

# APPENDIX I

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## RARE PLANT SURVEY REPORT

LANCASTER WATER RECLAMATION PLANT  
RARE PLANT SURVEY

July 21, 2003

Performed by  
Environmental Science Associates

Prepared for  
County Sanitation Districts of Los Angeles County, District 14

## SUMMARY

This report details the results of a rare plant survey conducted in May, 2003 by Environmental Science Associates' (ESA) botanists. The survey covered several proposed locations for expansion of the Lancaster Water Reclamation Plant (LWRP) operated by District 14 of the Los Angeles County Sanitation Districts (LACSD) and is referred to in this document as the LWRP rare plant study area. The areas surveyed are considered potential locations for new LWRP storage reservoirs. Twelve special status plant species have been observed or have the potential to occur in the vicinity of the LWRP rare plant study area. Three sensitive plant species were found by ESA within the LWRP rare plant study area. These species include Alkali mariposa lily, golden goodmania, and Mojave spine flower. None of these species are listed as rare, threatened, endangered under state or federal legislation, or of special concern by the state or federal governments. However, they are listed by the California Native Plant Society (CNPS), and thus, potential impacts to these species should be considered under the California Environmental Quality Act (CEQA).

## PROJECT LOCATION

The proposed project site is located in unincorporated Los Angeles County, approximately 5.5 miles north of Lancaster, California and immediately west of Edwards Air Force Base. The project entails the expansion of existing LWRP facilities and two alternatives include the construction of new storage reservoirs. The LWRP rare plant study area consisted of three areas proposed for locating new storage reservoirs (Figure 1). Areas A1 and A2 are located directly south of the existing LWRP storage reservoirs. Areas B1 and B2 are located directly to the north of the existing LWRP storage reservoirs. Area C is located across Highway 14 and to the west of the existing LWRP storage reservoirs.

## BIOLOGICAL SETTING

The LWRP rare plant study area consists primarily of open scrub lands, with the existing LWRP and storage ponds located in between Avenues C and D. There is one residence located in Area A1 and two residences located in Area C to the west of Highway 14. Agricultural disturbances are evident throughout the study area and appear to be most frequent and/or most recent west of Highway 14. Areas located east of Highway 14 and west of EAFB have generally not been disturbed by agriculture, although there is evidence of agriculture in Area A1. Area B1 contains the remains of what is labeled as a "test track" on the 1973 Teale Data Center topographic quadrangle for the area, with large areas that were paved in the past. Areas A2 and B2 would appear to be the least disturbed and vegetation appears to occur in a relatively natural state, with the exception of the remnants of a residence in the middle portion of Area B2 north of Avenue C.



The easternmost portion of Area A1 and the southeastern corner of Area C contain bermed rectangular areas that are labeled as “duck ponds” on the 1973 Teale Data Center topographic quadrangle, and these areas are highly disturbed.

### *PLANT COMMUNITIES*

The LWRP rare plant study area is primarily dominated by shadscale scrub. Other communities, including alkali sacaton, claypan and alkali flat, and dry wash communities, occur infrequently. Each community is described below based on field observations, Holland (1986) and Sawyer and Keeler-Wolf (1995) plant classification systems, and Hickman (1993) nomenclature.

**Shadscale scrub.** Shadscale scrub is the dominant plant community in all portions of the rare plant study area. The description of shadscale scrub is consistent with halophytic-phase saltbush scrub as described in *Biological Resources Environmental Planning Technical Report: Basewide Vegetation and Wildlife Surveys and Habitat Quality Analysis* (Mitchell et al. 1993). Shadscale scrub occurs on poorly-drained flats with heavy, highly alkaline soil. Dominant shrub species observed include shadscale (*Atriplex confertifolia*), four-wing saltbush (*A. canescens*), and rubber rabbitbrush (*Chrysothamnus nauseosus*). Shallow depressions interspersed between patches of shadscale scrub support native and non-native species including goldfields (*Lasthenia californica*), pygmy primrose (*Oenothera pterosperma*), redstem filaree (*Erodium cicutarium*), and gilia (*Gilia brecciarum*). Foxtail chess (*Bromus madritensis* ssp. *rubens*) commonly dominates upland disturbed areas between patches of shadscale scrub. In some areas, large patches of Mojave spineflower (*Chorizanthe spinosa*), golden goodmania (*Goodmania luteola*), arrow scale (*Atriplex phyllostegia*) or diffuse woolly star (*Eriastrum diffusum*) occur in monotypic patches on slightly higher ground within open depressions between shadscale scrub.

**Alkali sacaton.** This community primarily consists of dense stands of alkali sacaton (*Sporobolus airoides*). Alkali sacaton occurs on more or less permanently moist, alkaline soils (Holland 1986) and was infrequently observed. Alkali mariposa lily was an infrequent associate in these areas. Saltgrass (*Distichlis spicata*) and popcorn flower (*Plagiobothrys* sp.) were also observed in areas appearing to hold more moisture. Alkali sacaton was noted to occur primarily in Area A1 and A2.

**Alkali flats and claypans.** Alkali flats and claypans consist of barren salt-crusting depressions that are generally devoid of vegetation. Alkali flats generally have sandy soils and consist of a mosaic of generally low relief, barren to sparsely vegetated depressions interspersed with hummocks of slightly higher elevation. These higher areas are still subject to periodic inundation and generally support relatively dense cover consisting of low-growing vegetation, such as red-stem filaree, shadscale, arrow scale, Mojave spineflower, and golden goodmania. Alkali flats are found throughout the study area and are commonly associated with the network of washes that drain the area towards the southeast. Claypan soils are poorly drained and are highly alkaline. Claypan depressions are primarily confined to the southeasternmost portions of the study area (Area A2 and the southern portion of B2), where soils appear to have been less disturbed than in the bulk of the study area. Occasionally, the edges of claypans support species adapted to

wetland conditions, including desert alyssum (*Lepidium fremontii*), saltgrass, and comb-bur (*Pectocarya* sp.).

Dry wash. Great basin sagebrush (*Artemisia tridentata*) is the dominant species along the most highly-incised washes and drainages. Shadscale occurs along less-incised drainages and washes. Alkali mariposa lily (*Calochortus striatus*) occurs along a number of the washes in the study area, especially when these washes exhibit defined flood terraces with otherwise sparse vegetation. Dry washes typically convey water after heavy rain storms.

In addition to the above communities, dense stands of salt cedar (*Tamarix ramosissima*) were found in isolated areas, most often occurring with obvious evidence of previous habitation, such as concrete pads for housing, and appearing to have been planted as windbreaks. Isolated individuals of Joshua tree (*Yucca brevifolia*) were also infrequently noted in the study area, primarily in the easternmost portions. A full list of plant species observed is presented in the *Survey Results* section below.

### *SPECIAL STATUS PLANT SPECIES*

Twelve special status plant species<sup>1</sup> have been observed or have the potential to occur in the vicinity of the LWRP rare plant study area. See Table 1 below for the name, occurrence information, period of identification, habitat, and status of each species.

Three of the species identified in Table 1 were observed within the study area: Alkali mariposa lily (CNPS List 1B), golden goodmania (CNPS List 4), and Mojave spine flower (CNPS List 4). These species have no designated status or protection under federal or state endangered species legislation but are recognized as rare or endangered, or potentially at risk of becoming so, by the California Native Plant Society. CNPS List 1B species are considered to be rare, threatened, or endangered in California and elsewhere. CNPS List 4 species are plants of limited distribution and this list is considered to be a watch list.

