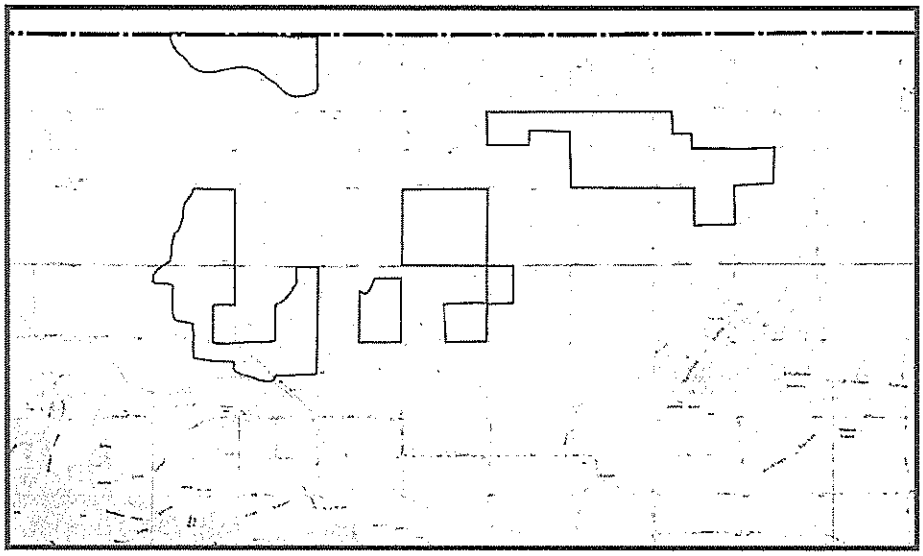
Biological Resources Assessment of the Proposed Joshua Tree Woodland Significant Ecological Area



Joshua Tree Woodland

(Including Existing SEA No. 60)

Los Angeles County, California

November 2000

PCR

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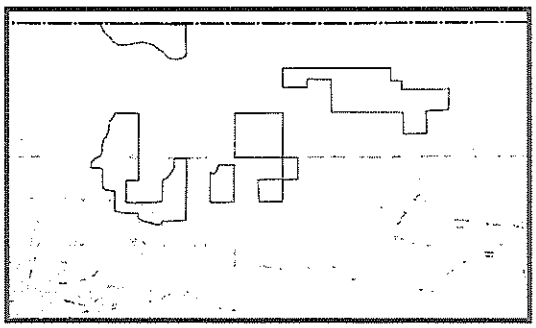

Joshua Tree Woodland

(Including Existing SEA No. 60)

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November 2000

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EXECUTIVE SUMMARY

Location: The proposed Joshua Tree Woodland Significant Ecological Area (SEA) is located in the western portion of the Antelope Valley west and northwest of the Antelope Valley California Poppy Reserve in an unincorporated area of Los Angeles County.

Description: The proposed Joshua Tree Woodland SEA covers 4,732 acres on the Antelope Valley floor between the Tehachapi Mountains and western San Gabriel Mountains and incorporates the undisturbed portions of existing SEA number 60. The topography of the SEA is flat with elevations varying less than 200 feet within its approximately 7.4 square mile area. The location and orientation of the proposed SEA represents a matrix of remnant stands of joshua trees among a patchwork of disturbed areas.

Existing Land Use: Land use within the proposed Joshua Tree Woodland SEA consists of undisturbed open space vegetated with joshua tree woodlands. Adjacent land uses consists of agricultural uses, ranches, and rural residential development and scattered undisturbed open space areas.

Ownership: Land ownership within the proposed Joshua Tree Woodland SEA consists of both public and private holdings. The only public ownership is the California Aqueduct as it passes through the southwestern portion of the SEA. The remaining land within the SEA is privately owned. Adjacent land ownership includes the State owned Antelope Valley California Poppy Reserve.

