Sensitive Plant Surveys and Vegetation Update for Playa Vista

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Summary

This report provides methodology and results of field surveys conducted in the spring and summer of 1995 for the Playa Vista project. The purpose of the surveys was to update James Henrickson's survey of the botanical resources of Playa Vista conducted from April to October of 1990 (report dated May 12, 1991). Walking field surveys were conducted in the project area from early April to mid-October of 1995; they encompassed the range of flowering periods expected for the plants of concern. Notable differences in vegetation communities from Henrickson's vegetation map were also recorded. Results of the survey were as follows:

1) Two species, suffrutescent wallflower (*Erysimum insulare* ssp. *suffrutescens*) and Lewis's evening primrose (*Camissonia lewisii*) were originally recorded by Henrickson and found to still exist in Areas B and C;

2) A small and previously unknown population of southern tarplant (*Hemizonia parryi* ssp. *australis*) was found in Area C. The total size of the population was estimated at 30 individuals;

3) The importance of the eucalyptus grove on the south-central side of Area B as a roosting site for Monarch butterflies was confirmed and a nearby stand of western goldenrod (*Solidago occidentalis*) was observed to be an important food resource for adult Monarchs.

The southern tarplant population is likely to be a serious concern in impact assessments for vegetation in the Playa Vista Project because the distribution of the plants in the project area is confined entirely to an area planned for development -- the area east of the baseball fields in Area C. The population is presently the only one known to occur in the Marina del Rey/Ballona region and therefore its loss would be biologically significant. The taxon is a federal candidate in category 2; however, it has a higher status with the California Native Plant Society which considers the plant threatened or endangered in California and elsewhere (List 1B). Measures to encourage the long-term population viability of southern tarplant, suffrutescent wallflower, and Lewis's evening primrose within the project area are recommended.

Introduction

The Playa Vista Project is a combined restoration/development project in the Ballona Wetlands region of Marina del Rey. The first detailed vegetation survey of the project area was conducted in 1990 by James Henrickson of the Department of Biology, California State University at Los Angeles. His findings and detailed vegetation maps were produced in draft form in 1991. It is unknown if a "final" report was ever issued, but the draft was quite detailed and comprehensive. The purpose of the work described herein is to update the findings of Dr. Henrickson to reflect recent changes in listing status of sensitive plant species, and identify significant changes in the extent or composition of plant communities within the project area. This update in 1995 was thought to be especially important, given that 1995 had one of the highest rainfall seasons on record, and the year of Henrickson's study (1990) was relatively dry.

For reference purposes the project area is divided into four subareas: A, B, C, and D. Henrickson found that each of these subareas is quite diverse in habitat types and species composition, but all have been subject to serious invasion of exotic species and a long history of significant human impacts. While we do not have quantitative data on historical vegetation for the site, it is probably safe to say that the hydrological conditions and associated vegetation assemblages we see today are significantly different from those which occurred prior to the 1930s. It is important to understand this impact history as a starting point for evaluating the potential for sensitive plants at Playa Vista and where to look for such species; most of the historical collections of rare plants from the Ballona area were made prior to the major impacts that began in the 1930s (i.e. road construction, channelization of Ballona Creek and Centinela Creek, agricultural development, and development of gas extraction facilities). Based on information in Henrickson's report, general vegetation features and impact histories for each part of the project area can be summarized as follows:

Area A

Area A is approximately 139 acres and situated north of the Ballona Creek channel and west of Lincoln Boulevard. Like much of Marina del Rey, Area A was once part of the Ballona wetlands but was filled with excavated material from the Ballona channel in the 1930s and from Marina del Rey in the 1960s. Area A is isolated from tidal and creek influence: winter rains are the only major source of freshwater input. While salt flats and pickleweed are present, most of Area A is now dominated by upland vegetation and exotics, especially iceplant. Henrickson did not observed any sensitive plant species in Area A. Any rare plants that may have occurred here historically would be expected to have been buried under fill and unlikely to reoccur unless source populations outside of Area A survived. Area A is proposed for development as a marina under the present plan.

