HELIX environmental planning, inc.

April 16, 2010

AEG-08.02

Heather Blair
Aspen Environmental Group
8801 Folsom Blvd Suite 290
Sacramento, CA 95826

**Subject: 2010 Rare Plant Survey Letter Report for Mojave Solar Project**

Dear Ms. Blair,

This letter reports the results of a rare plant survey conducted in Spring 2010 by HELIX Environmental Planning, Inc. (HELIX) for the proposed Mojave Solar Project.

## INTRODUCTION

Mojave Solar, LLC proposes to construct and operate a 250 megawatt nominal capacity solar energy facility on an approximately 1,778-acre site located in the Mojave Desert near Lockhart in San Bernardino County, California. The Mojave Solar Project is approximately 15 miles northwest of Barstow, 5 miles north of Highway 58, and is situated immediately southwest of Harper Dry Lake and southeast of an existing Solar Energy Generating System facility (Figures 1 and 2). The Mojave Solar Project site consists mostly of fallow agricultural fields, disturbed land and disturbed desert saltbush scrub vegetation communities.

## METHODS

As preparation for the Spring 2010 rare plant survey, HELIX reviewed the Botanical Survey Reports prepared by EDAW (EDAW 2008 and 2009) for the Mojave Solar [One] Project, and also performed a search of the California Department of Fish and Game's (CDFG's) California Natural Diversity Database (CNDDB; CDFG 2010).

HELIX biologists Sally Trnka and Jasmine Watts conducted the rare plant survey for the Mojave Solar Project on April 5, 6, and 7, 2010. The rare plant survey area encompassed the 350-acres surveyed by EDAW in 2009, plus a 250-foot buffer (223 acres; Figure 3). The rare plant survey was conducted by walking meandering transects throughout the survey area. The rare plant survey targeted three special status plant species that were identified as having a high to moderate potential to occur within the survey area: desert cymopterus (*Cymopterus deserticola*), Mojave fish-hook cactus (*Sclerocactus polyancistrus*), and Mojave spineflower (*Chorizanthe spinosa*). Prior to conducting the rare plant survey on site, known locations for these three species within 1-mile of the Mojave Solar Project site (Figure 4) were visited on April 5, 2010 to confirm their vegetative and/or blooming status.

## RESULTS

Fifty-five (55) plant species were observed within the survey area and are attached. None of the 55 species observed on site or within the 250-foot buffer during the Spring 2010 rare plant survey were sensitive or of special status. CNDDB records one location for desert cymopterus that slightly overlaps the southern portion of the survey area, but no desert cymopterus was observed in this area. On site species were predominantly non-native (i.e., red-stem filaree [*Erodium cicutarium*], mustard [*Brassica tournefortii* and *Sisymbrium irio*], schismus grass [*Schismus arabicus*], and Russian thistle [*Salsola tragus*]) with occasional patches of saltbush (*Atriplex polycarpa*) and native wildflowers (i.e., dandelion [*Malacothrix* spp.] and brown eyes [*Camissonia claviformis*]).

Two of the targeted plant species, desert cymopterus and Mojave fish-hook cactus, were identified and confirmed where they had been previously mapped offsite, approximately 0.8 mile south of the survey area. Photos of these two species are attached. The Mojave spineflower was not observed emerging or flowering where it had been previously mapped approximately 0.9 mile west of the survey area.

## CONCLUSION

The Spring 2010 rare plant survey results were negative and concur with the negative results reported by EDAW in 2008 and 2009 for the current survey area. The potential for plants to occur within the onsite survey area is very low given the disturbed nature of existing habitats (fallow agriculture, disturbed habitat, and disturbed saltbush scrub). If you have any comments or questions regarding this letter report, please feel free to contact me or Greg Mason at (619) 462-1515.