Vegetation: Plant communities within the proposed SEA include: desert scrub, non-native grassland, joshua tree woodland, juniper woodland, and disturbed.

Wildlife: Wildlife populations within the proposed SEA reflect low diversity and abundance for the habitat types present due to the small size of the SEA, the homogeneity of the topography and habitat, and influences of edge effect from surrounding agricultural lands uses.

Wildlife Movement: Wildlife movement within the proposed Joshua Tree Woodland SEA is limited to local movement. Animals foraging within the SEA are unlikely to occur in concentrated areas due to the homogeneity of the topography of the SEA. However, local movement to and from the component parts of the SEA as well as to and from the San Gabriel Mountains and the Tehachapi Mountains undoubtedly occurs.

Sensitive Biological Resources: The proposed SEA includes large patches of joshua tree woodland, a sensitive plant community. The SEA also includes a small number of potentially occurring sensitive plant and animal species such as: sagebrush loeflingia, burrowing owl, loggerhead shrike, Mohave ground squirrel, southern grasshopper mouse, and a few others.

Regional Biological Value: The proposed SEA meets several designation criteria and supports several regional biological values (see Criteria Analysis table at the end of this summary). These values include: joshua tree woodland habitat, which was formerly more extensive, has now become rare both in Los Angeles County and in the region; the joshua tree woodland within the SEA is rare and of a high quality and is important to science as such; the SEA contains the most westerly extent of this habitat type; and the joshua tree woodland contained within the proposed SEA represents an excellent example of this community type.

Recommended Management Practices: Proposed new development within the Joshua Tree Woodland SEA should be designed to be highly compatible with the continued ecological function 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 Joshua Tree Woodland 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.

- Retain joshua tree woodland, a rare community, with adequate buffers so as to allow for the long term viability and integrity of plant community as a whole.

- 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.

CRITERIA ANALYSIS OF THE PROPOSED JOSHUA TREE WOODLAND SEA

Criterion	Status	Justification
A) The habitat of core populations of endangered or threatened plant or animal species.	Not met	Although there are several listed species which occur within the SEA, this criterion is not met due to the lack of known core population areas.
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 SEA contains large patches of undisturbed joshua tree woodland habitat which has become increasingly rare 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	As stated above, joshua tree woodlands have become rare in the region, and are even more rare in Los Angeles County.
D) Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, migrating grounds and is limited in availability either regionally or in Los Angeles County.	Not met	The habitat within the proposed SEA is not known to serve as a concentrated breeding, feeding, resting, or migrating ground for any species.
E) Biotic resources that are of scientific interest because they are either an extreme in physical/ geographical limitations, or represent unusual variation in a population or community.	Met	Due to the scarcity of joshua tree woodland, specimens of the quality found in the proposed SEA are important to science and have become living laboratories. The SEA also contains the most westerly extent of this habitat type.
F) Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in Los Angeles County.	Met	The joshua tree woodland contained within the proposed SEA is an excellent example of this community type.

SIGNIFICANT ECOLOGICAL AREA UPDATE STUDY

1. LOCATION

1.1 GENERAL

The proposed Joshua Tree Woodland Significant Ecological Area (SEA) is located in the western portion of the Antelope Valley west and northwest of the Antelope Valley California Poppy Reserve in an unincorporated area of Los Angeles County as shown in Figure 1, *Regional Map*, on page 2. The proposed SEA consists of seven separate areas in close proximity in an area between the Kern County line to the north, the California Aqueduct and Fairmont Butte to the south, 220th Street West to the west, and 140th Street West to the east.

The SEA is located at least partially in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Neenach School and Fairmont Butte as shown in Figure 2, *Existing and Proposed Boundaries* on page 3. It incorporates all of the undisturbed portions of existing SEA number 60.

