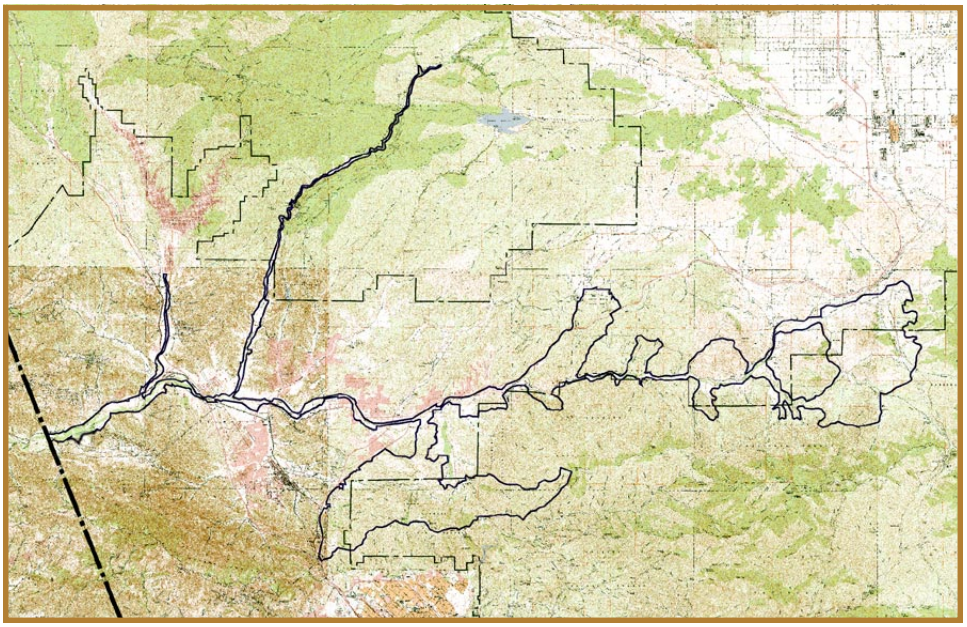
Biological Resources Assessment of the Proposed Santa Clara River Significant Ecological Area



Santa Clara River

(Including Existing SEA Nos. 19, 23, and 61)

Los Angeles County, California

November 2000

PCR

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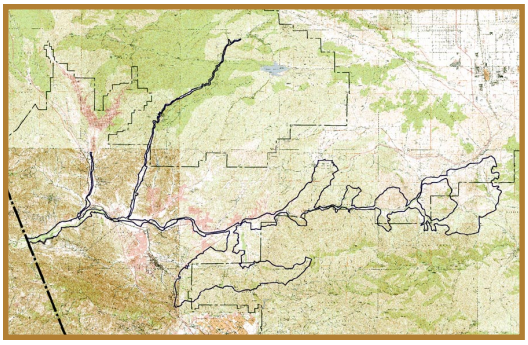

Santa Clara River

(Including Existing SEA Nos. 19, 23, and 61)

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EXECUTIVE SUMMARY

Location: The proposed Santa Clara River Significant Ecological Area (SEA) extends the full length of the Santa Clara River within Los Angeles County, most reaches lying within unincorporated areas, but the western portion passing through the cities of Santa Clarita and Los Angeles. The overall boundaries extend upstream along several major tributary creeks and where contiguous drainage areas connect to the river basin through open habitat, the proposed SEA boundary embraces all or major portions of these watersheds. The proposed SEA incorporates existing SEA numbers 19, 23 and 61.

Description: The proposed Santa Clara River SEA covers 37,774 acres and with the watershed extensions encompasses a wide variety topographic features and habitat types. The SEA encompasses the essential watershed system of the Santa Clara River, from its headwaters to the point at which it exits Los Angeles County. The eastern portion of the SEA surrounds Kentucky Springs and Aliso Canyon watersheds, follows the river channel downstream through the Acton basin, taking in other side drainages and significant rock outcroppings, then loops around the Vasquez Canyon watershed and includes Vasquez Rocks County Natural Area, while the southern boundary encompasses Bear Canyon and portions of Oak Spring Canyon. The southern boundary extends to encompass the remaining natural areas of the Sand Canyon watershed, along with major habitat features and watersheds of Elsmere, Whitney, Placerita and Bear canyons. From Sand Canyon west the SEA boundary extends to San Francisquito Canyon, wherein the northern boundary extends to the headwaters of San Francisquito Creek, then returns to the river channel and proceeds west to the confluence with Castaic Creek, where it draws around the lower portion of Castaic Creek, and then follows the Santa Clara River channel to the Los Angeles/Ventura County line. Roughly half of the proposed SEA is within unincorporated Los Angeles County accounting for approximately 19,408 acres. Other jurisdictions within the SEA include: 16,895 acres within Angeles National Forest; 15 acres within the City of Los Angeles; and 1,456 acres within the City of Santa Clarita.

Existing Land Use: The proposed Santa Clara River SEA encompasses, or is adjacent to, a myriad of existing land uses of varying intensities, including public and private campgrounds, County Natural Areas Parks, dispersed and clustered rural residential development, mobile home parks, kennels, wild animal compounds, surface mining for minerals and aggregate, light industrial facilities, munitions research facilities, and urban density residential development. Soledad Canyon Road parallels the alignment for much of the eastern two-thirds of the SEA, but portions of the roadway form the outside boundary of the proposed SEA.

Ownership: Land ownership within the proposed SEA consists of both public and private holdings. Public lands include portions of the Angeles National Forest, and Placerita Canyon and Vasquez Rocks County Natural Areas. Portions of the SEA also lie within the incorporated boundaries of the cities of Santa Clarita and Los Angeles. The remaining lands within the SEA consist of private ownerships. Individual private land holdings within the SEA are estimated to range from less than one acre to parcels in excess of 1,000 acres.

Vegetation: Plant communities within the proposed SEA include: bigcone spruce-canyon oak forest, coast live oak woodland, coast live oak riparian forest, chaparral, coastal sage scrub, coastal sage scrub-chaparral mixed scrub, non-native and native grasslands, alluvial fan sage scrub, southern cottonwood-willow riparian woodland and forest, southern sycamore-alder woodland, southern willow scrub, vernal pool, pinyon-juniper woodland, juniper woodland, freshwater marsh, and disturbed.

Wildlife: Wildlife within the proposed Santa Clara River SEA is very diverse and abundant, due to the inclusion of significant upland, watershed and primary tributary creek areas adjacent to the river basin, and largely intact riparian systems extending from to the margin of the Mojave desert to the Los Angeles/Ventura County line within the proposed SEA boundaries. The transitional mosaic of vegetation communities found along the east-west alignment of the river basin and adjoining areas provides ecosystem values both ecotonal and distinctive, for a diverse array of native wildlife, within the SEA and into the connecting regional ecological systems.

Wildlife Movement: The proposed Santa Clara River SEA encompasses the single most direct wildlife movement corridor and habitat linkage zone for wildlife movement between the Mojave Desert and higher elevations of the San Gabriel Mountains, the southern Sierran interchange zone, the Santa Susana Mountains, coast ranges, and Oxnard coastal plain. The river's riparian corridor extends from its watershed and tributary basins westward along the northern foothills of the San Gabriel Mountains, through the Santa Clarita Valley, where it is joined by the San Francisquito and Castaic Creek drainages, and then into Ventura County. The functional limits of the SEA extend on through Ventura County, pick up several other tributaries, and reach the Pacific Ocean at Ventura. San Francisquito Creek extends north into the Angeles National Forest to its headwaters in Green Valley. The segments of the SEA which encompass Vasquez Canyon and the Elsmere, Whitney, Placerita, Bear, and upper Sand canyon drainages extend the corridor and habitat linkage values of the SEA from the river basin into the western terminus of the San Gabriel range. The Santa Clara River and tributary systems mapped within the proposed SEA boundaries offer relatively free movement pathways and habitat linkages, with few barriers to terrestrial travel, accessible surface water or shallow groundwater, and/or riparian habitat cover. And, because the Santa Clara River basin system is unchannelized for almost all of its length, and has natural bottom substrates for

the entire length of all tributaries, it provides easy entry and exit for wildlife moving in and between the different habitat zones.

Sensitive Biological Resources: Sensitive plant communities within the proposed SEA include: native grassland, coast live oak riparian forest, southern willow scrub, bigcone spruce-canyon oak forest, southern sycamore-alder woodland, southern cottonwood-willow riparian woodland and forest, freshwater marsh, alluvial fan sage scrub, and vernal pool. The SEA, as proposed, includes a number of sensitive plant and animal species occurring or potentially occurring within the SEA, such as: slender-horned spineflower, unarmored three-spined stickleback, Santa Ana sucker, California red-legged frog, southwestern arroyo toad, southwestern pond turtle, least Bell's vireo, southwestern willow flycatcher, and many others.

Regional Biological Value: The proposed SEA meets several designation criteria and supports many regional biological values (see Criteria Table at the end of this summary). These values include: habitat for core populations of slender-horned spineflower and unarmored three-spined stickleback; the watershed and upper tributary streams for the principal remaining natural hydrological system within Los Angeles County, its riparian formations, freshwater marshes, alluvial fan sage scrub, and intact upland communities. Portions of the river and its tributary creeks have year-round surface water, providing breeding sites for sensitive amphibians, and permanent water resources for wildlife species moving along the river corridors; open ponds and marshes provide foraging, nesting and wintering sites for riparian-obligate migratory songbirds; the uplands offer linkage zones for species movement to and from the river, as well as representing excellent examples of the respective habitat types, and provide wide-ranging species with nesting, roosting, denning, and refuge sites near the freshwater corridor; the riparian woodlands and forests provide roosting and nesting opportunities for numerous raptors; and, the drainages together provide the primary subterranean aquifer for water resources between the headwaters and the Oxnard plain.

