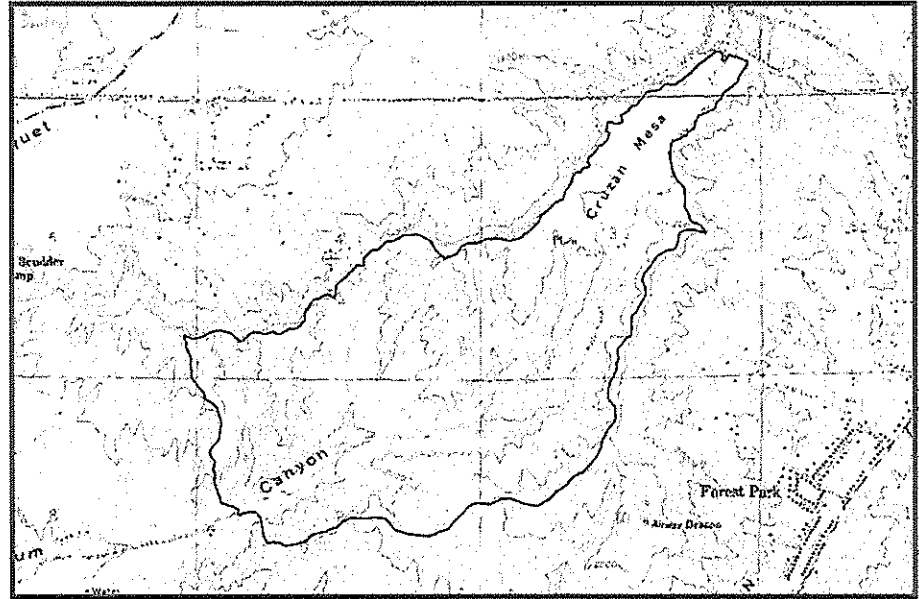


# BIOLOGICAL RESOURCES ASSESSMENT OF THE PROPOSED CRUZAN MESA VERNAL POOLS SIGNIFICANT ECOLOGICAL AREA



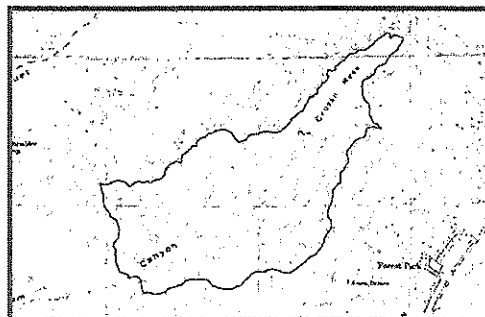
## CRUZAN MESA VERNAL POOLS

Los Angeles County, California

November 2000

PCR

# BIOLOGICAL RESOURCES ASSESSMENT OF THE PROPOSED CRUZAN MESA VERNAL POOLS SIGNIFICANT ECOLOGICAL AREA



## CRUZAN MESA VERNAL POOLS

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November 2000

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## EXECUTIVE SUMMARY

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**Location:** The proposed Cruzan Mesa Vernal Pools Significant Ecological Area (SEA) lies in the southeastern end of the Liebre Mountains, north of the Santa Clara River, and southeast of Bouquet Canyon. The proposed SEA boundaries encompass the watershed and drainages of the Cruzan Mesa and Plum Canyon vernal pools, considered as a single ecosystem within the SEA.

**Description:** The proposed Cruzan Mesa Vernal Pools SEA covers 958 acres. The orientation and extent of the proposed SEA encompasses the watershed supporting regionally unique vernal pools. Plum Canyon forms the major drainage running east-west through the southern portion of the SEA and drains westerly into Bouquet Canyon. Much of the SEA is comprised of slopes and canyons supporting coastal sage scrub or chaparral vegetation. The Cruzan Mesa vernal pools lie within an elevated, closed basin atop an eroded foothill between Mint and Bouquet canyons. The Plum Canyon vernal pool is a smaller, but biologically important vernal pool situated in a landslide depression on a hillside terrace. All of the proposed 958 acres within the proposed SEA are within unincorporated Los Angeles County jurisdiction.

**Existing Land Use:** The proposed SEA currently is unoccupied except for remnants of former agricultural and livestock uses. There are three artificially-created stock ponds at the southern end of the Cruzan Mesa basin, and several bunker-style structures set into the surrounding slopes. Several dirt roadways traverse the mesa basin, one of which was bulldozed through the middle of the original pool, creating two separate pools on either side of the roadway berm. The Cruzan Mesa vernal pools and ponds are fenced, and in 1996 the surrounding slopes were brushed and lightly graded. No further land alterations have occurred.

The Plum Canyon vernal pool is hidden from view from the Plum Canyon roadway, and so receives little human attention. Trash dumping, shooting and off-road vehicle activities have occurred within a few meters of the margin of the pool basin, but the pool shows only limited evidence of human intrusion.

**Ownership:** Land ownership within the proposed SEA consists entirely of private lands within unincorporated areas of Los Angeles County. The SEA lies north of the City of Santa Clarita and west of the unincorporated community of Forest Park, in Mint Canyon.

**Vegetation:** Plant communities within the proposed SEA include: vernal pool aquatics and emergent species, coastal sage scrub, mainland cherry forest, chaparral, and ruderal non-native

grassland. Dirt roads inside the SEA are bordered by non-native grassland and other ruderal plant species.

**Wildlife:** Wildlife within much of the proposed SEA is comprised of species typically occurring within coastal sage scrub. Birds of prey frequently forage over the pools and open grasslands which form following the seasonal drying of the surface water. The Cruzan Mesa and Plum Canyon vernal pools provide rare surface water habitat for wildlife in an otherwise semi-arid scrub region, and the ponds attract moderate numbers and diversity of migratory waterfowl. The peripheral zones where different formations of coastal sage scrub surround the vernal pools provide important shelter, terrestrial refugia, ecotonal and edge habitat for wildlife.