1.2 BOUNDARY DESCRIPTION

The Joshua Tree Woodland SEA is composed of seven separate areas. The overall boundaries are as follows: the western boundary terminates at 220th Street West (the border between Ranges 15W and 16W); the northern boundary is the Kern County line (the border between Townships 8N and 9N); the southern boundary abuts the California Aqueduct (in Section 29, Range 15W, Township 8N) as the valley approaches the foothills of the western San Gabriel Mountains Range; and the eastern boundary is 145th Street West as it occurs between Avenues C and D.

The northern most area lies between Avenues A (to the north) and B (to the south). The southwestern area lies between Avenue C (to the north) and just south of the California Aqueduct (to the south). Both of these areas are bordered by 200th Street West and 220th Street West to the east and west respectively. The majority of the eastern most area lies between Avenue B (to the north) and Avenue C (to the south), with one quarter section to the south of Avenue C. This entire eastern area is bordered by 145th Street West and 180th Street West on the east and west respectively. The remaining four areas of the SEA are located in a closely grouped cluster in the central portion of the SEA matrix. This portion extends south from Avenue C to Avenue E with 170th Street West to the east and 200th Street West to the west.

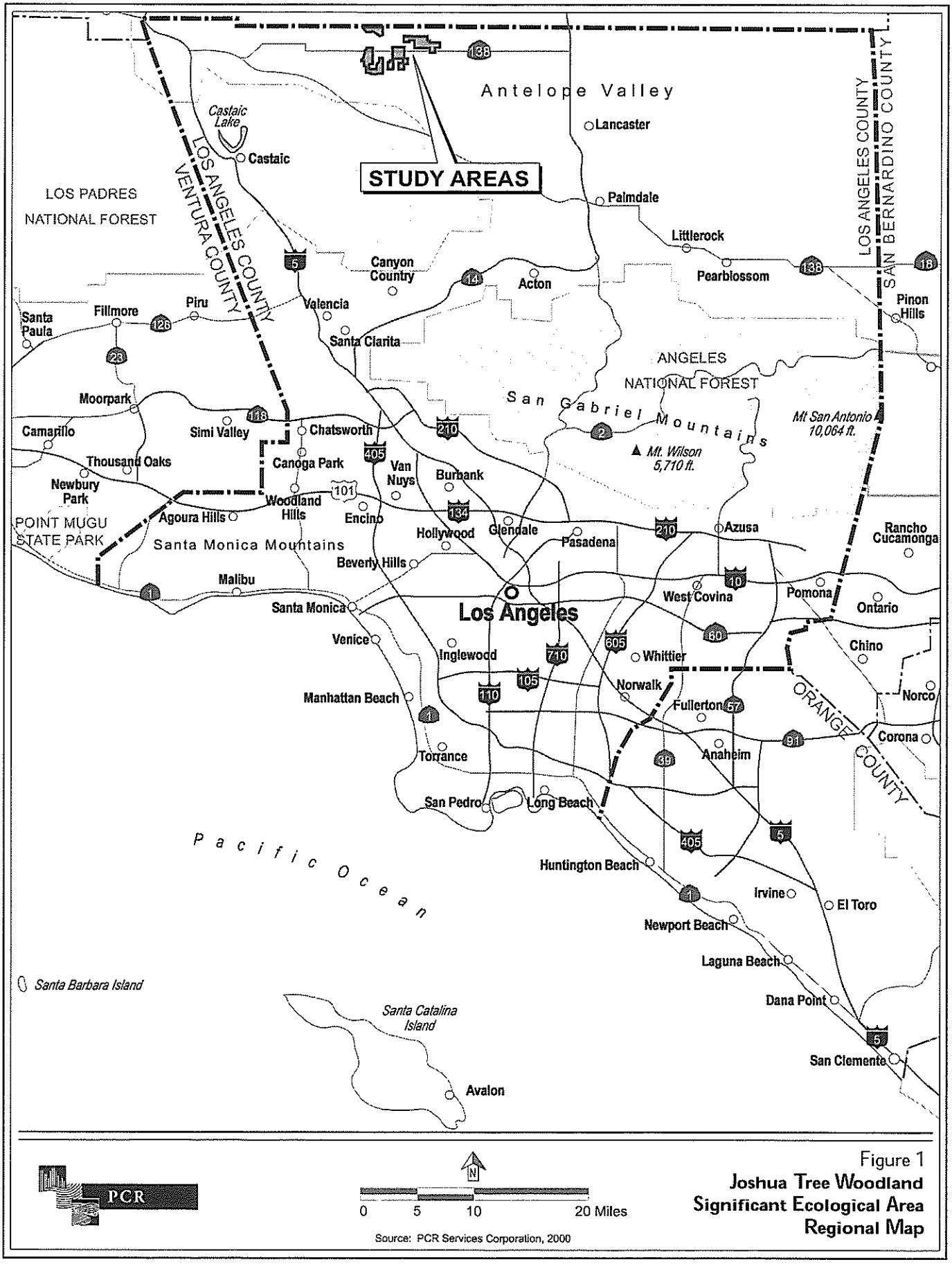
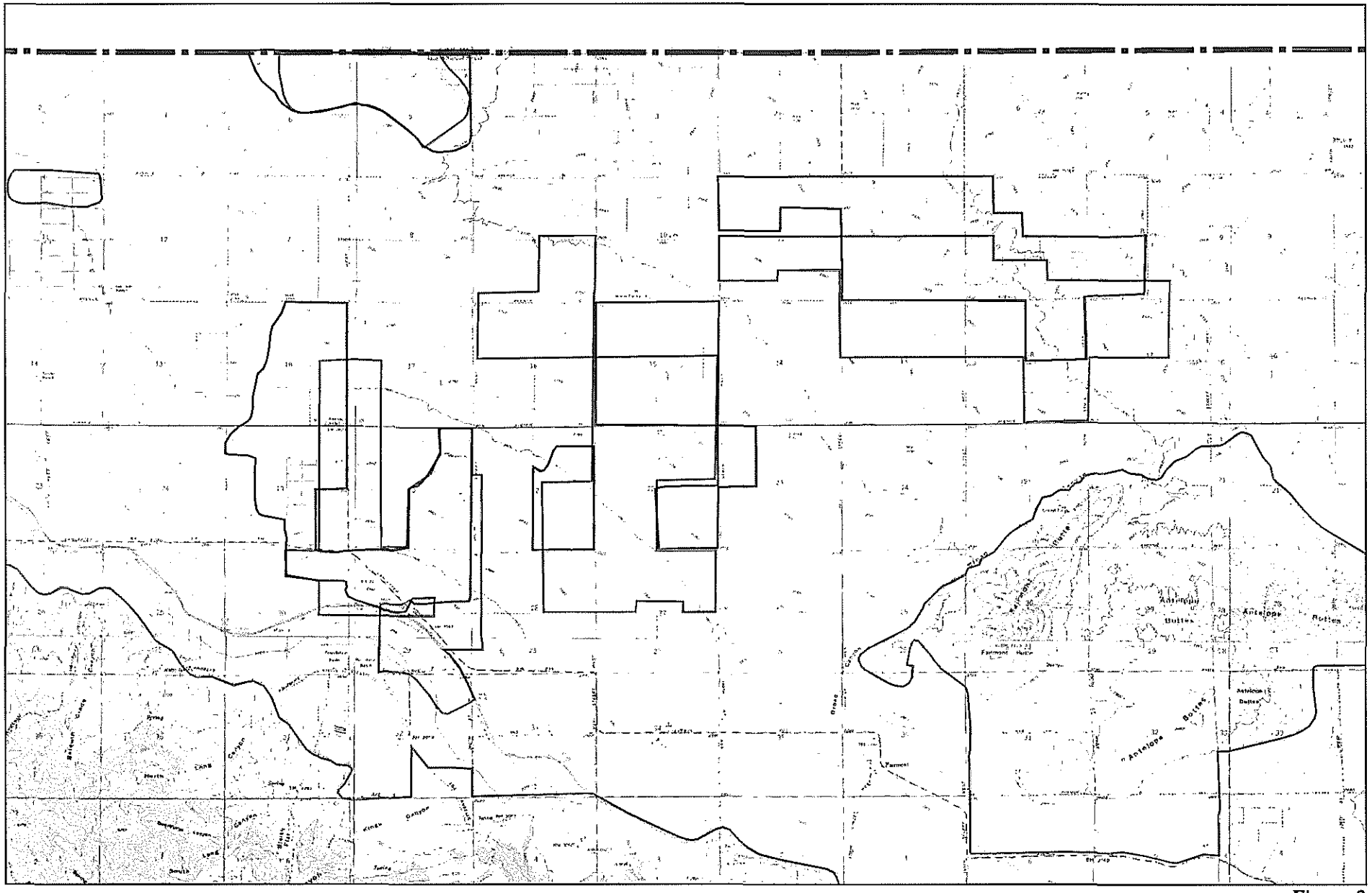