Recommended Management Practices: Proposed new development within the proposed Santa Clara River SEA should be designed to be highly compatible with the continued ecological function of each of the component biological resources described above. Development has pushed to the margins of the Santa Clara River and its tributaries in numerous reaches, in some areas compromising the biological functionality and water characteristics of the river. In order to preserve the integrity of the SEA, the proposed comprehensive management practices described in the *Los Angeles County SEA Update Study 2000 Background Report* are recommended. These practices address:

- Core habitat
- Habitat linkages and wildlife corridors

- Fire management
- Public access and recreation
- Infrastructure
- Wetlands, riparian habitats, and streambeds
- Non-riparian/upland woodlands

In addition to the comprehensive management practices the following proposed management practices are recommended specifically for the proposed Santa Clara River SEA:

- Limit development densities to one residential unit per ten acre parcel, and constrain development design, where feasible, to cluster dwelling configuration along existing roadways in order to minimize clearing associated with fuel management, and to reduce the need for grading, fencing, and other habitat disturbances.
- Limit new development to well outside the existing floodplain margins (as identified from biological, hydrological, and geological evidence, along with Federal Emergency Management Agency assessments), so as to obviate the necessity for further bank stabilization.
- Maintain the habitat of core populations of listed species including the federally endangered unarmored three-spined stickleback and red-legged frog and the federally and state endangered slender-horned spineflower as well as adequate buffers to eliminate or minimize adverse impacts.
- Retain rare communities with adequate buffers so as to allow for the long term viability and integrity of plant communities as a whole. Rare communities include: native grassland, coast live oak riparian forest, southern willow scrub, bigcone spruce-canyon oak forest, southern sycamore-alder woodland, southern cottonwood-willow riparian woodland and forest, freshwater marsh, alluvial fan sage scrub, and vernal pool.
- Carefully review proposals for new or increased groundwater extraction to prevent overdrafting of the shallow aquifer supporting the riparian habitat areas. The biological functionality of these areas is directly related to the supporting hydrology which originates from the surrounding basin slopes and from the groundwater flows of Santa Clara River.
- Require agricultural activities to employ the best management practices (BMPs) recognized in the industry; avoid unnecessary direct impacts to habitat, and conform to legal standards for all pesticide, herbicide and fertilizer applications.

- Retain connectivity and linkage values of the Santa Clara River and its major tributaries over their entire alignments, and between the Santa Clara River and the Santa Susana Mountains.

- Prohibit bridges over the Santa Clara River except for “flying” type bridges with wide, open spans beneath, that neither impinge nor alter the channel characteristics below.

CRITERIA ANALYSIS
OF THE PROPOSED SANTA CLARA RIVER SEA

Criterion	Status	Justification
A) The habitat of core populations of endangered or threatened plant or animal species.	Met	The only natural population of the federally endangered unarmored three-spined stickleback is within the Santa Clara River and its tributaries. The population of federally and state endangered slender-horned spineflower in Bee Canyon is one of fewer than seven known occurrences for this species, one of only two known occurrences in the County, and one of its largest populations.
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 bigcone spruce-canyon oak forests above Placerita Canyon, the vernal pool in the Placerita Canyon-Sand Canyon divide, the native grassland formations on the so-called Golden Valley Ranch (upper Placerita Canyon), and the alluvial fan sage scrub formations of lower San Francisquito Canyon, Kentucky Springs and Acton are unique and regionally restricted biotic communities within the proposed SEA. Additionally, the riparian forests and woodlands along the Santa Clara River are among the most extensive, diverse and intact formations in Southern California. Rare aquatic species, such as the unarmored three-spined stickleback, Santa Ana sucker, red-legged frog, least Bell's vireo, summer tanager, spineflower, and many others represented within the proposed SEA are found nowhere else in the region.
C) Within Los Angeles County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The cottonwood-willow forests and woodlands, alluvial fan sage scrub, coast live oak riparian forest, and bigcone spruce-canyon oak forest communities are best represented in Los Angeles County within the proposed SEA.
D) Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in Los Angeles County.	Met	The Santa Clara River basin affords breeding opportunities for numerous species otherwise not known to breed within Los Angeles County, including California red-legged frog, summer tanager, southwestern willow flycatcher, and the unarmored three-spined stickleback. The extensive riparian areas shelter dozens of migrant songbird species during Winter, including high concentrations of white-crowned and golden-crowned sparrows, fox sparrow, yellow-rumped warbler, dark-eyed junco, and sharp-shinned hawk. The proposed SEA embraces the river corridor and the linkage zones considered essential to insuring connectivity and resource values for many of the wildlife species present within the Los Angeles County portion of the Santa Clara River. The proposed SEA embraces the river corridor and the linkage zones considered essential to insuring connectivity and resource values for many of the wildlife species present within the Los Angeles County portion of the Santa Clara River.

CRITERIA ANALYSIS
OF THE PROPOSED SANTA CLARA RIVER SEA
(CONTINUED)

Criterion	Status	Justification
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.	Not met	Although there are many rare biotic resources within the proposed SEA, this criteria is not met due to the lack of extremes in physical/geographical limitations, or representations of unusual variation in a population or community.
F) Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in Los Angeles County.	Met	The proposed Santa Clara River SEA encompasses some of the highest quality, least disturbed and biotically intact acreage of bigcone spruce-canyon oak forest, riparian forest and woodland, coastal sage scrub, and alluvial fan sage scrub remaining in the county, and one of only three known vernal pools in the County.

SIGNIFICANT ECOLOGICAL AREA UPDATE STUDY

1. LOCATION

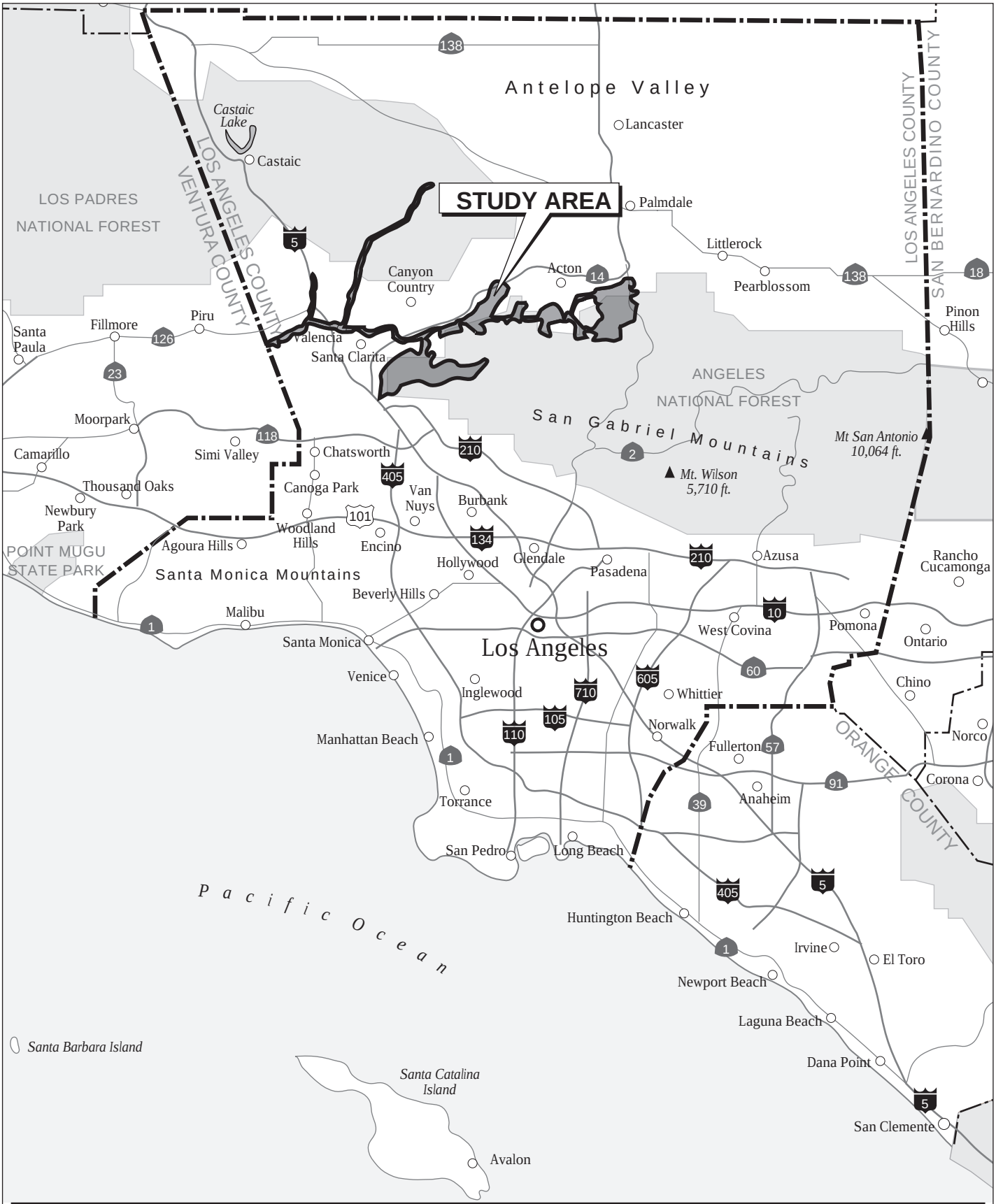
1.1 GENERAL

The proposed Santa Clara River Significant Ecological Area (SEA) encompasses the entire Los Angeles County reach of the Santa Clara River, primarily within unincorporated areas of Los Angeles County, as shown in Figure 1, *Regional Map*, on page 2. The proposed Santa Clara River SEA covers 41,344 acres and with the watershed extensions encompasses a wide variety topographic features and habitat types. The orientation and extent of the proposed SEA also consists of the surface and subsurface hydrology of the Santa Clara River, from its headwater tributaries and watershed basin to the point at which it exits Los Angeles County jurisdiction.

The SEA is located at least partially in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Pacifico Mountain, Acton, Agua Dulce, Sunland, San Fernando, Mint Canyon, Oat Mountain, Newhall, and Val Verde, as shown in Figure 2, *Existing and Proposed Boundaries* on page 3. It incorporates existing SEA numbers 19, 23 and 61.