**Wildlife Movement:** The proposed SEA serves as an isolated, high resource quality habitat linkage for migratory waterfowl. The vernal pools teem with arthropod and amphibian activity, and so provide essential feeding grounds for long-distance migrants, as well as for resident species of reptiles, birds and mammals. The ponds do not lie within any identified terrestrial movement routes for wildlife, but in themselves serve as important seasonal watering sites for species moving through and across the Plum Canyon divide between Mint and Bouquet canyons.

**Sensitive Biological Resources:** The proposed SEA is configured to encompass the regionally significant vernal pools and coastal sage scrub watershed which supports them. Sensitive plant communities within the proposed SEA include vernal pool, fresh-water marsh, coastal sage scrub, and in Plum Canyon, mainland cherry forest. The proposed SEA supports a number of sensitive plant and animal species, including the federally and state endangered California Orcutt grass, federally threatened prostrate navarretia, federally endangered Riverside fairy shrimp, western spadefoot toad, and possibly also the federally threatened California gnatcatcher.

**Regional Biological Value:** The proposed SEA meets several designation criteria and supports several regional biological values (see Criteria Table at the end of this summary). These values include: sensitive plant species unique to seasonal pools on heavy clay soils, several of which are at the northernmost point in their overall ranges; seasonal surface water, providing breeding sites for sensitive amphibians, including western spadefoot and Riverside fairy shrimp; vernal pools, found nowhere else in Los Angeles County, and their coastal sage scrub watershed serving as a hydrological filter; seasonal ponds and surrounding mesic vegetation provide essential foraging and wintering sites for migrating birds otherwise uncommon in the southern Liebre Mountains; steep cliffs surrounding the mesa tops and their crevices and cavities provide roosting and nesting sites in the otherwise brush-covered hillsides. These pools are the also the only three or four such pools in this portion of Southern California. The sensitive resources they support are unique locally and regionally, and biologists considered to be among most sensitive habitat types in Southern California.

**Recommended Management Practices:** Proposed new development within the proposed Cruzan Mesa Vernal Pools SEA should be designed to be highly compatible with the continued ecological function of each of the component biological resources described above. 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 Cruzan Mesa Vernal Pools SEA:

- Prohibit surface altering development within the watersheds or slope connections of the vernal pools. Brushing and other substrate changing actions on the surrounding slopes can cause siltation or direct runoff into the ponds, lowering their biological functionality.
- Limit development to low density and only within the lower (southern) end of the basin, below the central elevation, but strictly limit human intrusion into the vernal pool areas.
- Maintain the habitat of populations of listed species including the federally endangered Riverside fairy shrimp and the federally and state endangered California Orcutt grass 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: vernal pool, fresh-water marsh, coastal sage scrub, and mainland cherry forest.
- Retain connectivity habitat linkage values of the Cruzan Mesa-Plum Canyon vernal pool ecosystem.



- Restrict human activity in the vernal pool basins or any other actions which might compromise the underlying clay lenses which support the vernal pool hydrology (such as well or piezometer placement); and strictly limit actions which alter surrounding habitat values or disturb slope substrates.
- Transfer of ownership of these pools to a conservation entity would insure proper long-term management of this sensitive regional resource.

**CRITERIA ANALYSIS  
OF THE PROPOSED CRUZAN MESA VERNAL POOLS SEA**

<u>Criterion</u>	<u>Status</u>	<u>Justification</u>
A) The habitat of core populations of endangered or threatened plant or animal species.	Met	The only known Los Angeles County populations of the federally endangered Riverside fairy shrimp and the federal and state endangered California Orcutt grass are found in the vernal pools within the SEA.
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 Cruzan Mesa and Plum Canyon vernal pools are regionally unique biotic communities with several plants found only in such habitat types, and support the Riverside fairy shrimp, western spadefoot toad, and at least one vernal pool endemic ground beetle species.
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 Cruzan Mesa and Plum Canyon vernal pools are unique biotic communities within Los Angeles County, with several plants found only in such habitat types, and support the Riverside fairy shrimp, western spadefoot toad, and at least one vernal pool endemic ground beetle species.
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 vernal pools serve as concentrated breeding areas for several species of amphibians, including the sensitive western spadefoot toad. They also attract a diversity of waterfowl seasonally, mostly species migrating through the area, using the pools for resting and feeding. While other open water systems attract and support waterfowl, the vernal pools are located in remote, upland sites, away from other such freshwater features.
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 the SEA does not contain biotic resource that are clearly an extreme in physical/geographical limitations, or represent unusual variation in a population or community and therefore does not meet this criterion, it is of scientific interest due the extreme rarity of vernal pool communities.
F) Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in Los Angeles County.	Met	Protection and sensitive management of the Cruzan Mesa and Plum Canyon vernal pools would preserve the only such habitat type in Los Angeles County.

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## SIGNIFICANT ECOLOGICAL AREA UPDATE STUDY

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### 1. LOCATION

#### 1.1 GENERAL

The proposed Cruzan Mesa Vernal Pools Significant Ecological Area (SEA) lies in the southeastern end of the Liebre Mountains, north of the Santa Clara River, and southeast of Bouquet Canyon, as shown in Figure 1, *Regional Map*, on page 2. The proposed SEA boundaries encompass the watershed and drainages of the Cruzan Mesa and Plum Canyon vernal pools, considered as a single ecosystem within the SEA. The SEA is located within in an unincorporated portion of Los Angeles County and lies entirely within the United States Geological Survey (USGS) 7.5' California Mint Canyon Quadrangle, as shown in Figure 2, *Existing and Proposed Boundaries* on page 3.