Figure 1
Joshua Tree Woodland Significant Ecological Area Regional Map



Proposed SEA Boundary
Existing SEA Boundary
Angeles National Forest

Figure 2

Joshua Tree Woodland
Significant Ecological Area
Existing and Proposed Boundaries

0 5600
Feet

FORMA Systems
09/06/00

2. DESCRIPTION

The proposed Joshua Tree Woodland SEA covers 4,732 acres on the western Antelope Valley floor between the Tehachapi Mountains and the western San Gabriel Mountains. The topography of the SEA is extremely flat with the land sloping less than 200 feet in approximately five miles. The location and orientation of the proposed SEA represents a matrix of remnant stands of joshua tree woodland among a patchwork of disturbed areas. Nearly all of the land within the SEA is undisturbed and vegetated. Most of the land surrounding the SEA is disturbed in the form of agricultural use with a few scattered rural residences. The southern boundary represents the highest point in the proposed SEA at 2,960 feet above mean sea level. All of the acreage within this SEA is in unincorporated County jurisdiction.

3. EXISTING LAND USE

Land use within the proposed Joshua Tree Woodland SEA consists of undisturbed open space vegetated with joshua tree woodlands. Adjacent land uses consists of agricultural use, rural residential development, and scattered undisturbed open space areas. These areas consist mostly of large lots incorporating ranches.

4. LAND OWNERSHIP

Land ownership within the proposed Joshua Tree Woodland SEA consists of both public and private holdings. The only public ownership is the California Aqueduct as it passes through the southwestern SEA area. The remaining land within the SEA is privately owned. Individual land ownerships within the SEA are estimated to range from one to 100 acre parcels. Adjacent land ownership includes the State owned Antelope Valley California Poppy Reserve.

5. VEGETATION

Vegetation within the proposed Joshua Tree Woodland SEA is limited to a few communities with relatively few species (see below). However, the dominant community, joshua tree woodland, is in good condition throughout most of the SEA and includes many mature stands. All 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). Other communities are named based on dominant species within them and/or commonly used terminology. Descriptions and general locations of the each plant community present within the SEA, including desert scrub, non-native grassland, joshua tree woodland, juniper woodland, and disturbed are given below.

Desert scrub is a moderately tall, fairly open shrubland with several species contributing to the canopy. Dominants often include Great Basin sage brush, antelope bush, saltbush, and/or rabbitbrush, with several perennial grasses dispersed between the shrubs. Within the proposed SEA, this community inter-grades with joshua tree woodlands.

Grassland communities consist of low, herbaceous vegetation that are dominated by grasses but generally also harbor native forbs and bulbs as well as naturalized annual forbs. Grasslands within the proposed SEA consists of non-native grasslands alone. **Non-native grassland** consists of dominant invasive annual grasses that are primarily of Mediterranean origin. Dominant species found within this community include slender oats, wild oats, ripgut brome, foxtail chess, golden tops, *Schismus*, and wild mustard. Non-native grasslands are located in small patches intermingling with joshua tree woodland throughout the SEA.

