

**APPENDIX D**  
*Rare Plant Surveys*



# **APPENDIX D-1**

*Rare Plant Surveys – Valley Region*



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# FOCUSED SPECIAL-STATUS PLANT SURVEY REPORT

## Valley Area Flood Control Facilities

### Prepared for:



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November 2017



# FOCUSED SPECIAL-STATUS PLANT SURVEY REPORT

## Valley Area Flood Control Facilities

ASPEN ENVIRONMENTAL GROUP

November 2017

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# FOCUSED SPECIAL-STATUS PLANT SURVEY REPORT

## Valley Area Flood Control Facilities

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November 2017

### I. Introduction

The San Bernardino County Flood Control District (District) is developing a Master Storm Water System-Wide Maintenance Plan (MSWSMP) for all District flood control facilities. In support of this MSWSMP the District is in the process of preparing an Environmental Impact Report (EIR) in support of long-term programmatic permits for routine maintenance. Aspen Environmental Group (Aspen) was contracted by the District to conduct special-status plant surveys at twenty flood control facilities (facilities) located in the valley area of San Bernardino County. This included five facilities along Cajon Wash, ten facilities along Lytle Creek, and five facilities along the Santa Ana River.

The purpose of this report is to describe the focused special-status plant surveys that were conducted and provide the results of these surveys. For the purposes of this report 'facilities' refers to all twenty flood control facilities.

### II. Project Description

The MSWSMP will specify maintenance activities that are proposed at these twenty District facilities. Maintenance is proposed as needed throughout each facility and will include:

- Mechanized land clearing and excavation
- Bank repair
- Mowing
- Stock piling of material
- Herbicide application and vector control
- Fire break construction, and
- Ingress and egress routes

The facilities included in the Valley Area and addressed in this report are:

**Cajon Wash Facilities.** These facilities are located near the communities of Devore and Muscoy along the northern edge of the Cajon Wash. They are shown on the Devore and San Bernardino North USGS 7.5-minute topographic quadrangles. Elevation ranges from 1,420 feet to 2,100 feet above sea level. The total size of these facilities is 60.5 acres (Table 1). The following Cajon Wash facilities were surveyed:

- 2-208-5a (Upper Devore Levee)
- 2-208-5b (Cajon Creek Wash)
- 2-209-5b (Muscoy Groin #2)

- 2-209-5c (Muscoy Groin #3)
- 2-209-5d (Muscoy Groin #4)

**Lytle Creek Facilities.** These facilities are located near the communities of Muscoy, Rialto, and San Bernardino primarily along the western edge of Lytle Creek. They are shown on the Devore, San Bernardino North, and San Bernardino South USGS 7.5-minute topographic quadrangles. Elevation ranges from 955 feet to 2,065 feet above sea level. The total size of these facilities is 150.0 acres (Table 1). The following Lytle Creek facilities were surveyed:

- 2-204-1a (Lytle-Cajon Channel)
- 2-205-5b (Riverside Groin #2)
- 2-205-5c (Riverside Groin #3)
- 2-205-5d (Riverside Groin #4)
- 2-206-5a (Lytle Creek Levee)
- 2-207-5a (Island Levee)
- 2-207-5b (Island Levee)
- 2-210-5a (Muscoy Levee)
- 2-210-5b (Muscoy Levee)
- 2-211-5a (Lytle Creek Gatehouse)

**Santa Ana River Facilities.** These facilities are located near the communities of San Bernardino, Rialto, Colton, and Grand Terrace along both edges of the Santa Ana River. They are shown on the San Bernardino South and Redlands USGS 7.5-minute topographic quadrangles. Elevation ranges from 850 feet to 1,190 feet above sea level. The total size of these facilities is approximately 415.3 acres (Table 1). The following Santa Ana River facilities were surveyed:

- 2-701-1A (Santa Ana River)
- 2-701-1B (Santa Ana River)
- 2-701-1C (Santa Ana River)
- 3-101-1D (Santa Ana River)
- 3-101-1E (Santa Ana River)

### III. Methods

Vegetation and land cover mapping was completed by Dudek as part of the EIR that is in preparation. Mapping was accomplished using a combination of aerial photograph interpretation and field verification. True-color high resolution aerial photography flown in 2009 was obtained by the District in 2009. Dudek's mapping effort was conducted in five phases: (1) data and literature review, (2) GIS database development, (3) aerial photograph review, (4) field mapping, and (5) data interpretation and analysis. Dudek biologists Britney Strittmater, Katie Dayton, Erin Bergman, and Heather Moine completed the mapping effort and created the vegetation and land cover maps.

Vegetation types match nomenclature in A Manual of California Vegetation (Sawyer et al. 2009) whenever possible. Aspen Environmental Group (Aspen) staff prepared vegetation and cover maps for the facilities using the GIS data provided by Dudek (see Figure 2). Most of the vegetation descriptions were provided by Dudek and were tailored to the facilities addressed in this report.

Aspen biologist Justin M. Wood reviewed available literature to identify special-status plants known from the vicinity of the facilities. Data from the California Natural Diversity Database (CNDDDB) (CDFW, 2017a) was reviewed for the following USGS 7.5-minute topographic quadrangles: Telegraph Peak, Silverwood Lake, Cucamonga Peak, Cajon, San Bernardino North, San Bernardino South, Lake Arrowhead, Harrison Mountain, Keller Peak, Yucaipa, Redlands, Fontana, Guasti, Riverside West, Riverside East, Sunnymead, and El Casco. CNDDDB search results are provided in Attachment 5.

The review also included a search of the California Native Plant Society (CNPS) *Online Electronic Inventory* (CNPS, 2017; for the quads listed above) and the Consortium of California Herbaria database (CCH, 2017) for records of special-status plants known from the area. All state listed, federally listed, and other special-status plant species known from comparable habitats within the region are addressed below in the results section. Several of the special-status plants identified during the literature search occur only in specialized native habitats that are absent from the facilities, or occur only at higher or lower elevations than the facilities. These plants are listed in Attachment 3, but are not addressed further in this report.

Focused special-status plant surveys were conducted on April 25, 26, May 3, 4, June 21, 22, July 31, and August 1, 2017. Surveys were conducted by Wood of Aspen and Sarah DeGroot of Rancho Santa Ana Botanic Garden. During some of the surveys, the surveyors were assisted by Shaun Kehmeyer and Brady Daniels of Aspen. Wood and DeGroot have extensive experience with the special-status plants from the region, including the state and federally listed species.

During the surveys the botanists covered all accessible portions of the facilities proposed for maintenance by walking “meandering transects” (Nelson, 1987) with particular attention given to areas of suitable habitat for special-status plant species. During the surveys, all plant species observed were either identified in the field or vouchered with photographs or collections for later identification. Plants were identified using keys, descriptions, and illustrations in Baldwin et al. (2012), the Jepson eFlora database of California plants (Jepson, 2017), and other regional references. All plant species observed in the proposed and alternative alignments are listed in Attachment 4. All special-status plant locations within or immediately adjacent to the facilities will be reported to the CNDDDB.

In conformance with California Department of Fish and Wildlife guidelines (CDFG, 2000), surveys were (a) conducted during flowering seasons for the special status plants known from the area, (b) floristic in nature, (c) consistent with conservation ethics, (d) systematically covered all habitat types on the sites, and (e) well documented, by this report, photos that will be uploaded to CalPhotos (BSCIT, 2017), and by voucher specimens to be deposited at Rancho Santa Ana Botanic Gardens and other herbaria. Documenting the flora with photos and vouchered specimens allows others to verify the identifications of species found within the facilities and can also be used by researchers and scientists to know what plants are known from the families. Wood visited two reference site for slender-horned spineflower during 2017 and it was confirmed to be present at both locations. A reference site for Santa Ana River woollystar was not visited because it is identifiable year-round and does not require adequate precipitation to germinate.

## V. Results

This section summarizes the general climate of the San Bernardino Valley. It also summarizes the results of the vegetation and land cover mapping, special-status species surveys, and habitat evaluation.

Climate in the region is temperate, with cool, wet winters and hot, dry summers. Average annual high temperature as reported in Redlands, California is 79.7°F and average annual low temperature is 50.3 °F

(U.S. Climate Data, 2017). Average annual rainfall is typically 13.27 inches (U.S. Climate Data, 2017). During the 2016 to 2017 rainfall year (July 1 through June 30) was 16.12 inches, approximately 121 percent of the average (U.S. Climate Data, 2017). Annual plants were abundant and had high diversity within most facilities. Most shrubs and perennials were also in flower and had new vegetative growth present. Based on observations made during the field survey, it appears that the region received ample rainfall to support a diverse and representative native plant assemblage.

## V. A. Vegetation and Land Cover

A summary of acreages for vegetation and land cover types is provided in Table 1. In addition, brief descriptions of the vegetation and land covers are provided in the following paragraphs. Additional details about these vegetation and cover types can be found in the EIR.

**Table 1: Vegetation Communities and Land Cover Types within the Facilities**

Facility	California Buckwheat Scrub	California Sagebrush-California Buckwheat Scrub	California Sagebrush Scrub	Chamise Chaparral	Scale Broom Scrub	Brittle Bush Scrub	Fremont Cottonwood Forest	Arroyo Willow Thickets	Mulefat Thickets	Eucalyptus Groves or Ornamental Plantings	Non-Native Grasslands	Unvegetated Wash or Channel	Ruderal	Urban	Disturbed Land	Concrete Channel	Total
<b>Cajon Wash Facilities</b>																	
2-208-5a	1.2	2.1	0.4		2.0							0.1		2.7	0.1		8.6
2-208-5b	18.1				1.8									4.9	6.8		31.6
2-209-5b					1.6							1.0			3.1		5.7
2-209-5c			3.8		0.1									1.7			5.6
2-209-5d					8.7									0.4			9.1
<b>Lytle Creek Facilities</b>																	
2-204-1a											0.2		0.0 <sup>1</sup>	20.6	14.6	12.1	47.6
2-205-5b	0.2			2.9										3.2			6.3
2-205-5c				3.2	0.3									0.0	3.5		7.0
2-205-5d				1.2	0.5										4.2		5.8
2-206-5a	10.4									1.0		5.9				2.7	19.9
2-207-5a					5.6									0.1	7.4		13.0
2-207-5b					1.0						0.6		2.5	4.0	2.5		10.5
2-210-5a	0.7				0.6						0.0			1.1	5.5		7.9
2-210-5b	0.5				3.0						0.5		0.4	1.2	12.5		18.1

2-211-5a	0.2				1.9					0.1	0.0		0.3	2.3	7.3	1.8	13.9
<b>Santa Ana River Facilities</b>																	
2-701-1A					72.0		21.7			0.4				1.3	20.7		116.2
2-701-1B					13.0	1.9	3.0	11.9	18.4		4.4	43.7		20.2	48.8	3.2	168.6
2-701-1C							6.8	3.8	16.3		3.4	19.0		18.9	18.8		87.0
3-101-1D	0.1				4.9		11.1								8.2		24.3
3-101-1E					5.5			4.2						0.1	9.4		19.1

1 = Vegetation and cover types shown as 0.0 had less than 0.05 acres present within a given facility.

**California Buckwheat Scrub (*Eriogonum fasciculatum* Shrubland Alliance).** California buckwheat scrub is dominated by California buckwheat (*Eriogonum fasciculatum*). It is a common sage scrub vegetation types that grows in alluvial washes and adjacent hillsides (see Photo 1). Other species such as California sagebrush (*Artemisia californica*), white sage (*Salvia apiana*), black sage (*Salvia mellifera*), and brittlebush (*Encelia farinosa*) are also present but in much lower numbers. It is mapped within several of the facilities (Table 1).

**California Sagebrush Scrub (*Artemisia californica* Shrubland Alliance).** California sagebrush scrub is dominated or co-dominant by California sagebrush. It also grows on alluvial terraces and nearby hillsides (see Photo 2). It grows with other coastal sage scrub species such as hairy yerba santa (*Eriodictyon trichocalyx*), California buckwheat, white sage, black sage, and brittlebush. It is mapped within two of the Cajon Wash facilities (2-208-5a and 2-209-5c; Table 1).

**Brittle Bush Scrub (*Encelia farinosa* Shrubland Alliance).** Brittle bush scrub is dominated by brittle bush. It is similar in forms and structure as California buckwheat scrub described. It also grows on alluvial terraces and benches adjacent to the active floodplain. It is mapped within a single Santa Ana River facility (2-701-1B; Table 1).

**Scale Broom Scrub (*Lepidospartum squamatum* Shrubland Alliance).** Scalebroom scrub is type of coastal scrub vegetation that is dominated by scalebroom (*Lepidospartum squamatum*). It grows in more active portions of the alluvial system and is infrequently scoured by storm flows (see Photo 3). Additional species such as California croton (*Croton californicus*), California buckwheat, and telegraph weed (*Heterotheca grandiflora*) are also present. It is present in several of the facilities (Table 1). Scale broom scrub is a special-status community with a state rank of S3 (CDFG 2010).

**Chamise Chaparral (*Adenostoma fasciculatum* Shrubland Alliance).** Chamise chaparral is a type of chaparral vegetation that is dominated by chamise (*Adenostoma fasciculatum*). It grows on the oldest alluvial benches within the alluvial systems (see Photo 4). Other upland species are also present but are much less common. It is mapped within several of the Lytle Creek facilities (Table 1).

**Fremont Cottonwood Forest (*Populus fremontii* Forest Alliance).** Fremont cottonwood forest is dominated by Fremont cottonwood (*Populus fremontii*) as a large emergent tree in the canopy. Other species that are present include species such as arroyo willow (*Salix lasiolepis*), narrowleaf willow (*Salix exigua*), and desert wild grape (*Vitis girdiana*). It is present in all the Santa Ana River facilities (Table 1). Fremont cottonwood forest is a special-status community with a state rank of S3 (CDFG 2010).

**Arroyo Willow Thickets (*Salix lasiolepis* Shrubland Alliance).** Arroyo willow thickets are dominated by arroyo willow (*Salix lasiolepis*). Other willows that may be present include Goodding’s willow (*Salix gooddingii*), red willow (*Salix laevigata*), and Pacific willow (*Salix lasiandra*). Arroyo willow thickets are present in several of the Santa Ana River facilities (Table 1).

**Mulefat Thickets (*Baccharis salicifolia* Shrubland Alliance).** Mulefat thickets are dominated by mulefat (*Baccharis salicifolia*). Other species such as arroyo willow, sandbar willow, blue elderberry (*Sambucus nigra* ssp. *caerulea*), and Fremont cottonwood may be present but are much less common. They are found along wetted stream channels and in intermittent stream channels. Mulefat thickets are present in several of the Santa Ana River facilities (Table 1).

**Eucalyptus Groves [*Eucalyptus (globulus, camaldulensis)* Semi-Natural Woodland Stands] and other ornamental plantings.** Eucalyptus groves and ornamental plantings were mapped in areas with planted trees, groves, and windbreaks and are vegetated with gumtrees (*Eucalyptus* spp.) and other ornamental trees. It was mapped within several of the facilities (Table 1).

**Non-Native Grasslands.** Non-native grasslands were mapped to a more generalized habitat type as opposed to differentiating specific stands of non-native grass species. Non-native grassland was used to map areas that are dominated by non-native grassland such as wild oats (*Avena* spp.) and brome grasses (*Bromus* spp.). It is present in several upland habitats within the facilities (see Photo 5). Some native annuals may be present but are in very low numbers.

**Unvegetated Wash or Unvegetated Channel.** This category includes natural, sandy bottom ephemeral washes that are unvegetated or sparsely vegetated. It also includes several unvegetated, maintained or engineered, sandy bottom channels are present at several of the facilities (Table 1).

**Disturbed Land/Ruderal.** Disturbed land within the facilities includes dirt roads, vacant lots, and other areas that are devoid of vegetation.

**Concrete Channel.** Developed concrete flood control channels are present within several of the facilities.

**Urban.** Urban areas consist of buildings, structures, homes, parking lots, paved roads, and maintained areas and do not support native vegetation.

## V. B. Federal and State Listed Plants

Twelve endangered plants have been reported from the USGS 7.5-minute topo quads surrounding the facilities (CDFW, 2017a; CNPS, 2017; CCH, 2017). Three of these species occur in habitats similar to those found at the facilities and are addressed in Table 2. The remaining nine species have no potential to be present at the facilities because of a lack of suitable habitat or because the facilities are located outside their elevation or geographic ranges. These nine species are listed in Attachment 3 are not addressed further in this report.

**Table 2. Federally and State Listed Plant Potentially Present in the Facilities**

Scientific Name Common Name	Listing Status Federal <sup>1</sup> /State <sup>2</sup> / CRPR <sup>2</sup>	Habitat Type/ Blooming Period/ Elevation Range/ General Geographic Range	Potential for Occurrence in the Facilities <sup>3</sup>
<i>Berberis nevinii</i> Nevin's barberry	FE/SE/1B.1	Perennial evergreen shrub; coastal sage scrub, chaparral, oak woodland, about 900 - 2700 ft. elev.; scattered locations in LA, San Bern, Riv., San Diego Cos. Feb-Jun.	<b>Not likely to occur.</b> Not observed during survey; suitable habitat present in most facilities; known from about 6 miles upstream in San Timoteo Canyon.

**Table 2. Federally and State Listed Plant Potentially Present in the Facilities**

Scientific Name Common Name	Listing Status Federal <sup>1</sup> /State <sup>2</sup> / CRPR <sup>2</sup>	Habitat Type/ Blooming Period/ Elevation Range/ General Geographic Range	Potential for Occurrence in the Facilities <sup>3</sup>
<i>Dodecahema leptoceras</i> Slender-horned spineflower	FE/SE/1B.1	Annual; open, sandy alluvial benches in valleys and canyons; San Fernando Valley, Santa Ana River Valley, western Riverside Co.; about 600-2500 ft. elev. Apr-Jun.	<b>Low.</b> Not observed during survey; suitable habitat is present within several facilities; known from current locations within about 3 miles of the facilities.
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i> Santa Ana River woollystar	FE/SE/1B.1	Shrubland, alluvial fans and plains; endemic to Santa Ana River watershed, primarily in San Bern. Co.; below about 2000 ft. elev. May-Sep.	<b>Present.</b> 716 plants observed with eleven of the facilities (see text).

1 - Federal listing

FE = federally endangered

FT = federally threatened

2 - State listing–status codes

SE = state endangered

CE = candidate state endangered

ST = state threatened

SR = state rare

1A = CRPR Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere.

1B = CRPR Rank 1B: Plants that are rare, threatened or endangered in California and elsewhere.

2B = CRPR Rank 2B: Plants that are rare, threatened or endangered in California but more common elsewhere.

3 = CRPR Rank 3: Plants about which more information is needed – a review list.

4 = CRPR Rank 4 Plants with a limited distribution – a watch list.

Threat rank of 0.1 (e.g., 1B.1) indicates a plant seriously endangered in California (high degree/immediacy of threat), 0.2 indicates a plant fairly endangered in California (moderate degree/immediacy of threat), 0.3 indicates a plant not very endangered in California (low degree/immediacy of threats or no current threats known). All CRPR 1A and some CRPR 3 plants lacking threat information receive no threat-rank extension.

3 - Likelihood of occurrence: not likely to occur, low, moderate, high, and present - accounts for presence and quality of habitat and the geographic and elevation range of the species.

**Slender-horned spineflower (*Dodecahema leptoceras*).** Slender-horned spineflower is both federally and state listed as endangered (CDFW, 2017; USFWS, 1987). It is a low-growing annual, typically flowering between April and May (CNPS, 2017). Its numbers vary greatly from year to year according to rainfall, and in years of low rainfall it may not come up at all. Slender-horned spineflower’s usual habitat is open, slightly depressed sites within mature shrublands of broad alluvial systems (Allen, 1996; Wood and Wells, 1996). Occupied habitat is found on relatively flat surfaces with substrates ranging in age from about 100 years to several thousand years since the material was last deposited or scoured by flooding. Surrounding vegetation varies among sites and apparently does not affect habitat suitability. Similarly, cryptogamic soil crusts were found at some sites, but did not correlate with spineflower occupancy. Spineflower microsites are slightly lower than surrounding surfaces and have higher silt content and lower mineral, organic, and plant nutrient content than surrounding areas. Young and coauthors (2000) found that slender-horned spineflower does not require mycorrhizal associations, although it can host some mycorrhizae species.