#### 1.2 BOUNDARY DESCRIPTION

The boundary of the portion of the SEA surrounding Cruzan Mesa follows the margin of the cliffs which define the mesa basin, above Mint Canyon on the eastern side, the upper end of Vasquez Canyon on the northwestern side, and Bouquet Canyon to the west. The southwestern and southern boundaries surround the watershed of Plum Canyon at a distance sufficient to protect the topography and hydrology of the vernal pool situated therein.

### 2. DESCRIPTION

The proposed Cruzan Mesa Vernal Pools SEA covers 958 acres of mesas, canyons and interior slopes, with Plum Canyon creek running east-west through the southern portion of the overall SEA. The extent of the proposed SEA encompasses the watershed supporting both of these regionally unique vernal pools, including the immediate watershed surrounding both systems and the corridor in between. Plum Canyon forms the major drainage running east-west through the southern portion of the SEA, draining west toward Bouquet Canyon. Uplands within the proposed SEA are comprised of slopes and canyons supporting coastal sage scrub or scrub-chaparral vegetation. The Cruzan Mesa vernal pool complex lies within an elevated, topographically enclosed basin atop an eroded foothill between Mint and Bouquet canyons. Plum Canyon vernal pool, situated in a landslide depression on a hillside terrace, is smaller than the Cruzan Mesa pools, but possesses the same essential vernal pool characteristics as the larger system, and the two areas together form an ecologically functional unit.

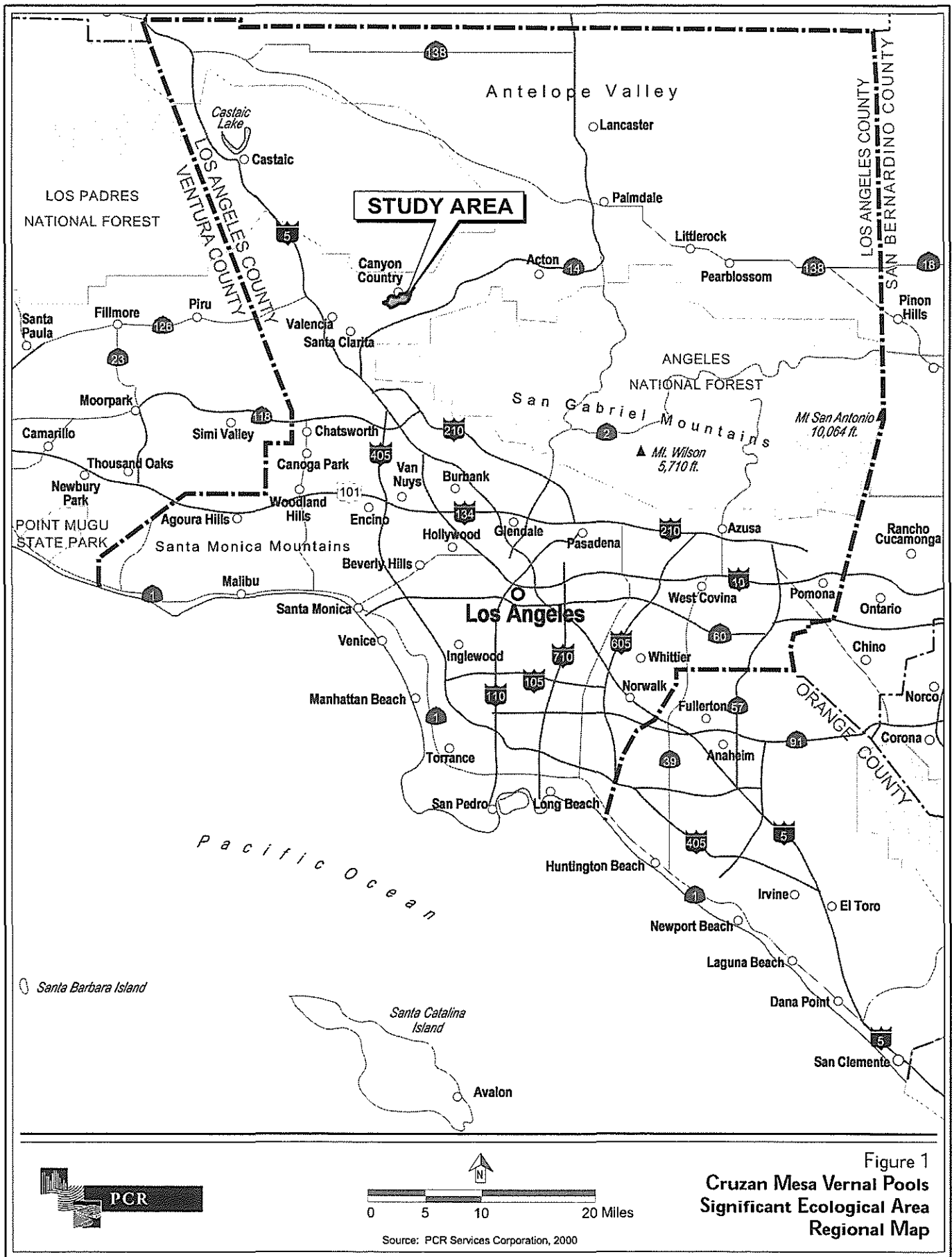
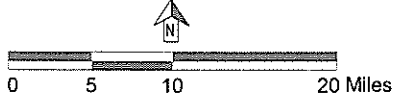
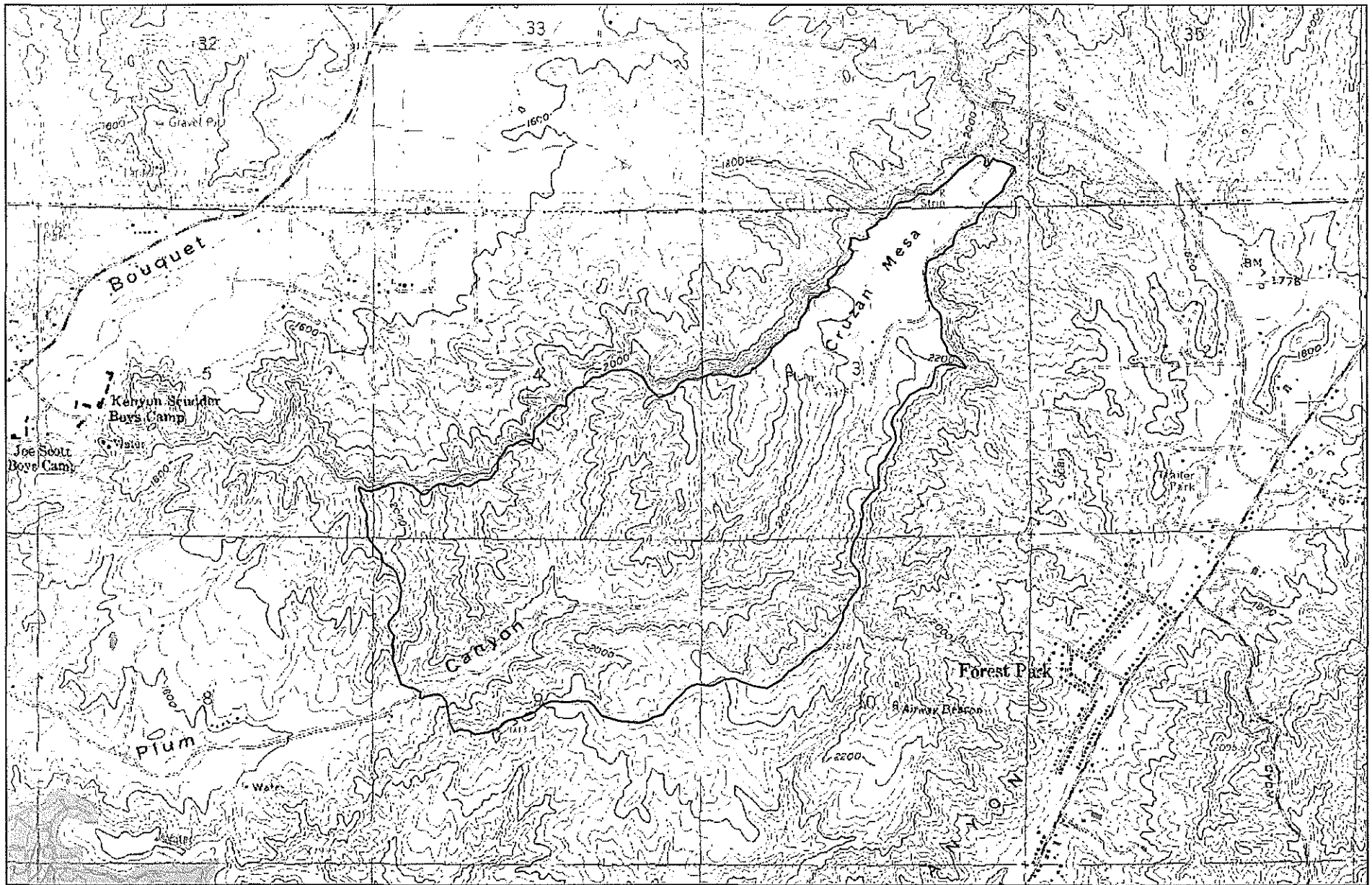