Joshua tree woodland is an open woodland with joshua tree usually as the only arborescent species with numerous smaller shrub species interspersed between. Shrub species include Great Basin sagebrush, antelope bush, saltbush, rabbit brush, and creosote bush. Joshua tree woodland occupies approximately 95 percent of the proposed SEA.

Juniper woodland is an extremely open woodland dominated by California juniper, with an understory typical of desert scrub as it is described above. This community is dominant in a few areas within the SEA but is usually loosely scattered within the joshua tree woodland.

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 grasses and "weedy" herbaceous species, native and non-native, including doveweed, mustards, telegraph weed, Russian thistle, dock, yellow star thistle, Australian saltbush, and cocklebur. Disturbed areas occur throughout the proposed SEA around active agriculture and residential developments, along paved roads, dirt access roads, and other similarly disturbed areas.

6. WILDLIFE

Wildlife populations within the proposed SEA reflect somewhat lower diversity and abundance for the habitat types present due to the small size of the SEA areas, the homogeneity of the topography and habitat, and influences of edge effect from surrounding agricultural lands uses. An assessment of invertebrate populations is made difficult due to the lack of data but the SEA is sure to include more common species in fair numbers. Amphibian populations are generally scarce in desert communities and no riparian habitat is available within the SEA. Many essential reptilian habitat characteristics such as open habitats that allow free movement and high visibility and small mammal burrows for cover and escape from predators and extreme weather are present within the SEA. These characteristics as well as the availability of fallen and decomposing woody material are likely to support a wide variety of reptilian species.

The scrubland, woodland, and grassland habitats in the proposed SEA provide foraging and cover habitat for year-round resident and seasonal resident song birds. In addition, the SEA encompasses abundant raptor foraging, perching, and nesting habitat. The combination of these resources provide for a diversity of bird species.

Mammal populations are suggested to also reflect the generally disturbed environs influencing this SEA. Small mammals are expected to be uneven in their diversity with more adaptive species and introduced European species being in high numbers compared to others. Medium sized mammal populations are expected to exhibit the same characteristics. Large mammals are largely absent on a resident basis.

All 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

Wildlife movement within the proposed Joshua Tree Woodland SEA is limited to local movement. Animals foraging within the SEA are unlikely to occur in concentrated areas due to the homogeneity of the topography and habitat of the SEA. However, local movement to and from the different SEA areas as well as to and from the San Gabriel Mountains and the Tehachapi Mountains is restricted due to the disturbed nature of the Valley floor. Wildlife movement, therefore, is likely

to converge in areas where movement is still possible causing concentrated movement areas or "bottlenecks".

8. SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources are habitats or individual species granted special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, rare, or otherwise 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 Joshua Tree Woodland SEA supports one habitat type, **joshua tree woodland**, considered sensitive by resource agencies, namely the CDFG [California Natural Diversity Database (CNDDB), 2000], because of its scarcity and support of a number of state and federally listed endangered, threatened, and rare vascular plants, as well as several sensitive bird and reptile species. Joshua tree woodland occurs throughout the study area. This community is considered a highest-inventory priority community by the CDFG, indicating that it is experiencing a decline throughout its range. The array and composition of joshua tree woodland 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, the CDFG, and the CNPS (particularly List 1A, 1B, and 2). The Sensitive Species Table on page 8 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 JOSHUA TREE WOODLAND SEA