It occurs in Los Angeles, Riverside, and San Bernardino counties. Within the vicinity of the facilities it is known from the Santa Ana River wash near Redlands, approximately 1.5 miles of Santa Ana River facility 3-101-1D (CCH, 2017). It is also known from the Cajon Wash within about 2.7 miles of the Cajon Wash facility 2-208-5A (CCH, 2017). There are also several historic records in much closer proximity to the facilities however these populations have not been relocated in recent years and may have been extirpated (CDFW, 2017). Marginally suitable alluvial bench habitat is present within several Santa Ana

River facilities (2-701-1A, 3-101-1D, and 3-101-1E), several Lytle Creek facilities (2-205-5B, 2-205-5C, 2-205-5D, 2-206-5A, and 2-207-5A), and several Cajon Wash facilities (2-208-5A, 2-208-5B, 2-209-5B, and 2-209-5C). The most suitable habitat was observed at 2-208-5B but this species was not observed at this facility or any others. A reference site was visited in 2017 and slender-horned spineflower were present but in very limited numbers and the plants were relatively small compared to years with higher than average rainfall. It has a low potential to germinate at this and other facilities in the future.

**Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*).** Santa Ana River woollystar is federally and state listed as endangered (CDFW, 2017; USFWS, 1987). The USFWS released a draft recovery plan in 1996, but a final recovery plan has not been adopted. There has been no proposed or final critical habitat designation.

It is a shrub or subshrub occurring in open washes and early-successional alluvial shrublands. It is found on sandy or gravelly soils on floodplains of the Santa Ana River watershed in southwestern San Bernardino County. It is a short-lived species, typically lasting between five and ten years. Santa Ana River woollystar flowers relatively late in the season (between June and August) and its large blue floral displays can be conspicuous. On the Santa Ana River and Mill Creek floodplain, it occurs from the base of the San Bernardino Mountains to the former Norton Air Force Base (now San Bernardino International Airport). It also occurs farther west, in the Lytle Creek and Cajon Wash floodplains (tributary to the Santa Ana River). Within the Cajon Wash floodplain, Santa Ana River woollystar occurs from about 2000 feet elevation near Devore, south to about 1200 feet elevation where Lytle Creek and Cajon Wash enter a flood control basin (CDFW, 2017). Habitat farther downstream is routinely impacted by large flood events which scour the sediment and remove the plants. The last large scouring flood event was in 2010 which has allowed numerous populations of Santa Ana River woollystar to become established downstream to the vicinity of Rialto Channel.

Santa Ana River woollystar is identified in the field by its stature (shrub or subshrub), gray-woolly foliage, and long tubular flowers (the tubes are generally 25-37 mm. long; Baldwin et al. 2012). This description is based on plants in the eastern part of its range (e.g., north of Redlands) and is only partially accurate for the Cajon Wash and Lytle Creek floodplain occurrences. These western occurrences have shorter flower tubes (ca. 14-23 mm.; Tierra Madre Consultants, 1988), but otherwise are identical to the eastern occurrences. These have been considered hybrids or intergrades between the eastern *Eriastrum densifolium* ssp. *sanctorum* populations and the more common subspecies (ssp. *densifolium* and possibly ssp. *elongatum*), which occur throughout much of the southern California area, including local mountains, valleys, and deserts (Wheeler, 1988; Burke et al., 1989). But the USFWS (1987) included the Lytle Creek and upper Cajon Wash plants in its final rule listing the Santa Ana River woollystar and reaffirmed in 1992 and 1994 that these occurrences are protected under FESA. In the 1994 clarification, the USFWS cited genetic work by Brunell and Reisberg (1993), which concluded that the Lytle Creek occurrences are “virtually identical genetically . . . and appear to differ only with respect to corolla tube length.” Further genetic analysis by Brunell and Whitkus (1997) also showed “no major discontinuity” between the two areas. Taxonomic work among the woollystar subspecies is continuing and, to date, has not changed this understanding (Sara DeGroot, Rancho Santa Ana Botanic Garden, pers. comm.). The USFWS continues to recognize the Lytle Creek and Cajon Wash occurrences as the endangered Santa Ana River woollystar.

A total of 716 individual plants were mapped within eleven of the facilities in 2017 (see Figure 3). 120 additional plants were mapped within about 50 feet of the facilities (see Figure 3). In general, plants were found along the margins of recently scoured river channels, with a few patches of plants on mature alluvial benches, relatively isolated from larger populations (see Photos 6 through 8). A large patch of plants was

observed at facility 2-209-5B in an area that appears to have been seeded in the past (see Photo 6). A small number of additional plants may be present in facilities with dense riparian vegetation (i.e. 2-701-1A) and could have been overlooked because of difficult access. In addition, Santa Ana River woollystar occurrences can be highly variable from year to year and future storm events may eliminate some plants or cause additional plants to germinate and be present in the future.

**Table 3: Santa Ana River Woollystar Present in the Facilities**

Facility Location and Number		Within Maintenance Area	Within 50 Feet of Maintenance Area
Lytle Creek	(2-207-5A)	14	5
Lytle Creek	(2-211-5A)	9	0
Cajon Wash	(2-209-5D)	1	1
Cajon Wash	(2-209-5C)	287	70
Cajon Wash	(2-209-5B)	8	12
Cajon Wash	(2-208-5B)	18	32
Santa Ana River	(2-701-1A)	43	0
Santa Ana River	(3-101-1E)	1	0
Santa Ana River	(3-101-1D)	6	0
Santa Ana River	(2-701-1C)	25	0
Santa Ana River	(2-701-1B)	304	0
Total:		<b>716</b>	<b>120</b>

## V. B. Other Special-status Plants

All special-status species identified during the literature review as being either present or potentially present in the facilities are presented below in Table 3. All special-status plants that were present or have at least a moderate potential to be present in the facilities are further discussed below. Non-listed special-status species with a low or moderate potential for occurrence are not discussed further in this report.

**Table 4. Special-status Plants Present or Potentially Present in the Facilities**

Scientific Name Common Name	Conservation Status Federal/State/ CRPR	Habitat Type/ Blooming Period/ Range/ General Geographic Range	Potential for Occurrence in the Facilities
<i>Ambrosia monogyra</i> Singlewhorl burrobrush	--/—/2B.2	Shrub or small tree; desert and inland cismontane flats, washes, alluvial fans; below about 1700 ft. elev.; San Bernardino Valley; San Diego Co., east to Texas and mainland Mexico. Aug-Nov.	<b>Low.</b> Not observed during survey; suitable habitat is present within several facilities; known from historical occurrence at Fontana Powerhouse, less than 1 mile from several Lytle Creek facilities.
<i>Calochortus plummerae</i> Plummer's mariposa-lily	--/—/4.2	Chaparral, alluvial fans, pine forest, below ±5600 ft. elev.; widespread but uncommon throughout S. Calif. mts., foothills & valleys. May-Jul.	<b>Present.</b> Three plants observed with Cajon Wash facility 2-209-5C. Suitable habitat is present at most facilities.
<i>Chorizanthe parryi</i> var. <i>parryi</i> Parry's spineflower	--/—/1B.1	Shrublands, open sandy places on alluvial slopes below about 4300 ft. elev.; Inland Empire and also coastal LA Co., Banning Pass, Cajon Pass. Apr-Jun.	<b>Present.</b> 616 plants observed during the surveys (see text).

<i>Chorizanthe xanti</i> var. <i>leucotheca</i> White-bracted spineflower	--/—/1B.2	Desert shrubland, pinyon-juniper woodland, about 1000-4000 ft. elev.; San Bernardino, Riverside, and San Diego Cos. Apr-Jun.	<b>Present.</b> 2 plants observed during the surveys (see text).
<i>Horkelia cuneata</i> var. <i>puberula</i> Mesa horkelia	--/—/1B.1	Shrublands, woodlands, gen sandy alluvial plains; SLO to San Diego Co, away from immediate coast; rarely inland to San Bern. Co., about 200-2300 ft. elev. Apr-Sep.	<b>Low.</b> Not observed during survey; suitable habitat is present within several facilities; known from historical occurrence in Rancho Cucamonga about 6 miles from the Lytle Creek facilities.
<i>Juglans californica</i> Southern California black walnut	--/—/4.2	Perennial deciduous tree; Alluvial zones in chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats from 164-2900ft. elev. ; Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, Ventura Cos.; California endemic.	<b>Present.</b> A single tree observed within Lytle Creek facility 2-205-5B. Suitable habitat in all facilities.
<i>Lepidium virginicum</i> var. <i>robinsonii</i> Robinson's pepper-grass	--/—/4.3	Annual herb; shrublands below about 1700 ft. elev.; Los Angeles Co, inland to Riverside & San Bernardino Cos, and S to Baja Calif. Jan-Jul.	<b>Moderate.</b> Not observed during surveys; suitable habitat present within most facilities; known from within 1 mile of the Santa Ana River facilities.
<i>Phacelia stellaris</i> Brand's star phacelia	--/—/1B.1	Annual herb; Coastal dunes and scrub below 1300 ft. elev. ; Los Angeles, Orange, Riverside, San Bernardino, San Diego and S to Baja Calif.	<b>Low.</b> Not observed during surveys; marginally suitable habitat present within several facilities; known from within 4 mile of the Santa Ana River facilities.
<i>Pseudognaphalium leucocephalum</i> white rabbit-tobacco	--/—/2B.2	Perennial herb; shrublands, sea level to about 7000 ft. elev.; open sand, usually on alluvium; San Luis Obispo through San Diego cos, inland to Riverside and San Bernardino cos.	<b>Low.</b> Not observed during surveys; suitable habitat present within most facilities; Nearest historical record more than 6 miles from the Lytle Creek facilities.
<i>Romneya coulteri</i>	--/—/4.2	Perennial rhizomatous herb; Often in burn areas in chaparral and coastal scrub habitat from 65-390ft. elev. ; Los Angeles, Orange, Riverside, San Diego and S to Baja Calif.	<b>Low.</b> Not observed during surveys; marginally suitable habitat is present within most facilities; Nearest record from within about 1 mile of the Cajon Wash facilities.

See Table 2 for summary of listing status.

**Parry's spineflower (*Chorizanthe parryi* var. *parryi*).** Parry's spineflower has a CRPR of 1B.1 (CDFW, 2017). It is an annual herb in the buckwheat (Polygonaceae) family. It is endemic to southern California and occurs in the flats and foothills of the San Gabriel, San Bernardino, and San Jacinto Mountains in Los Angeles, San Bernardino, and Riverside counties. It is found on sandy or rocky soils in openings in coastal scrub, alluvial fan sage scrub, chaparral, woodland, and grassland habitats at elevations from 300 to 4300 feet, and flowers from April to June (CNPS, 2017). There is suitable habitat for this species at the facilities and there are several records in Cajon Wash and Lytle Creek Wash within about three miles (CDFW, 2016). 616 Parry's spineflower were mapped within six of the facilities (see Figure 3 and Photos 9 and 10). 168 additional plants were mapped within about 50 feet of the facilities (see Figure 3). It was observed primarily in chamise chaparral and in disturbed areas immediately adjacent to the chamise chaparral.

**Table 5: Parry's Spineflower Present in the Facilities**

Facility Location and Number	Within Maintenance Area	Within 50 Feet of Maintenance Area
Cajon Wash (2-208-5A)	89	37
Cajon Wash (2-208-5B)	17	1

Lytle Creek	(2-205-5C)	436	40
Lytle Creek	(2-205-5D)	0	20
Lytle Creek	(2-206-5A)	0	4
Lytle Creek	(2-205-5B)	74	66
Total:		<b>616</b>	<b>168</b>

**White-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*).** White-bracted spineflower has a CRPR of 1B.2 (CDFW, 2017). It is an annual herb in the buckwheat (Polygonaceae) family. Parry’s spineflower is endemic to southern California and occurs in San Bernardino, Riverside, and San Diego Counties. It is found on sandy or gravelly soils in coastal scrub, Riversidian alluvial fan sage scrub, Mojavean desert scrub, and pinyon juniper woodland at elevations from 980 to 3900 feet, and flowers from April to June (CNPS, 2017). There is suitable habitat for this species at the facilities and there are records from Cajon Pass, about three miles to the north (CDFW, 2017). Two white-bracted spineflowers were mapped within Cajon Wash facility 2-208-5A (see Figure 3). An additional 6 plants were mapped within about 50 feet of the Lytle Creek facility 2-206-5A (see Figure 3 and Photo 11). It has a moderate potential for occurrence at several other facilities in the Lytle Creek and Cajon Wash facilities.

**California Rare Plant Rank 4 Species.** Three additional special-status species were found during focused plant surveys or have at least a moderate potential to be present: Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*), Plummer's mariposa-lily (*Calochortus plummerae*), and southern California black walnut (*Juglans californica*). Three Plummer's mariposa-lily plants were observed just outside of the maintenance area at Cajon Wash facility 2-209-5C (see Figure 3 and Photo 12). Additional individuals are likely to be present at this facility and others that were surveyed. Plummer’s mariposa-lily is a bulb that’s flower producing fluctuated annually based on rainfall. Additional bulbs may have been present and didn’t flower in 2017. A single southern California black walnut tree was observed at Lytle Creek facility 2-205-5B (see Figure 3), however additional young individuals may be present within any of the facilities or could germinate in the future. All four of these plants are ranked as CRPR 4 species (i.e., a “watch list,” not indicating rarity) and none are listed as threatened or endangered.

## VI. Summary

Santa Ana River woollystar, a federally and state listed endangered species was observed within eleven facilities in 2017. An additional four no-listed special-status species were also present within the facilities: Plummer's mariposa-lily, Parry's spineflower, white-bracted spineflower, southern California black walnut. Robinson's pepper-grass also has at least a moderate potential to be present.

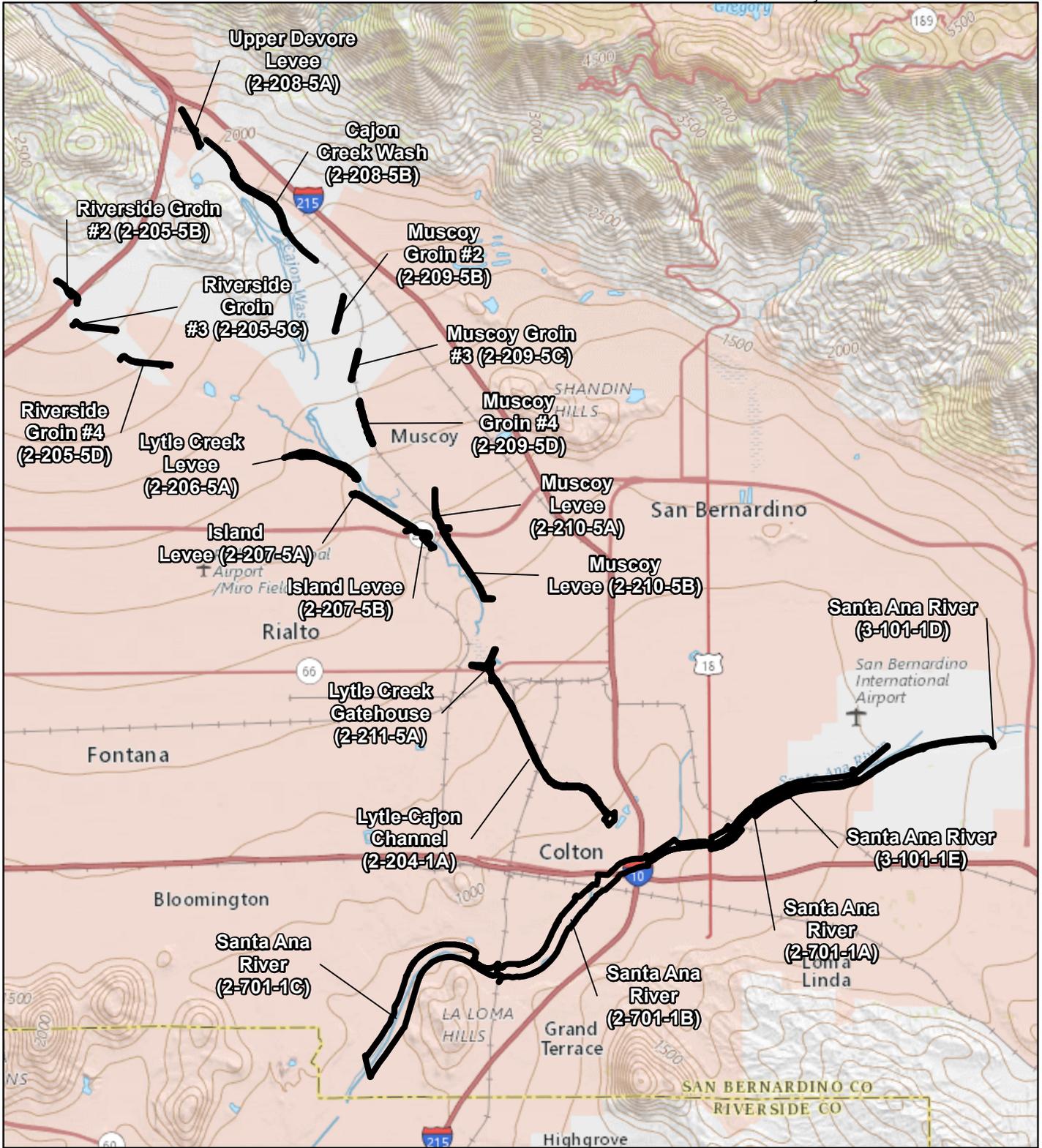
Rainfall totals during the 2016 to 2017 rainfall year (July 1 through June 30) were above average in the San Bernardino Valley, receiving about 121 percent of the total annual precipitation (U.S. Climate Data, 2017). The precipitation was sufficient to trigger most of the annual plants to germinate and flower. Conclusions on special-status plant potentials for occurrence are based on habitat suitability and observations made during the focused survey.

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**Attachment 1**  
**Figures**



— Facility

**Figure 1.**  
**San Bernardino County**  
**Valley Facilities**



1 0 1 Miles



Figure 2-1.