Figure 1  
 Cruzan Mesa Vernal Pools  
 Significant Ecological Area  
 Regional Map



Source: PCR Services Corporation, 2000



-  Proposed SEA Boundary
-  Existing SEA Boundary
-  Angeles National Forest

*Figure 2*  
**Cruzan Mesa Vernal Pools**  
**Significant Ecological Area**  
**Existing and Proposed Boundaries**

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The seasonally wet vernal pools and surrounding open coastal sage scrub and chaparral slopes support migrant and resident birds and other native sage scrub vertebrate species, including a number of sensitive taxa, including Riverside fairy shrimp, western spadefoot toad, ashy rufous-crowned sparrow, Bell's sparrow, and possible also California gnatcatcher. The steep cliffs which surround Cruzan Mesa, especially along the southeast and north margins, provide protected sites for perching, roosting and nesting by a variety of birds of prey, including great horned owl, barn owl, red-tailed hawk, prairie falcon, and golden eagle. All of the proposed 958 acres within the proposed Cruzan Mesa Vernal Pools SEA are within unincorporated Los Angeles County jurisdiction.

### **3. EXISTING LAND USE**

The proposed SEA has no active land uses, but formerly was used for limited dry-land agriculture and livestock grazing. Cruzan Mesa was recently brushed and lightly graded around the vernal pool margins, which were fenced at the time of the clearing. A mixture of native and ruderal vegetation has re-grown over the entire cleared area, in part from seed and in part of remnant root crowns and rhizomes. There has been no land alteration around the Plum Canyon pool, but existing residential developments have encroached to within approximately one mile from the west.

### **4. LAND OWNERSHIP**

Land ownership within the proposed SEA consists entirely of private holdings, within unincorporated Los Angeles County. The SEA boundaries lie north of the City of Santa Clarita, with the eastern boundary of the SEA situated atop the mesa, just west of the rural residential community of Forest Park.