VASCULAR PLANTS

Scientific Name	Common Name	Agency Listing Status	CNPS Listing Status	Preferred Habitat	Location
ANGIOSPERMS (Dicotyledons)					
Caryophyllaceae	**Pink Family**				
Loeflingia squarrosa var. *artemisiarum*	sagebrush loeflingia		1B	Great basin scrub, Sonoran desert scrub, desert dunes, sandy flats, sandy areas around clay slicks.	Potential where habitat occurs
Fabaceae	**Legume Family**				
Astragalus preussi var. *laxiflorus*	Lancaster milk-vetch		1B	Chenopod scrub, alkaline clay flats or gravelly or sandy washes and along draws in gullied badlands.	Potential where habitat occurs
ANGIOSPERMS (Monocotyledons)					
Liliaceae	**Lily Family**				
Calochortus plummerae	Plummer's mariposa lily	FSC	1B	Variety of Southern California plant communities, including 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

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 JOSHUA TREE WOODLAND SEA (CONTINUED)

VASCULAR PLANTS

Scientific Name	Common Name	Agency Listing Status	CNPS Listing Status	Preferred Habitat	Location
Calochortus striatus	alkali mariposa lily	FSC	1B	Chaparral, chenopod scrub, Mojavean desert scrub, meadows, alkaline meadows, and ephemeral washes.	Potential where habitat occurs

Legend

Agency Lists

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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 JOSHUA TREE WOODLAND SEA (CONTINUED)

VERTEBRATES

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
REPTILES				
Iguanidae	**Iguanid Lizard Family**			
Phrynosoma coronatum blainvillei	San Diego coast horned lizard	FSC, CSC, SP	Coastal scrub, chaparral valley-foothill hardwood, conifer, riparian habitats, pine-cypress, juniper, annual grasslands in arid and semi-arid climate conditions below 6,000 ft.	Fairmont, 4 mi. NNE of Lake Hughes; 2 mi. E of Gorman along Hwy 138 (1953)
Phrynosoma coronatum frontale	California horned lizard	CSC, SP	Scrubland, grassland, coniferous forest, broad-leaf woodlands.	1 individual observed on Quartz Hill (1991)
BIRDS				
Accipitridae	**Hawks, Kites, Harriers and Eagle Family**			
Accipiter striatus	sharp-shinned hawk	CSC	(Nesting) Woodlands; forages over chaparral and other scrublands; prefers riparian habitats and N-facing slopes, with plucking perch sites.	Potential to forage throughout SEA
Aquila chrysaetos	golden eagle	CSC, SFP	(Nesting and wintering)Mts., deserts, and open country; prefer to forage over grasslands, deserts, savannahs and early successional stages of forest and shrub habitats.	Potential to forage throughout SEA
Buteo regalis	ferruginous hawk	CSC	(wintering) Rivers, lakes, and coasts; open tracts of sparse shrubs and grasslands, and agricultural areas during winter.	Potential to forage throughout SEA

Legend

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SENSITIVE SPECIES
OCCURRING OR POTENTIALLY OCCURRING
WITHIN THE PROPOSED JOSHUA TREE WOODLAND SEA
(CONTINUED)

VERTEBRATES

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
Buteo swainsoni	Swainson's hawk	ST	(Nesting) Plains, ranges, open hills, sparse trees.	Potential to forage throughout SEA
Circus cyaneus	northern harrier	CSC	(Nesting) Coastal salt marshes, freshwater marshes, grasslands, and agricultural fields; occasionally forages over open desert and brushlands.	Potential to forage throughout SEA
Falconidae	**Falcon Family**			
Falco mexicanus	prairie falcon	CSC	(Nesting) Grasslands, savannahs, rangeland, agricultural fields, and desert scrub; often uses sheltered cliff ledges for cover.	Potential to forage throughout SEA
Strigidae	**True Owl Family**			
Athene cunicularia	burrowing owl	FSC, CSC	Dry grasslands, desert habitats, and open pinyon-juniper and ponderosa pine woodlands below 5,300 feet elevation. Prefers berms, ditches, and grasslands adjacent to rivers, agricultural, and scrub areas.	Recorded at Antelope Valley California Poppy Reserve, 0.5 mi. SE of SEA
Mimidae	**Thrashers**			
Toxostoma lecontei	Le Conte's thrasher	CSC	Open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub, nests in dense, spiny shrub or cactus in desert wash habitat.	Potential where habitat occurs