 Facility

**Vegetation/Land Cover**

- |   |   |
|---|---|
|  Concrete Channel      |  Ruderal |
|  Disturbed Land        |  Urban   |
|  Non-Native Grasslands |   |



1,000 0 1,000  
Feet



 Facility

**Vegetation/Land Cover**

 California Buckwheat  
Scrub Alliance

 Chamise Chaparral  
Alliance

 Unvegetated Wash

 Urban

**Figure 2-2.**

**Vegetation and Land Cover  
Riverside Groin #2 (2-205-5B)**



200 0 200  
Feet



 Facility

**Vegetation/Land Cover**

 Chamise Chaparral Alliance

 Disturbed Land

 Scale Broom Scrub Alliance

 Urban

**Figure 2-3.**

**Vegetation and Land Cover  
Riverside Groin #3 (2-205-5C)**



200 0 200  
Feet



 Facility

**Vegetation/Land Cover**

 Chamise Chaparral Alliance

 Disturbed Land

 Scale Broom Scrub Alliance

 Urban

**Figure 2-4.**

**Vegetation and Land Cover  
Riverside Groin #4 (2-205-5D)**



200 0 200  
 Feet



 Facility

**Vegetation/Land Cover**

 California Buckwheat  
Scrub Alliance

 Disturbed Land

 Ornamental Plantings

 Unvegetated Wash

**Figure 2-5.**

**Vegetation and Land Cover  
Lytle Creek Levee (2-206-5A)**



500 0 500  
Feet



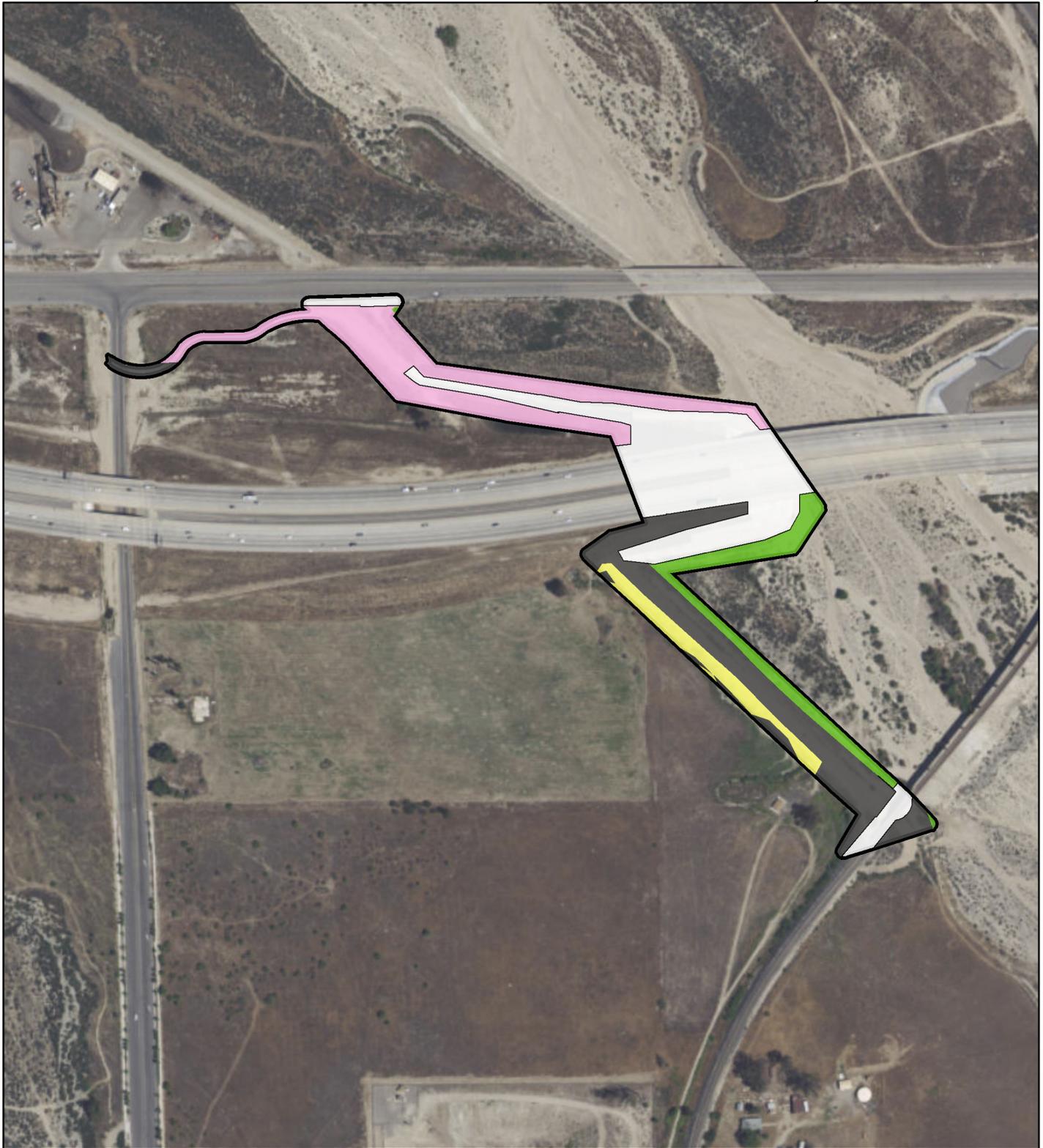
-  Facility
- Vegetation/Land Cover**
-  Disturbed Land
-  Scale Broom Scrub Alliance
-  Urban

Figure 2-6.

**Vegetation and Land Cover  
Island Levee (2-207-5A)**



500 0 500  
Feet



 Facility

**Vegetation/Land Cover**

 Disturbed Land

 Non-Native Grasslands

 Ruderal

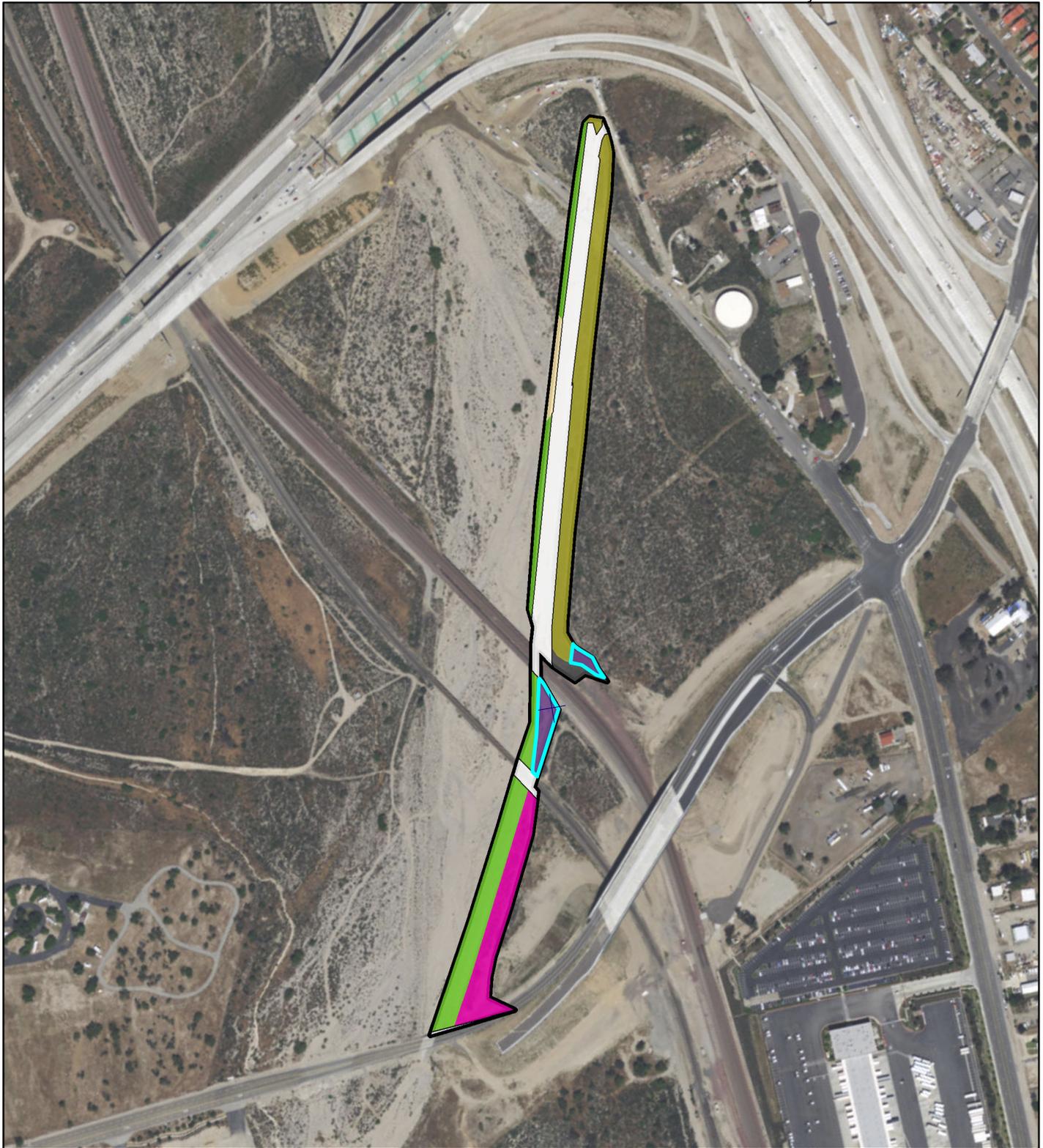
 Scale Broom Scrub Alliance

 Urban

**Figure 2-7.**

**Vegetation and Land Cover  
Island Levee (2-207-5B)**





 Facility

**Vegetation/Land Cover**

 California Buckwheat Scrub Alliance

 California Sagebrush Scrub Alliance

 California Sagebrush-California Buckwheat Scrub Alliance

 Disturbed Land

 Scale Broom Scrub Alliance

 Unvegetated Wash

 Urban

**Figure 2-8.**

**Vegetation and Land Cover  
 Upper Devore Levee 2-208-5A**



300 0 300  
 Feet



 Facility

**Vegetation/Land Cover**

 California Sagebrush  
Scrub Alliance

 Disturbed Land

 Scale Broom Scrub  
Alliance

 Urban

**Figure 2-9.**

**Vegetation and Land Cover  
Cajon Creek Wash (2-208-5B)**



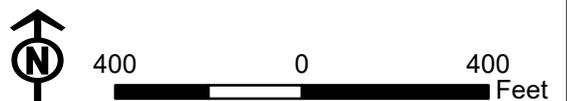
1,000 0 1,000  
Feet



-  Facility
- Vegetation/Land Cover**
-  Disturbed Land
-  Unvegetated Channel
-  Scale Broom Scrub Alliance
-  Urban

Figure 2-10.

**Vegetation and Land Cover  
Muscoy Groin #2 (2-209-5B)**





 Facility

**Vegetation/Land Cover**

 California Sagebrush  
Scrub Alliance

 Scale Broom Scrub  
Alliance

 Urban

**Figure 2-11.**

**Vegetation and Land Cover  
Muscoy Groin #3 (2-209-5C)**



300 0 300  
Feet



 Facility

**Vegetation/Land Cover**

 Scale Broom Scrub Alliance

 Urban

**Figure 2-12.**

**Vegetation and Land Cover  
Muscoy Groin #4 (2-209-5D)**



400 0 400  
Feet



-  Facility
- Vegetation/Land Cover**
-  California Sagebrush Scrub Alliance
-  Scale Broom Scrub Alliance
-  Disturbed Land
-  Urban
-  Non-Native Grasslands

Figure 2-13.

**Vegetation and Land Cover  
Muscoy Levee (2-210-5A)**



300 0 300  
Feet



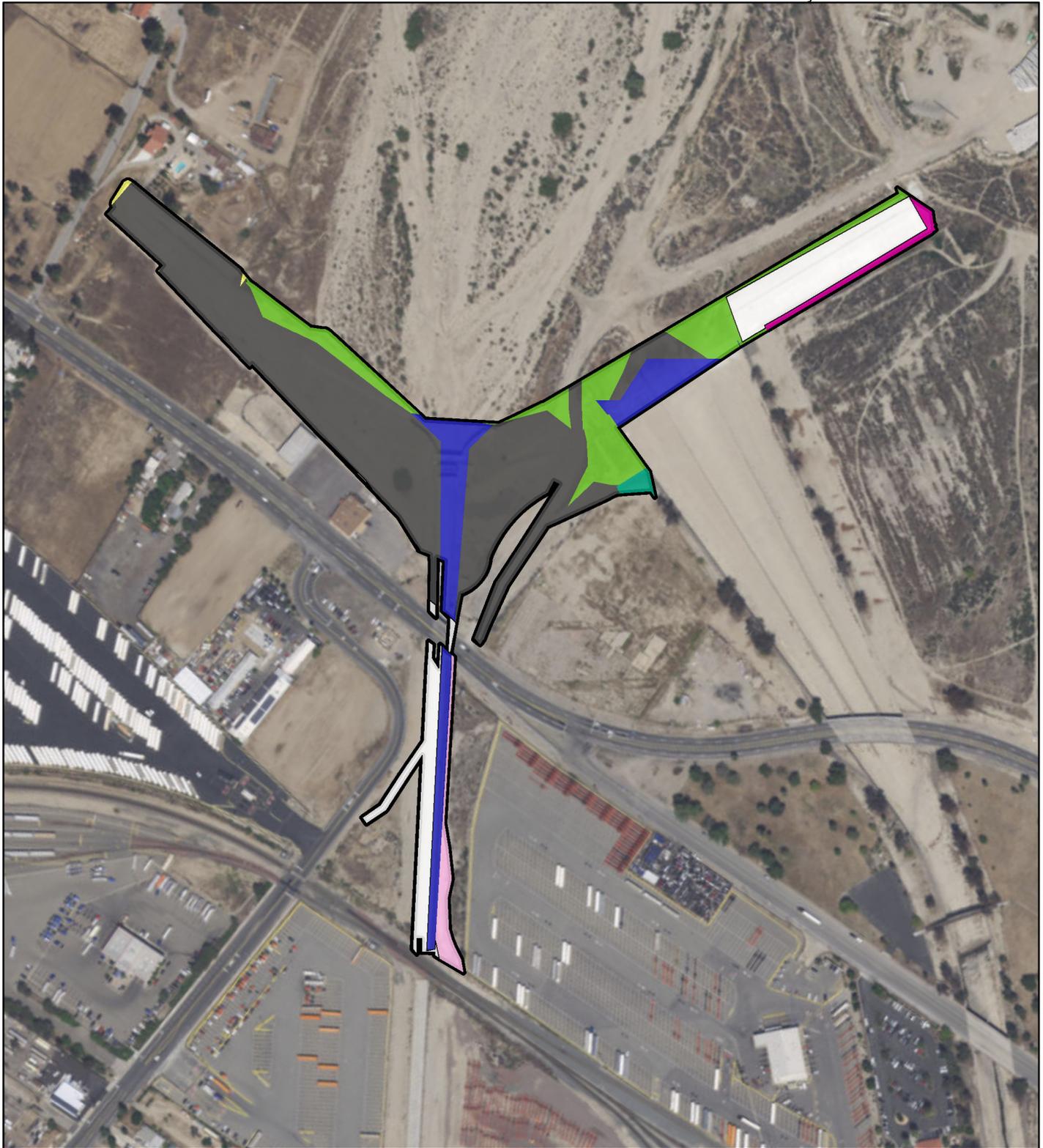
-  Facility
- Vegetation/Land Cover**
-  California Sagebrush Scrub Alliance
-  Ruderal
-  Disturbed Land
-  Scale Broom Scrub Alliance
-  Non-Native Grasslands
-  Urban

Figure 2-14.

**Vegetation and Land Cover  
Muscoy Levee (2-210-5B)**



500 0 500  
Feet



 Facility

**Vegetation/Land Cover**

- |   |  |  |
|---|--|--|
|  California Buckwheat Scrub Alliance |  Eucalyptus Groves Alliance |  Scale Broom Scrub Alliance |
|  Concrete Channel                    |  Non-Native Grasslands      |  Urban                      |
|  Disturbed Land                      |  Ruderal                    |  |

**Vegetation and Land Cover  
 Lytle Creek Gatehouse 2-211-5A**



300 0 300 Feet

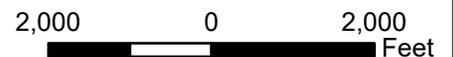
**Figure 2-15.**

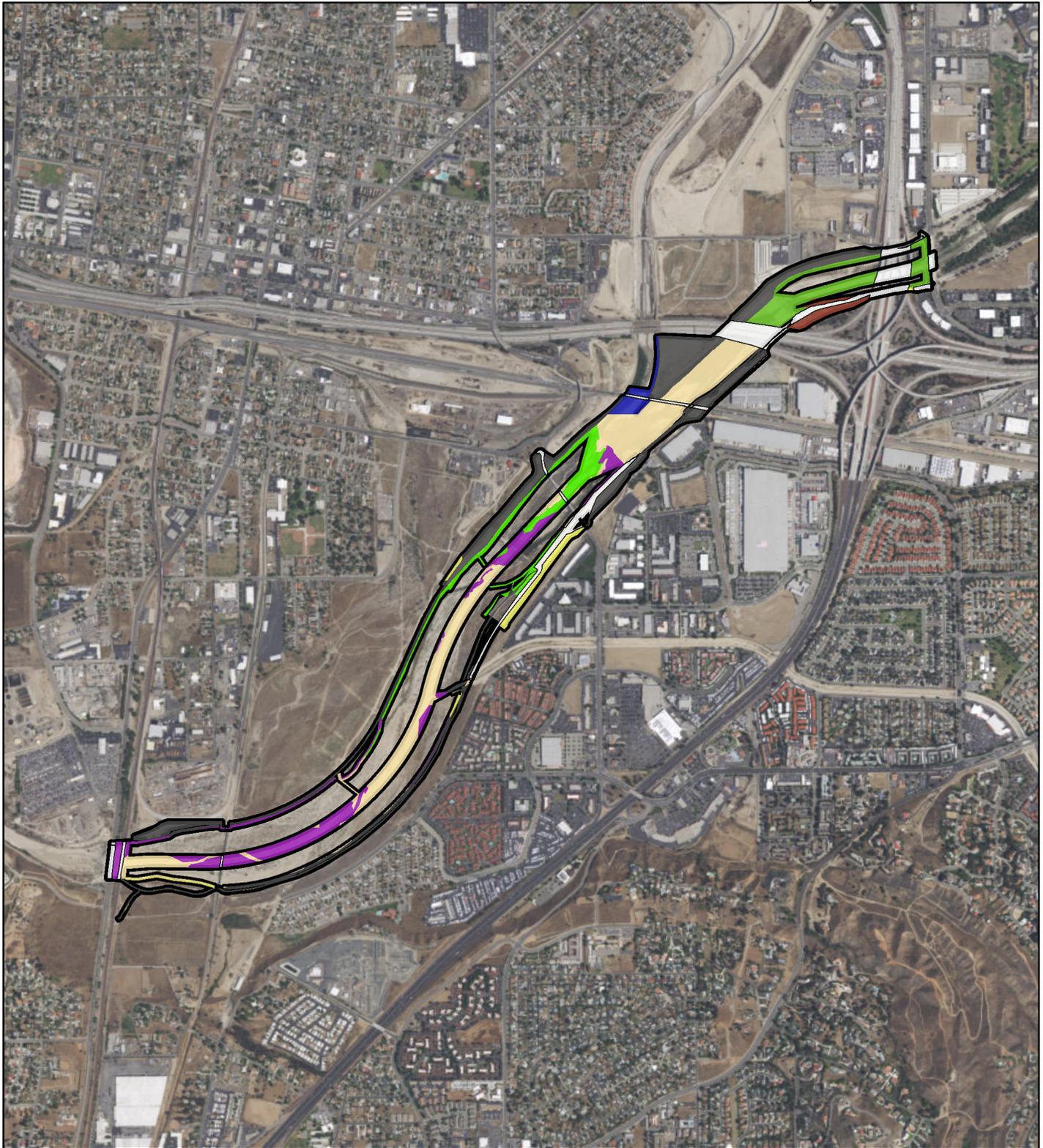


Figure 2-16.