Area B

Area B is approximately 338 acres and fragmented by roads. The area is situated west of Lincoln Boulevard and south of the Ballona Creek channel. Area B contains most of the native habitat diversity in the project area and is the focus of most of the restoration effort under the present plan. Area B supports a large remnant of the Ballona wetlands as well as a small sand dune community. Narrow ditches with cattails and other freshwater vegetation cross Area B at various locations and are currently the only source of fresh water input into the site aside from direct precipitation. Over time, the area has been impacted by natural gas extraction facilities, fill for agricultural development, paved roads (Lincoln, Jefferson, and Culver Boulevards), and invasion by exotic species. Prior to the 1930s, before Ballona Creek and Centinela Creek were channelized, freshwater input into Area B was undoubtedly much greater than it is today.

Area C

Area C is approximately 66 acres and bisected by Culver Boulevard. Like Area A, according to Henrickson, Area C was subject to dumping of excavated material from the various development and road projects which occurred in Marina del Rey during the 1930s and 1960s. Also like Area A, Area C was once part of the extensive Ballona marsh but is now dominated by upland plant species; it also supports small salt flats and pickleweed stands only in relatively isolated, low-lying areas. The portion of Area C south of Culver is occupied primarily by baseball diamonds and also contains a small weedy field on the eastern quarter of the property.

Area D

Area D is approximately 462 acres and is the largest section of the project area. A large, private airstrip formerly occupied the site; currently, much of the site is occupied by roads and industrial buildings. Remaining natural habitats on the site are fragmented by roads and past dumping of fill. Centinela Ditch, a straightened remnant of Centinela Creek, follows the southern border and eventually empties into Area B. Except for willow riparian vegetation along the ditch, vegetation in Area D is dominated by upland native and exotic species. Area D is planned for commercial/residential development.

Methods

Prior to field surveys, a list of plant species of potential concern was compiled from a search of the California Natural Diversity Database, the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants, and a previous survey of the project area (Henrickson, 1991). Additional information sources for particular species included status reports from the California Department of Fish and Game and *Fremontia*, a periodical published by the California Native Plant Society. Based upon this information, a field schedule for the spring and summer of 1995 was developed to match the flowering and/or fruiting periods of the species of concern; this maximized the likelihood of detecting species. Due to the exhaustive floristic nature of the previous study by Henrickson (1991), our survey strategy focused on the flowering and fruiting periods of the sensitive species rather than repeat the floristic study by Henrickson. Henrickson's highly detailed vegetation maps were used as a basis for developing the survey strategy; they were updated as necessary during the surveys if significant changes in habitats were observed.

Targeted surveys for sensitive plant species were conducted from April 4 to October 20, 1995. The surveys were scheduled and supervised by Dr. Edith Read (Psomas and Associates) with assistance in the field effort from Impact Sciences. The extent of coverage of the project area and number of field people conducting the surveys varied with the species. Some species were known to have specific habitat associations, such as salt marsh. Other species were known to be less specific, and would potentially be found almost anywhere in the project area. Where possible, known populations of the species in coastal southern California were visited prior to the surveys in order to verify appropriate scheduling of the survey.

Table 1 provides a list of the species that were targeted for field surveys; their status, dates and areas in which the surveys were conducted; and a summary of what was known about the species prior to the surveys.

Results and Discussion

General Vegetation

Vegetation communities were found to be of the same types and distribution as recorded by Henrickson's (1991) vegetation map. Two exceptions were noted in Area B and are shown in Figure 1: expansion of pickleweed saltmarsh and freshwater marsh habitat along Jefferson Boulevard.

During surveys conducted on October 19, stands of western goldenrod (*Solidago occidentalis*) on the south-central side of Area B near a eucalyptus grove were the only species in flower and visited by large numbers of Monarch butterflies. The continuing importance of the eucalyptus grove as a roosting site for the Monarchs, reported by Mattoni (1991) was verified in this survey. The late summer flowering of western goldenrod, after most other plant species are out of flower, probably contributes to the importance of the goldenrod as a food resource for adult Monarchs.

Sensitive Plants

Table 2 summarizes the results of the sensitive plant survey and, in cases where results were negative, provides an evaluation of habitat potential for the species on the project site. The following paragraphs provide further details regarding the species found on site. Regarding species which were not found, in general it can be argued that significant changes in hydrological conditions and increases in human impacts have eliminated species and habitat that may have been historically present on site. Specifically, collections of Coulter's goldfields, Ventura Marsh milk-vetch, and Ballona cinquefoil from the project area were all made during the period 1900-1910, prior to major alteration of habitat in the 1930s. These species have not been observed or collected since that time, and were not observed by Henrickson (1991) or the 1995 surveys. This is strong evidence in support of the argument that these species have been eliminated from the project area.