Sincerely,

Jasmine Watts
Biologist

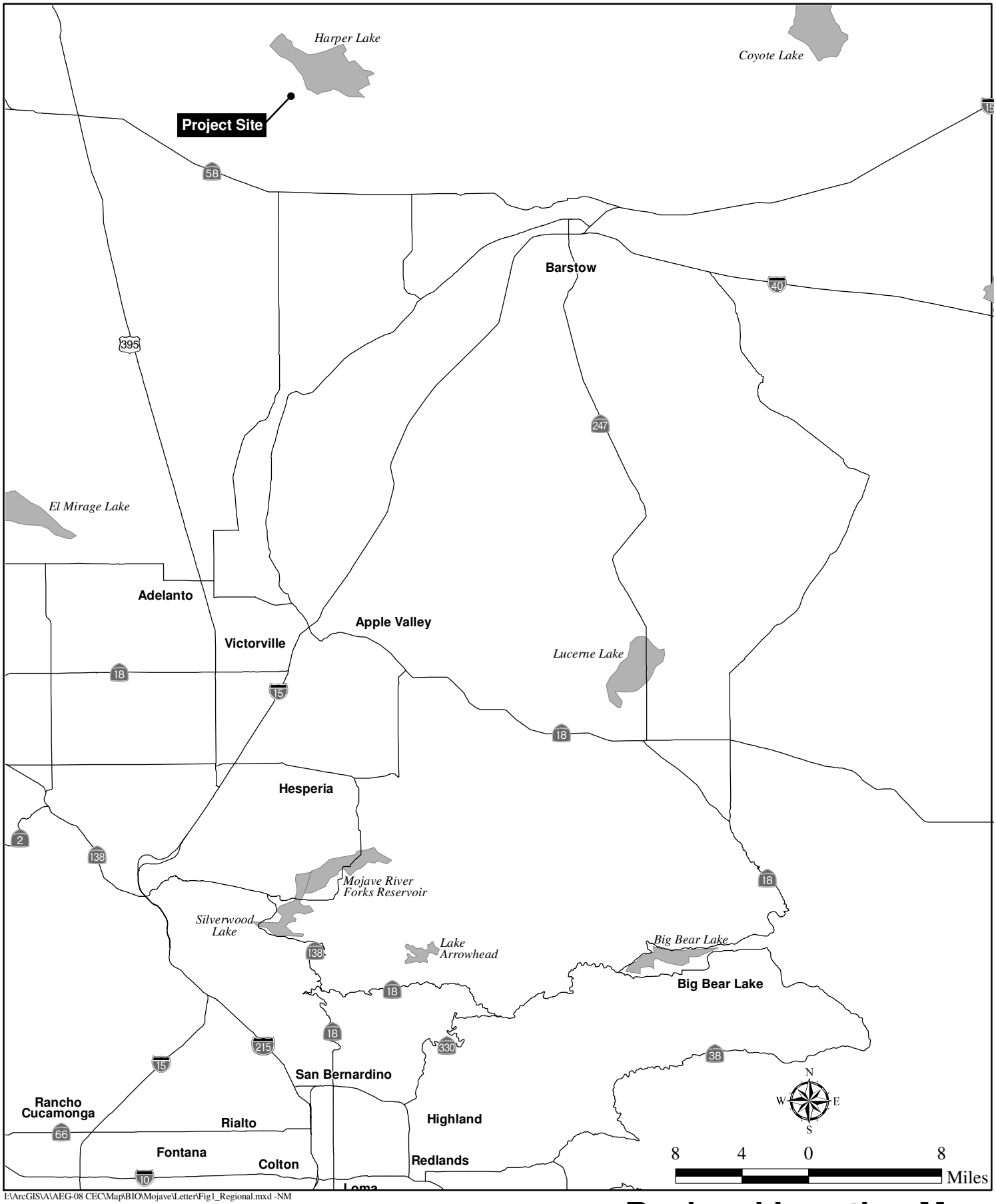
Enclosures: Figure 1 Regional Location Map
Figure 2 Project Location Map
Figure 3 Rare Plant Survey Area
Figure 4 Known Locations of Targeted Species
Plant Species Observed
Photos of Targeted Species from Known Locations

## REFERENCES

EDAW. 2009. Mojave Solar Project Letter Report for Spring 2009 Botanical Surveys. July 24.

2008. Mojave Solar One Project Botanical Survey Report. November (Revised February 2009).

California Department of Fish and Game. 2010. California Natural Diversity Database (CNDDB). March.