**Vegetation and Land Cover  
Santa Ana River (2-701-1A)**





Facility

**Vegetation/Land Cover**

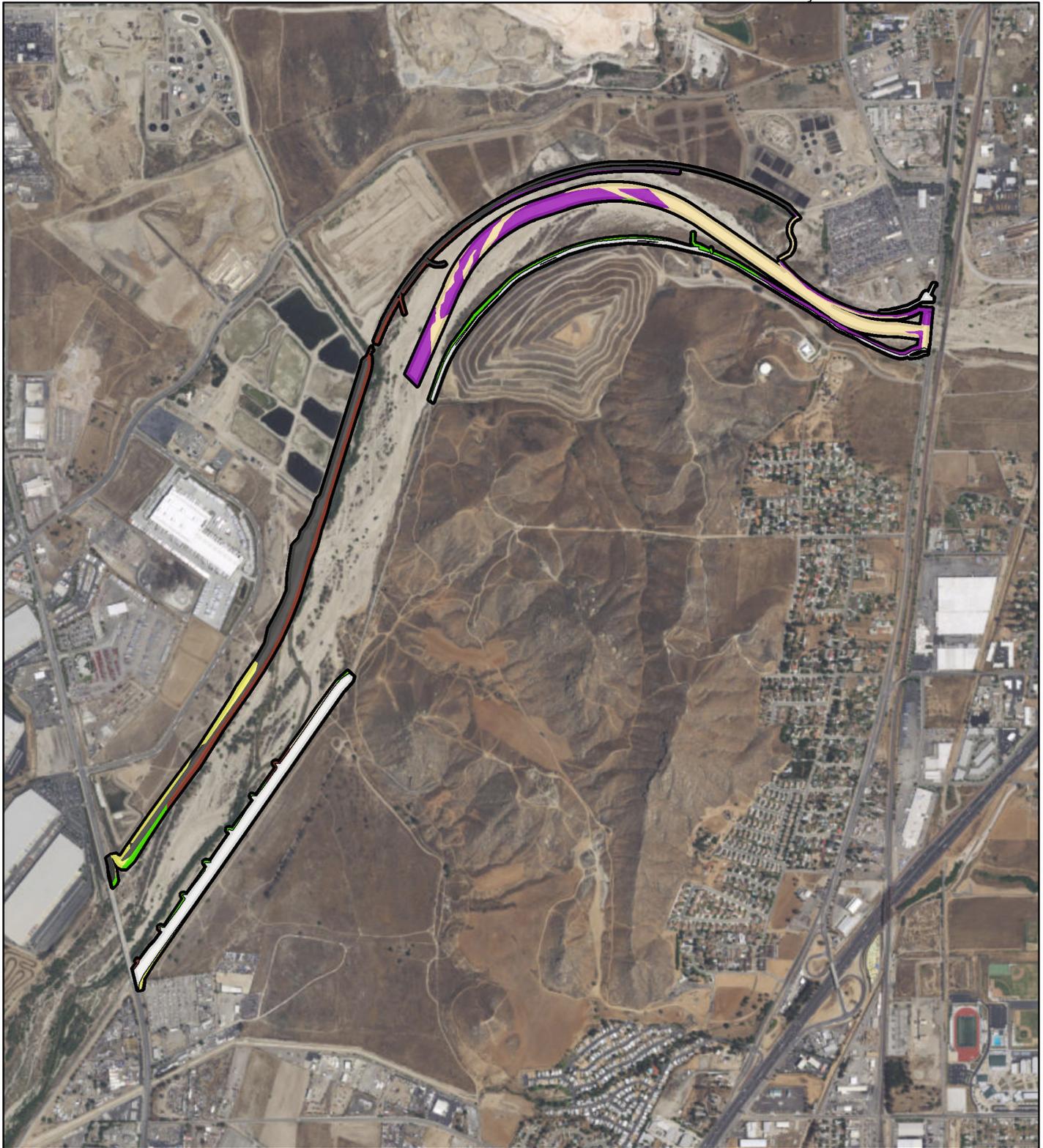
- |                                    |                            |
|------------------------------------|----------------------------|
| Arroyo Willow Thickets Alliance    | Non-Native Grasslands      |
| Concrete Channel                   | Scale Broom Scrub Alliance |
| Disturbed Land                     | Unvegetated Wash           |
| Fremont Cottonwood Forest Alliance | Urban                      |
| Mulefat Thickets Alliance          |                            |

**Vegetation and Land Cover  
 Santa Ana River 2-701-1B**



1,000 0 1,000  
 Feet

**Figure 2-17.**



Facility

**Vegetation/Land Cover**

- Arroyo Willow Thickets Alliance
- Disturbed Land
- Fremont Cottonwood Forest Alliance
- Mulefat Thickets Alliance
- Non-Native Grasslands
- Unvegetated Wash
- Urban

**Figure 2-18.**

**Vegetation and Land Cover  
Santa Ana River 2-701-1C**



1,000 0 1,000  
Feet



Figure 2-19.

 Facility

**Vegetation/Land Cover**

 California Buckwheat Scrub Alliance

 Disturbed Land

 Fremont Cottonwood Forest Alliance

 Non-Native Grasslands

 Scale Broom Scrub Alliance

 Urban

**Vegetation and Land Cover  
Santa Ana River (3-101-1D)**



1,000 0 1,000  
Feet

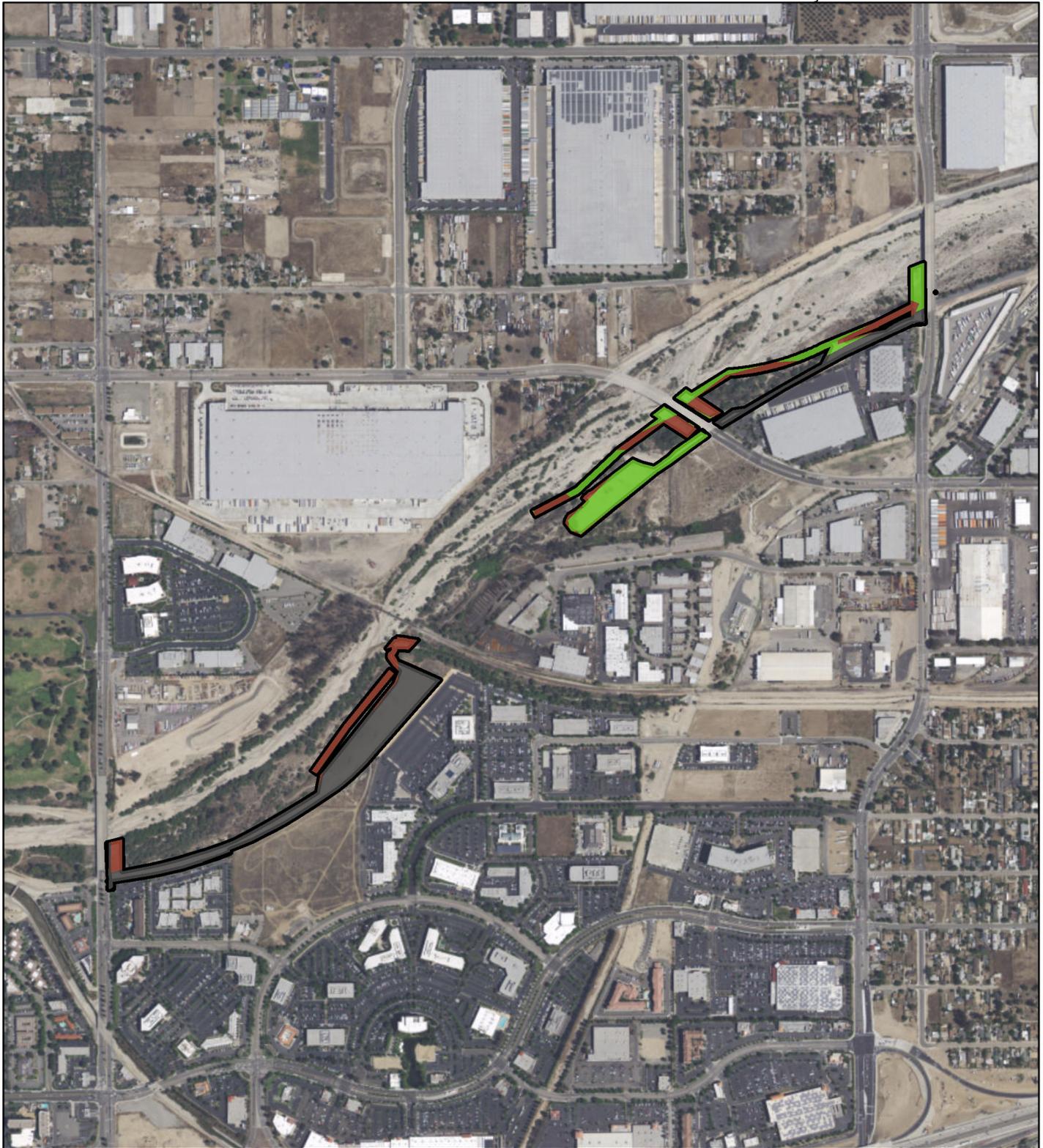


Figure 2-20.

-  Facility
- Vegetation/Land Cover**
-  Disturbed Land
-  Fremont Cottonwood Forest Alliance
-  Scale Broom Scrub Alliance
-  Urban

**Vegetation and Land Cover  
Santa Ana River (3-101-1E)**



500 0 500  
Feet

**Attachment 2**  
**Project Photos**



Photo 1: Close-up view of a typical stand of California buckwheat scrub.



Photo 2: Overview of a typical stand of California sagebrush scrub along Cajon Wash.



Photo 3: Close-up view of a typical stand of scalebroom scrub on a disturbed alluvial terrace.

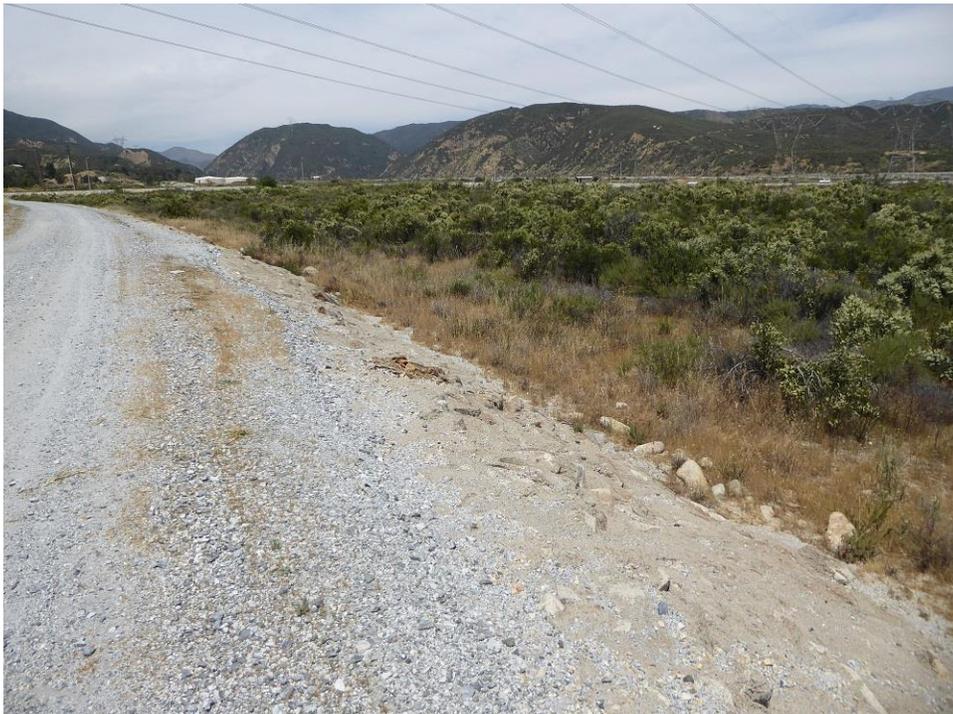


Photo 4: Overview of a typical stand of chamise chaparral.



Photo 5: Overview of a typical stand of non-native grassland.



Photo 6: Overview of a dense patch of Santa Ana River woollystar observed at 2-209-5B.



Photo 7: Overview of occupied Santa Ana River woollystar habitat at 2-211-5A.



Photo 8: Close-up view of Santa Ana River woollystar at 2-207-5A.



Photo 9: Close-up view of Parry's spineflower from within the facilities.



Photo 10: Close-up view of a typical patch of Parry's spineflower from within the facilities.



Photo 11: Close-up view of white-bracted spineflower from within the facilities.



Photo 12: Close-up view of Plummer's mariposa lily observed near 2-209-5C.

**Attachment 3**  
**Observed Species List**

<b>Latin Name</b>	<b>Common Name</b>
<b>VASCULAR PLANTS</b>	
<b>Dicotyledons</b>	
CUPRESSACEAE	CYPRESS FAMILY
<i>Juniperus californica</i>	California juniper
AMARANTHACEAE	AMARANTH FAMILY
<i>Amaranthus blitoides</i>	Prostrate pigweed
ANACARDIACEAE	SUMAC or CASHEW FAMILY
<i>Rhus aromatica (R. trilobata)</i>	Skunk bush, basketbush
<i>Toxicodendron diversilobum</i>	Western poison oak
APIACEAE	CELERY FAMILY
<i>Anthriscus caucalis</i>	Bur chervil
<i>Daucus pusillus</i>	Rattlesnake weed
ASTERACEAE	ASTER FAMILY
<i>Ambrosia acanthicarpa</i>	Annual bur-sage
<i>Ambrosia confertiflora</i>	Weak leaved burweed
<i>Ambrosia psilostachya</i>	Western ragweed
<i>Artemisia californica</i>	California sagebrush
<i>Artemisia douglasiana</i>	California mugwort
<i>Artemisia dracunculus</i>	Herbaceous sagewort
<i>Baccharis salicifolia</i>	Mule fat
<i>Bebbia juncea</i> var. <i>aspera</i>	Rough sweetbush
<i>Bidens frondosa</i>	Sticktight
<i>Brickellia californica</i>	California brickellbush
<i>Carduus pycnocephalus</i>	Italian thistle
* <i>Centaurea benedictus</i>	Blessed thistle
* <i>Centaurea melitensis</i>	Tocalote
<i>Chaenactis glabriuscula</i>	Yellow pincushion
<i>Cirsium occidentale</i> var. <i>californicum</i>	California thistle
<i>Corethrogyne filaginifolia</i>	California-aster, sand-aster
* <i>Dimorphotheca</i> sp.?	unid. African Diasy
<i>Encelia farinosa</i>	Brittlebush
<i>Ericameria linearifolia</i>	Interior goldenbush
<i>Ericameria nauseosa</i>	Common rabbitbrush
<i>Ericameria parishii</i> var. <i>parishii</i>	Parish's goldenbush
<i>Ericameria pinifolia</i> ?	Pine goldenbush
* <i>Erigeron bonariensis</i>	Flax-leaved horseweed
<i>Erigeron canadensis</i>	Horseweed
<i>Erigeron foliosus</i>	Leafy fleabane
<i>Eriophyllum confertiflorum</i>	Golden-yarrow
<i>Gnaphalium</i> sp.	Unid cudweed
<i>Gutierrezia californica</i>	California matchweed
<i>Helianthus annuus</i>	Western sunflower
<i>Helianthus gracilentus</i> (?)	Slender sunflower
<i>Heterotheca grandiflora</i>	Telegraph weed
<i>Heterotheca sessiliflora</i>	Sessileflower goldenaster
* <i>Hypochaeris glabra</i>	Smooth cat's-ear
* <i>Lactuca serriola</i>	Prickly lettuce
<i>Lasthenia coronaria</i>	Royal goldfields
<i>Lepidospartum squamatum</i>	Scale-broom
<i>Lessingia glandulifera</i>	Valley lessingia

<i>Logfia filaginoides</i>	California filago
* <i>Oncosiphon piluliferum</i>	Stinknet
<i>Pluchea sericea</i>	Arrow-weed
<i>Pseudognaphalium</i>	Unid. Cudweed
<i>Pseudognaphalium biolettii</i>	Bicolored cudweed
<i>Pseudognaphalium luteo-album</i>	Pearly everlasting
<i>Senecio flaccidus</i>	Threadleaf ragwort
* <i>Senecio vulgaris</i>	Common groundsel
* <i>Silybum marianum</i>	Milk thistle
* <i>Sonchus asper</i> ssp. <i>asper</i>	Prickly sow thistle
* <i>Sonchus oleraceus</i>	Common sow thistle
<i>Stephanomeria pauciflora</i> (?)	Wire-lettuce, desert straw
<i>Stylocline gnaphaloides</i>	Everlasting neststraw
<i>Tetradymia comosa</i>	Hairy horsebrush
<i>Uropappus lindleyi</i>	Silverpuffs
* <i>Verbesina encelioides</i> ssp. <i>exauriculata</i>	Golden crownbeard
<i>Xanthium strumarium</i>	Cocklebur
<b>BORAGINACEAE</b>	<b>BORAGE OR WATERLEAF FAMILY</b>
<i>Amsinckia menziesii</i>	Common fiddleneck
<i>Cryptantha circumscissa</i> (?)	Western cryptantha
<i>Cryptantha intermedia</i>	Common cryptantha
<i>Cryptantha micrantha</i>	Purpleroot cryptantha
<i>Cryptantha muricata</i>	Prickly cryptantha
<i>Emmenanthe penduliflora</i>	Whispering bells
<i>Eriodictyon trichocalyx</i>	Yerba santa
<i>Eucrypta chrysanthemifolia</i>	Common eucrypta
<i>Pectocarya</i> sp.	Unid. comb-bur
<i>Phacelia affinis</i> (?)	Limestone phacelia
<i>Phacelia brachyloba</i>	Short-lobed phacelia
<i>Phacelia campanularia</i>	Desert bells
<i>Phacelia cicutaria</i> (?)	Caterpillar phacelia
<i>Phacelia distans</i>	Common phacelia
<i>Phacelia ramosissima</i>	Branching phacelia
<i>Plagiobothrys nothofulvus</i> (?)	Rusty popcornflower
<b>BRASSICACEAE</b>	<b>MUSTARD FAMILY</b>
* <i>Brassica fruticulosa</i>	Mediterranean cabbage
* <i>Brassica tournefortii</i>	Sahara mustard, wild turnip
* <i>Hirschfeldia incana</i>	Shortpod mustard
* <i>Lobularia maritima</i>	Sweet alyssum
* <i>Sisymbrium altissimum</i>	Tumble mustard
* <i>Sisymbrium irio</i>	London rocket
* <i>Sisymbrium officinale</i>	Hedge mustard
* <i>Sisymbrium orientale</i>	Hare's ear cabbage
<b>CACTACEAE</b>	<b>CACTUS FAMILY</b>
<i>Cereus</i> sp.	Unid. ornamental cactus
<i>Cylindropuntia californica</i> var. <i>parkeri</i> ( <i>Opuntia parryi</i> )	Valley cholla
<i>Opuntia</i> x <i>vaseyi</i> ( <i>O. littoralis</i> ssp. <i>vaseyi</i> )	Mesa prickly pear
<b>CHENOPODIACEAE</b>	<b>GOOSEFOOT FAMILY</b>

* <i>Chenopodium album</i> (?)	Lamb's quarters, common goosefoot
* <i>Cyclolooma atriplicifolium</i>	Winged pigweed
* <i>Dysphania botrys</i>	Jerusalem oak goosefoot
* <i>Salsola tragus</i>	Russian thistle
CISTACEAE	ROCK-ROSE FAMILY
<i>Crocianthemum scoparium</i> ( <i>Helianthemum scoparium</i> )	Peak rush-rose
CONVOLVULACEAE	MORNING-GLORY FAMILY
<i>Cuscuta</i> sp.	Unid. dodder
CRASSULACEAE	STONECROP FAMILY
<i>Crassula connata</i> ( <i>C. erecta</i> )	Pygmy-weed
<i>Dudleya lanceolata</i>	Lance-leaved dudleya
CUCURBITACEAE	GOURD FAMILY, CUCUMBER FAMILY
<i>Cucurbita foetidissima</i>	Calabazilla
<i>Marah macrocarpa</i>	Chilicothe, wild cucumber
EUPHORBIACEAE	SPURGE FAMILY
<i>Croton californicus</i>	California croton
<i>Croton setiger</i>	Turkey-mullein
<i>Euphorbia albomarginata</i>	Rattlesnake sandmat
* <i>Ricinus communis</i>	Castor bean
<i>Stillingia linearifolia</i>	Linear-leaved stillingia
FABACEAE	LEGUME FAMILY, PEA FAMILY
<i>Acmispon americanus</i>	Spanish clover
<i>Acmispon glaber</i>	Deerweed
<i>Acmispon heermannii</i>	Heermann's lotus
<i>Acmispon strigosus</i>	Strigose lotus
<i>Lupinus hirsutissimus</i>	Stinging lupine
<i>Lupinus truncatus</i>	Collar lupine
* <i>Melilotus albus</i>	White sweetclover
* <i>Parkinsonia aculeata</i>	Mexican palo verde
GERANIACEAE	GERANIUM FAMILY
* <i>Erodium botrys</i>	Big heron bill
* <i>Erodium cicutarium</i>	Redstem filaree
JUGLANDACEAE	WALNUT FAMILY
** <i>Juglans californica</i>	Southern California black walnut
LAMIACEAE	MINT FAMILY
* <i>Marrubium vulgare</i>	Horehound
<i>Salvia apiana</i>	White sage
<i>Salvia columbariae</i>	Chia
<i>Salvia mellifera</i>	Black sage
LOASACEAE	STICK-LEAF FAMILY
<i>Mentzelia</i> sp.	Unid. annual
MONTIACEAE	MINER'S LETTUCE FAMILY
<i>Calyptidium monandrum</i>	Pussypaws, common calyptidium
MORACEAE	MULBERRY FAMILY, FIG FAMILY
* <i>Ficus carica</i>	Common fig
MYRSINACEAE	MYRSINE FAMILY
* <i>Anagallis arvensis</i>	Scarlet pimpernel
MYRTACEAE	MYRTLE FAMILY
* <i>Eucalyptus</i> sp.	Ornamental eucalyptus
ONAGRACEAE	EVENING-PRIMROSE FAMILY