1.2 BOUNDARY DESCRIPTION

The eastern portion of the SEA follows natural contours at the top of the watersheds to surround the Kentucky Springs and Aliso Canyon basins, the southern portions of which are within the Angeles National Forest. The boundary then follows the river channel downstream through the Acton basin, paralleling Soledad Canyon road on the north side, following the toe of the slope on the south. It continues along the channel margins to the southwest from Action to Arrastre Creek, where the boundary again follows the watershed contours to take in the four upper tributary channels; just west of the confluence with Arrastre Creek the northern boundary loops around the basal contours of the significant rock outcroppings above the river basin, and on the south side, around the Mill Canyon tributary basin. From this point the boundaries again stay at the river margins west to Agua Dulce Canyon drainage, at which point the northern boundary loops around that watershed, including the boundary of Vasquez Rocks County Natural Area, and the southern boundary opposite Agua Dulce Canyon. The SEA also encompasses the lower portion of Bear Canyon and undeveloped alluvial terrace portions of Oak Spring Canyon adjacent to the river channel.



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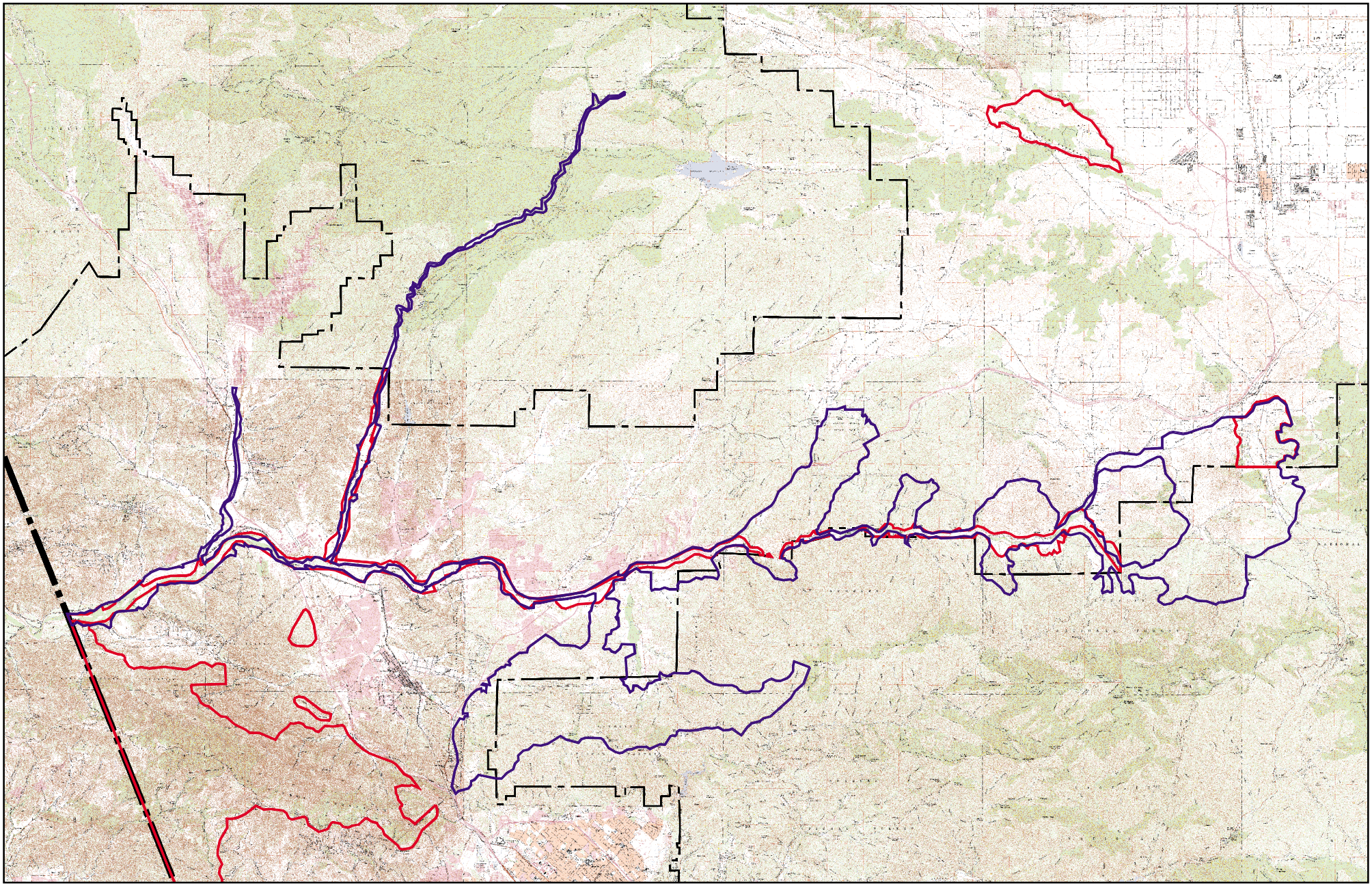
Source: PCR Services Corporation, 2000

Figure 1
Santa Clara River Significant Ecological Area Regional Map



Proposed SEA Boundary
Existing SEA Boundary
Angeles National Forest

Figure 2

Santa Clara River
Significant Ecological Area
Existing and Proposed Boundaries

0 19100
Feet

FORMA Systems
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The southern boundary passes southward from the river channel margin just west of the confluence with Sand Canyon, excluding existing development, and extends to the south behind existing rural residential developments to encompass the remaining natural areas of the western portion of the Sand Canyon watershed. The boundary follows along behind residential developments to Placerita Canyon, at which point it loops to the southeast, following Sand Canyon Road and then along watershed break lines to encompass the upper end of the Bear Canyon drainage. Near Magic Mountain the boundary follows the contour to the southwest, and then proceeds west along the Santa Clarita Divide to its intersection with the Interstate 5 (I-5)/Highway 14 junction, then follows the margin of existing development on the east side of Sierra Highway around to the northeast. It then passes around existing residential project boundaries to the river margin at Humphreys railway stop, about 0.4 mile west of its previous point of exit from the river channel. The area encompassed by the boundary includes major ridgeline, earthquake escarpment, grassland, and canyon habitat features and watersheds of Elsmere, Whitney, Placerita and Bear canyons, all of which are integral parts of the river basin recharge system and functional ecosystem. The boundary was drawn to avoid existing major development, which nearly isolate the uplands from the river basin; the narrow aperture for the linkage reflects the remnant nature of the last unobstructed terrestrial passageway between the upland areas and the river.

From Sand Canyon westward the SEA boundary remains close to the margins of the floodplain to the confluence with San Francisquito Canyon (formerly a separate SEA, number 19), wherein the boundary extends northward upstream along the margins of that drainage (following the already approved development setback limit lines) into Angeles National Forest (Saugus District) to the headwaters of San Francisquito Creek. The boundaries west of the San Francisquito confluence follow the river margins to the Castaic Creek confluence, at which point the northern boundary line again has been drawn to the north around the lower portion of Castaic Creek, embracing the riparian habitat areas around and above the confluence; then the boundaries of the SEA follow the margins of the Santa Clara River channel to the Ventura County line.

2. DESCRIPTION

The proposed Santa Clara River SEA covers 37,774 acres and with the watershed extensions includes a wide variety topographic features and habitat types. The orientation and extent of the proposed SEA encompasses the surface and subsurface hydrology of the Santa Clara River, from its headwater tributaries and watershed basin to the point at which it exits Los Angeles County jurisdiction. The eastern portion of the SEA surrounds the Kentucky Springs and Aliso Canyon watersheds, portions of which are within the Angeles National Forest. It follows the river channel downstream through the Acton basin, taking in Arrastre Creek, Mill Canyon and other side drainages and significant rock outcroppings, then stays within the channel to Agua Dulce Canyon, at which

point the northern boundary loops around that watershed and includes Vasquez Rocks County Natural Area, while the southern boundary encompasses the lower portion of Bear Canyon and undeveloped portions of Oak Spring Canyon adjacent to the river channel. The southern boundary leaves the river channel at the confluence with Sand Canyon and extends broadly to the south, to include all of the remaining natural areas of the Sand Canyon watershed, along with the major ridgeline, earthquake escarpment, grassland, and canyon habitat features and watersheds of Elsmere, Whitney, Placerita and Bear canyons.

From Sand Canyon west the SEA boundary remains close to the margins of the floodplain to the confluence with San Francisquito Canyon (formerly a separate SEA, number19), wherein the northern boundary extends northward upstream on that drainage to the headwaters of San Francisquito Creek on the Angeles National Forest (Saugus District), then returns to the river channel and proceeds west to the confluence with Castaic Creek. From here, it extends north around the lower portion of Castaic Creek, embracing the riparian habitat areas around and above the confluence, with the boundaries of the SEA following the Santa Clara River channel to the Ventura County line. The biological and ecological functionality of the SEA is integrally linked to the river basin for its entire length, of course, so the biogeographic limits of the proposed SEA would extend downstream through Los Angeles/Ventura County to its mouth at the Pacific Ocean, and encompass the significant tributary drainages (Piru Creek, Sespe Creek, Santa Paula Creek, Wheeler Creek, etc.).

The Kentucky Springs and Aliso Canyon watershed zones originate on National Forest land, in semi-arid chaparral and desert scrub habitat, but the drainages themselves support different formations of desert and interior riparian habitat, ranging from seasonal Great Basin sagebrush wash in Kentucky Springs to dense, mature, willow-cottonwood-sycamore woodlands over permanent streams in Aliso Canyon. The surrounding uplands in the basins support pinyon-juniper woodlands, chamise, mountain mahogany, and manzanita dominated chaparral formations, buckwheat scrub, and ruderal lands. Alluvial terraces within both drainages have been rather extensively cultivated for orchard crops or dryland agriculture, and in more recent years, rural and urban-type residential developments have encroached on the watersheds. Portions of the Aliso Canyon riparian woodlands have been encroached upon by rural development, but the upper portion of the drainage possesses excellent xeric cottonwood-sycamore riparian woodland. The alluvial plain formed along the southern margin of the river basin below these canyons supports intact, high diversity xeric alluvial fan sage scrub.