Three sensitive plant species were observed on the project site: Lewis's evening primrose, suffrutescent wallflower, and southern tarplant. Details of their occurrence are described below.

- Lewis's evening primrose (*Camissonia lewisii* Raven; CNPS List 3)

  Lewis's evening primrose was documented by Henrickson (1991) as occurring in sandy soils of Areas B and C; however, a more precise location was not provided. We confirmed the occurrence of this species in our survey. No occurrences outside of Areas B and C were found. Figures 2 and 3 show the population locations. All populations occur on sand, generally away from dense grasses and weeds. The total

size of the population in Area B is estimated at 5,000 individuals and in Area C at 6,000 individuals.

In most cases, *C. lewisii* co-occurs in the project area with *C. bistorta* (California sun cup), a common taxon with no sensitivity status. *C. lewisii* is distinguished primarily by conspicuous 4-angled fruits and glandular hairs in the inflorescence; however, the two taxa are very difficult to distinguish with dried specimens or in marginal habitats. The List 3 status of *C. lewisii* with the California Native Plant Society means that more information is needed regarding the species -- in many cases, surveys may fail to distinguish the plants from *C. bistorta*. It is my view that the species are so similar in morphology that hybrids in co-occurring populations would not be surprising.

- Suffrutescent wallflower (*Erysimum insulare* ssp. *suffrutescens*; CNPS List 4)

Suffrutescent wallflower was documented by Henrickson (1991) as occurring on the dunes in Area B. This occurrence was confirmed in our survey. Figure 2 shows the approximate location of the population. The population is small with about 10 individuals. Expansion and regeneration of this population may be limited by increasing densities of ripgut brome (*Bromus diandrus*), a dominant weed on the dunes which appears to be replacing stands of iceplant (*Carpobrotus edulis*) that are being removed.

The List 4 status of suffrutescent wallflower with the California Native Plant Society denotes that the species is considered uncommon but not threatened at this time. Many taxa on List 4 are locally significant and monitoring or protection of their populations has been recommended (Skinner and Pavlick, 1994). The nearest extant population of suffrutescent wallflowers to the project area is at the El Segundo Dunes; the population at that location is larger and more protected (personal observation). In addition, Skinner and Pavlick (1994) have recommended that marginal populations such as the one at Ballona also be protected.

- Southern Tarplant (*Hemizonia parryi* ssp. *australis* Keck; Federal candidate in Category 2: CNPS List 1B)

Southern tarplant occurs east of the baseball fields in Area C (Figure 3). The black anthers of the flowers and prickly, sticky foliage distinguish this taxon from other more common tarplant species that occur in the region. The total population on the site is approximately 30 individuals. Intense surveys were required to avoid overlooking plants which occurred in dense stands of common tarplant (*Hemizonia fasciculata*). With the exception of one plant observed growing under one of the bleachers at the eastern baseball field, the microhabitat for southern tarplant on the project site is compacted, clay soil in shallow depressions and openings in dense stands

of weeds which include curly dock (*Rumex crispus*) and horseweed (*Conyza canadensis*).

The population of southern tarplant on the project site is the only population known from the region of Marina del Rey. The population was not observed by Henrickson (1991) or previously collected at Ballona. The nearest known population is at Harbor Regional Park, about 10 miles south of the project site. This population was visited on October 5 prior to the survey at Playa Vista and found to be still extant.

Federal candidate species are not protected under the Endangered Species Act. However, the California Native Plant Society (Skinner and Pavlick, 1994) argues that federal listing often lags behind the need for protection, and that CNPS List 1B plants are eligible for state listing as threatened or endangered.

Conclusion and Recommendations

While none of the sensitive plant species found in the project area are protected under the Endangered Species Act, their occurrence at Ballona adds significantly to the biological diversity of upland habitats. Protection of Lewis's evening primrose and suffrutescent wallflower populations on the dunes in Area B should not be difficult, as long as these species are included in the overall restoration plan for the dunes. The large population of 5,000 Lewis's evening primrose on the dunes should be sufficient for continued viability of the species in the project area -- the loss of the population in Area C should not diminish this viability.