<i>Camissoniopsis bistorta</i>	California sun cup
<i>Camissoniopsis hirtella</i> (?)	Field suncup
<i>Eulobus californica</i>	California false mustard
OROBANCHACEAE	BROOMRAPE FAMILY
<i>Castilleja exserta</i>	Purple owl's-clover
PAPAVERACEAE	POPPY FAMILY
<i>Argemone munita</i>	Prickly poppy
<i>Dendromecon rigida</i>	Bush poppy
PLANTAGINACEAE	PLANTAIN FAMILY
<i>Penstemon grinnellii</i>	Grinnell's penstemon
<i>Penstemon spectabilis</i>	Royal penstemon
* <i>Plantago patagonica</i>	Patagonia plantain
PLATANACEAE	SYCAMORE FAMILY
<i>Platanus racemosa</i>	Western sycamore
POLEMONIACEAE	PHLOX FAMILY
<i>Allophyllum glutinosum</i>	Sticky false gilia
** <i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	Santa Ana river woolly-star
<i>Eriastrum sapphirinum</i> ssp. <i>dasyanthum</i>	Sapphire woollystar
<i>Gilia capitata</i>	Bluehead gilia, ball gilia
<i>Navarretia atractyloides</i>	Holly-leaved skunkweed
<i>Navarretia hamata</i> (?)	Hooked navarretia
POLYGONACEAE	BUCKWHEAT FAMILY
** <i>Chorizanthe parryi</i> var. <i>parryi</i>	Parry's spineflower
<i>Chorizanthe staticoides</i>	Turkish rugging
** <i>Chorizanthe xanti</i> var. <i>leucotheca</i>	White-bracted spineflower
<i>Eriogonum fasciculatum</i>	California buckwheat
<i>Eriogonum gracile</i>	Slender wild buckwheat
<i>Eriogonum thurberi</i>	Thurber's wild buckwheat
<i>Lastarriaea coriacea</i>	Leather-spineflower
<i>Pterostegia drymarioides</i>	Woodland threadstem, hairnet
<i>Rumex hymenosepalus</i>	Wild rhubarb
RANUNCULACEAE	BUTTERCUP FAMILY
<i>Delphinium cardinale</i>	Scarlet larkspur
RHAMNACEAE	BUCKTHORN FAMILY
<i>Ceanothus crassifolius</i> (?)	Hoaryleaf ceanothus
<i>Ceanothus leucodermis</i>	Chaparral whitethorn
<i>Rhamnus crocea</i>	Spiny redberry
ROSACEAE	ROSE FAMILY
<i>Adenostoma fasciculatum</i>	Chamise
<i>Cercocarpus betuloides</i>	Birch-leaf mountain-mahogany
SALICACEAE	WILLOW FAMILY
<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont cottonwood
<i>Salix exigua</i>	Narrow-leaf willow, sandbar willow
<i>Salix laevigata</i>	Red willow
<i>Salix lasiandra</i>	Lance-leaved willow
<i>Salix lasiolepis</i>	Arroyo willow
SCROPHULARIACEAE	FIGWORT FAMILY
<i>Scrophularia californica</i>	California figwort
SIMAROUBACEAE	QUASSIA FAMILY

* <i>Ailanthus altissima</i>	Tree of heaven
SOLANACEAE	NIGHTSHADE FAMILY
<i>Datura wrightii</i>	Jimsonweed, tolguacha
* <i>Lycopersicon esculentum</i>	Garden tomato
<i>Nicotiana attenuata</i>	Coyote tobacco
* <i>Nicotiana glauca</i>	Tree tobacco
<i>Nicotiana quadrivalvis</i>	Indian tobacco
<i>Solanum douglasii</i>	Nightshade
TAMARICACEAE	TAMARISK FAMILY
* <i>Tamarix ramosissima</i> (?)	Saltcedar
VISCACEAE	MISTLETOE FAMILY
<i>Phoradendron leucarpum</i> ssp. <i>macrophyllum</i>	American mistletoe (on cottonwood)
<b>Monocotyledons</b>	
AGAVACEAE	AGAVE FAMILY
<i>Hesperoyucca whipplei</i>	Chaparral yucca
<i>Yucca schidigera</i> (?)	Mojave yucca
ARECACEAE	PALM FAMILY
* <i>Washingtonia robusta</i> (?)	Mexican fan palm
LILIACEAE	LILY FAMILY
** <i>Calochortus plummerae</i>	Plummer's mariposa lily
POACEAE	GRASS FAMILY
* <i>Arundo donax</i>	Giant reed
* <i>Avena barbata</i>	Slender oat
* <i>Avena fatua</i>	Wild oat
* <i>Brachypodium distachyon</i>	False brome
* <i>Bromus diandrus</i>	Rippgut brome
* <i>Bromus hordeaceus</i>	Soft chess
* <i>Bromus madritensis</i> ssp. <i>rubens</i>	Red brome
* <i>Bromus tectorum</i>	Cheat grass
* <i>Cynodon dactylon</i>	Bermuda grass
<i>Festuca microstachys</i>	Annual fescue
* <i>Festuca myuros</i>	Rattail sixweeks grass
* <i>Hordeum murinum</i>	Wall barley, hare barley
* <i>Hordeum vulgare</i> (?)	Common barley
* <i>Lamarckia aurea</i>	Goldentop grass
<i>Melica imperfecta</i>	Little California melica
* <i>Pennisetum setaceum</i>	Crimson fountain grass
* <i>Polypogon monspeliensis</i>	Rabbitfoot grass
* <i>Schismus barbatus</i>	Mediterranean schismus
<i>Setaria parviflora</i>	Knotroot bristle grass
* <i>Sorghum halepense</i>	Johnson grass
* <i>Stipa miliacea</i> var. <i>miliacea</i>	Smilo grass
<i>Stipa pulchra</i>	Purple needle grass

*Non-native species are indicated by an asterisk, special-status species indicated by two asterisks. This list includes only species observed on the site. Others may have been overlooked or unidentifiable due to season.*

**Attachment 4**  
**CNDDDB Query Results**



# Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



**Query Criteria:** Quad (Telegraph Peak (3411735) OR Cajon (3411734) OR Silverwood Lake (3411733) OR Cucamonga Peak (3411725) OR San Bernardino North (3411723) OR San Bernardino South (3411713) OR Lake Arrowhead (3411732) OR Harrison Mtn. (3411722) OR Keller Peak (3411721) OR Yucaipa (3411711) OR Redlands (3411712) OR Fontana (3411714) OR Guasti (3411715) OR Riverside East (3311783) OR Riverside West (3311784) OR Sunnymead (3311782) OR El Casco (3311781)) AND Taxonomic Group (Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Allium howellii</i> var. <i>clokeyi</i> Mt. Pinos onion	PMLIL02161	None	None	G4T2	S2	1B.3
<i>Ambrosia pumila</i> San Diego ambrosia	PDAST0C0M0	Endangered	None	G1	S1	1B.1
<i>Arctostaphylos glandulosa</i> ssp. <i>gabrielensis</i> San Gabriel manzanita	PDERI042P0	None	None	G5T3	S3	1B.2
<i>Arenaria paludicola</i> marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
<i>Asclepias nyctaginifolia</i> Mojave milkweed	PDASC02190	None	None	G4G5	S2	2B.1
<i>Astragalus hornii</i> var. <i>hornii</i> Horn's milk-vetch	PDFAB0F421	None	None	G4G5T1T2	S1	1B.1
<i>Astragalus lentiginosus</i> var. <i>antonius</i> San Antonio milk-vetch	PDFAB0FB92	None	None	G5T2	S2	1B.3
<i>Atriplex coronata</i> var. <i>notatior</i> San Jacinto Valley crownscale	PDCHE040C2	Endangered	None	G4T1	S1	1B.1
<i>Atriplex serenana</i> var. <i>dauidsonii</i> Davidson's saltscale	PDCHE041T1	None	None	G5T1	S1	1B.2
<i>Berberis nevinii</i> Nevin's barberry	PDBER060A0	Endangered	Endangered	G1	S1	1B.1
<i>Botrychium crenulatum</i> scalloped moonwort	PPOPH010L0	None	None	G4	S3	2B.2
<i>Botrychium minganense</i> Mingan moonwort	PPOPH010R0	None	None	G4G5	S3	2B.2
<i>Brodiaea filifolia</i> thread-leaved brodiaea	PMLIL0C050	Threatened	Endangered	G2	S2	1B.1
<i>California macrophylla</i> round-leaved filaree	PDGER01070	None	None	G4	S4	1B.2
<i>Calochortus palmeri</i> var. <i>palmeri</i> Palmer's mariposa-lily	PMLIL0D122	None	None	G3T2	S2	1B.2
<i>Calochortus plummerae</i> Plummer's mariposa-lily	PMLIL0D150	None	None	G4	S4	4.2
<i>Canbya candida</i> white pygmy-poppy	PDPAP05020	None	None	G3G4	S3S4	4.2



Selected Elements by Scientific Name  
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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b>Carex comosa</b> bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
<b>Castilleja cinerea</b> ash-gray paintbrush	PDSCR0D0H0	Threatened	None	G1G2	S1S2	1B.2
<b>Castilleja lasiorhyncha</b> San Bernardino Mountains owl's-clover	PDSCR0D410	None	None	G2?	S2?	1B.2
<b>Centromadia pungens ssp. laevis</b> smooth tarplant	PDAST4R0R4	None	None	G3G4T2	S2	1B.1
<b>Chloropyron maritimum ssp. maritimum</b> salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T1	S1	1B.2
<b>Chorizanthe parryi var. parryi</b> Parry's spineflower	PDPGN040J2	None	None	G3T2	S2	1B.1
<b>Chorizanthe xanti var. leucotheca</b> white-bracted spineflower	PDPGN040Z1	None	None	G4T3	S3	1B.2
<b>Cladium californicum</b> California saw-grass	PMCYP04010	None	None	G4	S2	2B.2
<b>Claytonia lanceolata var. peirsonii</b> Peirson's spring beauty	PDPOR03097	None	None	G5T1Q	S1	3.1
<b>Cuscuta obtusiflora var. glandulosa</b> Peruvian dodder	PDCUS01111	None	None	G5T4T5	SH	2B.2
<b>Deinandra mohavensis</b> Mojave tarplant	PDAST4R0K0	None	Endangered	G2	S2	1B.3
<b>Dodecahema leptoceras</b> slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
<b>Dudleya abramsii ssp. affinis</b> San Bernardino Mountains dudleya	PDCRA04013	None	None	G4T2	S2	1B.2
<b>Eremothera boothii ssp. boothii</b> Booth's evening-primrose	PDONA03052	None	None	G5T4	S2	2B.3
<b>Eriastrum densifolium ssp. sanctorum</b> Santa Ana River woollystar	PDPLM03035	Endangered	Endangered	G4T1	S1	1B.1
<b>Eriogonum microthecum var. johnstonii</b> Johnston's buckwheat	PDPGN083W5	None	None	G5T2	S2	1B.3
<b>Fimbristylis thermalis</b> hot springs fimbristylis	PMCYP0B0N0	None	None	G4	S1S2	2B.2
<b>Galium californicum ssp. primum</b> Alvin Meadow bedstraw	PDRUB0N0E6	None	None	G5T1	S1	1B.2
<b>Helianthus nuttallii ssp. parishii</b> Los Angeles sunflower	PDAST4N102	None	None	G5TH	SH	1A
<b>Heuchera parishii</b> Parish's alumroot	PDSAX0E0S0	None	None	G3	S3	1B.3
<b>Horkelia cuneata var. puberula</b> mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1



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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Imperata brevifolia</i> California satintail	PMPOA3D020	None	None	G4	S3	2B.1
<i>Ivesia argyrocoma</i> var. <i>argyrocoma</i> silver-haired ivesia	PDROS0X021	None	None	G2T2	S2	1B.2
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i> Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
<i>Lepidium virginicum</i> var. <i>robinsonii</i> Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
<i>Lilium parryi</i> lemon lily	PMLIL1A0J0	None	None	G3	S3	1B.2
<i>Linanthus concinnus</i> San Gabriel linanthus	PDPLM090D0	None	None	G2	S2	1B.2
<i>Lycium parishii</i> Parish's desert-thorn	PDSOL0G0D0	None	None	G3?	S1	2B.3
<i>Malacothamnus parishii</i> Parish's bush-mallow	PDMAL0Q0C0	None	None	GXQ	SX	1A
<i>Monardella australis</i> ssp. <i>jokerstii</i> Jokerst's monardella	PDLAM18112	None	None	G4T1	S1	1B.1
<i>Monardella macrantha</i> ssp. <i>hallii</i> Hall's monardella	PDLAM180E1	None	None	G5T3	S3	1B.3
<i>Monardella pringlei</i> Pringle's monardella	PDLAM180J0	None	None	GX	SX	1A
<i>Muhlenbergia californica</i> California muhly	PMPOA480A0	None	None	G4	S4	4.3
<i>Nama stenocarpa</i> mud nama	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
<i>Nasturtium gambelii</i> Gambel's water cress	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
<i>Navarretia prostrata</i> prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.1
<i>Opuntia basilaris</i> var. <i>brachyclada</i> short-joint beavertail	PDCAC0D053	None	None	G5T3	S3	1B.2
<i>Oreonana vestita</i> woolly mountain-parsley	PDAPI1G030	None	None	G3	S3	1B.3
<i>Orobanche valida</i> ssp. <i>valida</i> Rock Creek broomrape	PDORO040G2	None	None	G4T2	S2	1B.2
<i>Packera bernardina</i> San Bernardino ragwort	PDAST8H0E0	None	None	G2	S2	1B.2
<i>Pediomelum castoreum</i> Beaver Dam breadroot	PDFAB5L050	None	None	G3	S2	1B.2
<i>Perideridia parishii</i> ssp. <i>parishii</i> Parish's yampah	PDAPI1N0C2	None	None	G4T3T4	S2	2B.2



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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Phacelia stellaris</i></b> Brand's star phacelia	PDHYD0C510	None	None	G1	S1	1B.1
<b><i>Pseudognaphalium leucocephalum</i></b> white rabbit-tobacco	PDAST440C0	None	None	G4	S2	2B.2
<b><i>Ribes divaricatum var. parishii</i></b> Parish's gooseberry	PDGRO020F3	None	None	G4TX	SX	1A
<b><i>Sagittaria sanfordii</i></b> Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
<b><i>Schoenus nigricans</i></b> black bog-rush	PMCYP0P010	None	None	G4	S2	2B.2
<b><i>Scutellaria bolanderi ssp. austromontana</i></b> southern mountains skullcap	PDLAM1U0A1	None	None	G4T3	S3	1B.2
<b><i>Senecio aphanactis</i></b> chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
<b><i>Sidalcea hickmanii ssp. parishii</i></b> Parish's checkerbloom	PDMAL110A3	None	Rare	G3T1	S1	1B.2
<b><i>Sidalcea malviflora ssp. dolosa</i></b> Bear Valley checkerbloom	PDMAL110FH	None	None	G5T2	S2	1B.2
<b><i>Sidalcea neomexicana</i></b> salt spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
<b><i>Sidalcea pedata</i></b> bird-foot checkerbloom	PDMAL110L0	Endangered	Endangered	G1	S1	1B.1
<b><i>Sphenopholis obtusata</i></b> prairie wedge grass	PMPOA5T030	None	None	G5	S2	2B.2
<b><i>Streptanthus bernardinus</i></b> Laguna Mountains jewelflower	PDBRA2G060	None	None	G3G4	S3S4	4.3
<b><i>Streptanthus campestris</i></b> southern jewelflower	PDBRA2G0B0	None	None	G3	S3	1B.3
<b><i>Symphotrichum defoliatum</i></b> San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
<b><i>Symphotrichum greatae</i></b> Greata's aster	PDASTE80U0	None	None	G2	S2	1B.3
<b><i>Thelypteris puberula var. sonorensis</i></b> Sonoran maiden fern	PPTHE05192	None	None	G5T3	S2	2B.2
<b><i>Trichocoronis wrightii var. wrightii</i></b> Wright's trichocoronis	PDAST9F031	None	None	G4T3	S1	2B.1
<b><i>Viola pinetorum ssp. grisea</i></b> grey-leaved violet	PDVIO04431	None	None	G4G5T3	S3	1B.3

Record Count: 78

**Attachment 5**  
**Special-Status Species Not Addressed**

## Attachment 5. Special-status species not addressed

Scientific Name	Common Name	Reason for Exclusion
<b>PLANTS</b>		
<i>Allium howellii</i> var. <i>clokeyi</i>	Mt. Pinos onion	Well below elevation range.
<i>Ambrosia pumila</i>	San Diego ambrosia	No suitable alkali substrates.
<i>Arctostaphylos glandulosa</i> ssp. <i>gabrielensis</i>	San Gabriel manzanita	Well below elevation range.
<i>Arenaria paludicola</i>	Marsh sandwort	No suitable alkali habitat.
<i>Asclepias nyctaginifolia</i>	Mojave milkweed	Well outside elevational range.
<i>Astragalus hornii</i> var. <i>hornii</i>	Horn's milk-vetch	No suitable alkali habitat.
<i>Astragalus lentiginosus</i> var. <i>antonius</i>	San Antonio milk-vetch	Well below elevation range.
<i>Atriplex coronata</i> var. <i>notatior</i>	San Jacinto Valley crownscale	No suitable alkali substrates or playa habitat.
<i>Atriplex serenana</i> var. <i>davidsonii</i>	Davidson's saltscale	No suitable alkali substrates or playa habitat.
<i>Botrychium crenulatum</i>	Scalloped moonwort	Well below elevation range.
<i>Botrychium minganense</i>	Mingan moonwort	Well below elevation range.
<i>Brodiaea filifolia</i>	Thread-leaved brodiaea	No suitable clay soils.
<i>California macrophylla</i>	Round-leaved filaree	No suitable clay soils.
<i>Calochortus palmeri</i> var. <i>palmeri</i>	Palmer's mariposa-lily	Well below elevation range.
<i>Canbya candida</i>	White pygmy-poppy	Outside of species geographic range.
<i>Carex comosa</i>	Bristly sedge	No suitable high elevation wetland habitat.
<i>Castilleja cinerea</i>	Ash-gray paintbrush	Well below elevation range, no suitable montane habitat.
<i>Castilleja lasiorhyncha</i>	San Bernardino Mountains owl's-clover	Well below elevation range, no suitable montane habitat.
<i>Centromadia pungens</i> ssp. <i>laevis</i>	Smooth tarplant	No suitable alkali substrates or playa habitat.
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	Salt marsh bird's-beak	No suitable alkali substrates or playa habitat.
<i>Cladium californicum</i>	California saw-grass	No suitable meadow or seep habitat.
<i>Claytonia lanceolata</i> var. <i>peirsonii</i>	Peirson's spring beauty	Well below elevation range, no suitable montane habitat.
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i>	Peruvian dodder	No suitable wetland or other mesic habitat.
<i>Deinandra mohavensis</i>	Mojave tarplant	Well below elevation range, no suitable montane habitat.
<i>Dudleya abramsii</i> ssp. <i>affinis</i>	San Bernardino Mountains dudleya	Well below elevation range, no suitable montane habitat.
<i>Eremothera boothii</i> ssp. <i>boothii</i>	Booth's evening-primrose	Outside of geographic range.
<i>Eriogonum microthecum</i> var. <i>johnstonii</i>	Johnston's buckwheat	Well below elevation range, no suitable montane habitat.
<i>Fimbristylis thermalis</i>	Hot springs fimbristylis	No suitable wetland or other mesic habitat.
<i>Frasera neglecta</i>	Pine-green gentian	Well below elevation range, no suitable montane habitat.
<i>Galium californicum</i> ssp. <i>primum</i>	Alvin Meadow bedstraw	Outside of species' geographic range.
<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	Los Angeles sunflower	Considered to be extirpated.
<i>Heuchera parishii</i>	Parish's alumroot	Well below elevation range, no suitable montane habitat.
<i>Imperata brevifolia</i>	California satintail	No suitable meadow or seep habitat.
<i>Ivesia argyrocoma</i> var. <i>argyrocoma</i>	Silver-haired ivesia	Well below elevation range, no suitable montane habitat.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	No suitable alkali substrates.