Section 15380 of CEQA provides a definition of endangered, rare, or threatened species that must be considered under the CEQA process that includes those species listed under the federal and state endangered species acts. Subsection 15380 (d) states that species not so listed shall be considered to be endangered, rare, or threatened under CEQA if they can be shown to meet the following criteria:

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<sup>1</sup> Special status species are defined as listed plant and animal species that receive specific protection defined in federal or state legislation (Endangered Species Act), and are formally designated as endangered, threatened or rare under state or federal legislation. Also included in this definition are species that have no formal listing status as threatened or endangered, but are regarded as locally "rare," "sensitive," or "species of concern" on the basis of adopted policies and expertise of federal, state or local resource agencies, or local organizations with acknowledged expertise, such as the California Native Plant Society. Species that meet the criteria of Section 15380 of the California Environmental Quality Act or the California Native Plant Protection Act are defined as special status species. In general, plants constituting CNPS List 1A, 1B or 2 meet the definitions of California Department Fish and Game Code Section 1901 (Native Plant Protection Act) and/or Sections 2062 and 2067 (California Endangered Species Act), and are protected as such.

- the species' survival and reproduction in the wild are in immediate jeopardy from loss of habitat, changes in habitat, competition, predation, or other factors;
- although not presently at risk of extinction, the species exists in such small numbers throughout all, or a significant portion, of its range that it may become endangered if its environment worsens; or
- the species is likely to become endangered within the foreseeable future throughout all, or a significant portion of, its range and may be considered "threatened" as that term is used in the Federal Endangered Species Act.

In general, plants appearing on CNPS List 1B or 2 are considered to meet CEQA's Section 15380 criteria and effects to these species are considered "significant." Additionally, plants listed on CNPS List 1B and List 2 meet the definition of Section 1901 of Fish and Game Code, Chapter 10 (Native Plant Protection Act). Species appearing on CNPS List 4 are uncommon enough from a statewide perspective that their status should be monitored regularly to determine their degree of endangerment or rarity but should not be presumed to meet the criteria above unless it can be demonstrated.

Table 1  
Special Status Plant Species Observed or Potentially Present in the LWRP Rare Plant Study Area, North of Lancaster, California

Plant Species Common name ( <i>Scientific name</i> )	Site Occurrence	Survey / Identification Period	Habitat	Status USFWS/CDFG/ CNPS
Lancaster milkvetch ( <i>Astragalus preussii</i> var. <i>laxiflorus</i> )	Known to occur near Lancaster (CNPS, 2003a). Not observed within LWRP rare plant study area (ESA, 2003).	April – May	Areas of high water table in halophytic saltbush scrub., alkaline flats, gravelly or sandy washes, and along draws	--/--List 1B
Alkali mariposa lily ( <i>Calochortus striatus</i> )	Observed in 1993 and 1995 at EAFB (TetraTech, 1995c); Observed in 1995 along Sierra Highway near Avenue G (CDFG, 2003a). Observed within the rare plant survey study area (ESA, 2003).	April – June	Alkaline flats, claypans and sand dunes, especially in drainages. In halophytic saltbush scrub	--/--List 1B
Pygmy poppy ( <i>Canbya candida</i> )	Observed in 1995 at EAFB (Tetra Tech, 1995c). Not observed within LWRP rare plant study area (ESA, 2003).	April – May	Sandy or granitic places in Joshua tree woodland, Mojavean desert scrub	--/--List 1B
Parry's spineflower ( <i>Chorizanthe parryi</i> var. <i>parryi</i> )	Observed in 1896 in general vicinity of Lancaster (CDFG, 2001). Not observed within LWRP rare plant study area (ESA, 2003).	April – June	Dry sandy soils, dry slopes and flats	--/--List 3

Table 1 (cont.)

Plant Species Common name ( <i>Scientific name</i> )	Site Occurrence	Survey / Identification Period	Habitat	Status USFWS/CDFG/ CNPS
Mojave spineflower ( <i>Chorizanthe spinosa</i> )	Observed in 1995 at EAFB near Rosamond Dry Lake (Tetratich, 1995a). Observed within the LWRP rare plant study area (ESA, 2003).	April – July	Bare slopes and flats in saltbush scrub	--/--/List 4
Desert cymopterus ( <i>Cymopterus deserticola</i> )	Observed in 1993 at EAFB (EAFB, 1993b). Not observed within LWRP rare plant study area (ESA, 2003).	March - May	Sandy swales and along sandy washes, loose sandy soils of flats in old dune areas; Joshua tree woodland	FSC/--/List 1B
Hoover's eriastrum ( <i>Eriastrum hooveri</i> )	Jepson shows more coastal distribution. CNPS shows in LA county. Not observed within LWRP rare plant study area (ESA, 2003).	Mar-Jul	Chenopod scrub, drying grassy areas	FT/--/List 4
Barstow wooly sunflower ( <i>Eriophyllum mohavense</i> )	Observed in 1995 at EAFB (Tetra Tech, 1995d). Not observed within LWRP rare plant study area (ESA, 2003).	April – May	Rises between sinks in xerophytic saltbush scrub, silty or sandy areas	FSC/--/List 1B
Golden goodmania ( <i>Goodmania luteola</i> )	Observed in 1995 at EAFB near Rosamond Dry Lake (Tetra Tech, 1995a). Observed within the LWRP rare plant study area (ESA, 2003)	April – August	Salt-crust sand dunes or sandy soils in halophytic saltbush scrub	--/--/List 4
Sagebrush loeflingia ( <i>Loeflingia squarrosa</i> var. <i>artemisiarum</i> )	Observed within 0.5 miles of the LWRP (CDFG, 2003a). Not observed within LWRP rare plant study area (ESA, 2003).	April – May	Sand dunes in halophytic scrub	--/--/List 2
Crowned onion ( <i>Muilla coronata</i> )	Observed 1977 at EAFB (CalFlora, 2001). Not observed within LWRP rare plant study area (ESA, 2003).	March – April	Water saturated soils in xerophytic saltbush scrub	--/--/List 4
Parish's alkali grass ( <i>Puccinellia parishii</i> )	No observations in area. Not observed within LWRP rare plant study area (ESA, 2003).	April – May	Alkali springs and seeps	--/--/List 1B

EAFB = Edwards Air Force Base

## METHODS

Field surveys were conducted from May 5 through May 9, 2003 by Y. Molette, Botanist, and M. Lowe, Botanist. A total of 92 person-hours were spent surveying the study area shown in Figure 2.



Four belt transects were walked for each ¼ section of the study area<sup>2</sup>. Belt transects were walked in a meandering or zig-zag pattern to increase coverage. In this fashion, each transect covered a belt approximately 500 feet wide. Along each transect plant communities were characterized and all plant species observed were noted to the extent of determining rarity. Locations of special status species were mapped in the field with two different methods: by using aerial photos to determine species location and by using a Garmin Etrex GPS unit. Level of accuracy for the GPS unit averaged within approximately 4 meters. Population size and density were also noted for many locations. All species location data was mapped in Arc 8 and is presented in Figures 3 through 6.

## SURVEY RESULTS

Table 2 lists plant species observed during the survey. Figure 1 depicts the distribution of each special status species observed within the study area. Details on population locations, habitat, and densities for each identified sensitive species follow. Attachment A of this report includes California Native Species Field Survey Forms completed per California Department of Fish and Game specifications for each identified sensitive species.