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# Regional Location Map

MOJAVE SOLAR PROJECT

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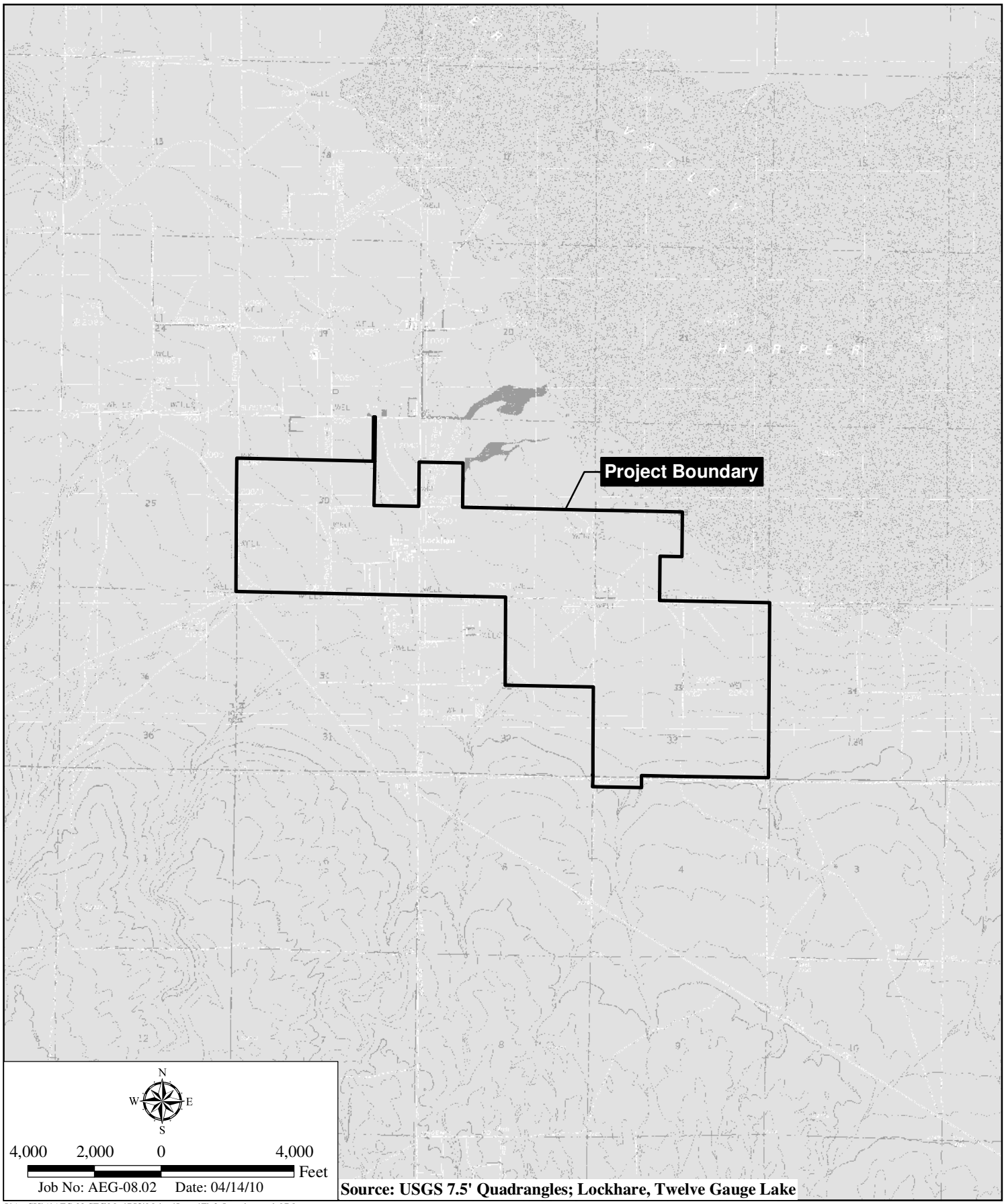
Figure 1