## Attachment 5. Special-status species not addressed

Scientific Name	Common Name	Reason for Exclusion
<i>Lilium parryi</i>	Lemon lily	No suitable mesic meadow habitat, well below the elevational range.
<i>Linanthus concinnus</i>	San Gabriel linanthus	Below elevation range.
<i>Lycium parishii</i>	Parish's desert-thorn	Known from collections prior to 1900 in San Bernardino, likely extirpated from the county.
<i>Malacothamnus parishii</i>	Parish's bush-mallow	Not likely to be a recognized species.
<i>Monardella australis</i> ssp. <i>jokerstii</i>	Jokerst's monardella	Below elevation range.
<i>Monardella macrantha</i> ssp. <i>hallii</i>	Hall's monardella	Below elevation range.
<i>Monardella pringlei</i>	Pringle's monardella	No suitable sand habitat, likely north of the species' geographic range.
<i>Muhlenbergia californica</i>	California muhly grass	No suitable mesic canyon habitat.
<i>Nama stenocarpa</i>	Mud nama	No suitable lake margin or vernal pool habitat.
<i>Nasturtium gambelii</i>	Gambel's water cress	No suitable meadow or seep habitat, extirpated from southern CA.
<i>Navarretia prostrata</i>	Prostrate vernal pool navarretia	No suitable vernal pool habitat.
<i>Opuntia basilaris</i> var. <i>brachyclada</i>	short-joint beavertail	Outside of geographic range
<i>Oreonana vestita</i>	woolly mountain-parsley	Outside of geographic range.
<i>Orobanche valida</i> ssp. <i>valida</i>	Rock Creek broomrape	Outside of geographic range.
<i>Packera bernardina</i>	San Bernardino ragwort	Outside of geographic range.
<i>Pediomelum castoreum</i>	Beaver Dam breadroot	Outside of geographic range.
<i>Perideridia parishii</i> ssp. <i>parishii</i>	Parish's yampah	Outside of geographic range.
<i>Ribes divaricatum</i> var. <i>parishii</i>	Parish's gooseberry	Considered to be extirpated.
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	No suitable wetland habitat.
<i>Schoenus nigricans</i>	Black bog-rush	No suitable wetland or mesic habitat.
<i>Scutellaria bolanderi</i> ssp. <i>austromontana</i>	Southern mountains skullcap	Outside of geographic range.
<i>Senecio aphanactis</i>	Chaparral ragwort	Outside of species' geographic range.
<i>Sidalcea hickmanii</i> ssp. <i>parishii</i>	Parish's checkerbloom	Outside of geographic range.
<i>Sidalcea malviflora</i> ssp. <i>dolosa</i>	Bear Valley checkerbloom	Outside of geographic range.
<i>Sidalcea neomexicana</i>	Salt Spring checkerbloom	No suitable alkali substrate or wetland habitat.
<i>Sidalcea pedata</i>	bird-foot checkerbloom	Outside of geographic range.
<i>Sphenopholis obtusata</i>	Prairie wedge grass	No suitable meadow or seep habitat.
<i>Streptanthus bernardinus</i>	Laguna Mountains jewelflower	Well below the elevational range.
<i>Streptanthus campestris</i>	Southern jewelflower	Well below the elevational range.
<i>Symphyotrichum defoliatum</i>	San Bernardino aster	No suitable wetland or mesic habitat.
<i>Symphyotrichum greatae</i>	Greata's aster	No suitable mesic canyon habitat.
<i>Thelypteris puberula</i> var. <i>sonorensis</i>	Sonoran maiden fern	No suitable mesic canyon habitat.
<i>Trichocoronis wrightii</i> var. <i>wrightii</i>	Wright's trichocoronis	Outside of geographic range.
<i>Viola pinetorum</i> ssp. <i>grisea</i>	grey-leaved violet	Well below elevation range.

# **APPENDIX D-2**

*Rare Plant Surveys – Desert Region*



# APPENDIX D-2

## *Rare Plant Surveys – Desert Region*



# FOCUSED SPECIAL-STATUS PLANT SURVEY REPORT

## Low Desert Flood Control Facilities

### Prepared for:



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### Prepared by:



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October 2017

# FOCUSED SPECIAL-STATUS PLANT SURVEY REPORT

## Low Desert Flood Control Facilities

ASPEN ENVIRONMENTAL GROUP  
October 2017

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### Attachments

- Attachment 1: Figures
- Attachment 2: Photo Exhibit
- Attachment 3: Special-status Plants Unlikely to Occur in the Survey area
- Attachment 4: Plant Species Observed
- Attachment 5: California Natural Diversity Database Results

# FOCUSED SPECIAL-STATUS PLANT SURVEY REPORT

## Low Desert Flood Control Facilities

Justin M. Wood  
ASPEN ENVIRONMENTAL GROUP  
October 2017

### I. Introduction

The San Bernardino County Flood Control District (District) is developing a Master Storm Water System-Wide Maintenance Plan (MSWSMP) for all District flood control facilities. In support of this MSWMP the District is preparing an Environmental Impact Report (EIR) in support of long-term programmatic permits for routine maintenance.

Aspen Environmental Group (Aspen) was contracted by the District to conduct special-status plant surveys at six flood control facilities (facilities) located in the low desert area of San Bernardino County, described in Section II.

The purpose of this report is to describe the methods and results of focused special-status plant surveys that were conducted in 2017. For the purposes of this report ‘facilities’ refers to all six flood control facilities.

### II. Project Description

The MSWSMP will specify maintenance activities that are planned at the facilities. Maintenance will include:

- Mechanized land clearing and excavation
- Bank repair
- Mowing
- Stock piling of material
- Herbicide application and vector control
- Fire break construction, and
- Ingress and egress routes

The facilities are:

- **Little Morongo Creek (6-501-1A).** This facility is an earthen trapezoidal flood control channel in the community of Morongo Valley. It is shown on the Morongo Valley USGS 7.5-minute topographic quadrangle. Elevation ranges from 2,620 feet to 2,920 feet above sea level. The total size of the facility is approximately 19.1 acres and maintenance is proposed within the entire facility. Flows into the facility originate in the San Bernardino Mountains to the northwest. Substrates and micro-habitats are diverse and include sandy wash, gravel benches, and adjacent intact sandy desert scrub vegetation (see Photos 1 through 3). The facility does not appear to be maintained as frequently as some of the others.
- **Old Woman Springs Creek Basin (6-454-4A).** This facility is in a flood control basin in the community of Yucca Valley. It is shown on the Yucca Valley USGS 7.5-minute topographic quadrangle. Elevation ranges from 3,320 feet to 3,350 feet above sea level. The total size of the

facility is approximately 3.8 acres and maintenance is proposed within the entire facility. Flows into the facility originate within a small geographic area just to the northwest. It supports very little habitat diversity and includes landscaped basin slopes and sandy wash in the basin bottom (see Photo 4). The facility does not appear to be maintained as frequently as some of the others.

- **Yucca Creek (6-451-1C).** This facility is an earthen trapezoidal flood control channel in the community of Yucca Valley. It is shown on the Yucca Valley and Joshua Tree North USGS 7.5-minute topographic quadrangles. Elevation ranges from 3,060 feet to 3,170 feet above sea level. The total size of the facility is approximately 38.3 acres however maintenance is only proposed within about 15 acres of the facility. Flows into the facility originate within the community of Yucca Valley and adjacent foothills. It supports very little habitat diversity and includes maintained channel slopes, a broad sandy wash, and very few patches of intact desert wash woodland habitat at its eastern end (see Photos 5 and 6). The facility appears to be frequently maintained and is regularly scoured.
- **Quail Wash (6-452-1A).** This facility is an earthen trapezoidal flood control channel in the community of Joshua Tree. It is shown on the Joshua Tree North USGS 7.5-minute topographic quadrangle. Elevation ranges from 2,770 feet to 3,000 feet above sea level. The total size of the facility is approximately 41.2 acres however maintenance is only proposed within about 6 acres of the facility. Flows into the facility originate within developed areas to the southwest and some adjacent foothills. Habitat includes a sandy wash, maintained channel slopes, and some adjacent patches of desert scrub (see Photos 7 and 8). The facility appears to be frequently maintained and is regularly scoured.
- **49 Palms Spreading Grounds (6-401-2A).** This facility is composed of several flood control features and associated infrastructure (roads and stockpiling areas) in the community of Twentynine Palms. It is shown on the Twentynine Palms and Queen Mountain USGS 7.5-minute topographic quadrangles. Elevation ranges from 2,130 feet to 2,330 feet above sea level. The total size of the facility is approximately 137.8 acres however maintenance is only proposed within about 40.1 acres of the facility. Flows into the facility originate in Twentynine Palms Canyon to the south. Habitat includes a broad wash dominated by boulders and smaller sandy braids. Habitat is diverse and includes a variety of wash vegetation types (see Photos 9 and 10). The facility does not appear to be regularly maintained.
- **Joshua Tree Wash (6-452-1B).** This facility is an earthen trapezoidal flood control channel in the community of Joshua Tree. It is shown on the Joshua Tree North USGS 7.5-minute topographic quadrangle. Elevation ranges from 2,630 feet to 2,840 feet above sea level. The total size of the facility is approximately 7.5 acres and maintenance is proposed within the entire facility. Flows into the facility originate within developed areas to the south and adjacent foothills to the south. Habitat includes a sandy wash, maintained channel slopes, and some adjacent patches of desert scrub (see Photos 11 and 12). The facility appears to be frequently maintained and is regularly scoured.

### III. Methods

Vegetation and land cover mapping was completed by Dudek as part of the EIR that is in preparation. Mapping was accomplished using a combination of aerial photograph interpretation and field verification. True-color high resolution aerial photography flown in 2009 was obtained by the District in 2009. Dudek's mapping effort was conducted in five phases: (1) data and literature review, (2) GIS database

development, (3) aerial photograph review, (4) field mapping, and (5) data interpretation and analysis. Dudek biologists Britney Strittmater, Katie Dayton, Erin Bergman, and Heather Moine completed the mapping effort and created the vegetation and land cover maps.

Vegetation and land cover were field verified in the field by Wood. Vegetation types match nomenclature in *A Manual of California Vegetation* (Sawyer et al. 2009) whenever possible. Aspen staff prepared vegetation and cover maps for the facilities using the GIS data provided by Dudek (see Figure 2). Most of the vegetation descriptions were provided by Dudek and were tailored to the facilities addressed in this report.

Justin M. Wood of Aspen reviewed available literature to identify special-status plants known from the vicinity of the six facilities. Data from the California Natural Diversity Database (CNDDDB) (CDFW, 2017) was reviewed for the following USGS 7.5-minute topographic quadrangles: Bighorn Canyon, Catclaw Flat, Deadman Lake SE, Deadman Lake SW, Desert Hot Springs, Goat Mountain, Indian Cove, Joshua Tree North, Joshua Tree South, Landers, Lead Mountain SW, Morongo Valley, Queen Mountain, Rimrock, Seven Palms Valley, Sunfair, Twentynine Palms, Twentynine Palms Canyon, Valley Mountain, Yucca Valley South, and Yucca Valley North. CNDDDB search results are provided in Attachment 5.

The review also included a search of the California Native Plant Society (CNPS) Online Electronic Inventory (CNPS, 2017; for the quads listed above) and the Consortium of California Herbaria database (CCH, 2017) for records of special-status plants known from the area. All state listed, federally listed, and other special-status plant species known from comparable habitats within the region are addressed below in the results section. Several of the special-status plants identified during the literature search occur only in specialized native habitats that are absent from the facilities, or occur only at higher or lower elevations than the facilities. These plants are listed in Attachment 3, but are not addressed further in this report.

Focused special-status plant surveys were conducted by Wood along with Duncan Bell and LeRoy Gross of Rancho Santa Ana Botanic Garden. Surveys were conducted on April 18, 20, and 24, 2017. All members of the survey team have extensive experience with the special-status plants from the region, including the state and federally listed species.

During the survey the botanists covered all accessible portions of the facilities by walking “meandering transects” (Nelson, 1987) with particular attention given to areas of suitable habitat for special-status plant species. All plant species observed within the facilities were either identified in the field or vouchered with photographs or collections for later identification. Plants were identified using keys, descriptions, and illustrations in Baldwin et al. (2012), the Jepson eFlora database of California plants (Jepson Flora Project, 2017), and other regional references. All plant species observed in the proposed and alternative alignments are listed in Attachment 4. All special-status plants observed within or immediately adjacent to the facilities were reported to the CNDDDB.

In conformance with California Department of Fish and Wildlife guidelines (CDFG, 2000), surveys were (a) conducted during flowering seasons for the special status plants known from the area, (b) floristic in nature, (c) consistent with conservation ethics, (d) systematically covered all habitat types on the sites, and (e) well documented, by this report, photos that will be uploaded to CalPhotos (BSCIT, 2017), and by voucher specimens to be deposited at Rancho Santa Ana Botanic Garden.

Soil maps are not available for the facilities (USDA, 2017). Wood tested substrates within each facility using a hydrochloric acid test to determine if calcium carbonate soils (potential habitat for several special-status species) were present. A positive detection for calcium carbonate produces a fizzing reaction as carbon dioxide is produced from the chemical reaction.

## V. Results

Climate in the region is temperate, with cool winters and hot, dry summers. Average annual high temperature is 79.6°F an average annual low temperature is 50.7 °F (U.S. Climate Data, 2017). Average annual rainfall for the vicinity is 5.12 inches as measures in the community of Joshua Tree (U.S. Climate Data, 2017). Rainfall to-date for the 2016 to 2017 rainfall year (July 1 through June 30) was 3.9 inches, approximately 76 percent of the average (U.S. Climate Data, 2017). Annual plants were abundant and had high diversity within all facilities. Most shrubs and perennials were also in flower and had new vegetative growth present. It appears that based on observations made during the field surveys that the region received ample rainfall to support a healthy and representative native plant population.

### V. A. Vegetation and Land Cover

A summary of acreages for vegetation and land cover types is provided in Table 1. In addition, descriptions of the vegetation and land covers are provided in the following paragraphs.

**Table 1: Vegetation and Land Cover Types within the Facilities**

Vegetation or Land Cover Type	Little Morongo Creek	Old Woman Springs Creek Basin	Yucca Creek	Quail Wash	Joshua Tree Wash	49 Palms Spreading Grounds
Desert Willow Woodland	0.19	0	3.96	0	0	0
Disturbed Smoke Tree Woodland	0	0	0	0	0	17.63
Catclaw Acacia Thorn Scrub	0	0	0	0.33	0	58.44
Creosote Bush Scrub	0.13	0	0.02	0	0	28.03
Creosote Bush – White Bursage Scrub	0	0	0	1.31	0.20	1.31
Disturbed Catclaw Acacia Thorn Scrub	0	0	0	0	0	2.71
Disturbed Creosote Bush Scrub	0	0.00 <sup>1</sup>	0	0	0	8.85
Disturbed Creosote Bush – White Bursage Scrub	0	0	0	0	0.64	0
Disturbed Joshua Tree Woodland	0	0	0	0	0.44	0
Disturbed Mojave Yucca Scrub	0	0	0	0	0.69	0
Joshua Tree Woodland	0	0	0.09	0	0.20	0
Mojave Yucca Scrub	0	0	0	0	1.56	0
Parish’s Goldeneye Scrub	0	0	0	0.00 <sup>1</sup>	0	0
Unvegetated Channel	18.71	0.45	27.17	29.68	0	0
Unvegetated Wash	0	0	6.34	0	3.62	11.28
Disturbed Land	0.05	3.22	0.37	9.81	0.15	9.53
Urban	0.04	0.12	0.34	0.03	0.02	0.02
<b>Total</b>	<b>19.12</b>	<b>3.79</b>	<b>38.29</b>	<b>41.16</b>	<b>7.52</b>	<b>137.8</b>

1. Vegetation and land cover of 0.00 indicate that these cover types were present but less than 0.05 acres.

**Desert Willow Woodland (*Chilopsis linearis* Woodland Alliance).** Desert willow woodland is dominated or co-dominated by desert willow (*Chilopsis linearis*) in the shrub or tree canopy. Tree species associated with the desert willow woodland include ironwood (*Olneya tesota*), honey mesquite, smoke tree (*Psoralea argophylla*), and Joshua tree (*Yucca brevifolia*). Shrubs associated with this alliance include burrobush (*Ambrosia dumosa*), sweetbush (*Bebbia juncea*), California jointfir (*Ephedra californica*), black-stem (*Ericameria paniculata*), California buckwheat (*Eriogonum fasciculatum*), and creosote bush (*Larrea tridentata*). This alliance occurs on intermittent channels, washes, canyon bottoms, arroyos, and along wash terraces and floodplains. This alliance occurs where flooding is infrequent, but where subterranean water is available and contains soils that are well-drained sands and gravels (Sawyer et al. 2009). It was present within the Little Morongo Creek and Yucca Creek facilities (Table 1).

**Smoke Tree Woodland Alliance (*Psoralea argophylla* Woodland Alliance).** Smoke tree woodland is dominated or co-dominated by smoke tree. Additional tree species include blue paloverde (*Parkinsonia florida*) and desert willow. Shrubs within this alliance include catclaw acacia (*Senegalia greggii*), burrobush, sweetbush, desert lavender (*Condea emoryi*), creosote bush, and wire-lettuce (*Stephanomeria pauciflora*). This alliance occurs on intermittently flooded channels, washes, and arroyos that contain sandy and well drained, moderately acidic or slightly saline soils (Sawyer et al. 2009). It was present within the 49 Palms Spreading Grounds facility (Table 1).

**Catclaw Acacia Thorn Scrub (*Acacia greggii* Shrubland Alliance).** Catclaw acacia thorn scrub is dominated or co-dominated by catclaw acacia. Additional species associated with the catclaw acacia thorn scrub include burrobush, sweetbush, jointfir (*Ephedra* spp.), California buckwheat, desert lavender, creosote bush, and desert almond (*Prunus fasciculata*). Emergent desert willow and smoke tree may also be present but in low numbers (Sawyer et al. 2009). Catclaw acacia thorn scrub is found in channels, washes, arroyos, and on canyon walls containing moderately acidic to slightly saline soils that are coarse and well-drained (Sawyer et al. 2009). It was present within Quail Wash and the 49 Palms Spreading Grounds facilities (Table 1).

**Creosote bush scrub (*Larrea tridentata* Shrubland Alliance).** Creosote bush scrub is dominated by creosote bush. Creosote bush scrub is commonly associated with other species such as burrobush, woolly brickellbush (*Brickellia incana*), jointfir, and saltbushes (*Atriplex* spp.). Joshua trees can be present but in very low numbers (Sawyer et al. 2009). The creosote bush scrub alliance often occurs on alluvial fans, bajadas, minor intermittent washes and upland slopes with well-drained soils and may have pavement surface present (Sawyer et al. 2009). It was present within the Old Woman Springs Creek Basin, Yucca Creek, Little Morongo Creek, and 49 Palms Spreading Grounds facilities (Table 1).

**Creosote bush - white bursage scrub (*Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance).** Creosote bush – white bursage scrub is co-dominated by creosote bush and burrobush (also known as white bursage). It is similar to creosote bush scrub described above. It is found in minor washes and rills, on alluvial fans, bajadas, and upland slopes on well-drained, alluvial, sandy soils, and may have desert pavement surface (Sawyer et al. 2009). It is present within the Quail Wash, Joshua Tree Wash, and 49 Palms Spreading Grounds (Table 1).

**Joshua Tree woodland (*Yucca brevifolia* Woodland Alliance).** Joshua tree woodland is visually dominated by Joshua tree which is typically an emergent species is growing taller than adjacent lower-growing shrubs. Additional species associated with the Joshua tree woodland include burrobush, yellow rabbitbrush, Nevada jointfir (*Ephedra nevadensis*), California buckwheat, and Mojave yucca (*Yucca schidigera*). This alliance often occurs on ridges, gently moderate slopes, and alluvial fans on coarse sands,

fine silts, gravel, or sandy loam soils (Sawyer et al. 2009). It is present within the Yucca Creek and Joshua Tree Wash facilities (Table 1).