Protection of southern tarplant in the project area is more problematic than for the other sensitive plant species because the tarplants occur only in the southeast section of Area C which is planned for development. The southern tarplant population in particular is valuable because of its general rarity in Southern California. We recommend that a recovery and management plan for the species be developed which would ensure the continued presence of southern tarplant in the project area. Such a plan and its implementation does not need to be expensive - the weedy nature of the species should favor human-assisted propagation and enhancement of populations in protected areas of the project as long as its microhabitat requirements (shallow depressions in clay soils) are properly considered. A large, viable population in the project area would also serve as a "refuge population" in the face of continuing declines of the species in the coastal Southern California region.

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Tables

Table 1 - Sensitive Plant Species Targeted for Field Surveys in the for Playa Vista Project Area

Species Name Common Name	Status	Lifeform; flowering period	Habitat Associations	Distribution	Survey date(s) in project area; areas searched
ring Flowering pecies					
tragalus tener var. astal dunes milk-ich	Fed:C1 State:E CNPS:1B	Annual herb; Mar-May	Coastal dunes, in coastal strand vegetation and in moist depressions on coastal terraces.	Endemic to California. Known from western Monterey County to Los Angeles County (but believed extinct there) and western San Diego County (searches in 1980's failed to rediscover population). Now believed isolated to one occurrence at Pebble Beach in Monterey County.	April 13, 1995; dune habitat in Area B; no other dune habitat occurs in project area.
anisssonia lewisii ewis's evening mrose	Fed:none State:none CNPS:3	Annual herb; Mar-Jun	Coastal dunes; sandy soils	Central and west Los Angeles County through central and west Orange County, Baja.	April 12-13, 1995; all relatively open, sandy soils searched in Areas A, B, and C.
uthea maritima each spectaclepod	Fed:C1 State:T CNPS:1B	Biennial to short-lived perennial from rhizome; Apr-May	Coastal dunes, typically within sight of surf or in swales between foredunes.	Morro Bay dunes in San Luis Obispo County dunes in Santa Barbara County, San Nicolas Island. Historical populations in Los Angeles County, San Miguel Island, and Baja have probably been extirpated.	April 13, 1995; dune habitat in Area B.

Table 1 - Continued

Species Name Common Name	Status	Lifeform; flowering period	Habitat Associations	Distribution	Survey date(s) in project area; areas searched
ysimum tasulare ssp. *ffrutescens* ffrutescent wallflowe	Fed:none State:none CNPS:4	Perennial; Feb-Jun	Coastal dunes	Endemic to California; ranges from San Luis Obispo County to Ventura County and southern Los Angeles County.	April 13, 1995; dune habitat in Area B.
sthenia glabrata ssp. *ulteri* ulter's goldfields	Fed:C2 State:none CNPS:1B	Annual herb; Feb-Jun	Salt marsh, playas, vernal pools and vernally flooded areas.	Santa Barbara and Ventura County to San Bernardino, Riverside, and San Diego Counties.	April 12-13, 1995; Areas A, B, C.
'nacaulis denudata r. *denudata* ast woolly-heads	Fed:none State:none CNPS:2	Annual herb; Apr-Sep	Coastal dunes	Channel Islands, southern Los Angeles County to Orange County and western San Diego County, Baja.	April 13, 1995; dune habitat in Area B.
'acelia stellaris and's phacelia	Fed:none State:none CNPS:1B	Annual herb; Mar-Jun	Coastal dunes	Southern Los Angeles County to western San Diego County and Baja.	April 13, 1995; dune habitat in Area B.
nmer-Fall owering Species					
tragalus nostachys var. *tostissimus* ntura marsh milk-tch	Fed:C2 State:none CNPS:1A	Perennial herb; Jul-Oct	Coastal salt marsh	Known historically from Los Angeles, Ventura, and Orange Counties -- now may be extinct throughout its range; CDFG status report states populations in the Santa Monica or Ballona marshes are "certainly extinct"	July 7, 14, 1995; salt marsh habitat in Area B; remote chance of occurrence but any historical populations still extant would only have survived here; rest of project area too disturbed.