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# Project Location Map

MOJAVE SOLAR PROJECT

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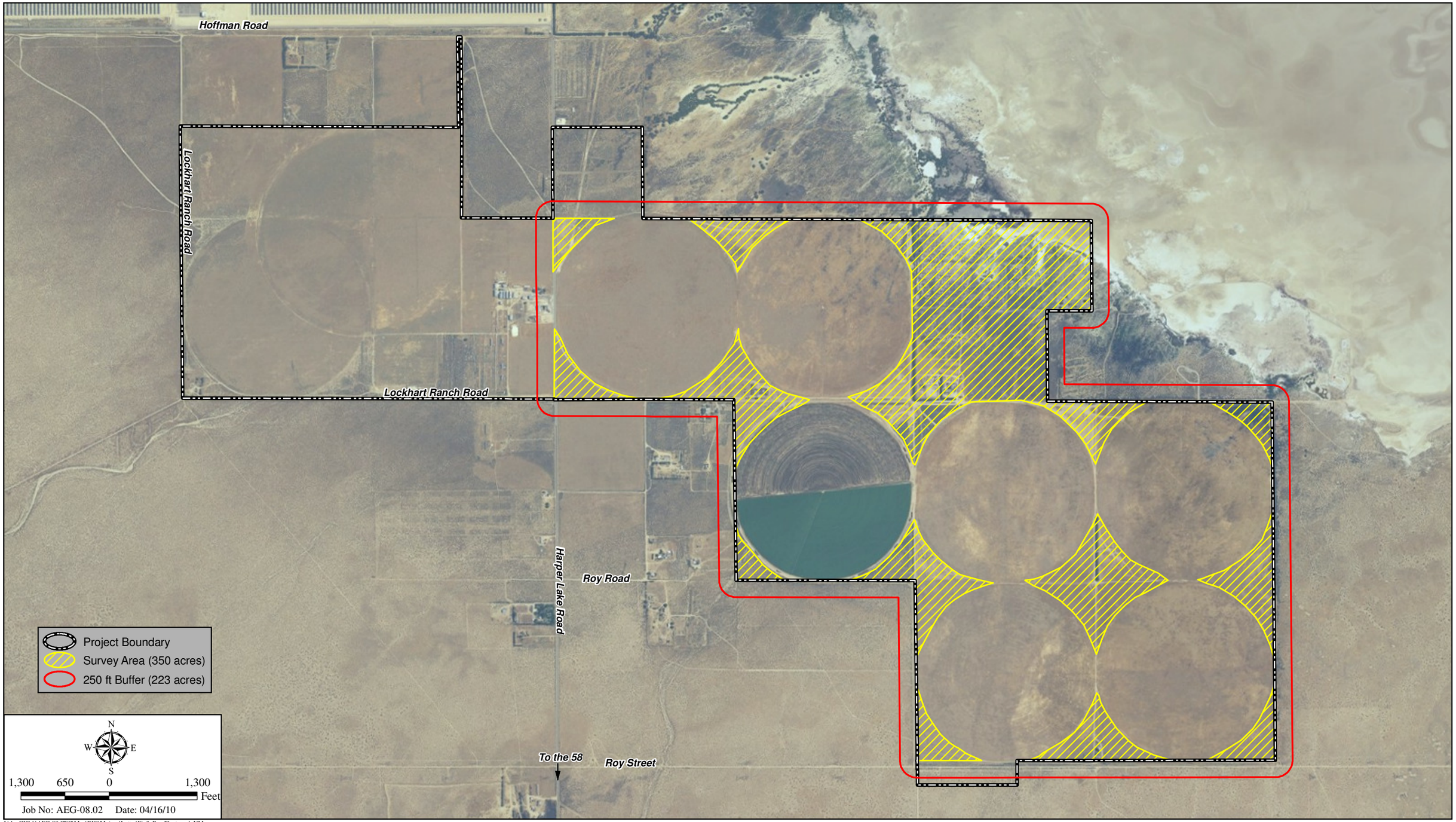
Figure 2

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# Spring 2010 Rare Plant Survey Area