**Mojave Yucca Scrub (*Yucca schidigera* Shrubland Alliance).** Mojave yucca scrub is dominated by Mojave yucca. Other species such as burrobush, buckthorn cholla (*Cylindropuntia acanthocarpa*), Nevada jointfir, California buckwheat, big galleta (*Hilaria rigida*), and Mexican bladdersage (*Scutellaria mexicana*) are also present. It occurs on rocky slopes, alluvial fans, and upper bajadas on well-drained, sandy loam soils (Sawyer et al. 2009). It is present within the Joshua Tree Wash facility (Table 1).

**Parish’s Goldeneye Scrub (*Viguiera parishii* Shrubland Alliance).** Parish’s goldeneye scrub is dominated by Parish’s goldeneye (*Bahiopsis parishii*). Associated species include sweetbush, buckthorn cholla, brittlebush, Nevada jointfir, California buckwheat, California barrel cactus, Mexican bladdersage, and Mojave yucca. This alliance most often occurs on the margins of washes and arroyos, rocky to boulder alluvium, or moderate to steep slopes; substrates are generally granitic or volcanic (Sawyer et al. 2009). It is present within the Quail Wash facility (Table 1).

**Unvegetated Channel.** Unvegetated, maintained or engineered, sandy bottom channels are mapped as unvegetated channel. These are present within the Little Morongo Creek, Old Woman Springs Creek Basin, Yucca Creek, and Quail Wash facilities (Table 1).

**Unvegetated Wash.** Natural, sandy bottom ephemeral washes that are unvegetated or sparsely vegetated are mapped as unvegetated wash. These are present within the Joshua Tree Wash and 49 Palms Spreading Grounds facilities (Table 1).

**Disturbed Land.** Undeveloped lands that lack vegetation are mapped as disturbed land. Disturbed land within the facilities includes dirt roads, vacant lots, and other areas that are devoid of vegetation. It is present within all facilities (Table 1).

**Developed (Urban).** Developed areas include buildings, structures, homes, parking lots, and paved roads. Developed areas do not support native vegetation. They are present within all facilities (Table 1).

## V. B. Federal and State Listed Plants

Four listed threatened or endangered plants have been reported from the twenty-one USGS 7.5-minute topo quads surrounding the facilities (CDFW, 2017 and CNPS, 2017). Two of these, Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*) and slender-horned spineflower (*Dodecahema leptoceras*), have no potential to be present at the facilities because of a lack of suitable habitat and are not addressed further in this report. The remaining two have a low potential for occurrence and are discussed below.

**Table 2. Federally and State Listed Plant Potentially Present in the Facilities**

Scientific Name Common Name	Listing Status Federal <sup>1</sup> /State <sup>2</sup> / CRPR <sup>3</sup>	Habitat Type/ Blooming Period/ Elevation Range/ General Geographic Range	Potential for Occurrence in the Survey area <sup>4</sup>
<i>Astragalus tricarlinatus</i> Triple-ribbed milk-vetch	FE/—/1B.2	Perennial herb; localized upland habitats (Joshua tree woodland, Sonoran Desert scrub, etc.) near Whitewater Canyon, Mission Creek, and scattered other locations, uncommon as waif in desert washes; 1500-3900 ft. elev.; Feb-May; restricted to San Bern. and Riv. Counties.	<b>Low.</b> Not observed during survey; minimally suitable wash habitat present; known from within 4 miles.

**Table 2. Federally and State Listed Plant Potentially Present in the Facilities**

Scientific Name Common Name	Listing Status Federal <sup>1</sup> /State <sup>2</sup> / CRPR <sup>3</sup>	Habitat Type/ Blooming Period/ Elevation Range/ General Geographic Range	Potential for Occurrence in the Survey area <sup>4</sup>
<i>Erigeron parishii</i> Parish's daisy	FT/—/1B.1	Perennial herb; mountain slopes, upper bajadas, washes; carbonate soils; 2600-6500 ft. elev.; May-Aug.; San Bern Mts. and Joshua Tree Nat Park.	<b>Low.</b> Not observed during survey; no suitable habitat in most facilities; minimally suitable wash habitat with carbonate substrate in Little Morongo Creek only; known from within about 5 miles.

1 - Federal listing

FE = federally endangered

FT = federally threatened

2 - State listing–status codes

SE = state endangered

CE = candidate state endangered

ST = state threatened

SR = state rare

1A = CRPR Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere.

1B = CRPR Rank 1B: Plants that are rare, threatened or endangered in California and elsewhere.

2B = CRPR Rank 2B: Plants that are rare, threatened or endangered in California but more common elsewhere.

3 = CRPR Rank 3: Plants about which more information is needed – a review list.

4 = CRPR Rank 4 Plants with a limited distribution – a watch list.

Threat rank of 0.1 (e.g., 1B.1) indicates a plant seriously endangered in California (high degree/immediacy of threat), 0.2 indicates a plant fairly endangered in California (moderate degree/immediacy of threat), 0.3 indicates a plant not very endangered in California (low degree/immediacy of threats or no current threats known). All CRPR 1A and some CRPR 3 plants lacking threat information receive no threat-rank extension.

3 - Likelihood of occurrence: not likely to occur, low, moderate, high, and present - accounts for presence and quality of habitat and the geographic and elevation range of the species.

**Triple-ribbed milk-vetch (*Astragalus tricarinatus*).** Triple-ribbed milk-vetch is federally listed as endangered and has a California Rare Plant Rank (CRPR) of 1B.2 (CDFW, 2017 and USFWS, 1998). It is a perennial herb that flowers between February and May. Triple-ribbed milk-vetch grows in upland habitats such as Joshua tree woodland and Sonoran desert scrub within a few scattered locations in Riverside and San Bernardino Counties. Waif plants are occasionally seen in washes downstream of these larger populations. It is found at elevations between about 1500 and 3900 ft. above mean sea level (CNPS, 2017). Critical habitat has not been designated for triple-ribbed milk-vetch. It is known from several occurrences in Morongo Valley and the adjacent San Bernardino Mountains, within about 3.3 miles of the Little Morongo Creek facility. It was not present during 2017 but it does have a very low potential to be found in Little Morongo Creek in the future if seed from upstream populations is dispersed downstream. It is not likely to occur in any of the additional facilities further to the east.

**Parish's daisy (*Erigeron parishii*).** Parish's daisy is federally listed as threatened and has a CRPR of 1B.1 (USFWS, 1994 and CDFW, 2017). It is a low-growing woody subshrub that flowers between May and August (CNPS, 2017). It occurs in Mojave desert scrub and pinyon and juniper woodlands and is largely restricted to loose, carbonate alluvium, although it is occasionally found on other rock types (CNPS, 2017 and Sanders, 2007). The nearest designated critical habitat is more than ten miles to the northwest of Little Morongo Wash (USFWS, 2002). It is known from several occurrences in the vicinity of Pioneertown, about three miles northwest of Old Woman Springs Creek Basin and about five miles northeast of Little Morongo Creek. Calcium carbonate substrates were present in Little Morongo Creek and it has a low potential to be found in this facility as a "waif" if seed is transported from off-site populations. Old Woman Springs Creek Basin

and the other facilities further to the east do not provide suitable calcium carbonate substrates and it is not likely to be present.

## V. B. Other Special-status Plants

All special-status plants identified during the literature review as being either present or with some potential to be present are presented below in Table 3. Non-listed special-status species with a minimal potential to be present not discussed further in this report.

**Table 3. Special-status Plants Present or Potentially Present in the Facilities**

<i>Astragalus bernardinus</i> San Bernardino milk-vetch	---/---/1B.2	Perennial herb; Often on granitic or carbonate soils. Joshua tree and pinyon and juniper woodlands; Apr-Jun; about 3000 – 6600 ft. elev.; San Bernardino Co., California endemic	<b>Low.</b> Not observed during survey; minimally suitable habitat in all facilities; just below the species elevation range.
<i>Ayenia compacta</i> California ayenia	---/---/2B.3	Perennial herb; rocky canyons and slopes with desert shrubland; W low desert margins; Mar-Apr; 500-3600 ft. elev.; Chuckwalla Valley, and E Mojave; also Mexico.	<b>Minimal.</b> Not observed during survey; no suitable rocky canyon or adjacent slope habitat. Very low potential to be present as a waif in 49 Palms Spreading Grounds and Joshua Tree Wash facilities only.
<i>Boechera dispar</i> Pinyon rockcress	---/---/2B.3	Perennial herb; coarse granitic soil, Joshua tree or pinyon-juniper woodland, desert shrubland; Mar-Jun; about 3900 - 8000 ft. elev.; Mojave Des & adj mtns.	<b>Minimal.</b> Not observed during survey; minimally suitable habitat in Little Morongo Creek facility only; just below the species elevation range.
<i>Chorizanthe xanti</i> var. <i>leucotheca</i> White-bracted spineflower	---/---/1B.2	Annual; sandy soils in desert shrubland and pinyon-juniper woodland; mountains and foothills; Apri-Jun; 1000-4000 ft. elev.; Cajon Pass and Banning Pass areas; also reported from Liebre Mtns.	<b>Minimal.</b> Not observed during survey; minimally suitable intact desert scrub habitat within facilities. Suitable habitat present in adjacent unmaintained lands beyond proposed maintenance area at Little Morongo Creek facility only.
<i>Coryphantha alversonii</i> Alverson's foxtail cactus	---/---/4.3	Perennial stem succulent; Mojave desert scrub and Sonoran desert scrub in granitic sandy or rocky soils; Apr-Jun; 250-5000 ft. elev. Imperial, Riverside, and San Bern Cos.	<b>Present.</b> Observed at 49 Palms Canyon Spreading Grounds facility. Not expected at other facilities because of frequent maintenance and lack of suitable habitat.
<i>Cymopterus multinervatus</i> Purple-nerve cymopterus	---/---/2B.2	Perennial herb; desert shrubland, pinyon-juniper woodland; sandy or gravelly sites; about 2600-5900 ft elev; Mar-Apr; San Bern Mtns, N and E to New York and Clark mtns, to Utah and Texas.	<b>Minimal.</b> Not observed during survey; minimally suitable habitat at Yucca Creek, Quail Wash, 49 Palms Spreading Grounds, and Joshua Tree Wash facilities only.
<i>Eriastrum sparsiflorum</i> Great basin eriastrum	---/---/4.3	Annual; sandy granitic soils in chaparral, woodlands, great basin sagebrush, and Mojave Desert scrub, about 3500-5600 ft. elev.; scattered locations throughout California.	<b>Low.</b> Not observed during survey; suitable habitat present; just below elevation range.
<i>Eschscholzia androuxii</i> Joshua tree poppy	---/---/4.3	Annual; desert washes, flats, and slopes; sandy, gravelly, or rocky soils in Joshua tree woodland, Mojave desert scrub; Feb-Jun; 1900–5500 ft. elev.; Joshua Tree Nat Park and surrounding areas.	<b>Present.</b> Observed at Yucca Creek, Quail Wash, and Joshua Tree Wash facilities. Suitable habitat present at all facilities.

<i>Funastrum utahense</i> Utah vine milkweed	---/---/4.2	Perennial herb, Mojave desert scrub and Sonoran desert scrub in sandy or gravelly soils; Apr-Jun; 330-4700 ft. elev.; S Calif deserts east into AZ and UT.	<b>Moderate.</b> Not observed during survey; suitable habitat is present at 49 Palms Spreading Grounds facility and this species may be present in portions of the facilities, beyond the proposed maintenance area.
<i>Galium angustifolium</i> ssp. <i>gracillimum</i> Narrow leaved bedstraw	---/---/4.2	Perennial herb; rocky granitic substrates within Sonoran Desert scrub and Joshua Tree woodland; Apr-Jun; about 420-5090 ft. elev.; scattered records in Los Angeles, San Bernardino, and Riverside Cos.	<b>Moderate.</b> Not observed during survey; marginally suitable habitat is present at all facilities.
<i>Grusonia parishii</i> Parish's club-cholla	---/---/2B.2	Perennial stem succulent. Occurs in Joshua tree woodland, Mojave desert scrub, and Sonoran desert scrub on sandy and rocky soils; May-Jun; 1000-5000 ft. elev.; Calif. deserts E into AZ and TX.	<b>Minimal.</b> Not observed during survey; minimally suitable habitat at Yucca Creek, Quail Wash, 49 Palms Spreading Grounds, and Joshua Tree Wash facilities only.
<i>Jaffueliobryum wrightii</i> Wright's jaffueliobryum moss	---/---/2B.3	Moss; Dry open rocky areas in alpine dwarf scrub, Mojave desert scrub, and Pinyon and juniper woodland; 530-8000 ft. elev.; broad dist. throughout W US.	<b>Minimal.</b> Not observed during survey; minimally suitable habitat at 49 Palms Spreading Grounds facility only.
<i>Linanthus bernardinus</i> Pioneertown linanthus	---/---/2B.2	Annual; Joshua tree woodland and pinyon/juniper woodland; Mar-May; 3900-4400 ft. elev. M. Restricted to the Pioneertown area of San Bern Co.	<b>Minimal.</b> Not observed during survey; minimally suitable habitat in Little Morongo Creek facility only; below the species elevation range.
<i>Linanthus maculatus</i> ssp. <i>maculatus</i> Little San Bernardino Mtns. linanthus	---/---/1B.2	Annual; occurs on sandy desert dunes, Joshua tree woodland, Mojave desert scrub, Sonoran desert scrub; Mar – May; 450-4000 ft. elev.	<b>Low.</b> Not observed during survey; marginally suitable habitat in all facilities
<i>Menodora spinescens</i> var. <i>mohavensis</i> Mojave menodora	---/---/1B.2	Perennial deciduous shrub; Occurs on Andesite gravel, rocky hillsides, canyons in Mojave desert scrub. Apr-May; 2200-6500 ft. elev.	<b>Minimal.</b> Not observed during survey; minimally suitable habitat at 49 Palms Spreading Grounds facility only.
<i>Monardella robisonii</i> Robison's monardella	---/---/1B.3	Perennial rhizomatous herb; pinyon-juniper woodland; Feb – Oct; 2000-4900 ft. elev.; Riverside and San Bernardino Cos.	<b>Minimal.</b> Not observed during survey; minimally suitable habitat at 49 Palms Spreading Grounds and Joshua Tree Wash facilities only.
<i>Muhlenbergia appressa</i> Appressed muhly	---/---/2B.2	Annual herb; Occurs on rocky substrate in Coastal Scrub, Mojave desert scrub, valley and foothill grassland; Apr-May; 65-5200 ft. elev.	<b>Minimal.</b> Not observed during survey; minimally suitable habitat in Little Morongo Creek facility only.
<i>Saltugilia latimeri</i> Latimer's woodland-gilia	---/---/1B.2	Annual; desert shrubland, chaparral; arid mountains and foothills; about 1300-6200 ft. elev.; Mar-Jun; desert margins, Riv. Co to Inyo Co.	<b>Present;</b> several plants observed within Little Moronga Creek facility. Low likelihood of occurring at facilities further east.

See Table 2 for summary of listing status.

**San Bernardino milk-vetch (*Astragalus bernardinus*)** San Bernardino milk-vetch has a CRPR of 1B.2 and is a perennial herb that blooms in April-June (CDFW, 2017 and CNPS, 2017). It grows on granitic or carbonate substrate in Joshua tree woodland and Pinyon/Juniper woodland habitats at elevations between 3000 and 6600 ft. San Bernardino milk-vetch is known from several historic records within less than one mile of the Old Woman Springs Creek Basin and Yucca Creek facilities (CCH, 2017). Habitat within all 6 facilities is only marginally suitable for San Bernardino milk-vetch because the facilities are near the lower margin of its elevational range. San Bernardino milk-vetch was not observed in any of the facilities during the

2017 field surveys and it is not expected to occur there in the future, although seed could disperse into one or more facilities, leading to a new occurrence as a “waif.”

**Little San Bernardino Mountains linanthus (*Linanthus maculatus* ssp. *maculatus*)** Little San Bernardino Mountains linanthus has a CRPR of 1B.2 and is annual herb that blooms in March-June (CDFW, 2017 and CNPS, 2017). It grows on unconsolidated sandy and gravelly soils in desert dune, Joshua tree woodland, Mojave desert scrub, and Sonoran desert scrub habitats at elevations between 450 and 4000 ft. (CNPS, 2017). Little San Bernardino Mountains linanthus is known from several historic records within less than one mile of Old Woman Springs Creek Basin, Yucca Creek, Quail Wash, and Joshua Tree Wash (CCH, 2017). Habitat within all 6 facilities is only marginally suitable for Little San Bernardino Mountains linanthus because the facilities do not support suitable unconsolidated sandy and gravelly micro-habitat. San Bernardino milk-vetch was not observed in any of the facilities during the 2017 field surveys and it is not expected to occur there in the future, although seed could disperse into one or more facilities, leading to a new occurrence as a “waif.”

**Latimer's woodland-gilia (*Saltugilia latimeri*)** Latimer's woodland-gilia has a CRPR of 1B.2 and is an annual herb that blooms in March-June (CDFW, 2017 and CNPS, 2017). It grows on a variety of substrates including rocky, sandy, granitic soils in chaparral, Mojave desert scrub, Pinyon and Juniper woodland habitats, and downstream washes at elevations between 1300 and 6200 ft. (CNPS, 2017). Latimer's woodland-gilia was found at two locations within the Little Morongo Creek facility: just upstream of the State Route (SR) 62 bridge within the proposed maintenance area and approximately 300 feet downstream of the proposed maintenance area (see Photo 13). Within the proposed maintenance area, several plants were growing on a small sediment deposit just outside of the low flow portion of the channel. It's distribution within Little Morongo Creek was limited but is likely to vary between years as sediment is scoured out of the creek and as new sediment is deposited. It has a low likelihood of occurrence at the additional facilities further east because they are further from known occurrences and do not appear to support rocky wash habitat such as that present in Little Morongo Creek. Latimer's woodland-gilia was not observed in the other five facilities during the 2017 field surveys and it is not expected to occur there in the future, although seed could disperse into one or more facilities, leading to a new occurrence as a “waif.”

**California Rare Plant Rank 4 Species.** Two additional special-status species were found during focused plant surveys: Joshua Tree poppy (*Eschscholzia androuxii*) and Alverson's foxtail cactus (*Coryphantha alversonii*). Alverson's foxtail cactus was observed within 49 Palms Spreading Grounds but was not observed within the proposed maintenance area. Joshua Tree poppy was observed at most of the facilities and is a relatively widespread plant in the region (see Photo 14). Utah vine milkweed (*Funastrum utahense*) and narrow leaved bedstraw (*Galium angustifolium* ssp. *gracillimum*) have a moderate potential to be present within several of the facilities but were not observed. All four of these plants are ranked as CRPR 4 species (i.e., a “watch list,” not indicating rarity) and none are listed as threatened or endangered.

## VI. Summary

A total of three special-status species were present within the facilities in 2017: Latimer's woodland-gilia, Joshua Tree poppy, and Alverson's foxtail cactus. Utah vine milkweed and narrow leaved bedstraw are the only other special-status plants with at least a moderate potential to be present.