Table 2  
Plant Species Observed in the LWRP Rare Plant Study Area, North of Lancaster,  
California

Species	Common name	Family
<i>Achyrachaena mollis</i> *	blow-wives	Asteraceae
<i>Allium</i> sp.*	onion	Liliaceae
<i>Amsinckia tessellata</i> var. <i>tesselata</i> *	devil's lettuce	Boraginaceae
<i>Artemisia tridentata</i> *	Great Basin sagebrush	Asteraceae
<i>Atriplex canescens</i> *	four-wing saltbush	Chenopodiaceae
<i>Atriplex confertifolia</i> *	shadscale	Chenopodiaceae
<i>Atriplex spinifera</i> *	Mojave saltbush	Chenopodiaceae
<i>Atriplex phyllostegia</i> *	arrow scale	Chenopodiaceae
<i>Bromus madritensis</i> ssp. <i>rubens</i>	foxtail chess	Poaceae
<i>Calochortus striatus</i> *	alkali mariposa lily	Liliaceae
<i>Centaurea solstitialis</i>	yellow star-thistle	Asteraceae
<i>Centaurea</i> sp.		Asteraceae
<i>Centromadia pungens</i> ssp. <i>pungens</i> *	common spikeweed	Asteraceae
<i>Chaenactis fremontii</i> *	desert pincushion	Asteraceae
<i>Chamomilla suaveolens</i>	pineapple weed	Asteraceae
<i>Chorizanthe spinosa</i> *	Mojave spineflower	Polygonaceae
<i>Chrysothamnus nauseosus</i> *	rubber rabbitbrush	Asteraceae

<sup>2</sup> Using similar conditions of previously-surveyed highly disturbed sites, locations of target species for the eastern ¼ section of A1 were estimated.

Table 2 (cont.)

Species	Common name	Family
<i>Descurainia sophia</i>	tansy mustard	Brassicaceae
<i>Distichlis spicata</i> *	saltgrass	Poaceae
<i>Elymus glaucus</i> *	blue wild rye	Poaceae
<i>Ephedra nevadensis</i> *	Mormon tea	Ephedraceae
<i>Eriastrum diffusum</i> *	diffuse woolly star	Polemoniaceae
<i>Eriogonum deflexum</i> *	skeleton weed	Polygonaceae
<i>Eriogonum sp.</i> *		Polygonaceae
<i>Erodium botrys</i>	filaree	Geraniaceae
<i>Erodium cicutarium</i>	filaree	Geraniaceae
<i>Erysimum capitatum</i> ssp. <i>capitatum</i>	western wallflower	Brassicaceae
<i>Gilia brecciarum</i> *		Polemoniaceae
<i>Goodmania luteola</i> *	Golden goodmania	Polygonaceae
<i>Grayia spinosa</i> *	hop-sage	Chenopodiaceae
<i>Heliotropium curassavicum</i>	heliotrope	Boraginaceae
<i>Hordeum depressum</i> *		Poaceae
<i>Hordeum leporinum</i>	hare barley	Poaceae
<i>Kochia californica</i> *	rusty molly	Chenopodiaceae
<i>Lasthenia californica</i> *	California goldfields	Asteraceae
<i>Lepidium fremontii</i> *	desert alyssum	Brassicaceae
<i>Lepidium oxycarpum</i> *		Brassicaceae
<i>Lepidium perfoliatum</i>		Brassicaceae
<i>Oenothera pterosperma</i> *	pygmy primrose	Onagraceae
<i>Opuntia sp.</i> *	beaver tail	Cactaceae
<i>Navarretia sp.</i> *		Polemoniaceae
<i>Pectocarya sp.</i>	comb-bur	Boraginaceae
<i>Phacelia fremontii</i> *	yellow throats	Hydrophyllaceae
<i>Phacelia ramosissima</i> *		Hydrophyllaceae
<i>Phacelia sp.</i> *		Hydrophyllaceae
<i>Plagiobothrys sp.</i> *	popcorn flower	Boraginaceae
<i>Polypogon monospermiensis</i>	beard grass	Poaceae
<i>Rafinesquia neomexicana</i> *	desert chicory	Asteraceae
<i>Salsola tragus</i>	Russian thistle	Chenopodiaceae
<i>Schismus arabicus</i>	Mediterranean grass	Poaceae
<i>Sporobolus airoides</i> *	alkali sacaton	Poaceae

Table 2 (cont.)

Species	Common name	Family
<i>Tamarix</i> sp.	tamarisk	Tamaricaceae
<i>Taeniatherum caput-medusae</i>	medusa head	Poaceae
<i>Xanthium</i> sp.	cockle-bur	Asteraceae
<i>Yucca brevifolia</i> *	Joshua tree	Agavaceae

\*native species

Source: ESA, 2003

Alkali mariposa lily: Alkali mariposa lily was found throughout the study area, with the highest densities occurring directly north of the LWRP in the southernmost portions of Areas B1 and B2. Densities throughout much of Area B1 ranged from 15-25 plants/m<sup>2</sup> to 50-100 plants/m<sup>2</sup>. This population is contiguous with a population mapped directly to the east on Edwards Air Force Base extending from Paiute Ponds along Avenue C west to just over the Base's western border (Tetra Tech, Inc. 1995c). Greene and Sanders (no date) concluded that an extensive population of alkali mariposa lily, consisting of tens of thousands of plants, occurs along the Sierra Highway from at least Avenue G to Avenue B and, perhaps, beyond. The results of this survey help to support that conclusion as well as show that the species also occurs to the west of Highway 14, although in much more widely scattered, smaller populations and at much lower densities.

The species was found in several different habitats. In the easternmost parts of the study area the plants occurred around the edges of hummocks in alkaline flats with low topographic relief and also along washes, particularly those with floodplain terraces. In Area C, while population densities were lower than those found in the areas east of Highway 14, the highest densities were found along drainages and washes, although the species was occasionally also found on sandy alkaline flats or growing within the canopy of shrubs such as shadscale or rabbitbrush. While large numbers of alkali mariposa lily were blooming at the time of the survey, the majority of individuals observed exhibited only buds. In a few areas most individuals exhibited only vegetative growth, indicating, perhaps that disturbance was recent enough that plants mature enough to bloom were not present in these areas.

Golden goodmania: Golden goodmania was found throughout the study area. Highest densities of this species occur in Area A2, the northern portion of Area B2, and in the westernmost portion of Area C, where the largest populations were observed. Golden goodmania was found almost exclusively on sandier soils in alkali flats where there was little topographic relief between the generally bare flats and vegetated hummocks. The species appeared to prefer the lower to middle elevations of the alkali flat mosaic. Populations ranged from 10's of individuals to 1000's and in size from 10 to 100's of square feet. Nearly all plants observed were in bloom at the time of the survey.

Mojave spineflower: Mojave spineflower covers Area C almost exclusively, where populations ranging from 50 individuals to thousands were noted. Only a few, relatively small, scattered populations were noted elsewhere in the study area. This species tended to occupy the middle to higher elevations of alkali flats with low topographic relief and also occurred along several washes in association with alkali mariposa lily. Although some individuals were in bloom, most plants observed had yet to flower at the time of the survey.

## ASSESSMENT OF POTENTIAL IMPACTS ON SPECIAL STATUS PLANTS

Expansion of the existing LWRP through the construction of new storage reservoirs located within the study area as defined in this report (see Figure 1) would result in the loss of populations of three special status plant species: alkali mariposa lily (CNPS List 1B), golden goodmania (CNPS List 4), and Mojave spineflower (CNPS List 4). Section 15380 of the CEQA Guidelines defines endangered, rare and threatened species for purposes of CEQA evaluation. Under this CEQA definition, these three species would be considered sensitive species to be evaluated through the CEQA process.