MOJAVE SOLAR PROJECT

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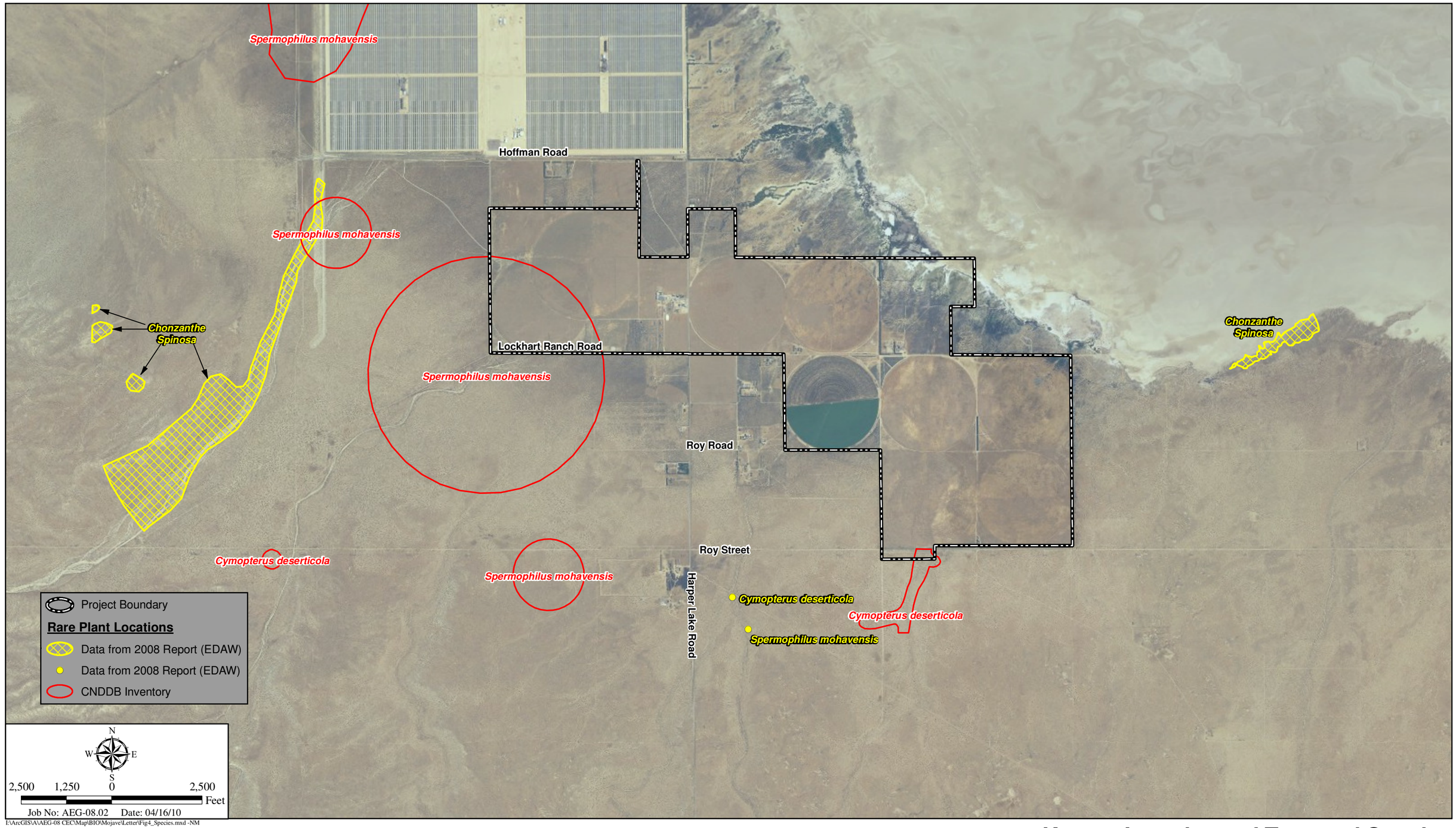
Figure 3




# Known Locations of Targeted Species

MOJAVE SOLAR PROJECT

Figure 4

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**PLANT SPECIES OBSERVED**
**Mojave Solar Project**