Table 1 - Continued

Species Name Common Name	Status	Lifeform; flowering period	Habitat Associations	Distribution	Survey date(s) in project area; areas searched
Cordylanthus maritimus var. *maritimus* salt marsh bird's- beak	Fed:E State:E CNPS:1B	Hemiparasitic annual; May-Oct	Coastal salt marsh	Coastal central to southern California and Baja. No historical collections at Ballona. Nearest extant populations occur at Upper Newport Bay, Orange County.	July 7, 14, 1995; salt marsh habitat in Area B.
Hemizonia parryi ssp. *australis* southern tarplant	Fed:C2 State:none CNPS:1B	Annual herb; Jun-Nov	Seasonally moist, often alkaline soils	Southern Santa Barbara County to central and west San Diego County and Baja.	October 5, 18-20, 1995; Areas A, B, C, and D.
Potentilla multijuga Ballona cinquefoil	Fed:C2 State:none CNPS:1A	Perennial herb; Jun-Aug	Brackish meadows in coastal sage scrub.	Southern Los Angeles County; no historical records outside of Ballona area; exact historical location within the once-extensive Ballona marsh area unknown; believed extirpated.	July 7, 14, 1995; Area B..

STATUS CODES:

Federal

E: Endangered
C1: Sufficient data are on file to support listing.
C2: More information on distribution and threats to populations is needed before listing is considered.

State

E: Endangered
T: Threatened

California Native Plant Society (CNPS)

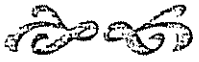
1A: Presumed extinct in California.
1B: Rare, threatened, or endangered in California and elsewhere.
2: Rare or endangered in California, more common elsewhere.
3: Need more information.
4: Plants of limited distribution.

SOURCES:

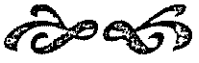
California Department of Fish and Game (1995a).
California Department of Fish and Game (1995b).
California Department of Fish and Game (1990).
California Department of Fish and Game (1988).
California Department of Fish and Game (1987).
California Department of Fish and Game (1978).
California Department of Fish and Game (1977).
Dennis (1995)
Skinner and Pavlik (1994).