The CNPS R-E-D Code System was used to determine whether the CNPS List 4 species (golden goodmania and Mojave spineflower) would be considered sensitive per CEQA, Section 15380. There are three components to the code system:

- **Rarity:** which addresses nature and extent of the plant's distribution as well as the numbers of individuals or known populations;
- **Endangerment:** which addresses the plant's perceived vulnerability to extinction for any reason; and
- **Distribution:** which focuses on the overall range of the plant.

Each component of the code is divided into three classes or degrees of concern, represented by the numbers 1 through 3, with higher numbers indicating a greater degree of concern.

The R-E-D Code for golden goodmania is 1-2-2. This indicates that the species is rare but found in sufficient numbers and widely distributed enough that the potential for extinction is low at this time. It also indicated that the species is endangered in a portion of its range and that it is considered rare outside of California (CNPS 2003 b). Golden goodmania is known from seven counties in California, with no recent observations documented in Los Angeles County (CalFlora 2003) and no documented occurrences listed in the CNDDDB (CDFG 2003b). However, based on a general aerial photographic analysis to determine suitable habitat for this species, it is likely that this species occurs outside of the LWRP rare plant study area within less disturbed areas. This species also occurs at Edwards Air Force Base. Although the species is fairly common throughout the study area, this List 4 species would appear to meet the criteria for consideration under

CEQA, especially given the rapidly urbanizing growth predicted for the Lancaster area (Southern California Association of Governments, 2000).

The R-E-D Code for Mojave spineflower is 1-2-3. These numbers indicate that the species is rare but found in sufficient numbers and widely distributed enough that the potential for extinction is low at this time. They also indicated that the species is endangered in a portion of its range and is endemic to California. This List 4 species was not as common as golden goodmania in the survey area and is endemic to three counties in California. Most documented occurrences are from Kern County and a number of recent sightings are from Edwards Air Force Base. However, two of three documented occurrences in Los Angeles County are historical and threats to the species in the Lancaster area include the urban growth mentioned above. This species would also appear to meet the criteria for consideration under CEQA.

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## ATTACHMENT A

### California Native Species Field Survey Forms



For Office Use Only

Source Code \_\_\_\_\_ Quad Code \_\_\_\_\_  
 Elm Code \_\_\_\_\_ Occ. No. \_\_\_\_\_  
 EO Index No. \_\_\_\_\_ Map Index No. \_\_\_\_\_

Date of Field Work: 05 - 05-09 - 03

### California Native Species Field Survey Form

**Scientific Name:** Calochortus striatus

**Common Name:** Alkali manzanita lily

**Species Found?**  Yes  No If not, why?

Total No. Individuals 1000's Subsequent Visit?  yes  no  
 Is this an existing NDDDB occurrence? 23  yes, Occ. #  no  unk.

Collection? If yes: No Number Museum / Herbarium

**Reporter:** Martha Lowe / Yolanda Molette  
**Address:** 436 14th St., Ste. 600  
Oakland, CA 94612  
**E-mail Address:** mlowe@esassoc.com  
**Phone:** (510) 740-1707

Plant Information	Animal Information
Phenology: <u>20</u> % vegetative <u>80*</u> % flowering <u>0</u> % fruiting	# adults <input type="checkbox"/> # juveniles <input type="checkbox"/> # larvae <input type="checkbox"/> # egg masses <input type="checkbox"/> # unknown <input type="checkbox"/>
* 35% actually in flower; 45% in bud	breeding <input type="checkbox"/> wintering <input type="checkbox"/> burrow site <input type="checkbox"/> rookery <input type="checkbox"/> nesting <input type="checkbox"/> other <input type="checkbox"/>

**Location Description (please attach map AND/OR fill out your choice of coordinates, below)**

County: Los Angeles Landowner / Mgr.: Private

Quad Name: Rosamond Elevation: 2325 ft

T \_\_\_ R \_\_\_ Sec \_\_\_ , \_\_\_ 1/4 of \_\_\_ 1/4, Meridian:  H  M  S  Source of Coordinates (GPS, topo. map & type): GPS

T \_\_\_ R \_\_\_ Sec \_\_\_ , \_\_\_ 1/4 of \_\_\_ 1/4, Meridian:  H  M  S  GPS Make & Model Garmin Etrex

Datum:  NAD27  NAD83  WGS84  Horizontal Accuracy average of 5 meters meters/feet

Coordinate System: UTM Zone 10  UTM Zone 11  OR Geographic (Latitude & Longitude)

Coordinates: Easting/Longitude 118.15179 Northing/Latitude 34.79159

**Habitat Description** (plant communities, dominants, associates, substrates/soils, aspects/slope): Habitat is shadscale scrub occurring in a mosaic with alkali flats. Dominant species are Atriplex confertifolia, A. canescens and chrysothamnus nauseosus in shrub layer with Erodium cicutarium, Gilia breccarium, Oenothera pterodisperma, and non-native grasses in herb layer. Study area extends from 1/2 mile south of Avenue D to Avenue B and from Edwards Air Force Base boundary to approx. 1/4 mile east of 40th St. Population is included in that described in occurrence # 23 but extends west of Highway 14. 1000's of plants observed, with highest densities to east of Sierra Hwy and between water treatment plant and Avenue C.

Other rare species? Goodmania lutea, Chorizanthe spinosa

**Site Information** Overall site quality:  Excellent  Good  Fair  Poor

Current / surrounding land use: widely scattered residential, some agriculture, water treatment plant

Visible disturbances: Past agricultural uses, water impoundments, and residential uses

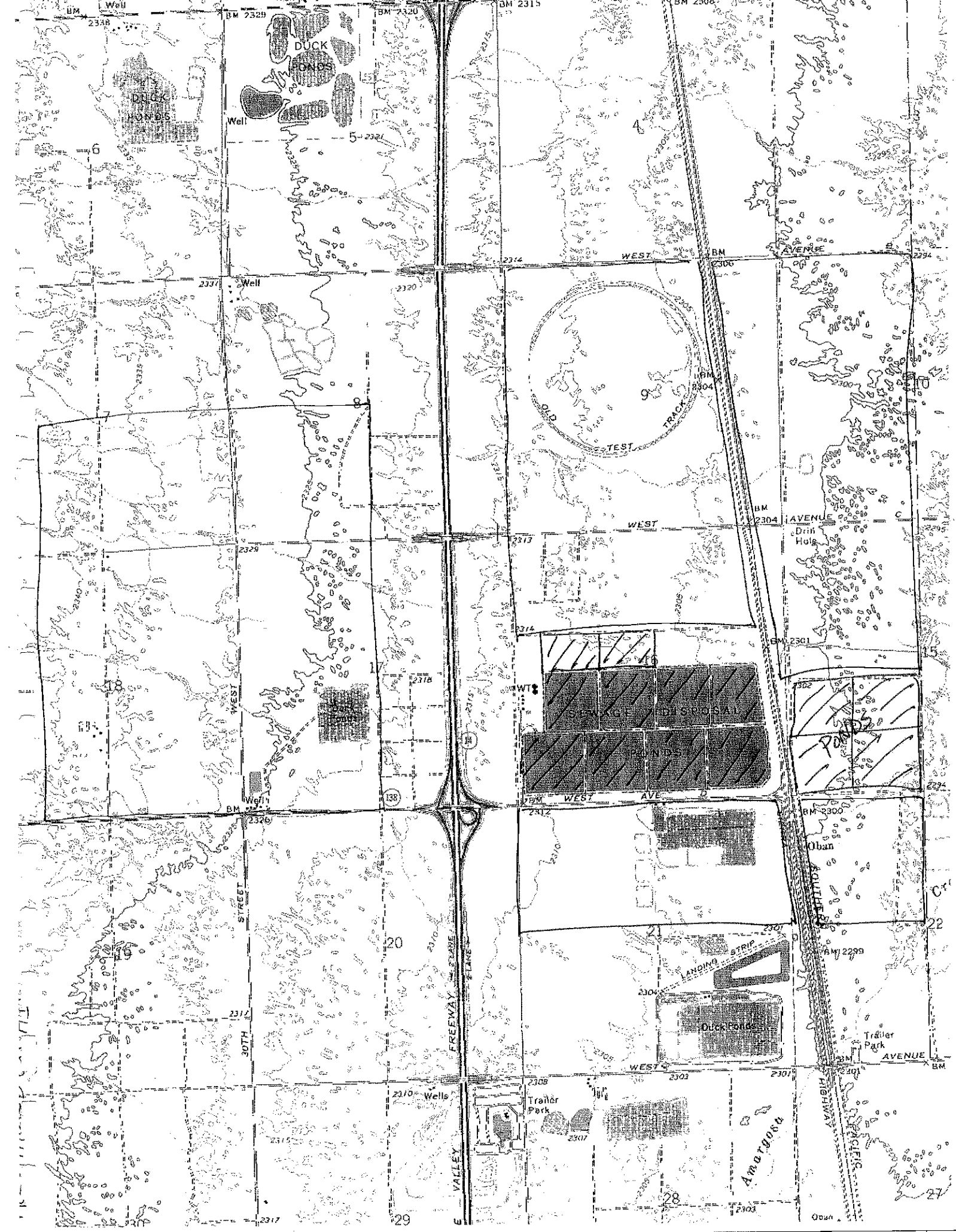
Threats: Development, land is privately owned and some acreage currently for sale