### **5. VEGETATION**

The proposed SEA encompasses formations of coastal sage scrub, vernal pool and non-native grassland. The vernal pool margins support limited densities of native grasses, but these do not form separate communities and are included within the vernal pool floral matrix. 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. 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). Descriptions and general locations of the each plant community present within the SEA are given below.

**Vernal pool** sites occur in the proposed SEA within the southern end of the Cruzan Mesa basin and on a landslide terrace on the northern slope of upper Plum Canyon, about one and one-half aerial miles south west of the Cruzan Mesa pool system. True vernal pools, which are rare in Southern California and extremely rare in Los Angeles County, form seasonally in shallow, closed basins, usually where a lens of heavy clay soil holds surface water following rainfall events. Agency-listed sensitive plant species occurring within both of the SEA pool systems include California Orcutt grass and spreading navarretia, along with other vernal pool endemics such as hairgrass, woolly-marbles, waterwort, *Mimulus latidens* and water-starwort.

**Coastal sage scrub** occurs throughout the slopes and ridges of most of the proposed SEA, in places intermixed with chaparral elements. To some extent, the mosaic of coastal sage and chaparral reflects the fire history of any given portion of the site, with scrub formations generally occurring on sites which have more recently burned. However, some slopes within upper Plum and Mint canyons, where no fires have occurred for over 30 years, still support “pure” coastal sage scrub, suggesting that the formation is a climax community on those sites.

Dominant species on most slopes within the SEA are California sagebrush, woolly blue-curly, chaparral yucca, black sage, Acton encelia, white sage, chamise. A variety of less dominant associated species are also present including lance-leaved live-forever, common tarplant, California buckwheat, beavertail cactus, turkish rugging, and Peirson's morning-glory. Disced or cleared areas have regrown with a dense cover of oats and bromes, California poppy, fiddleneck, several species of lupines, popcorn flower, comb-bur and other disturbance-favored native annuals. Less-frequently disturbed portions of the upper watershed basin support dense stands of chamise – California scrub oak chaparral, with yerba santa abundant along dirt roads and other disturbed areas. In the lower portions of canyons and along Plum Canyon creek, where ground-water levels permit, giant rye grass, Mexican elderberry, acourtia, redberry, toyon, holly-leaved cherry, Fremont cottonwood, western sycamore, and arroyo willow occur.

**Non-native grassland** generally consists of invasive annual grasses which are primarily of Mediterranean origin, and which have become the dominant ground cover formation on disturbed sites throughout the western states. Common 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, yellow star thistle, wire lettuce, sow thistle, milk thistle, and other disturbance-favored “weedy” taxa. Non-native ruderal formations occur over most of the Mesa around the vernal pools, where coastal sage scrub has been disturbed or removed, in small strips and

patches through the SEA primarily along disturbed dirt road edges and where grading or other substrate disturbances have not regrown to native species.

**Mainland cherry forest** is not well described but is typically composed of tall stands of hollyleaf cherry on rocky, dry slopes. Within the proposed SEA, this community is not well developed and inter-mingles with chaparral. It can be found in a single narrow patch on a slope in the southwest portion of the SEA.

## 6. WILDLIFE

Wildlife diversity and abundance within the proposed SEA are moderate, commensurate with the relative homogeneity of the natural open space habitat types. A number of local wildlife species are more-or-less dependent upon coastal sage scrub or scrub-chaparral formations, while other species are strictly limited to seasonal pool habitats. The two vernal pool systems in the proposed SEA, along with the coastal sage scrub-chaparral uplands surrounding and connecting them constitutes a single, integrated functional ecosystem for wildlife species, both within the SEA boundaries and as a part of the larger regional scrub-chaparral ecosystem.

Analysis of invertebrates on any particular site usually is limited by a lack of specific data, but the fact that the SEA contains only two primary natural habitat types insures that there is sufficient acreage to support healthy populations of whatever invertebrate species are present, probably several hundred terrestrial species. The vernal pools, when ponded, form aquatic habitats for a moderately diverse fauna of freshwater arthropods and other invertebrates, including native fairy shrimp, aquatic flies, diving beetles, water scavengers, ostracods, and snails. The only insect order presently known to have a vernal pool endemic within the SEA is Coleoptera, with one vernal pool ground beetle species thus far having been found.

Amphibians generally are relatively common in coastal sage scrub habitats with persistent surface hydrology during the breeding season, and the proposed SEA supports abundant populations of Pacific chorus frog, western toad, and western spadefoot toad. At least two species of salamander also may be present within more mesic portions of the surrounding canyons and chaparral.

Reptile populations in the proposed SEA would include numerous lizard species, including San Diego banded gecko, yucca night lizard, side-blotched lizard, western fence lizard, western skink, San Diego alligator lizard, coastal western whiptail, San Diego horned lizard, and silvery legless lizard. A robust snake fauna also would be expected within the SEA, including western blind snake, coachwhip ("red racer"), chaparral whipsnake, coastal patch-nosed snake, California rosy boa,



San Diego gopher snake, California kingsnake, California mountain kingsnake, night snake, and 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. Open coastal sage scrub hosts 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. The vernal pools attract moderate numbers of migrating waders and waterfowl, and provide important winter foraging areas for resident and migratory birds of prey. Coastal sage and chaparral birds resident or breeding within the SEA includes ashy rufous-crowned sparrow, Bell's sparrow, black-chinned sparrow, lark sparrow, California thrasher, spotted towhee, California towhee, phainopepla, northern mockingbird, lazuli bunting, and several species of hummingbird, with additional species (western meadowlark, California horned lark, and perhaps also savannah and grasshopper sparrows) nesting and foraging in the grassland and ruderal habitats surrounding the vernal pools. Birds of prey observed around the vernal pools include red-tailed hawk, northern harrier, white-tailed kite, prairie falcon, and golden eagle. Barn owl, great horned owl, and common raven all nest in the cliffs surrounding Cruzan Mesa.