Downstream of the Acton basin the proposed SEA encompasses the Arrastre Creek drainage, which is the type locality for the federally and state endangered unarmored three-spined stickleback fish, and also loops around the high, rounded rocky butte-like outcroppings on the north side of the

river. These features, while only a minor part of the watershed of the river, provide important nesting, roosting, and sheltering habitat values for bats, birds of prey, and other sensitive species foraging along the river corridor. Agua Dulce Canyon has a permanent stream and supports high quality riparian habitat formations from the confluence with the river to the intersection with the Antelope Valley Freeway; from that point north the riparian areas are fragmented, improving and maturing significantly where the creeks pass through Vasquez Rocks County Natural Area.

The alluvial terraces along the river channel as it enters the eastern portion of the Santa Clarita Valley support alluvial fan sage scrub, Great Basin sagebrush scrub, coast live oak woodland, and coastal sage scrub habitats. The alluvial fans of Oak Springs Canyon and Sand Canyon are important recharge grounds for the river aquifer; surface flows from both canyons presently entering the Santa Clara River basin through natural, unconfined channels. Recognizing the importance of this drainage, the proposed SEA boundaries have been drawn to encompass the entire Sand Canyon-Bear Canyon watershed, most of which is within the National Forest. The major habitat linkage zones and watersheds between the river basin and the National Forest, and the protected areas of the county (Placerita Canyon Natural Area) have also been included within the proposed SEA boundary. These canyons form a natural movement zone for wildlife moving across and through the western end of the San Gabriel range to the Santa Susana range and the Santa Clara River basin, and together encompass a spectrum of significant and unique habitat, vegetation and wildlife resources.

The segment of the Santa Clara River passing through the City of Santa Clarita is a dry channel except during seasonal runoff flows. Regardless of this condition, it supports relatively intact stands of alluvial sage scrub formations, riparian woodland, and southern riparian scrub. The dry zones are essential to the continued genetic isolation of the unarmored three-spined stickleback population in the upper reaches of the river.

San Francisquito Creek supports dense and mature southern riparian scrub and riparian woodland formations, along with small areas of freshwater marsh, providing essential wintering areas and resident habitat for waterfowl, wading birds, marshland birds, and a variety of other vertebrate species. After San Francisquito Creek passes from County land into the National Forest, the channel flows become less seasonal, and riparian resources expand and diversify.

Relatively vast areas of willow-cottonwood forest and southern riparian scrub occur west of San Francisquito Creek and within the junction zone of Castaic Creek and the Santa Clara River, supporting numerous sensitive species and providing multi-layered riparian habitat for a wide diversity of wildlife species, particularly birds of prey and riparian-obligate songbirds.

The Santa Clara River channel and its alluvial terraces and tributary creeks together form the single most important and natural value wildlife movement zone through Los Angeles County. Mobile species can enter the river basin anywhere along its length and proceed in either direction without having to pass through narrow culverts or blind channels, with continuous vegetative cover and only short stretches of dry substrates. The overall drainage course provides a continuum of aquatic and terrestrial movement opportunities, shelter, forage, and resident habitat from the mouth of the river at Ventura to the Antelope Valley. The drainage course connects to both districts of the Angeles National Forest, and links together two large public resource preserves (Vasquez Rocks and Placerita County Natural Areas).

Roughly half of the 37,774 acres proposed for the Santa Clara River SEA are within unincorporated Los Angeles County accounting for approximately 19,408 acres. Other jurisdictions within the SEA include: 16,895 acres within Angeles National Forest; 15 acres within the City of Los Angeles; and 1,456 acres within the City of Santa Clarita.

3. EXISTING LAND USE

The proposed SEA currently supports a wide spectrum of land uses. The easternmost portions, in the watersheds of Kentucky Springs and Aliso Canyon, are largely vacant open space or dispersed rural residential development, although some surface mining does occur on the National Forest. The portion of the proposed SEA lying south of Acton is currently open space, as are the rocky outcroppings and tributary canyon west of Acton. The river bottom from Acton to Santa Clarita contains numerous private and public recreational sites, most of which were developed as swimming or fishing parks, but several now have been converted to permanent mobile home residential areas. Agua Dulce Canyon has light rural residential development and a few private recreational sites; the County Natural Area consists of native habitat. Several surface mining operations are situated, and more are proposed, immediately east of the boundary of the City of Santa Clarita. Most of the area encompassed within the area south of Sand Canyon presently is undeveloped open space or dispersed rural residential development, except for Placerita Canyon Natural Area, which is another native habitat reserve, open for public park use. The river basin through Santa Clarita is largely undeveloped, although numerous commercial and light industrial facilities are situated at the margin of, or within, the floodplain. Recent development projects have stabilized portions of the river channel and bank in Santa Clarita, as well as portions of the lower end of San Francisquito Canyon, particularly around bridges and development. Additional stabilization and encroachment will occur as proposed and approved developments along the river and tributaries are constructed. Several bridges, industrial facilities, a water treatment plant and large parking areas have been situated along the river margin near the Castaic confluence, but the river remains largely

undeveloped, except for a single recreational vehicle facility and agriculture, from I-5 to the Los Angeles/Ventura County line.

4. LAND OWNERSHIP

Land ownership within the proposed SEA consists of both public and private holdings. Public lands include that portion of the SEA which overlaps the Angeles National Forest boundaries in the foothills of the San Gabriel Mountain range and along Soledad Canyon Road, and Placerita Canyon and Vasquez Rocks County Natural Areas. Portions of the SEA also lie within the incorporated boundary of the cities of Santa Clarita and Los Angeles. The remaining lands within the SEA are mostly private holdings. Individual private land ownerships within the SEA range from less than one acre to parcels in excess of 1,000 acres.

5. VEGETATION

Plant communities within the proposed SEA include: bigcone spruce-canyon oak forest, coast live oak woodland, coast live oak riparian forest, chaparral, coastal sage scrub, coastal sage scrub-chaparral mixed scrub, non-native and native grasslands, alluvial fan sage scrub, southern cottonwood-willow riparian woodland and forest, southern sycamore-alder woodland, southern willow scrub, vernal pool, pinyon-juniper woodland, juniper woodland, freshwater marsh, and disturbed. Transitional zones (ecotones) between these communities often contain unusual species compositions. Plant species observed or recorded in previous documentation within the study area are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEA Update Study 2000 Background Report*. Sensitive plant species occurring or potentially occurring within the proposed SEA are discussed in the Sensitive Biological Resources section of this document.

Plant communities within the proposed SEA were classified using standard methodology and terminology. Most of the communities discussed in this study correspond directly with those listed in Holland's *Preliminary Descriptions of the Terrestrial Natural Communities of California* (1986 and 1992 update); some communities are named based upon the dominant species within them and/or other commonly used terminology. Descriptions and general locations of the each plant community present within the SEA are given below.

Bigcone spruce-canyon oak forest formations typically occur in higher elevation draws on north-facing slopes, and may have incense cedar, big-leaf maple, California bay, and other shade-loving species intermixed, depending upon slope orientation, substrates, and fire history. Understory vegetation usually is dominated by chaparral species such as scrub oak, poison oak, wild grape, and

manzanita. This community occurs on watershed slopes in the eastern portion of the proposed SEA, and in a few of the narrower, more mesic canyons along the southern side of Soledad Canyon.

Coast live oak woodland consists of moderate-density overstory formations of coast live oak trees, usually on erosional plains along the margins of canyon bottoms and on lower slopes in chaparral and coastal sage scrub understory habitats. Mexican elderberry, chaparral currant, squawbush, and California peony are frequent in the understory. Extensive stands of this formation occur in Sand, Placerita, Bear, Whitney, Elsmere, and Soledad Canyons, and in unnamed tributary canyons to these drainages.

Coast live oak riparian forest is a variation of coast live oak woodland wherein the canopy is more closely grown, and the trees occur in narrower formations along watercourses. Willow, California bay, mulefat, and other riparian species often occur in the understory.

Juniper woodland is an open formation dominated by California juniper, often with an understory of foothill yucca, buckwheat, and other scrub species. This community is found on lower slopes within the eastern portion of the proposed SEA and is mixed with a few joshua trees and chaparral species in several places.

Pinyon-juniper woodland in the SEA typically consists of a mixture of single-needle leaf pinyon pine and California juniper, with mountain mahogany, buckwheat, squawbush, foothill yucca, penstemons, and native grasses. This formation occurs on middle elevation north-facing slopes in the Kentucky Springs watershed, and sporadically along the same orientations south of Acton.

Southern cottonwood-willow riparian woodland and forest is a broad-leafed winter-deciduous habitat dominated by Fremont cottonwood, in places mixed with black cottonwood, various species of willow, rarely an alder, and on drier sites, western sycamore. Southern cottonwood-willow riparian woodland (or forest) occurs in numerous reaches of the proposed SEA, forming mature overstory habitat on the Santa Clara River, its main tributaries, oxbow ponds, and alluvial plains. Some of the most extensive formations occur just west of Acton, in upper Aliso Canyon, in lower San Francisquito Canyon, and from Santa Clarita to the Ventura County border. Large tracts of cottonwood-willow habitat occur in Ventura County as well.

Southern sycamore-alder woodland is a formation which most often occurs on broad plains with heavy alluvial substrates, often along narrow creeks and streams with high-energy, permanent flows within the SEA. Alders typically occur along the watercourse, while sycamores usually grow a bit further from the active flowing channel. This community is rare within the SEA, occurring only

in the upper reaches of the watershed and in portions of Bear, Sand, and Placerita Canyons and to a lesser extent in Aliso Canyon.

Southern willow scrub is a riparian community consisting of dense, broad-leafed, winter-deciduous riparian thickets occurring within and adjacent to seasonal or permanent water courses The "scrub" formation generally is sub-mature – a state which often is 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 willow, and arroyo willow. Within the SEA this community occurs throughout the tributary and primary drainages, wherever the habitat structure is maintained or repeatedly altered by frequent high water flows.

Freshwater marsh develops in areas of still or slow-moving permanent freshwater. This community is dominated by the perennial, emergent cattail or bulrush, which may reach heights of 7 feet and grow dense enough to form a closed canopy. This formation occurs in scattered ponds and slow-flow portions of the river and tributaries within the SEA.