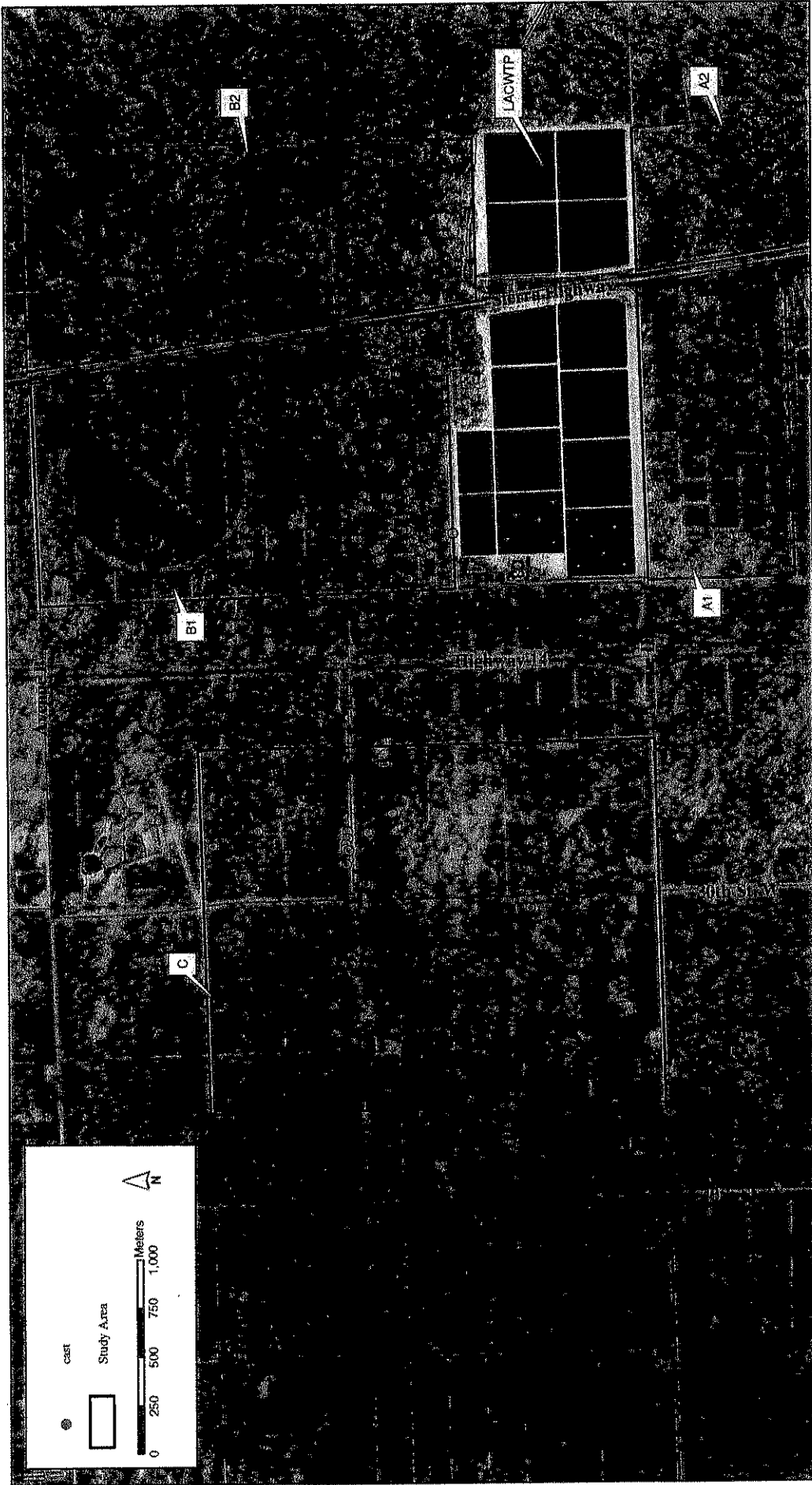
Comments:

<p><b>Determination:</b> (check one or more, and fill in blanks)</p> <input checked="" type="checkbox"/> Keyed (cite reference): <u>Jepson Manual</u> <input type="checkbox"/> Compared with specimen housed at: _____ <input checked="" type="checkbox"/> Compared with photo / drawing in: <u>Cal Flora Online</u> <input type="checkbox"/> By another person (name): _____ <input type="checkbox"/> Other: _____	<p><b>Photographs:</b> (check one or more)</p> <table style="width: 100%;"> <tr> <td>Plant / animal</td> <td><input type="checkbox"/></td> <td>Slide</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Habitat</td> <td><input type="checkbox"/></td> <td>Print</td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Diagnostic feature</td> <td><input type="checkbox"/></td> <td></td> <td></td> </tr> </table> <p>May we obtain duplicates at our expense? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no</p>	Plant / animal	<input type="checkbox"/>	Slide	<input type="checkbox"/>	Habitat	<input type="checkbox"/>	Print	<input checked="" type="checkbox"/>	Diagnostic feature	<input type="checkbox"/>		
Plant / animal	<input type="checkbox"/>	Slide	<input type="checkbox"/>										
Habitat	<input type="checkbox"/>	Print	<input checked="" type="checkbox"/>										
Diagnostic feature	<input type="checkbox"/>												

## Habitat Description (cont.):

Plants most often found around edges of hummocks in alkaline flats where topographic relief was low. Also along dry washes, especially when floodplain terraces were present and sparsely vegetated by other species. Densities were highest where disturbance was either more removed in the past or less severe. Occasional, lower density occurrences in more recent or more disturbed areas where soils were sandier.





Project Name/200302 -  
 Figure 3  
 Title

SOURCE: XXX

*Distribution of Calochortus striatus*

For Office Use Only

Source Code \_\_\_\_\_ Quad Code \_\_\_\_\_  
 Elm Code \_\_\_\_\_ Occ. No. \_\_\_\_\_  
 EO Index No. \_\_\_\_\_ Map Index No. \_\_\_\_\_

Date of Field Work: 05-05-09-03

### California Native Species Field Survey Form

Scientific Name: Chonizonthe spinosa

Common Name: Hoja de spineflower

Species Found?  Yes  No If not, why?