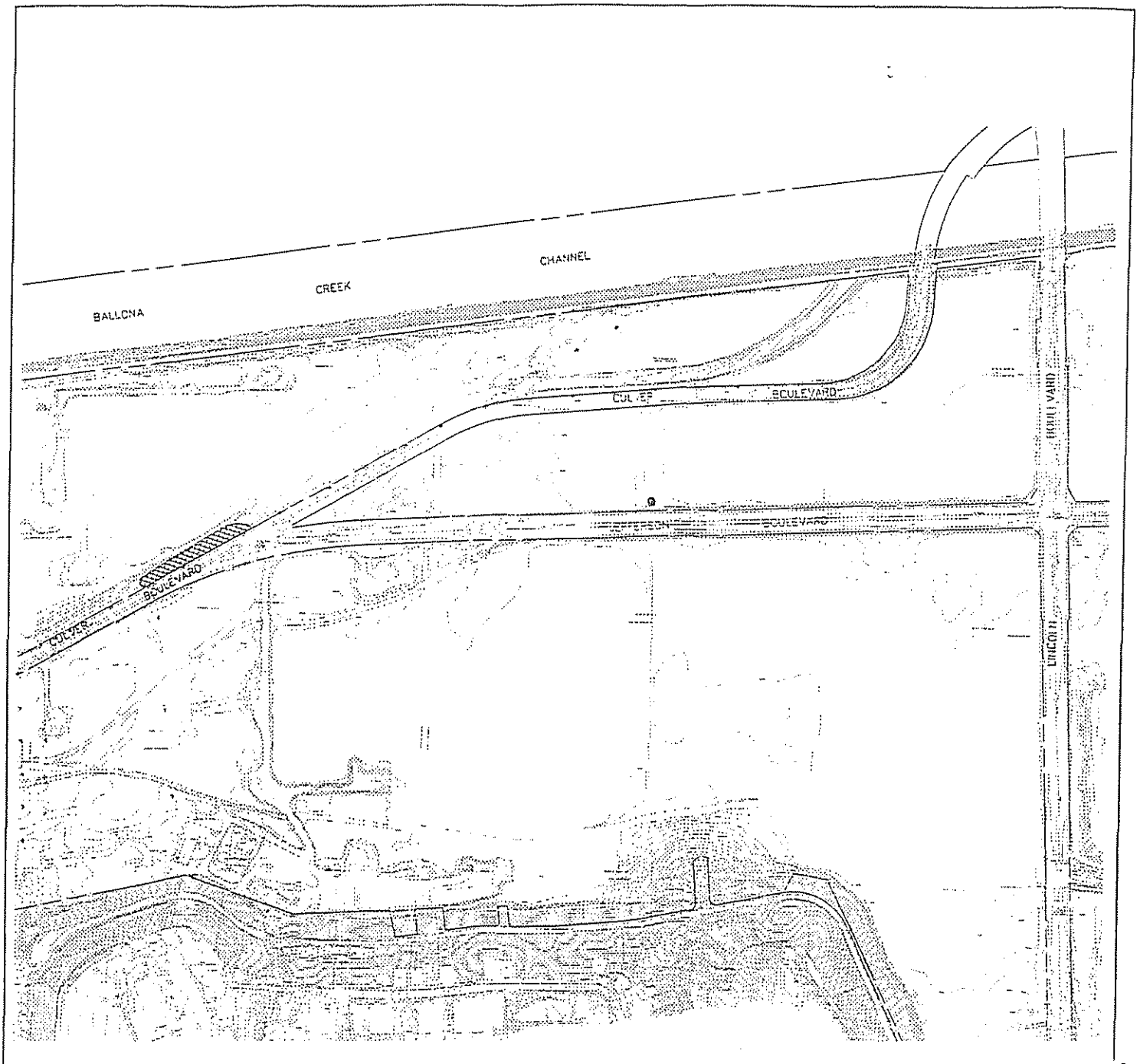
Table 2 - Summary Evaluation of Sensitive Plant Species Occurrence in the Playa Vista Project Area

Species Name Common Name	Evaluation
Astragalus pycnostachys var. *lanosissimus* Ventura marsh milk-vetch	**Absent.** Any historical occurrence(s) in project area have been extirpated by past disruptions of habitat
Astragalus tener var titi coastal dunes milk-vetch	**Absent.** No historical records from Ballona area, and present dune habitat is too degraded to support species
Camissonia lewisii Lewis's evening primrose	**Present.** Occurs on dunes in Area B (about 5000 individuals) and sandy soils in Area C north of Culver (about 6000 individuals).
Cordylanthus maritimus var. *maritimus* salt marsh bird's- beak	**Absent.** Species is readily observable at the proper time of year, so lack of observation in a dry and wet year (1990 and 1995, respectively), combined with lack of historical collections at Ballona, argue that the species is absent from the project site.
Dithrea maritima beach spectaclepod	**Absent.** No historical records from Ballona area, and present dune habitat is too degraded to support species.
Erysimum insulare ssp. *suffrutescens* suffrutescent wallflower	**Present.** Population of 10 plants occurs on dunes in Area B.
Hemizonia parryi ssp. *australis* southern tarplant	**Present.** Population of about 30 plants occurs in southeast section of Area C.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	**Absent.** Any historical occurrence(s) in project area have been extirpated by past disruptions of habitat.
Nemacaulis denudada var. *denudata* coast woolly-heads	**Absent.** No historical records from Ballona area, and present dune habitat is too degraded to support species
Phacelia stellaris Brand's phacelia	**Absent.** No historical records from Ballona area; present dune habitat is too degraded to support species
Potentilla multijuga Ballona cinquefoil	**Absent.** Any historical occurrence(s) in project area have been extirpated by past disruptions of habitat.