Vernal pool systems are extremely rare in Los Angeles County and there are only two verified vernal pools currently recognized within the area; Cruzan Mesa and Plum Canyon. However, there is at least one small seasonal pond with typical vernal pool characteristics within the so-called Golden Valley Ranch portion of the upper Placerita-Sand Canyon watershed break. This small pool is surrounded by coastal sage scrub, with a band of native needlegrass and melic grass on its fringes, and supports Riverside fairy shrimp and western spadefoot toad. It is considered a vernal pool by virtue of its habitat values and species unique to this type of seasonal formation.

Chaparral consists of broad-leafed or needle-leafed, sclerophyllous (hard-leafed), medium height to tall shrubs that form a dense cover on steep slopes, 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 on north-facing exposures; buckwheat, foothill yucca, chamise, hoary-leaf lilac, black sage, and goldenbush on south-facing slopes. This plant community occupies most of the basin slopes along the Santa Clara River and on interior ridges and slopes within the watersheds and drainages west of Acton. Chaparral also occurs on some of the higher elevations of the eastern watershed portions of the proposed SEA, where the shrubs frequently are interspersed as understory formations within oak and conifer woodlands.

Coastal sage scrub and **coastal sage scrub-chaparral mixed scrub** are formations which typically occur on south or west-facing slopes within the western portion of the SEA. Some sites may be artifacts of fire frequency or occurrence, while other areas appear to be stable scrub communities. Dominant species typically are California sagebrush, purple sage, black sage, white

sage, goldenbush, buckwheat, foothill yucca, California encelia, brittlebush, golden yarrow, chamise, hoary-leaf lilac, and a variety of annuals and bulbs. Excellent examples of coastal sage scrub occur in upper Placerita Canyon watershed and on the ridgeline to the north, along the Santa Clara River just east of Sand Canyon, and in San Francisquito Canyon.

Alluvial fan sage scrub, sometimes also known as floodplain sage scrub, generally consists of a mixture of shrubs which colonize and persist within infrequently scoured and flooded terrain such as floodplains, alluvial plains, or along seasonal streams. The dominant shrub in most washes is scalebroom, but Great Basin sage brush, rabbitbrush, and foothill yucca also usually occur in the habitat type, and may be dominant depending upon substrates and subsurface hydrology. This vegetation type is common throughout the alluvial plains and washes in the proposed SEA, forming particularly high diversity stands along the southern margin of the river at Acton, on uplands east of the Sand Canyon confluence, along the dry reaches of the river in Santa Clarita, and in lower San Francisquito Canyon. Extensive stands of Great Basin sagebrush-dominated alluvial scrub occur around Acton and in the Kentucky Springs portion of the SEA.

Native and non-native grassland communities consist of low, herbaceous vegetation dominated by grasses, with native formations generally mixed with native bulbs and other herbaceous species, often intermixed with naturalized annual taxa. There are representatives of native grasslands scattered within the proposed SEA, most notably patches of different needlegrass species and melic grasses on clay soils in Placerita Canyon, on slope wetlands and around oak on the ridge north of Placerita, and on less-disturbed xeric slopes in the eastern portion of the SEA. Seeps in chaparral often support homogeneous stands of giant rye; other native grasses occur sporadically within most natural habitats along the Santa Clara basin.

Non-native grassland consists of 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, along with wild mustards and other disturbance-favored “weedy” taxa. Non-native grasslands and other ruderal formations are the dominant understory on most disturbed substrates, particular grazed areas.

Disturbed or barren areas either completely lack vegetation or are dominated by ruderal species. Ruderal vegetation typically found within the proposed SEA includes non-native and native grasses and “weedy” herbaceous species, including doveweed, mustards, wire lettuce, sow thistle, telegraph weed, Russian thistle, dock, yellow star thistle, Australian saltbush, and cocklebur. Disturbed areas occur throughout the proposed SEA on fallow agricultural sites, disced fields, abandoned pastures, residential development, paved road margins, fire breaks, dirt access roads, trails, and other similarly disturbed areas.

6. WILDLIFE

Wildlife within the proposed SEA is extremely diverse and abundant, commensurate with extensive acreages of natural open space and great diversity of habitat types, within the river channels and on the surrounding uplands. While a few wildlife species may be entirely dependent upon or obligate within a single vegetative community, the mosaic of vegetation communities within the study area and adjoining uplands constitutes a continuum of functional ecosystems. These ecosystems support a wide variety of wildlife species, within the SEA boundaries and as a part of the regional ecosystem.

Analysis of invertebrates on any given site generally is limited by a lack of specific data, but the size of the SEA and diversity of habitats present are considered sufficient to support healthy populations of a very large number of invertebrate species, probably in excess of 2,500 species. The riparian formations, wetlands, and aquatic habitats within the SEA support diverse faunas of arthropods, including native fairy shrimp, craneflies, blackflies and other aquatic dipterans, stoneflies, caddisflies, and dobsonflies, water boatmen, giant water bugs, ground beetles, diving beetles, and tiger beetles. Terrestrial insects abound around riparian corridors and in scrub habitats, and are particularly abundant in oak-dominated habitats. Insect orders very well-represented taxonomically, and with some habitat specialization within the Santa Clara River SEA include Orthoptera, Neuroptera, Coleoptera, Diptera, Hymenoptera and Lepidoptera.

Amphibians are abundant and relatively diverse within moister woodland areas, along montane canyon bottoms, in riparian areas, and within surface water features of the proposed SEA. The overall riparian systems of the Santa Clara River basin support abundant populations of Pacific and California chorus frogs, western toad, western spadefoot toad, bullfrog, and African clawed frog (the latter two species are non- native), and in San Francisquito Canyon, California red-legged frog and southwestern arroyo toad. Arboreal, painted, and garden slender salamanders also are present within mesic habitats in the SEA.

Open scrub, chaparral and alluvial fan habitats support diverse reptile populations, and the overall herpetofauna of the proposed SEA would encompass numerous lizard species, along with southwestern pond turtle in Agua Dulce and Bear canyons. Yucca night lizard, side-blotched lizard, western fence lizard, western skink, San Diego alligator lizard, coastal western whiptail, San Diego horned lizard, desert horned lizard, silvery legless lizard and San Diego desert banded gecko all would be expected within the SEA.

The SEA also supports a robust snake fauna, including western blind snake, coachwhip ("red racer"), chaparral whipsnake, coastal patch-nosed snake, California rosy boa, San Diego gopher

snake, glossy snake, California kingsnake, mountain kingsnake, long-nosed snake, night snake, California lyre snake, California black-headed snake, two-striped garter snake, San Bernardino ring-necked snake, southern Pacific rattlesnake.

Bird diversity within the proposed SEA is related to habitat opportunities for year-round residents, seasonal residents, migrating raptors, and song birds. Coastal sage scrub and chaparral host a suite of birds typical of such sites at lower elevations over most of the coastal slopes of Southern California. The most productive sites for resident coastal sage scrub and chaparral birds are around riparian and freshwater systems, which also attract large numbers of migrants during Spring and Fall. Coastal sage and chaparral birds resident or breeding within the SEA includes Southern California (ashy) rufous-crowned sparrow, Bell's sparrow, black-chinned sparrow, lark sparrow, lazuli bunting, California gnatcatcher, California quail, greater roadrunner, spotted towhee, California towhee, California thrasher, phainopepla, northern mockingbird, and Anna's, Costa's, and black-chinned hummingbirds. Oak woodlands and riparian areas support many more species; notable species consist of the summer tanager, Bullock's oriole, black-headed grosbeak, band-tailed pigeon, western wood pewee, several swallow species, western yellow-billed cuckoo, willow flycatcher, and least Bell's vireo. Species associated with ruderal sites and grasslands include western meadowlark, California horned lark, and savannah and grasshopper sparrows. Birds of prey (including common migrants) observed within the SEA include red-shouldered hawk, red-tailed hawk, Cooper's hawk, sharp-shinned hawk, Swainson's hawk, merlin, American kestrel, northern harrier, white-tailed kite, prairie falcon, and golden eagle. Resident owl species within the proposed SEA boundaries include barn owl, great horned owl, long eared owl, and California spotted owl.

Native mammal diversity within the SEA is considerable. These include bats (at least seven species), rodents (at least four species of deer mice, two species of woodrat, Beechey ground squirrel, western gray squirrel, and more), two types of rabbits and one hare, broad-handed mole, long-tailed weasel, American badger, spotted and striped skunks, raccoon, gray fox, bobcat, coyote, mountain lion, and mule deer. Black bear also occur within the SEA boundaries, at least occasionally, but the San Gabriel Mountains population was introduced for game use, and this species is not native within the SEA.

Wildlife species previously recorded, as well as those expected to occur, within the study area are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEA Update Study 2000 Background Report*. Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section of this document.

7. WILDLIFE MOVEMENT

Historically (and prehistorically) the riparian corridor along the Santa Clara River has served as the primary east-west linkage between the Pacific coastline, coast ranges, interior ranges, high desert and southern Sierra (via the Tehachapi range). Animals moving through the Santa Clara drainage had unobstructed passage along the river and within the riparian systems between the coastal lowlands of Ventura and the Mojave Desert, with tributary routes extending south into the San Gabriel range, northward via Castaic, Bouquet and San Francisquito tributaries over the Transverse range and into the San Joaquin Valley, west into the central coast ranges, or east through the Tehachapis and into the southern Sierra Nevada. The present configuration of the tributary drainages has impinged upon connectivity from the Santa Clarita Valley to the north, but the Santa Clara River remains relatively intact and open. The proposed SEA embraces the river corridor and the linkage zones considered essential to insuring connectivity and resource values within the historic movement zones for all of the wildlife species present within the Los Angeles County portion of the Santa Clara River.

8. SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources are habitats or individual species which have been afforded special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, rare, or otherwise of concern; this is principally due to the species' declining or limited 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 proposed SEA, that have been afforded special recognition.