Legend

Agency Lists

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FSC	Federal Special Concern Species	SCE	State Candidate for Endangered
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SENSITIVE SPECIES OCCURRING OR POTENTIALLY OCCURRING WITHIN THE PROPOSED JOSHUA TREE WOODLAND SEA (CONTINUED)

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
VERTEBRATES				
Laniidae	**Shrike Family**			
Lanius l. ludovicianus	loggerhead shrike	FSC, CSC	Open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches.	Commonly recorded in area
Emberizidae	**Wood Warblers, Tanagers, Buntings, and Blackbird Family**			
Vermivora virginiae	Virginia's warbler	CSC	Arid, shrubby, mixed conifer, pinyon-juniper, montane chaparral.	Potential as migrant
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.	Potential where habitat occurs
Vespertilionidae	**Evening Bat Family**			
Euderma maculatum	spotted bat	FSC, CSC	Deserts, scrublands, chaparral, and coniferous woodlands.	Potential where habitat occurs
Molossidae	**Free-Tailed Bat Family**			
Eumops perotis californicus	western mastiff bat	FSC, CSC	Primarily arid lowlands, especially deserts. Open, semiarid to arid habitats including conifer and deciduous woodlands, coastal scrub, annual and perennial grass-lands, palm oases, chaparral, desert scrub, and urban.	Potential where habitat occurs

Legend

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SENSITIVE SPECIES
OCCURRING OR POTENTIALLY OCCURRING
WITHIN THE PROPOSED JOSHUA TREE WOODLAND SEA
(CONTINUED)

VERTEBRATES

Scientific Name	Common Name	Agency Listing Status	Preferred Habitat	Location
Sciuridae	**Squirrel Family**			
Spermophilus mohavensis	Mohave ground squirrel	FSC, ST	Low desert with scattered brush, sandy, or gravelly soil.	Potential where habitat occurs
Heteromyidae	**Pocket Mice and Kangaroo Rat Family**			
Perognathus alticola inexpectatus	Tehachapi pocket mouse	FSC, CSC	Arid annual grassland, desert shrub, fallow grain field, Russian thistle, burrows for cover and nesting, aestivates and hibernates, forages on open ground and under shrubs.	Recorded 2.5 mi. SE of Gorman (1952)
Muridae	**Mice, Rats, and Vole Family**			
Onychomys torridus ramona	southern grasshopper mouse	FSC, CSC	Grasslands, desert areas, especially scrub with friable soils.	Common in Antelope Valley

Legend

Agency Lists

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		CSC	California Special Concern Species

9. REGIONAL BIOLOGICAL VALUE

The proposed Joshua Tree Woodland SEA meets several SEA designation criteria incorporating 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.*

Although there are several listed species which occur within the SEA, this criterion is not met due to the lack of known core population areas.

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.*

Undisturbed joshua tree woodland habitat, which was formerly more extensive, has become rare 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.*

As stated above, joshua tree woodlands have become rare in the region, and are even more rare in unincorporated Los Angeles County.

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 habitat within the proposed SEA is not known to serve as a concentrated breeding, feeding, resting, or migrating ground for any species.

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.*

Due to the scarcity of joshua tree woodland, specimens of the quality found in the proposed SEA are important to science and have become living laboratories. In addition, the SEA contains the most westerly extent of this habitat type.

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

The joshua tree woodland contained within the proposed SEA represent an excellent example of this community type.

In conclusion, the area described in this report is proposed to be an SEA because it contains: 1) joshua tree woodland, a rare community both regionally and within the County; 2) the geographic limit of joshua tree woodland; and 3) an excellent undisturbed example of joshua tree woodland.

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

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