Figures





LEGEND

PICKLEWEED SALT MARSH

FRESHWATER MARSH

0 300 600

SCALE: = 600

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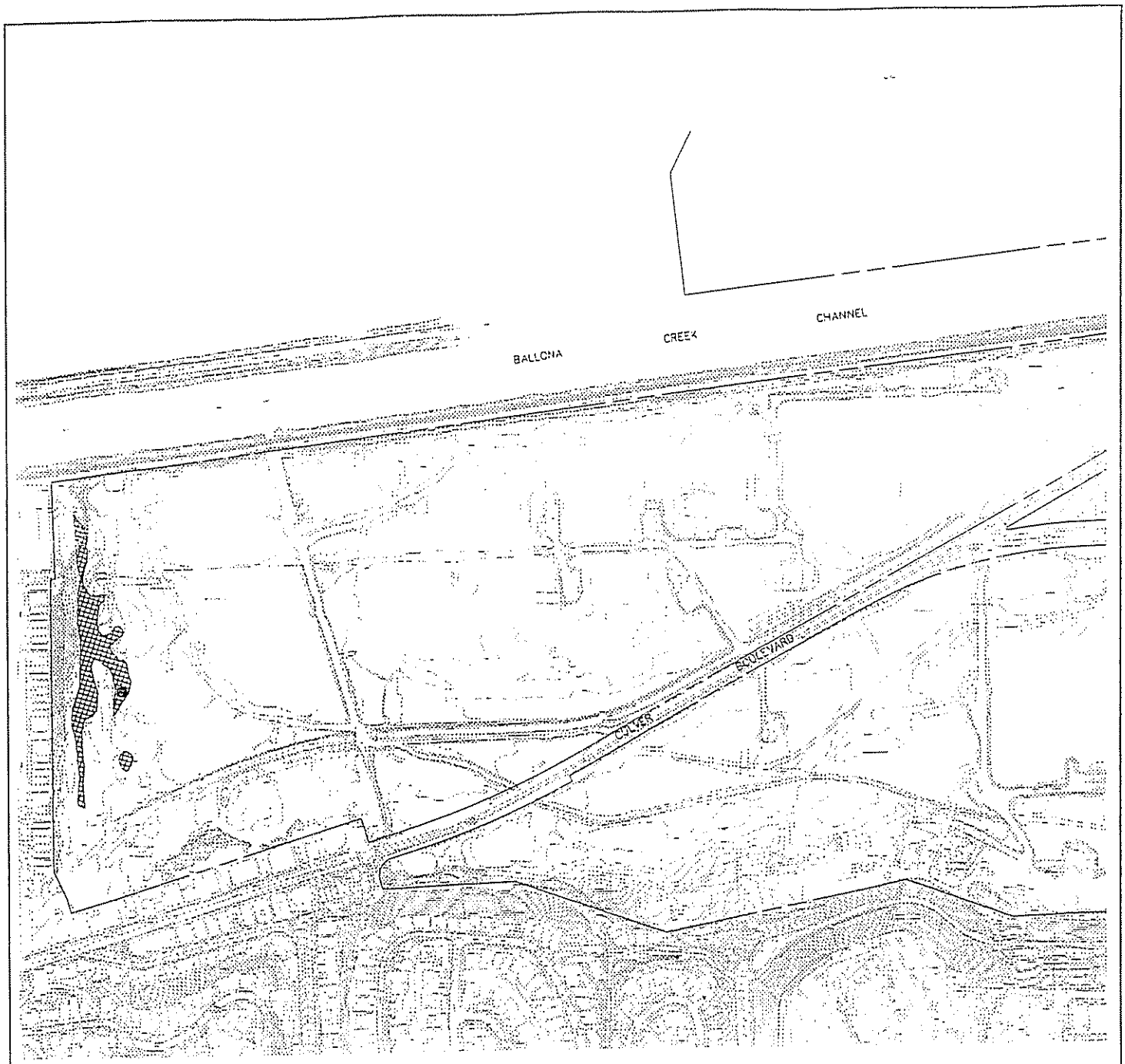
FIGURE 1
DETECTABLE AREAS OF WETLAND EXPANSION, 1995