Total No. Individuals 1000's Subsequent Visit?  yes  no  
 Is this an existing NDDDB occurrence?  no  unk.  
 Yes, Occ. # \_\_\_\_\_

Collection? If yes: No  
 Number \_\_\_\_\_ Museum / Herbarium \_\_\_\_\_

Reporter: Martha Lowe / Yolanda Molette  
 Address: 436 14th St., Ste. 600  
Oakland, CA  
 E-mail Address: mlowe@esassar.com  
 Phone: (Std) 740-1707

**Plant Information**

Phenology: 60 % vegetative 40 % flowering 0 % fruiting

**Animal Information**

# adults	# juveniles	# larvae	# egg masses	# unknown
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
breeding	wintering	burrow site	rookery	nesting
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Location Description (please attach map AND/OR fill out your choice of coordinates, below)**

County: Los Angeles Landowner / Mgr.: Private

Quad Name: Rosamond Elevation: 2320 ft

T \_\_\_\_\_ R \_\_\_\_\_ Sec \_\_\_\_\_, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian:  H  M  S  
 Source of Coordinates (GPS, topo. map & type): GPS

T \_\_\_\_\_ R \_\_\_\_\_ Sec \_\_\_\_\_, \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4, Meridian:  H  M  S  
 GPS Make & Model: Garmin Etrex

Datum:  NAD27  NAD83  WGS84  
 Horizontal Accuracy: 5 meters meters/feet

Coordinate System: UTM Zone 10  UTM Zone 11  OR Geographic (Latitude & Longitude)

Coordinates: Easting/Longitude 118.18473 Northing/Latitude 34.79149

**Habitat Description** (plant communities, dominants, associates, substrates/soils, aspects/slope): Habitat is mosaic of shade/scale scrub and alkali flats. Dominants are Atriplex confertifolia, A. canescens, and Chrysothamnus nauseosus in shrub layer with Erodium cicutarium, Gilia brecciarum, and non-native grasses in shrub layer. Study area extends from 1/2 mi. south of Avenue D to Avenue E and from Edwards Air Force Base to approx 1/4 mi east of 40th St. Most occurrences in fairly disturbed sandy soils west of Hwy 14 and East of 40th street. Individual populations ranged from less than 50 individuals to over 1000. Several occurrences east of Hwy 14 of smaller populations. Primarily occupied middle to higher elevations in alkali flats ->

Calochortus striatus, Goodmania luteola

**Site Information** Overall site quality:  Excellent  Good  Fair  Poor

Current / surrounding land use: Widely scattered residential, some agriculture, water treatment plant

Visible disturbances: Past agricultural, water impoundment, and residential uses

Threats: Development, agriculture. Land is privately owned, with some acreage

Comments: currently for sale.