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**

The vernal pools situated within this proposed SEA serve as isolated, high resource quality habitat linkage sites for migratory waterfowl. The vernal pools teem with arthropod and amphibian activity, and so provide essential feeding grounds for long-distance migrants, as well as for resident species of reptiles, birds and mammals. The ponds do not lie within any identified terrestrial movement routes for wildlife, but may serve as important seasonal watering sites for species moving through and across the Plum Canyon divide between Mint and Bouquet canyons. Plum Canyon stream channel undoubtedly serves as a movement pathway for more mobile species of terrestrial mammals, but it no longer links any larger habitat areas directly, due to land conversion in Mint and Bouquet Canyon.

## 8. SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources are habitats or individual species which have been accorded special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, rare, or otherwise of concern, 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 Cruzan Mesa Vernal Pools SEA supports several habitat types considered sensitive by resource agencies, namely the CDFG [California Natural Diversity Data Base (CNDDDB), 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 **coastal sage scrub**, **mainland cherry forest**, 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 9, lists those species which have been recorded within the proposed SEA as well as those reasonable expected to occur. The table includes locations of sensitive species observed, recorded in the CNDDDB, or reported in previous documentation as observed within or in the immediate vicinity of the proposed SEA. Additional species, such as native oak or sycamore may be protected under local ordinances but are not included in this table.

**SENSITIVE SPECIES  
OCCURRING OR POTENTIALLY OCCURRING  
WITHIN THE PROPOSED CRUZAN MESA VERNAL POOLS SEA**

**VASCULAR PLANTS**

<u>Scientific Name</u>	<u>Common Name</u>	<u>Agency Listing Status</u>	<u>CNPS Listing Status</u>	<u>Preferred Habitat</u>	<u>Location</u>
<b>ANGIOSPERMS (Dicotyledons)</b>					
<b>Boraginaceae</b>		<b>Borage Family</b>			
<i>Harpagonella palmeri</i> var. <i>palmeri</i>	Palmer's grappling hook	FSC	2	Chaparral, coastal scrub, valley and foothill grassland/clay.	Potential where habitat occurs
<b>Convolvulaceae</b>		<b>Morning-Glory Family</b>			
<i>Calystegia peirsonii</i>	Pierson's morning glory	FSC	4	Sage scrub, chenopod (saltbush) scrub, chaparral, cismontane woodland, lower montane coniferous forest, rocky slopes.	Potential where habitat occurs
<b>Lamiaceae</b>		<b>Mint Family</b>			
<i>Acanthomintha obovata</i> ssp. <i>cordata</i>	heart-leaved thorn mint		4	Chaparral, valley and foothill grassland/heavy clay alkaline serpentinite.	Potential where habitat occurs
<i>Navarretia fossalis</i>	spreading navarretia	FT	1B	Chenopod scrub, shallow freshwater marshes, vernal pools.	Cruzan Mesa; 0.3 mi. S of S end of landing strip at Cruzan Mesa (1993)
<b>Polygonaceae</b>		<b>Buckwheat Family</b>			
<i>Chorizanthe parryi</i> var. <i>parryi</i>	Parry's spineflower	FSC	3	Openings/clearings in coastal or desert sage scrub, chaparral or interface; dry slopes or flat ground; sandy soils.	Potential where habitat occurs

**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
		SR	State Rare
		CSC	California Special Concern Species

**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 CRUZAN MESA VERNAL POOLS SEA  
(CONTINUED)**

**VASCULAR PLANTS**

<u>Scientific Name</u>	<u>Common Name</u>	<u>Agency Listing Status</u>	<u>CNPS Listing Status</u>	<u>Preferred Habitat</u>	<u>Location</u>
<b>Ranunculaceae</b>		<b>Buttercup Family</b>			
<i>Myosurus minimus</i> ssp. <i>apus</i>	little mousetail	FSC	3	Vernal pools (alkaline).	Potential where habitat occurs
<b>ANGIOSPERMS (Monocotyledons)</b>					
<b>Juncaceae</b>		<b>Rush Family</b>			
<i>Juncus acutus</i> var. <i>leopoldii</i>	southwestern spiny rush		4	Coastal dunes (mesic), meadows (alkali seeps), marshes and swamps (coastal salt).	Potential where habitat occurs
<b>Liliaceae</b>		<b>Lily Family</b>			
<i>Brodiaea orcuttii</i>	Orcutt's brodiaea	FSC	1B	Chaparral, valley/foothill grassland, cismontane woodland; wet meadows/seeps, vernal pools (clay soils); sometimes associated with serpentinite substrate.	Potential where habitat occurs
<i>Calochortus clavatus</i> var. <i>clavatus</i>	club-haired mariposa lily		4	Coastal sage scrub, clayish flats and slopes.	Cruzan Mesa
<i>Calochortus clavatus</i> var. <i>gracilis</i>	slender mariposa lily	FSC	1B	Chaparral, especially in foothill cyns.; generally found in shade.	Potential where habitat occurs

**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
		SR	State Rare
		CSC	California Special Concern Species

**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 CRUZAN MESA VERNAL POOLS SEA  
(CONTINUED)**

**VASCULAR PLANTS**

<u>Scientific Name</u>	<u>Common Name</u>	<u>Agency Listing Status</u>	<u>CNPS Listing Status</u>	<u>Preferred Habitat</u>	<u>Location</u>
<i>Calochortus plummerae</i>	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.	Potential where habitat occurs
<b>Poaceae</b>	<b>Grass Family</b>				
<i>Orcuttia californica</i>	California Orcutt grass	FE, SE	1B	Vernal pools.	Cruzan Mesa, historic and recent records (no dates)