8.1 SENSITIVE PLANT COMMUNITIES/HABITATS

The proposed Santa Clara River SEA supports several habitat types considered sensitive by resource agencies, namely the CDFG [California Natural Diversity Database (CNDDB), 2000] because of their scarcity and support of a number of state and federally listed endangered, threatened, and rare vascular plants, as well as sensitive bird and reptile species. These communities include: bigcone spruce-canyon oak forest, coast live oak riparian forest, southern willow scrub, southern cottonwood-willow riparian woodland, sycamore-alder woodland, freshwater marsh, alluvial fan sage scrub, native grassland, and vernal pool. These communities or closely related designations are considered highest-inventory priority communities by the CDFG, indicating that they are declining

in acreage throughout their range due to land use changes. The array and composition of these communities has been discussed earlier in this report (see Section 5. Vegetation, above).

8.2 SENSITIVE SPECIES

Sensitive species include those listed, or candidates for listing by the USFWS, CDFG, and CNPS (particularly List 1A, 1B, and 2 as defined in the Sensitive Species Table). The Sensitive Species Table on page 16 lists those species which have been recorded within the proposed SEA as well as those reasonably expected to occur. The table includes locations of sensitive species observed, recorded in the CNDDB, or reported in previous documentation as observed within or in the immediate vicinity of the proposed SEA. Additional species, such as native oak, sycamore, or joshua trees, may be protected under local ordinances but are not included in this table.

SENSITIVE SPECIES
OCCURRING OR POTENTIALLY OCCURRING
WITHIN THE PROPOSED SANTA CLARA RIVER SEA

VASCULAR PLANTS

Scientific Name	Common Name	Agency Listing Status	CNPS Listing Status	Preferred Habitat	Location
FERNS AND FERN ALLIES					
Selaginellaceae	**Spike-Moss Family**				
Selaginella cinerascens	ashy spike-moss		4	Dry slopes on mesas in coastal sage scrub and chaparral.	Potential where habitat occurs
ANGIOSPERMS (Dicotyledons)					
Apiaceae	**Carrot Family**				
Perideridia pringlei	adobe yampah		4	Chaparral, cismontane woodland, coastal scrub.	Recorded in N Los Angeles, Kern and Ventura Cos.
Asteraceae	**Sunflower Family**				
Brickellia nevinii	Nevin's bricklebush		4	Chaparral, coastal sage scrub; steep slopes.	Recorded in N portion of San Francisquito Creek wash.; common locally
Senecio aphanactis	rayless ragwort		2	Cismontane woodland, coastal scrub; 20-575m.	Historic record

Legend

Agency Lists

FE	Federally Listed as Endangered	SE	State Listed as Endangered
FT	Federally Listed as Threatened	ST	State Listed as Threatened
FSC	Federal Special Concern Species	SCE	State Candidate for Endangered
FPE	Federally Proposed as Endangered	SCT	State Candidate for Threatened
FPT	Federally Proposed as Threatened	SP	State Protected
FPD	Federally Proposed for Delisting	SFP	State Fully Protected
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California Native Plant Society (CNPS) Lists

1A	Presumed extinct in California.
1B	Rare, threatened, or endangered throughout their range.
2	Rare, threatened, or endangered in California, but more common in other states.
3	Plant species for which additional information is needed before rarity can be determined.
4	Species of limited distribution in California (i.e., naturally rare in the wild), but whose existence does not appear to be susceptible to threat.

SENSITIVE SPECIES
OCCURRING OR POTENTIALLY OCCURRING
WITHIN THE PROPOSED SANTA CLARA RIVER SEA
(CONTINUED)

VASCULAR PLANTS

Scientific Name	Common Name	Agency Listing Status	CNPS Listing Status	Preferred Habitat	Location
Berberidaeeae	**Barberry Family**				
Berberis nevinii	Nevin's barberry	FE, SE	1B	Sage scrub, chaparral, cismontane woodland, riparian scrub; sandy or gravelly substrate.	Warm Spring Mt. and Newhall quads.; San Francisquito Cyn. (1987); 0.5 mi. N of San Francisquito powerhouse
Boraginaceae	**Borage Family**				
Harpagonella palmeri	Palmer's grappling hook	FSC	2	Sage scrub; clay soils; below 2,500 feet.	Historic occurrence in L.A. county, Newhall quadrangle
Cactaceae	**Cactus Family**				
Opuntia basilaris var. *brachyclada*	short-joint beavertail	FSC	1B	Chaparral, joshua tree woodland, mohavean desert scrub, pinyon-juniper woodland, riparian woodland, sandy soil or coarse granitic loam	Potential where habitat occurs; recorded outside SEA near Quigley Cyn., E of Newhall

Legend

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SENSITIVE SPECIES
OCCURRING OR POTENTIALLY OCCURRING
WITHIN THE PROPOSED SANTA CLARA RIVER SEA
(CONTINUED)

VASCULAR PLANTS

Scientific Name	Common Name	Agency Listing Status	CNPS Listing Status	Preferred Habitat	Location
Convolvulaceae	**Morning-Glory Family**				
Calystegia peirsonii	Pierson's morning glory	FSC	4	Sage scrub, chenopod (saltbush) scrub, chaparral, cismontane woodland, lower montane coniferous forest, rocky slopes.	Locally common in several cyns. along Santa Clara River
Fabaceae	**Legume Family**				
Lotus nuttallianus	Nuttall's lotus	FSC	1B	Chaparral and buckwheat communities.	Unconfirmed record in sandy areas of chaparral and buckwheat scrub near convergence of Soledad and Agua Dulce Cyns.
Grossulariaceae	**Gooseberry Family**				
Ribes divaricatus var. *parishii*	Parish's gooseberry	FSC	1B	Willow thickets, coastal sage scrub, riparian woodland. Perennial shrub.	Potential where habitat occurs

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SENSITIVE SPECIES
OCCURRING OR POTENTIALLY OCCURRING
WITHIN THE PROPOSED SANTA CLARA RIVER SEA
(CONTINUED)

VASCULAR PLANTS

Scientific Name	Common Name	Agency Listing Status	CNPS Listing Status	Preferred Habitat	Location
Malvaceae	**Mallow Family**				
Malacothamnus davidsonii	Davidson's bush mallow	FSC	1B	Sage scrub, chaparral, riparian woodland.	Unconfirmed record from Oak Spring Cyn. near Santa Clara River
Polemoniaceae	**Phlox Family**				
Navarretia fossalis	spreading navarretia	FT	1B	Chenopod scrub, shallow freshwater marshes, vernal pools.	Newhall area within vernal pools (1995-96)
Polygonaceae	**Buckwheat Family**				
Chorizanthe parryi var. *fernandina*	San Fernando Valley spineflower	FSC	1A	Coastal scrub, sandy soils.	Potential where habitat occurs; record outside SEA on Newhall Ranch (2000)
Dodecahema leptoceras	slender-horned spineflower	FE, SE	1B	Alluvial sage scrub vegetation on sandy flood-deposited rivers and washes.	Recorded near Newhall (1989) and in Mint Cyn. Also observed in Bee Cyn.

Legend

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SENSITIVE SPECIES
OCCURRING OR POTENTIALLY OCCURRING
WITHIN THE PROPOSED SANTA CLARA RIVER SEA
(CONTINUED)

VASCULAR PLANTS

Scientific Name	Common Name	Agency Listing Status	CNPS Listing Status	Preferred Habitat	Location
Saxifragaceae	**Saxifrage Family**				
Boykinia rotundifolia	round-leaved boykinia		4	Chaparral, riparian woodland, streambanks.	Common in local cyns.
ANGIOSPERMS (Monocotyledons)					
Liliaceae	**Lily Family**				
Calochortus catalinae	Catalina mariposa lily		4	Openings in chaparral, valley and foothill grassland, cismontane woodland; heavy soils.	Placerita Cyn.
Calochortus clavatus var. *clavatus*	club-haired mariposa lily		4	Coastal sage scrub, clayish flats and slopes.	Common on Golden Valley Ranch property
Calochortus clavatus var. *gracilis*	slender mariposa lily	FSC	1B	Chaparral, especially in foothill cyns.; generally found in shade.	Confluence of Bee Cyn. and Soledad Cyn. Rd.; Oak Spring Cyn.

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SENSITIVE SPECIES
OCCURRING OR POTENTIALLY OCCURRING
WITHIN THE PROPOSED SANTA CLARA RIVER SEA
(CONTINUED)

VASCULAR PLANTS

Scientific Name	Common Name	Agency Listing Status	CNPS Listing Status	Preferred Habitat	Location
Calochortus plummerae	Plummer's mariposa lily	FSC	1B	Sage scrub, valley and foothill grassland, yellow pine forest; dry, rocky or sandy sites, granitic or alluvial soil; to 4,800 feet.	Sunland, near Reese Ranch, little Tujunga Cyn. (1989); Santa Susana pass (1928) on Robinson Ranch golf course
Lilium humboldtii ssp. *ocellatum*	ocellated Humboldt lily	FSC	4	Openings in chaparral, cismontane woodland, lower montane coniferous forest; below 5,500 feet.	Common in local cyns.
Poaceae	**Grass Family**				
Orcuttia californica	California Orcutt grass	FE, SE	1B	Vernal pools.	Potential where habitat occurs

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SENSITIVE SPECIES
OCCURRING OR POTENTIALLY OCCURRING
WITHIN THE PROPOSED SANTA CLARA RIVER SEA
(CONTINUED)

INVERTEBRATES

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
CRUSTACEA–fairy shrimp, isopods, amphipods				
Streptocephalus woottoni	Riverside fairy shrimp	FE	Vernal pools/swales.	Golden Valley Ranch

VERTEBRATES

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
FISH				
Cyprinidae	**Minnow Family**			
Gila orcutti	arroyo chub	CSC	Slow water sections of streams with mud or sand substrates.	San Francisquito Creek, Soledad Rock Quarry project site in SEA 23
Gasterosteidae	**Stickleback Family**			
Gasterosteus aculeatus williamsoni	unarmored threespine stickleback	FE, SE, SFP	Fresh water rivers and streams in the L.A. basin; low flow areas.	Common in Santa Clara River; Arrastre Creek
Catostomidae	**Sucker Family**			
Catostomus santaanae	Santa Ana sucker	FE, CSC	Sand, rubble, boulder bottoms; cool, clear water; feed on algae.	Santa Clara River

Legend

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SENSITIVE SPECIES
OCCURRING OR POTENTIALLY OCCURRING
WITHIN THE PROPOSED SANTA CLARA RIVER SEA
(CONTINUED)