LEGEND

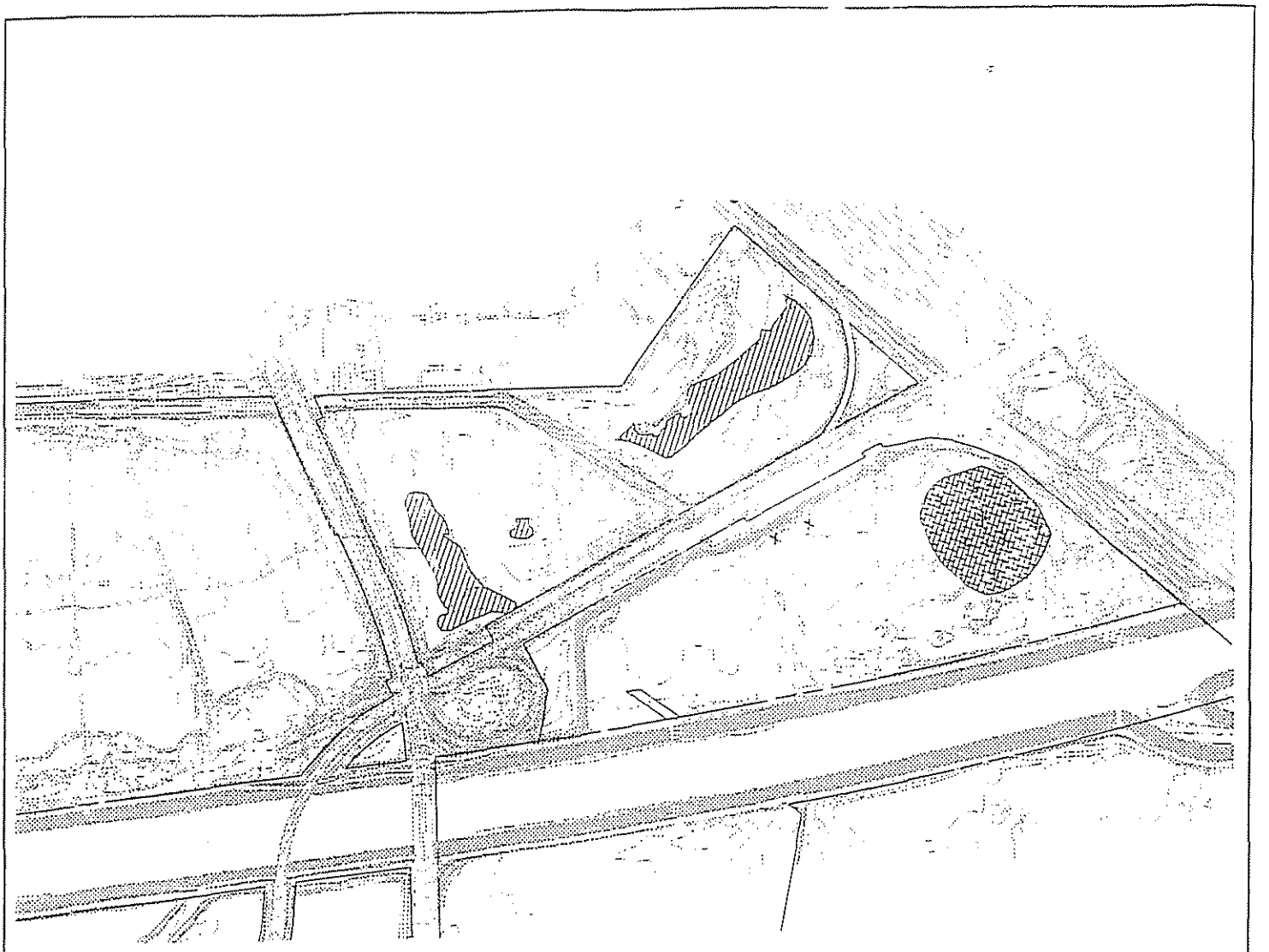
LEWIS'S EVENING PRIMROSE

SUFFRUTESCENT WALLFLOWER

SCALE: = 600

PSOMAS

FIGURE 2
LOCATIONS OF LEWIS'S EVENING PRIMROSE AND SUFFRUTESCENT WALLFLOWER ON DUNES OF AREA B



LEGEND

LEWIS'S EVENING PRIMROSE
(DENSE TO SCATTERED POPULATIONS)

SOUTHERN TARPLANT - SCATTERED
POPULATION OF APPROX. 30 TO 100 INDIVIDUALS

SOUTHERN TARPLANT - ISOLATED INDIVIDUAL

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SCALE: 1" = 600'

FIGURE 3
LOCATIONS OF LEWIS'S EVENING PRIMROSE AND SOUTHERN TARPLANT IN AREA C