**Legend**

<u>Agency Lists</u>			<u>California Native Plant Society (CNPS) Lists</u>		
FE	Federally Listed as Endangered	SE	State Listed as Endangered	1A	Presumed extinct in California.
FT	Federally Listed as Threatened	ST	State Listed as Threatened	1B	Rare, threatened, or endangered throughout their range.
FSC	Federal Special Concern Species	SCE	State Candidate for Endangered	2	Rare, threatened, or endangered in California, but more common in other states.
FPE	Federally Proposed as Endangered	SCT	State Candidate for Threatened	3	Plant species for which additional information is needed before rarity can be determined.
FPT	Federally Proposed as Threatened	SP	State Protected	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.
FPD	Federally Proposed for Delisting	SFP	State Fully Protected		
		SR	State Rare		
		CSC	California Special Concern Species		

**SENSITIVE SPECIES  
OCCURRING OR POTENTIALLY OCCURRING  
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(CONTINUED)**

**INVERTEBRATES**

<u>Scientific Name</u>	<u>Common Name</u>	<u>Agency Listing Status</u>	<u>Preferred Habitat</u>	<u>Location</u>
<b>CRUSTACEA – fairy shrimp, isopods, amphipods</b>				
<b>Order Anostraca</b>				
<b>Fairy Shrimp</b>				
<i>Branchinecta lynchii</i>	Vernal pool fairy shrimp	FT	Vernal pools in areas of shallow depressions that have a clay hardpan soil layer that inhibits percolation.	Historically documented at Cruzan Mesa vernal pools
<i>Branchinecta sandiegoensis</i>	San Diego fairy shrimp	FE	Vernal pools in areas of shallow depressions that have a clay hardpan soil layer that inhibits percolation.	Potential where habitat occurs
<i>Streptocephalus woottoni</i>	Riverside fairy shrimp	FE	Vernal pools/swales.	Historically documented at Cruzan Mesa vernal pools

**VERTEBRATES**

<u>Scientific Name</u>	<u>Common Name</u>	<u>Agency Listing Status</u>	<u>Preferred Habitat</u>	<u>Location</u>
<b>AMPHIBIANS</b>				
<b>Pelobatidae</b>				
<b>Spadefoot Toad Family</b>				
<i>Scaphiopus hammondii</i>	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.	Cruzan Mesa and Plum Cyn. vernal pools
<b>REPTILES</b>				
<b>Gekkonidae</b>				
<b>Gecko Family</b>				
<i>Coleonyx variegatus abbotti</i>	San Diego banded gecko	FSC	Rocky tracts, cyn. walls, and sand dunes in deserts and semi-arid areas.	Potential where habitat occurs

**Legend**

**Agency Lists**

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**SENSITIVE SPECIES  
OCCURRING OR POTENTIALLY OCCURRING  
WITHIN THE PROPOSED CRUZAN MESA VERNAL POOLS SEA  
(CONTINUED)**

**VERTEBRATES**

<u>Scientific Name</u>	<u>Common Name</u>	<u>Agency Listing Status</u>	<u>Preferred Habitat</u>	<u>Location</u>
<b>Iguanidae</b>				
<b>Iguanid Lizard Family</b>				
<i>Phrynosoma coronatum blainvillei</i>	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, flood plains, and windblown deposits.	Potential where habitat occurs
<b>Teiidae</b>				
<b>Whiptail Lizard Family</b>				
<i>Cnemidophorus tigris multiscutatus</i>	coastal western whiptail	FSC	Arid and semi-arid desert to open woodlands, where vegetation is sparse.	Cruzan Mesa and Plum Cyn.
<b>Colubridae</b>				
<b>Colubrid Snake Family</b>				
<i>Salvador hexalepis virgultea</i>	coast patch-nosed snake	FSC, CSC	Coastal chaparral, desert scrub, washes, sandy flats, and rocky areas. Barren creosote bush desert flats. Sagebrush semi-deserts; sea level to 7,000 feet.	Potential where habitat occurs
<i>Thamnophis hammondi</i>	two-striped garter snake	FSC, CSC, SP	Riparian and freshwater marshes with perennial water.	Potential where habitat occurs
<b>BIRDS</b>				
<b>Accipitridae</b>				
<b>Hawks, Kites, Harriers and Eagle Family</b>				
<i>Aquila chrysaetos</i>	golden eagle	CSC, SFP	(Nesting and wintering) Mountains, deserts, and open country; prefer to forage over grasslands, deserts, savannahs and early successional stages of forest and shrub habitats.	Cruzan Mesa (1998)

**Legend**

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**SENSITIVE SPECIES  
OCCURRING OR POTENTIALLY OCCURRING  
WITHIN THE PROPOSED CRUZAN MESA VERNAL POOLS SEA  
(CONTINUED)**

**VERTEBRATES**

<u>Scientific Name</u>	<u>Common Name</u>	<u>Agency Listing Status</u>	<u>Preferred Habitat</u>	<u>Location</u>
<i>Circus cyaneus</i>	northern harrier	CSC	Coastal salt marshes, freshwater marshes, grasslands, and agricultural fields; occasionally forages over open desert and brushlands.	Cruzan Mesa (1998)
<i>Elanus leucurus</i>	white-tailed kite	SFP	Grasslands with scattered trees, near marshes, along highways.	Cruzan Mesa (1998)
<b>Falconidae</b>	<b>Falcon Family</b>			
<i>Falco mexicanus</i>	prairie falcon	CSC	Grasslands, savannahs, rangeland, agricultural fields, and desert scrub; often uses sheltered cliff ledges for cover.	Cruzan Mesa, 1998
<b>Strigidae</b>	<b>True Owl Family</b>			
<i>Athene cunicularia</i>	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.	Potential where habitat occurs
<b>Muscicapidae</b>	<b>Kinglets, Gnatcatchers, Thrushes, and Babbler Family</b>			
<i>Poliophtila californica californica</i>	California gnatcatcher	FT, CSC	Coastal sage scrub vegetation below 2,500 feet elevation in Riverside County and generally below 1,000 feet elevation along the coastal slope; generally avoids steep slopes and dense	Plum Cyn. (1999); historic nesting in Mint Cyn.