**Determination:** (check one or more, and fill in blanks)

Keyed (cite reference): Jepson Manual

Compared with specimen housed at: \_\_\_\_\_

Compared with photo / drawing in: \_\_\_\_\_

By another person (name): \_\_\_\_\_

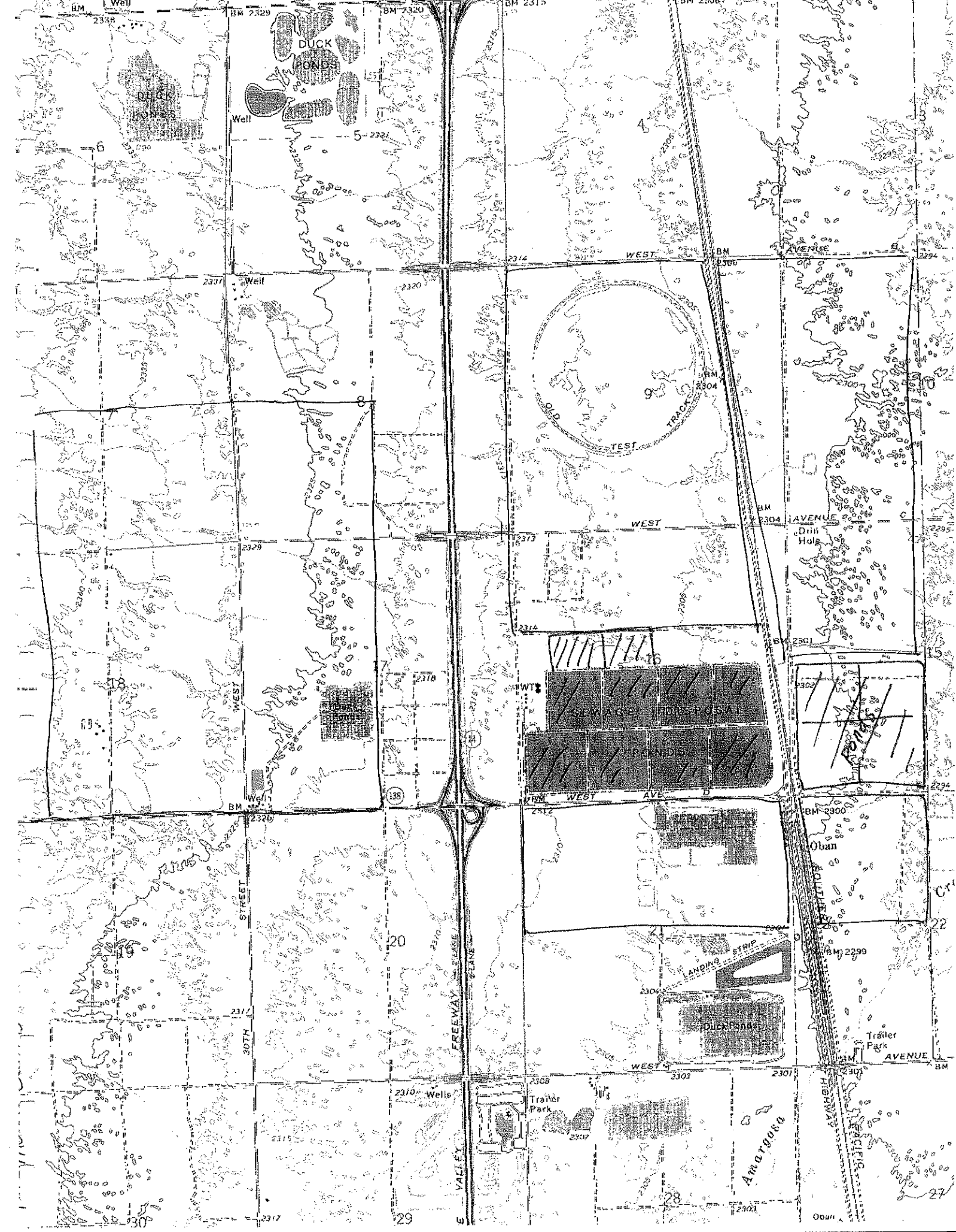
Other: \_\_\_\_\_

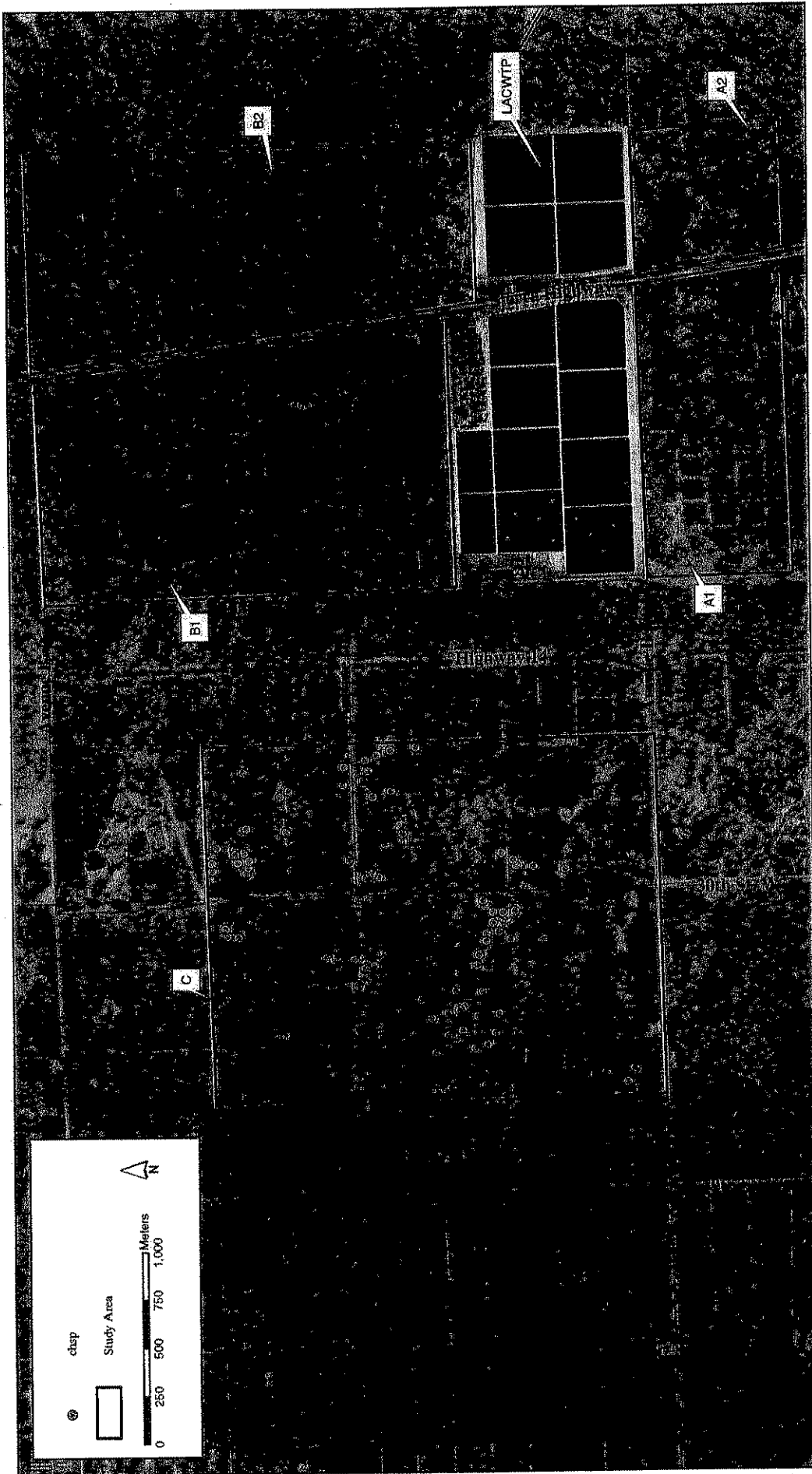
**Photographs:** (check one or more)

Plant / animal	Slide <input type="checkbox"/>	Print <input checked="" type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense?  yes  no

Habitat Description (cont.): where other vegetation was sparse.





Project Name 1200XXXX

Figure 5  
Title

*Distribution of Chorizanthe spinosa  
in the study area*

SOURCE: XXX



For Office Use Only

Source Code \_\_\_\_\_ Quad Code \_\_\_\_\_  
 Elm Code \_\_\_\_\_ Occ. No. \_\_\_\_\_  
 EO Index No. \_\_\_\_\_ Map Index No. \_\_\_\_\_

Date of Field Work: 05-25-09-03

### California Native Species Field Survey Form

Scientific Name: Goodmania luteola  
 Common Name: Golden goodmania

Species Found?  Yes  No If not, why?  
 Total No. Individuals 1000's Subsequent Visit?  yes  no  
 Is this an existing NDDDB occurrence?  no  unk.  
 Yes, Occ. # \_\_\_\_\_  
 Collection? If yes: No  
 Number \_\_\_\_\_ Museum / Herbarium \_\_\_\_\_

Reporter: Martha Lowe / Yolanda Molette  
 Address: 436 14th St., Ste. 600  
Oakland, CA 94612  
 E-mail Address: mlowe@esassac.com  
 Phone: (510) 740-1707

**Plant Information**

Phenology: 20 % vegetative 80 % flowering ? % fruiting

**Animal Information**

# adults  # juveniles  # larvae  # egg masses  # unknown   
 breeding wintering burrow site rookery nesting other

**Location Description (please attach map AND/OR fill out your choice of coordinates, below)**

County: Los Angeles Landowner / Mgr.: Private  
 Quad Name: Rosamond Elevation: 2325 ft  
 T \_\_\_ R \_\_\_ Sec \_\_\_ , \_\_\_ 1/4 of \_\_\_ 1/4, Meridian:  H  M  S  Source of Coordinates (GPS, topo. map & type): GPS  
 T \_\_\_ R \_\_\_ Sec \_\_\_ , \_\_\_ 1/4 of \_\_\_ 1/4, Meridian:  H  M  S  GPS Make & Model: Garmin Etrex  
 Datum:  NAD27  NAD83  WGS84  Horizontal Accuracy: 5 meters meters/feet  
 Coordinate System: UTM Zone 10  UTM Zone 11  OR Geographic (Latitude & Longitude)   
 Coordinates: Easting/Longitude 118.15179 Northing/Latitude 34.79159

**Habitat Description** (plant communities, dominants, associates, substrates/soils, aspects/slope): Habitat is mosaic of shadscale scrub and alkali flats. Dominants are Atriplex confertifolia, A. canescens, + Chrysothamnus nauseosus in shrub layer and Erodium cicutarium, Gilia brecciarum, and non-native grasses in herb layer. Study area extends from 1/2 mi S of Ave. D to Ave. B and from Edwards Air Force base boundary to @ 1/4 mi east of 40th St. Species found throughout but densities highest east of Sierra Hwy and west of 30th St. Populations ranged from 10's to 1000's of individuals. Found on sandy soils in alkaline flats with little topographic relief and little to no other vegetation. Other rare species? Calochortus striatus, Chorizanthe spinosa