VERTEBRATES

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
AMPHIBIANS				
Pelobatidae	**Spadefoot Toad Family**			
Scaphiopus hammondii	western spadefoot	FSC, CSC, SP	Open areas in lowland grasslands, chaparral, and pine-oak woodlands, areas of sandy or gravelly soil in alluvial fans, washes, and floodplains.	Tadpoles and toadlets observed near Via pond and a pond in middle Potero Cyn.; Placerita Cyn.; Sand Cyn.
Bufonidae	**True Toads**			
Bufo microscaphus californicus	arroyo southwestern toad	FE, CSC, SP	Washes/streams, sandy banks, grown to willows, cottonwoods or sycamores; riparian habitats of semi-arid areas, small cobbly streambeds.	One individual recorded along the Santa Clara River; San Francisquito Cyn.; Castaic Creek (above dam)
Ranidae	**True Frog Family**			
Rana aurora draytonii	California red-legged frog	FT, CSC, SP	Humid forests, woodlands, grasslands and streamsides, especially where cattails and other plants provide good cover.	San Francisquito Cyn. (USFS 1999)
REPTILES				
Emydidae	**Box and Water Turtle Family**			
Clemmys marmorata pallida	southwestern pond turtle	FSC, CSC, SFP	Ponds, marshes, rivers, streams, irrigation ditches.	Ben Cyn.; Vasquez Rocks; one individual in Santa Clara River, Newhall Ranch

Legend

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SENSITIVE SPECIES
OCCURRING OR POTENTIALLY OCCURRING
WITHIN THE PROPOSED SANTA CLARA RIVER SEA
(CONTINUED)

VERTEBRATES

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
Gekkonidae	**Gecko Family**			
Coleonyx variegatus abbotti	San Diego banded gecko	FSC	Rocky tracts, canyon walls, and sand dunes in deserts and semi-arid areas.	Tick Cyn.; tributary to Santa Clara River
Iguanidae	**Iguanid Lizard Family**			
Phrynosoma coronatum blainvillei	San Diego coast horned lizard	FSC, CSC, SP	Valley-foothill hardwood, conifer, and riparian habitats, pine-cypress, juniper and annual grassland habitats below 6,000 feet, open country, especially sandy areas, washes, floodplains, and windblown deposits.	Observed throughout San Francisquito Creek in various locations
Phrynosoma coronatum frontale	California horned lizard	CSC, SP	Scrubland, grassland, coniferous forest, broad-leaf woodlands.	One individual on Newhall Ranch property; common in SEA
Teiidae	**Whiptail Lizard Family**			
Cnemidophorus tigris multiscutatus	coastal western whiptail	FSC	Arid and semi-arid desert to open woodlands, where vegetation is sparse.	Santa Clara River and San Francisquito Creek; common in SEA
Anniellidae	**California Legless Lizard Family**			
Anniella pulchra pulchra	silvery legless lizard	CSC	Several habitats but especially in coastal dune, valley-foothill, chaparral, and coastal scrub habitats.	Placerita Cyn.; Sand Cyn.; common in SEA

Legend

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SENSITIVE SPECIES
OCCURRING OR POTENTIALLY OCCURRING
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(CONTINUED)

VERTEBRATES

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
Colubridae	**Colubrid Snake Family**			
Diadophis punctatus modoestus	San Bernardino ring-neck snake	FSC	Open, relatively rocky areas within valley-foothill, mixed chaparral, and annual grass habitats.	Placerita Cyn.; Santa Clara River
Lampropeltis zonata pulchra	San Diego mountain kingsnake	FSC, CSC, SP	Moist woods, coniferous forests, woodland and chaparral.	Placerita Cyn.; Sand Cyn.
Salvador hexalepis virgultea	coast patch-nosed snake	FSC, CSC	Found in coastal chaparral, desert scrub, washes, sandy flats, and rocky areas. Barren creosote bush desert flats. Sagebrush semi-deserts; sea level to 7,000 feet.	3 mi. E of Acton; historically collected in Placerita, Sand, and Soledad cyns.
Thamnophis hammondii	two-striped garter snake	FSC, CSC, SP	Riparian and freshwater marshes with perennial water.	Several records in upper Santa Clara River; Placerita Cyn.; Sand Cyn.
BIRDS				
Ardeidae	**Heron Family**			
Ixobrychus exilis hesperis	western least bittern	CSC	Emergent wetlands of cattails and tules.	Santa Clara River
Cathartidae	**New World Vulture Family**			
Gymnogyps californianus	California condor	FE, SE, SFP	Montane and foothill regions; vast expanses of open savannah, grasslands, and chaparral, with cliffs, large trees, and snags.	Recorded flying over agricultural fields and resting on ridges adjacent to S end of Tesoro project

Legend

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SENSITIVE SPECIES
OCCURRING OR POTENTIALLY OCCURRING
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(CONTINUED)

VERTEBRATES

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
Accipitridae	**Hawks, Kites, Harriers and Eagle Family**			
Accipiter cooperi	Cooper's hawk	CSC	Open woodlands especially riparian woodland.	Santa Clara River nesting records; foraging over Newhall Ranch; San Francisquito Creek, common in SEA
Accipiter striatus	sharp-shinned hawk	CSC	Woodlands; forages over chaparral and other scrublands; prefers riparian habitats and N-facing slopes, with plucking perch sites.	Common local migrant
Aquila chrysaetos	golden eagle	CSC, SFP	Mountains, deserts, and open country; prefer to forage over grasslands, deserts, savannahs and early successional stages of forest and shrub habitats.	Occasional over eastern portion of SEA
Buteo regalis	ferruginous hawk	CSC	Rivers, lakes, and coasts; open tracts of sparse shrubs and grasslands, and agricultural areas during winter.	Rare local migrant
Buteo swainsoni	Swainson's hawk	ST	Plains, ranges, open hills, sparse trees.	Occasional along Santa Clara River; Newhall (100 birds in 2000)
Circus cyaneus	northern harrier	CSC	Coastal salt marshes, freshwater marshes, grasslands, and agricultural fields; occasionally forages over open desert and brushlands.	Common local migrant; adjacent to SEA near Pico Cyn.

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SENSITIVE SPECIES
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(CONTINUED)

VERTEBRATES

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
Elanus leucurus	white-tailed kite	SFP	Grasslands with scattered trees, near marshes, along hwys.	nesting in woodlands along Santa Clara river, Live Oak Springs Cyn., Placerita Cyn.; near Pico Cyn.; common locally
Pandion haliaetus	osprey	CSC	Rivers, lakes, and coasts, mixed conifer.	Potential where habitat occurs
Falconidae	**Falcon Family**			
Falco columbarius	merlin	CSC	Coastlines, wetlands, woodlands, agricultural fields, and grasslands.	Occasional migrant
Falco mexicanus	prairie falcon	CSC	Grasslands, savannahs, rangeland, agricultural fields, and desert scrub; often uses sheltered cliff ledges for cover.	Nests in upper Placerita Cyn.
Falco peregrinus anatum	American peregrine falcon	SE, SFP, formerly FE	Coastal estuaries, open country, cliffs to coasts.	Occasional/rare visitor. Federally delisted Aug. 1999
Cuculidae	**Cuckoos and Roadrunner Family**			
Coccyzus americanus occidentalis	western yellow-billed cuckoo	SE	Riverine woodlands, thickets, and farms.	Record from Santa Clara River near Magic Mountain Park (Newhall Ranch; 1974)
Strigidae	**True Owl Family**			
Asio otus	long-eared owl	CSC	Riparian and live oak woodlands	Placerita, Sand Cyns. (nests)

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(CONTINUED)

VERTEBRATES

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
Athene cunicularia hypugea	burrowing owl	FSC, CSC	Dry grasslands, desert habitats, open pinyon-juniper, ponderosa pine woodlands below 5,300 feet elevation; berms, ditches, and grasslands adjacent to rivers, agricultural, and scrub areas.	Occasional visitor; no recent nests in Santa Clara Valley, probably nests in upland along Santa Clara River in E half of SEA
Strix occidentalis occidentalis	California spotted owl	CSC	Oak and oak-conifer habitats.	Placerita Cyn. (1999)
Apodidae	**Swift Family**			
Chaetura vauxi	Vaux's swift	CSC	Redwood and douglas fir habitats.	Common migrant
Tyrannidae	**Tyrant Flycatcher Family**			
Empidonax traillii extimus	southwestern willow flycatcher	FE	Low elevational sites: Riparian woodlands that contain water and low growing willow thickets. High elevational sites: Large, flat, wet meadows that contain patches of willow trees.	One individual observed in mature riparian woodlands of Santa Clara River; nests near Lang, approx. 6 mi. E of Newhall
Alaudidae	**Lark Family**			
Eremophila alpestris actia	California horned lark	CSC	Open habitats, grasslands along the coast, deserts near sea level to alpine dwarf shrub habitat, uncommonly in coniferous and chaparral habitats.	San Francisquito Creek; near Pico Cyn.; common in SEA

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SENSITIVE SPECIES
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(CONTINUED)

VERTEBRATES

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
Muscicapidae	**Kinglets, Gnatcatchers, Thrushes, and Babbler Family**			
Polioptila californica californica	California gnatcatcher	FT, CSC	Coastal sage scrub, below 2,500 feet, generally avoids steep slopes and dense vegetation for nesting.	Oak Springs Cyn. (1999); Plum Cyn. (1999); Golden Valley Ranch (1996); Placerita Cyn. (1970s); Vasquez Rancho Park (1970s)
Laniidae	**Shrike Family**			
Lanius ludovicianus	loggerhead shrike	FSC, CSC	Open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches.	4 pairs near agricultural fields/open chaparral near San Francisquito Creek; near Santa Clara River at County line; common locally in SEA
Vireonidae	**Vireo Family**			
Vireo bellii pusillus	least Bell's vireo	FE, SE	Perennial and intermittent streams with low, dense riparian scrub and riparian woodland habitats below 2,000 feet elevation; nests primarily in willows and forages in the riparian and occasionally in adjoining upland habitats.	Small population recorded in Santa Clara River riparian woodland and scrub zone along the Ventura-LA county border; Castaic Creek at Santa Clara River
Emberizidae	**Wood Warblers, Tanagers, Buntings, and Blackbird Family**			
Agelaius tricolor	tricolored blackbird	FSC, CSC	Freshwater marshes and riparian scrub.	Flocks of 20-50 indiv. observed at two sites near SEA 23