| FAMILY | SCIENTIFIC NAME | COMMON NAME |
|---|---|---|
| **ANGIOSPERMS: MONOCOTS** | | |
| Cyperaceae | *Scirpus robustus* | sedge |
| Poaceae | *Achnatherum hymenoides* | Indian ricegrass |
| | *Bromus madritensis* ssp. *rubens** | red brome, foxtail chess |
| | *Bromus tectorum** | cheat grass |
| | *Distichlis spicata* | saltgrass |
| | *Hordeum murinum* ssp. *leporinum** | hare barley |
| | *Schismus arabicus** | Arabian schismus |
| Typhaceae | *Typha* sp. | cattail |
| **ANGIOSPERMS: DICOTS** | | |
| Amaranthaceae | *Bassis hyssopifolia** | fivehook bassia |
| | *Atriplex polycarpa* | allscale saltbush |
| | *Atriplex spinifera* | spinescale saltbush |
| | *Salsola tragus** | Russian thistle, tumbleweed |
| Asteraceae | *Ambrosia acanthicarpa* | annual bur-sage |
| | *Ambrosia dumosa* | burroweed, white bursage |
| | *Ambrosia* [*Hymenoclea*] *salsola* | Cheesebush, burrobush |
| | *Chaenactis fremontii* | Fremont pincushion |
| | *Chaenactis xantiana* | Mojave pincushion |
| | *Coreopsis bigelovii* | Bigelow's tickseed |
| | *Filago depressa* | dwarf cottonrose |
| | *Lasthenia californica* | California goldfields |
| | *Layia glandulosa* | tidy-tips |
| | *Malacothrix californica* | California dandelion |
| | *Malacothrix coulteri* | snake's head |
| | *Stephanomeria pauciflora* | wire lettuce |
| Boraginaceae | *Amsinckia tessellata* var. *tesselata* | devil's lettuce |
| | *Cryptantha micrantha* | redroot cryptantha |
| | *Cryptantha pterocarya* | wingnut cryptantha |
| | *Pectocarya linearis* ssp. *ferocula* | sagebrush combseed |
| | *Plagiobothrys arizonicus* | Arizona popcornflower |
| Brassicaceae | *Brassica tournefortii** | Saharan mustard |
| | *Descurainia pinnata* | western tansymustard |
| | *Descurainia sophia** | Herb sophia |
| | *Sisymbrium irio** | London-rocket |
| | *Lepidium* sp. | pepperweed |
| Cactaceae | *Cylindropuntia echinocarpa* | silver cholla |

| FAMILY | SCIENTIFIC NAME | COMMON NAME |
|---|---|---|
| Campanulaceae | *Nemacladus glanduliferus* var. *glanduliferus* | glandular threadplant |
| Capparaceae | *Cleomella obtusifolia* | mojave stinkweed |
| Caryophyllaceae | *Spergularia marina* | salt marsh sand spurry |
| Euphorbiaceae | *Croton californicus* | California croton |
| Fabaceae | *Astragalus lentiginosus* var. *fremontii* | freckled milkvetch |
| | *Lupinus* sp. | lupine |
| | *Psorothamnus arborescens* | Mojave indigobush |
| Frankeniaceae | *Frankenia salina* | alkali heath |
| Geraniaceae | *Erodium cicutarium** | red stemmed filaree |
| Heliotropaceae | *Heliotropium curassavicum* | salt heliotrope |
| Hydrophyllaceae | *Phacelia fremontii* | Fremont's phacelia |
| Loasaceae | *Mentzelia albicaulis* | whitestem blazingstar |
| | *Mentzelia eremophila* | pinyon blazingstar |
| Malvaceae | *Eremalche exilis* | white mallow |
| | *Malva parviflora** | cheeseweed |
| | *Sphaeralcea ambigua* | desert globemallow, apricot mallow |
| Nyctaginaceae | *Mirabilis bigelovii* | wishbone bush |
| Onagraceae | *Camissonia campestris* | Mojave sun cup |
| | *Camissonia claviformis* ssp. *claviformis* | brown-eyed evening primrose |
| Papaveraceae | *Eschscholzia minutiflora* | pygmy poppy |
| Polemoniaceae | *Gilia cana* ssp. *speciosa* | showy gilia |
| | *Linanthus parryae* | sandblossoms |
| Polygonaceae | *Eriogonum pusillum* | puny buckwheat |
| Solanaceae | *Datura discolor* | Jimson weed |
| | *Lycium cooperi* | |
| | *Lycium andersonii* | water jacket, Anderson's desert thorn |
| Tamaricaceae | *Tamarix ramosissima** | Tamarisk |
| Zygophyllaceae | *Larrea tridentata* | creosote bush |

*Non-native species

Desert cymopterus (*Cymopterus deserticola*).

Mojave fish-hook cactus (*Sclerocactus polyancistrus*).