**Legend**

**Agency Lists**

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**SENSITIVE SPECIES  
OCCURRING OR POTENTIALLY OCCURRING  
WITHIN THE PROPOSED CRUZAN MESA VERNAL POOLS SEA  
(CONTINUED)**

**VERTEBRATES**

<u>Scientific Name</u>	<u>Common Name</u>	<u>Agency Listing Status</u>	<u>Preferred Habitat</u>	<u>Location</u>
<b>Laniidae                      Shrike Family</b>				
<i>Lanius ludovicianus</i>	loggerhead shrike	FSC, CSC	Open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches.	Plum Cyn. (1999)
<b>Emberizidae                      Wood Warblers, Tanagers, Buntings, and Blackbird Family</b>				
<i>Aimophila ruficeps canescens</i>	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.	Common throughout SEA
<i>Amphispiza belli</i>	Bell's sparrow	FSC, CSC	Dense, dry chamise chaparral and coastal slopes of coastal sage scrub.	Plum Cyn. (1998)
<b>MAMMALS</b>				
<b>Heteromyidae                      Pocket Mice and Kangaroo Rat Family</b>				
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	FE, CSC	Coastal sage scrub and desert scrub.	Potential where habitat occurs.
<b>Leporidae                      Rabbit and Hare Family</b>				
<i>Lepus californicus bennetti</i>	San Diego black-tailed jackrabbit	FSC, CSC	Open brushlands and scrub habitats between sea level and 4,000 feet elevation.	Cruzan Mesa and Plum Cyn.
<b>Muridae                      Mice, Rats, and Vole Family</b>				
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	FSC, CSC	Chaparral, coastal sage scrub, and pinyon-juniper woodland.	Potential where habitat occurs.
<i>Onychomys torridus ramona</i>	southern grasshopper mouse	FSC, CSC	Grasslands, desert areas, especially scrub with friable soils.	Potential where habitat occurs.

**Legend****Agency Lists**

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## 9. REGIONAL BIOLOGICAL VALUE

The proposed Cruzan Mesa Vernal Pools SEA meets several SEA designation criteria that consider regional biological values. Each criterion and how it is met or why not is described below.

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

The only known Los Angeles County populations of the federally endangered Riverside fairy shrimp and federally and state endangered California Orcutt grass are found in the vernal pools within the SEA.

*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 Cruzan Mesa and Plum Canyon vernal pools are regionally unique biotic communities with several plants found only in such habitat types, and support the Riverside fairy shrimp, western spadefoot toad, and at least one vernal pool endemic ground beetle species. The so-called Carlsberg vernal pool in Moorpark possesses similar habitat values to the Cruzan Mesa pools, but is much smaller in size, being only slightly larger than the Plum Canyon pool. The only other pond possessing vernal pool characteristics in the County (other than the playa ponds in the northern Antelope Valley, which are very different habitat types) is a small seasonal pool on the ridgeline north of upper Placerita Canyon.

*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 Cruzan Mesa and Plum Canyon vernal pools are unique biotic communities within Los Angeles County, with several plants found only in such habitat types, and support the Riverside fairy shrimp, western spadefoot toad, and at least one vernal pool endemic ground beetle species. The only other pond possessing typical vernal pool characteristics in the County (other than the playa ponds in the northern Antelope Valley, which are very different habitat types) is a small seasonal pool on the ridgeline north of upper Placerita Canyon.

*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 vernal pools serve as concentrated breeding areas for several species of amphibians, including the sensitive western spadefoot toad. They also attract a diversity of waterfowl seasonally, mostly species migrating through the area, using the pools for resting and feeding. While other open water systems attract and support waterfowl, the vernal pools are located in remote, upland sites, away from other such freshwater features.

*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 the SEA does not contain biotic resource that are clearly an extreme in physical/geographical limitations, or represent unusual variation in a population or community and therefore does not meet the criterion, it is of scientific interest due to the extreme rarity of vernal pool communities.

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

Protection and sensitive management of the Cruzan Mesa and Plum Canyon vernal pools would preserve the only such habitat types in Los Angeles 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, or 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.

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## 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 Cruzan Mesa Vernal Pools SEA:

- Prohibit surface altering development within the watersheds or slope connections of the vernal pools. Brushing and other substrate changing actions on the surrounding slopes can cause siltation or direct runoff into the ponds, lowering their biological functionality.
- Limit development to low density and only within the lower (southern) end of the basin, below the central elevation, but strictly limit human intrusion into the vernal pool areas.
- Maintain the habitat of populations of listed species including the federally endangered Riverside fairy shrimp and the federally and state endangered California Orcutt grass 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: vernal pool, fresh-water marsh, coastal sage scrub, and mainland cherry forest.

- Retain connectivity habitat linkage values of the Cruzan Mesa-Plum Canyon vernal pool ecosystem.
- Restrict human activity in the vernal pool basins or any other actions which might compromise the underlying clay lenses which support the vernal pool hydrology (such as well or piezometer placement); and strictly limit actions which alter surrounding habitat values or disturb slope substrates.
- Transfer of ownership of these pools to a conservation entity would insure proper long-term management of this sensitive regional resource.

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.

## 11. SOURCES

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