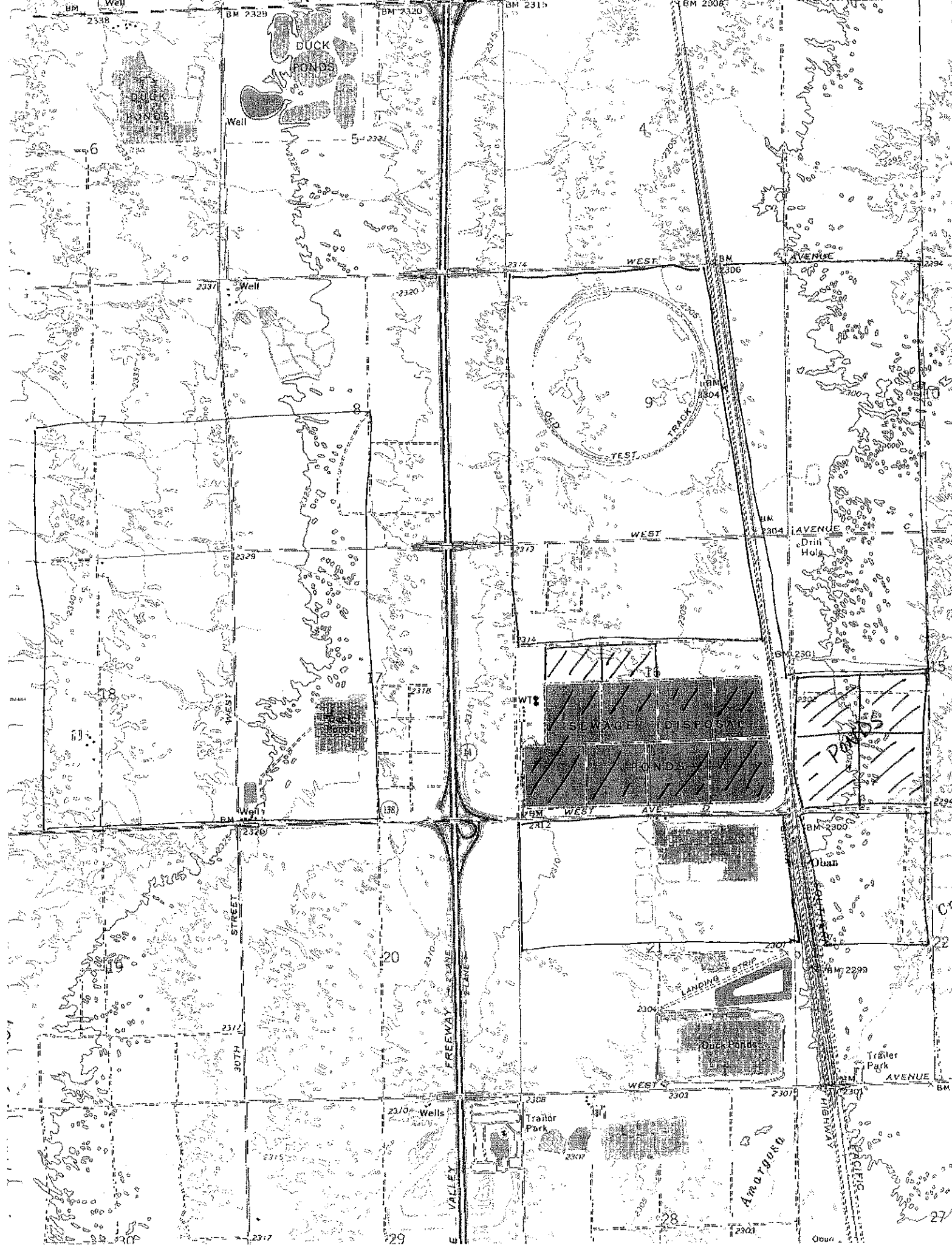
**Site Information** Overall site quality:  Excellent  Good  Fair  Poor  
 Current / surrounding land use: Widely scattered residential, some agriculture, water treatment plant  
 Visible disturbances: Past agricultural, water impoundment, and residential disturbances  
 Threats: Development, agriculture. Land is privately owned with some acreage  
 Comments: currently for sale

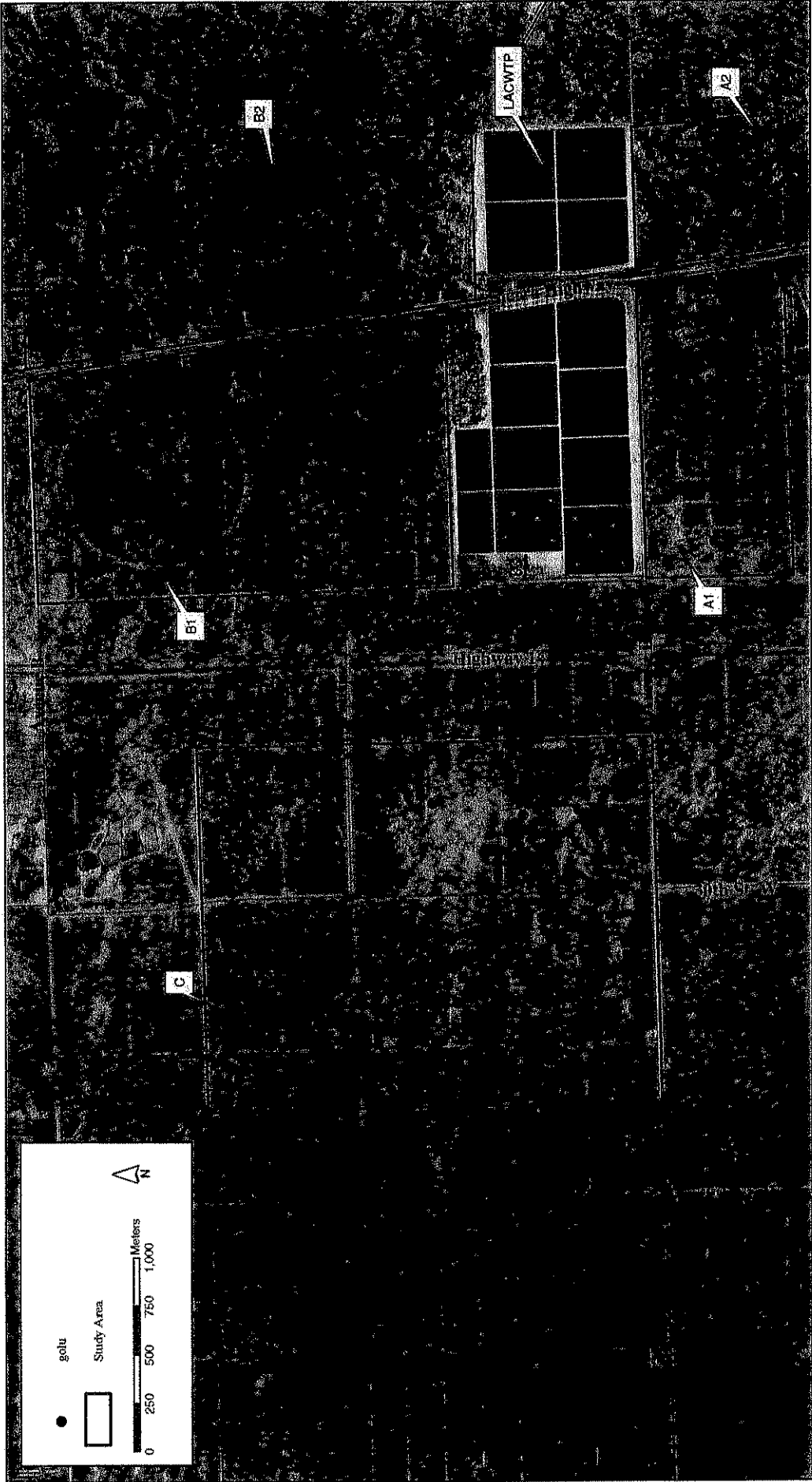
**Determination:** (check one or more, and fill in blanks)

Keyed (cite reference): Jepson Manual  
 Compared with specimen housed at: \_\_\_\_\_  
 Compared with photo / drawing in: Cal Flora online  
 By another person (name): \_\_\_\_\_  
 Other: \_\_\_\_\_

**Photographs:** (check one or more)

Plant / animal  Slide  Print   
 Habitat    
 Diagnostic feature    
 May we obtain duplicates at our expense?  yes  no





Project Name / 200XXXX \*  
**Figure 4**  
 Title

*Distribution of Goodmania luteola in the study area*