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(CONTINUED)

VERTEBRATES

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
Aimophila ruficeps canescens	Southern California (ashy) rufous-crowned sparrow	FSC, CSC	Generally, steep, rocky areas within coastal sage scrub and chaparral, often with scattered bunches of grass; prefers relatively recently burned areas.	Locally common
Amphispiza belli	Bell's sparrow	FSC, CSC	Dense, dry chamise chaparral and coastal slopes of coastal sage scrub.	Locally common
Dendroica petechia brewsteri	yellow warbler	CSC	Riparian woodlands, montane chaparral, and mixed conifer habitats.	Several pairs recorded nesting in Nat'l Forest near Francisquito Creek; occasionally nests along Santa Clara River
Icteria virens	yellow-breasted chat	CSC	Riparian woodlands with a thick understory.	One individual recorded in San Francisquito Creek near Santa Clara River
Piranga rubra	Summer tanager	CSC	Cottonwood-willow woodland and riparian scrub.	Santa Clara River near Lang
MAMMALS				
Phyllostomidae	**Leaf-Nosed Bat Family**			
Macrotus californicus	California leaf-nosed bat	FSC, CSC	Desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, and palm oasis. Roosts in tunnels, caves and possible buildings and bridges.	Becoming rare locally

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SENSITIVE SPECIES
OCCURRING OR POTENTIALLY OCCURRING
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(CONTINUED)

VERTEBRATES

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
Vespertilionidae	**Evening Bat Family**			
Myotis thysanodes	Fringed myotis	FSC	Dry, rocky habitats/caves, crevices in rocks, arid habitats, chaparral	Potential where habitat occurs
Myotis yumanensis	Yuma myotis	FSC, CSC	Open forests and woodlands with water are optimal but uses a variety of habitats.	Potential where habitat occurs
Euderma maculatum	spotted bat	FSC, CSC	Deserts, scrublands, chaparral, and coniferous woodlands.	Mouth of Castaic Creek
Corynorhinus (plecotus) townsendii pallescens	pale big-eared bat	CSC	Caves, tunnels, or other structures for roosting; vegetation and mesic edges for feeding; extremely sensitive to roosting site disturbance; maternity roosts in warm places.	Multiple historic records in old mines in along Santa Clara River
Antrozous pallidus	pallid bat	CSC	Nests in dry, rocky habitats/caves, crevices in rocks, arid habitats including deserts, chaparral, and scrublands.	Historic records in Santa Clara River watershed, Soledad Cyn., and Castaic Creek; common locally
Molossidae	**Free-Tailed Bat Family**			
Eumops perotis californicus	western mastiff bat	FSC, CSC	Primarily arid lowlands, especially deserts. Open, semi-arid to arid habitats including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban.	Rare locally, but present in SEA

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(CONTINUED)

VERTEBRATES

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
Leporidae	**Hares and Rabbit Family**			
Lepus californicus bennettii	San Diego black-tailed jackrabbit	FSC, CSC	Open brushlands and scrub habitats between sea level and 4,000 feet elevation.	Near San Francisquito Creek; common in SEA
Muridae	**Mice, Rats, and Vole Family**			
Neotoma lepida intermedia	San Diego desert woodrat	FSC, CSC	Chaparral, coastal sage scrub, and pinyon-juniper woodland.	Adjacent to Santa Clara River, Newhall Ranch; common in SEA
Onychomys torridus ramona	southern grasshopper mouse	FSC, CSC	Grasslands, desert areas, especially scrub with friable soils.	Soledad Cyn.
Procyonidae	**Raccoon Family**			
Bassariscus astutus	ringtail cat	SFP	Mixture of forest and shrublands in close association with rocky areas or riparian habitats.	Placerita Cyn.; locally rare, but present throughout eastern half of SEA

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9. REGIONAL BIOLOGICAL VALUE

The proposed Santa Clara River SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met or not met is described below.

Criterion A: The Habitat of Core Populations of Endangered or Threatened Plant or Animal Species.

The only natural population of the federally endangered unarmored three-spined stickleback is within the Santa Clara River and its tributaries. The population of federally and state endangered slender-horned spineflower in Bee Canyon is one of fewer than seven known occurrences for this species, one of only two known occurrences in the County, and one of its largest populations.

Criterion 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.

The bigcone spruce-canyon oak forests above Placerita Canyon, the vernal pool in the Placerita Canyon-Sand Canyon divide, the native grassland formations on the so-called Golden Valley Ranch (upper Placerita Canyon), and the alluvial fan sage scrub formations of lower San Francisquito Canyon, Kentucky Springs and Acton are unique and regionally restricted biotic communities within the proposed SEA. Additionally, the riparian forests and woodlands along the Santa Clara River are among the most extensive, diverse and intact formations in Southern California. Rare aquatic species, such as the unarmored three-spined stickleback, Santa Ana sucker, red-legged frog, least Bell's vireo, summer tanager, spineflower, and many others represented within the proposed SEA are found nowhere else in the region.

Criterion C: Within Los Angeles County, Biotic Communities, Vegetative Associations, and Habitat of Plant or Animal Species that are either Unique or are Restricted in Distribution.

The cottonwood-willow forests and woodlands, alluvial fan sage scrub, coast live oak riparian forest, and bigcone spruce-canyon oak forest communities are best represented in Los Angeles County within the proposed SEA.

Criterion D: Habitat that at some point in the Life Cycle of a Species or Group of Species, Serves as Concentrated Breeding, Feeding, Resting, or Migrating Grounds and is Limited in Availability either Regionally or in Los Angeles County.

The Santa Clara River basin affords breeding opportunities for numerous species otherwise not known to breed within Los Angeles County, including California red-legged frog, summer tanager, southwestern willow flycatcher, and the unarmored three-spined stickleback. The extensive riparian areas shelter dozens of migrant songbird species during Winter, including high concentrations of white-crowned and golden-crowned sparrows, fox sparrow, yellow-rumped warbler, dark-eyed junco, and sharp-shinned hawk. The proposed SEA embraces the river corridor and the linkage zones considered essential to insuring connectivity and resource values for many of the wildlife species present within the Los Angeles County portion of the Santa Clara River.

Criterion 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.

Although there are many rare biotic resources within the proposed SEA, this criteria is not met due to the lack of extremes in physical/geographical limitations, or representations of unusual variation in a population or community.

Criterion F: Areas that would Provide for the Preservation of Relatively Undisturbed Examples of the Original Natural Biotic Communities in Los Angeles County.

The proposed Santa Clara River SEA encompasses some of the highest quality, least disturbed and biotically intact acreage of bigcone spruce-canyon oak forest, riparian forest and woodland, coastal sage scrub, and alluvial fan sage scrub remaining in the county, and one of only three known vernal pools in the County.

In conclusion, the area described in this report is proposed to be an SEA because it contains: 1) the habitat of core populations of endangered and threatened plant and animal species; 2) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in Los Angeles County and regionally; 3) concentrated breeding, feeding, resting, or migrating grounds which are limited in availability in Los Angeles County; and 4) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in Los Angeles County.

10. RECOMMENDED MANAGEMENT PRACTICES

Proposed new development within the proposed Puente Hills SEA should be designed to be highly compatible with the continued ecological function of the component biological resources described above; retention of existing natural biotic resources should be ensured. Although a comprehensive evaluation of all possible future land uses within this SEA cannot be made here, a general approach is outlined below and is recommended for use on a project specific basis. In order to preserve the integrity of the SEA, the proposed comprehensive management practices described in the *Los Angeles County SEA Update Study 2000 Background Report* are recommended. These practices address:

- Core habitat
- Habitat linkages and wildlife corridors
- Fire management
- Public access and recreation
- Infrastructure
- Wetlands, riparian habitats, and streambeds
- Non-riparian/upland woodlands

In addition to the comprehensive management practices the following proposed management practices are recommended specifically for the proposed Santa Clara River SEA:

- Limit development densities to one residential unit per ten acre parcel, and constrain development design, where feasible, to cluster dwelling configuration along existing roadways in order to minimize clearing associated with fuel management, and to reduce the need for grading, fencing, and other habitat disturbances.
- Limit new development to well outside the existing floodplain margins (as identified from biological, hydrological, and geological evidence, along with Federal Emergency Management Agency assessments), so as to obviate the necessity for further bank stabilization.

- Maintain the habitat of core populations of listed species including the federally endangered unarmored three-spined stickleback and red-legged frog and the federally and state endangered slender-horned spineflower as well as adequate buffers to eliminate or minimize adverse impacts.

- Retain rare communities with adequate buffers so as to allow for the long term viability and integrity of plant communities as a whole. Rare communities include: native grassland, coast live oak riparian forest, southern willow scrub, bigcone spruce-canyon oak forest, southern sycamore-alder woodland, southern cottonwood-willow riparian woodland and forest, freshwater marsh, alluvial fan sage scrub, and vernal pool.

- Carefully review proposals for new or increased groundwater extraction to prevent overdrafting of the shallow aquifer supporting the riparian habitat areas. The biological functionality of these areas is directly related to the supporting hydrology which originates from the surrounding basin slopes and from the groundwater flows of Santa Clara River.

- Require agricultural activities to employ the best management practices (BMPs) recognized in the industry; avoid unnecessary direct impacts to habitat, and conform to legal standards for all pesticide, herbicide and fertilizer applications.

- Retain connectivity and linkage values of the Santa Clara River and its major tributaries over their entire alignments, and between the Santa Clara River and the Santa Susana Mountains.

- Prohibit bridges over the Santa Clara River except for "flying" type bridges with wide, open spans beneath, that neither impinge nor alter the channel characteristics below.

Additionally, proposed development should be reviewed when required by federal, state, or local laws before implementing plans which may impact biotic resources and/or sensitive species. Potential impacts to listed species or wetland areas require permitting in accordance with applicable laws.

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