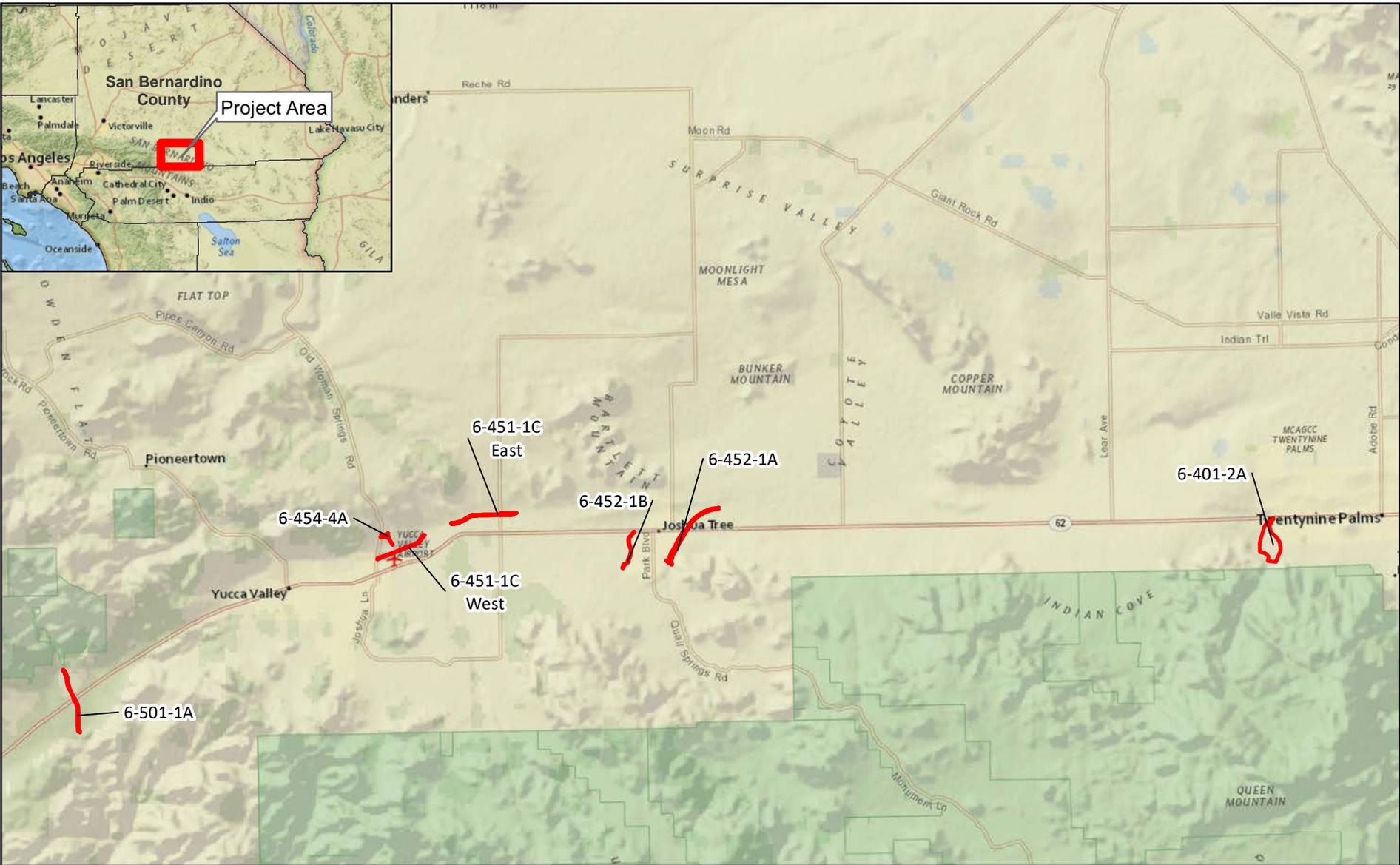
Rainfall totals during the 2016 to 2017 rainfall year (July 1 through June 30) were below average in the vicinity for the facilities, receiving approximately 76 percent of the average (U.S. Climate Data, 2017). The rainfall should have been sufficient to trigger most of the annual plants to germinate and flower; however, some species may have not germinated or could have died before flowering. Conclusions on special-status plant potentials for occurrence are largely based on habitat suitability and do not rely entirely on observations made during the survey.

## VII. Literature Cited

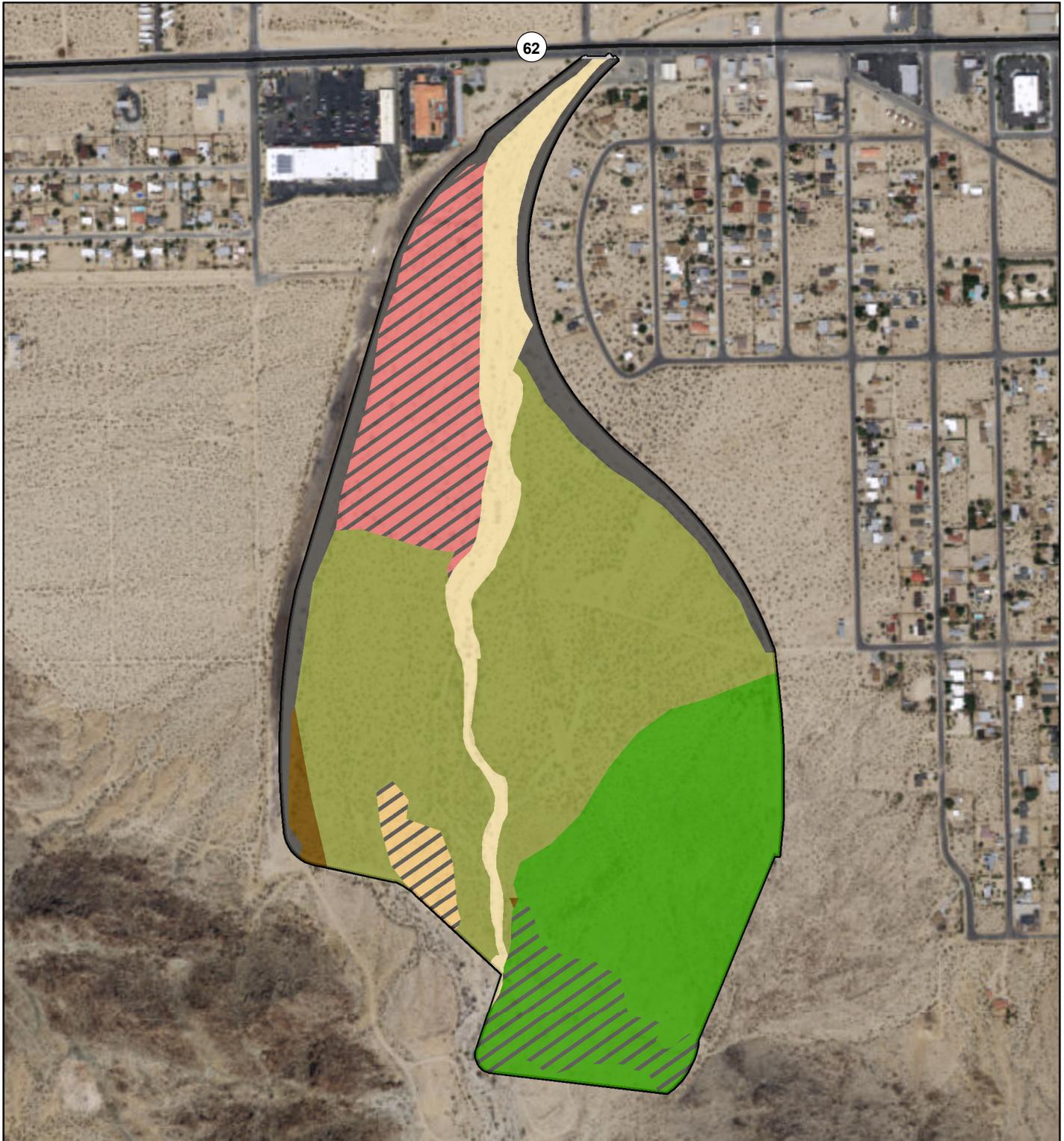
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**Attachment 1**  
**Figures**

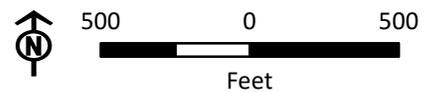


**Figure 1.**  
**Overview Map**



- |  |   |
|--|---|
| Project Footprint                            | Unvegetated Wash                              |
| <b>Vegetation Alliance/Land Cover</b>        | Urban   |
| Catclaw Acacia Thorn Scrub Alliance          | Disturbed Catclaw Acacia Thorn Scrub Alliance |
| Creosote Bush Scrub Alliance                 | Disturbed Creosote Bush Scrub Alliance        |
| Creosote Bush-White Burr Sage Scrub Alliance | Disturbed Smoke Tree Woodland Alliance        |
| Disturbed Land                               |   |

**Figure 2.**  
**Vegetation and**  
**Land Cover**  
**S 6-401-2A**





 Project Footprint

**Vegetation Alliance/Land Cover**

 Desert Willow Woodland Alliance

 Joshua Tree Woodland

 Unvegetated Channel

 Unvegetated Wash

 Urban

**Figure 2.**  
**Vegetation and**  
**Land Cover**

**6-451-1C East**



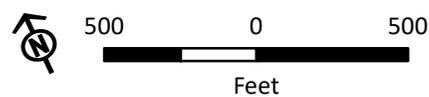
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Feet



-  Project Footprint
-  Creosote Bush Scrub Alliance
-  Disturbed Land
-  Unvegetated Channel
-  Urban
-  Disturbed Creosote Bush Scrub Alliance

**Figure 2.**  
**Vegetation and**  
**Land Cover**

**6-451-1C West**





 Project Footprint

**Vegetation Alliance/Land Cover**

 Catclaw Acacia Thorn Scrub Alliance

 Creosote Bush-White Burr Sage Scrub Alliance

 Disturbed Land

 Parish's Goldeneye Scrub Alliance

 Unvegetated Channel

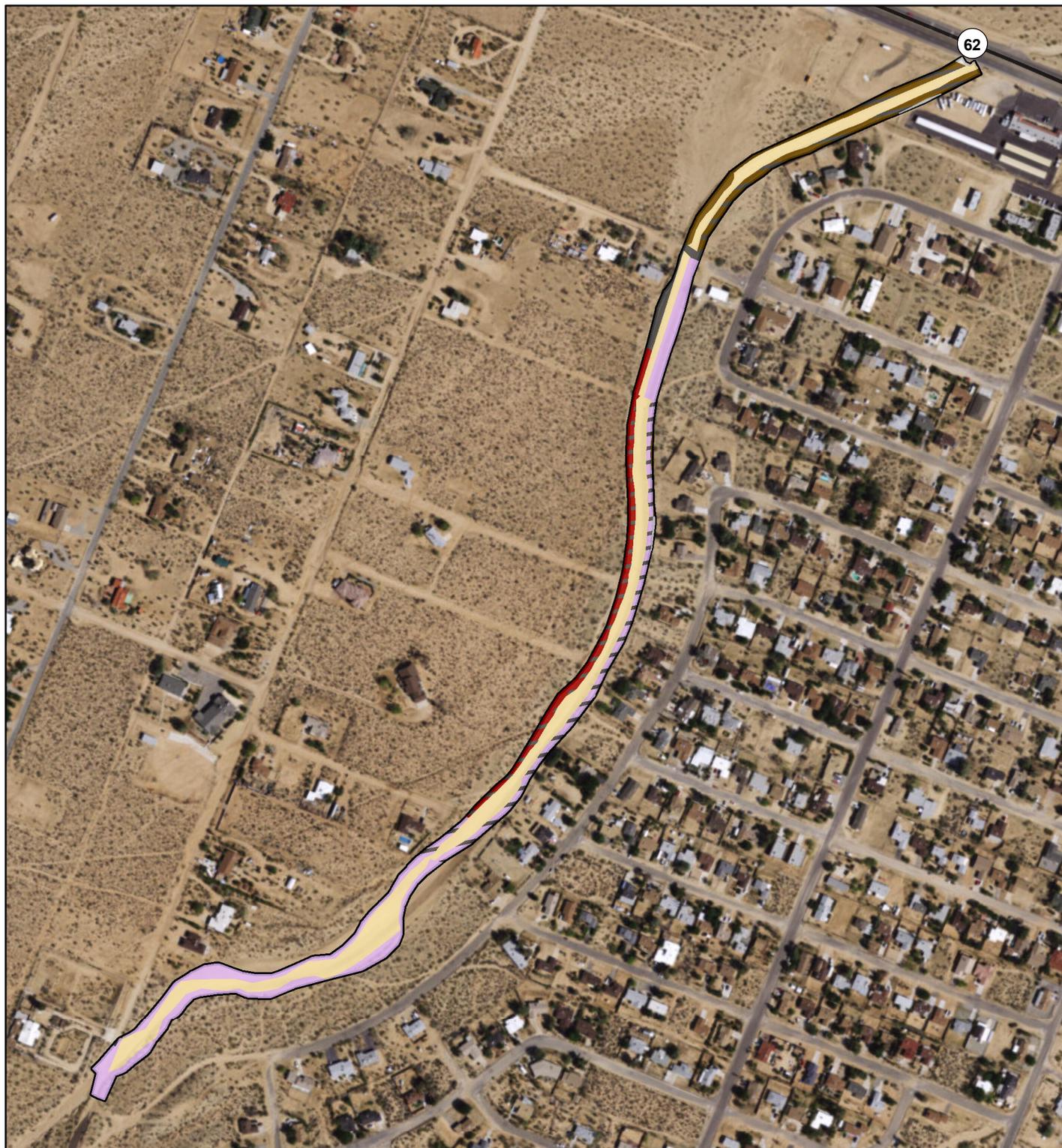
 Urban

**Figure 2.**  
**Vegetation and**  
**Land Cover**

**6-452-1A**



500 0 500  
Feet



 Project Footprint

**Vegetation Alliance/Land Cover**

 Creosote Bush-White Burr Sage Scrub Alliance

 Disturbed Land

 Joshua Tree Woodland

 Mojave Yucca Scrub

 Unvegetated Wash

 Urban

 Disturbed Creosote Bush-White Burr Sage Scrub Alliance

 Disturbed Joshua Tree Woodland

 Disturbed Mojave Yucca Scrub Alliance

**Figure 2.  
Vegetation and  
Land Cover**

**6-452-1B**



200 0 200



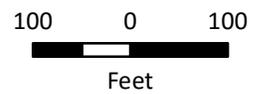
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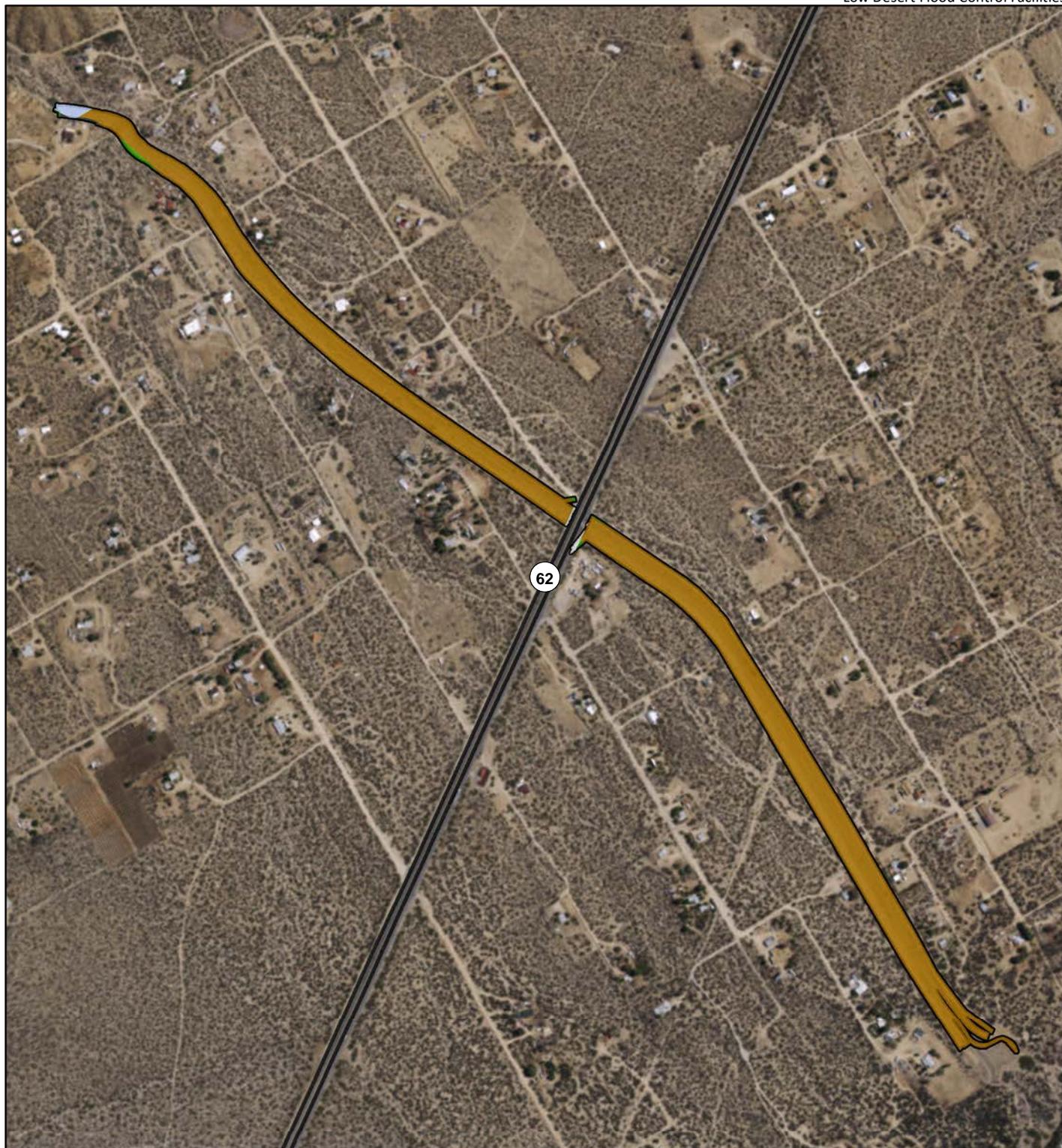


-  Project Footprint
-  Urban
- Vegetation Alliance/Land Cover**
-  Disturbed Land
-  Disturbed Creosote Bush Scrub Alliance
-  Unvegetated Channel

**Figure 2.**  
**Vegetation and**  
**Land Cover**

**6-454-4A**

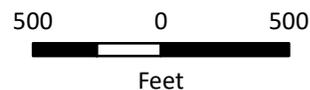




- |   |   |
|---|---|
|  Project Footprint               |  Unvegetated Channel |
| <b>Vegetation Alliance/Land Cover</b>   |  Urban               |
|  Creosote Bush Scrub Alliance    |   |
|  Desert Willow Woodland Alliance |   |
|  Disturbed Land                  |   |

**Figure 2.**  
**Vegetation and**  
**Land Cover**

**6-501-1A**



**Attachment 2**  
**Project Photos**



Photo 1: North-facing view of the wash habitat at the upstream end of Little Morongo Creek.



Photo 2: North-facing view from Highway 62 of the wash habitat within Little Morongo Creek.



Photo 3: North-facing view of the wash habitat at the downstream end of Little Morongo Creek.



Photo 4: Southeast-facing view of the habitat within Old Woman Springs Creek Basin.



Photo 5: East-facing view of the wash habitat within Yucca Creek just downstream of Yucca Mesa Rd.



Photo 6: West-facing view of the wash habitat within the downstream portion of Yucca Creek.



Photo 7: North-facing view of the wash habitat at the upstream end of Quail Wash.



Photo 8: West-facing view of the habitat at the downstream end of Quail Wash.



Photo 9: East-facing view of desert scrub habitat within the 49 Palms Spreading Grounds.



Photo 10: Southwest-facing view of wash habitat within the 49 Palms Spreading Grounds.



Photo 11: South-facing view of the habitat at the downstream end of Joshua Tree Wash.



Photo 12: South-facing view of the wash and upland habitat at the upstream end of Joshua Tree Wash.



Photo 13: Close-up view of Latimer's woodland-gilia observed within Little Morongo Wash.



Photo 14: Close-up view of Joshua Tree poppy observed within several facilities.

**Attachment 3**  
**Observed Species List**

<b>Latin Name</b>	<b>Common Name</b>
FILICALES	
<i>Pellaea mucronata</i> var. <i>mucronata</i>	Bird's foot fern
EPHEDRACEAE EPHEDRA FAMILY	
<i>Ephedra californica</i>	California ephedra
<i>Ephedra nevadensis</i>	Nevada ephedra
ANACARDIACEAE SUMAC or CASHEW FAMILY	
<i>Rhus ovata</i>	Sugar bush
APOCYNACEAE DOGBANE FAMILY	
<i>Asclepias erosa</i>	Desert milkweed
<i>Funastrum hirtellum</i>	Trailing townula
* <i>Nerium oleander</i>	Oleander
ASTERACEAE ASTER FAMILY	
<i>Acamptopappus sphaerocephalus</i>	Rayless goldenhead
<i>Adenophyllum cooperi</i>	Cooper's dyssochia
<i>Adenophyllum porophylloides</i>	San Felipe dyssochia
<i>Ambrosia acanthicarpa</i>	Annual bur-sage
<i>Ambrosia dumosa</i>	White bur-sage
<i>Ambrosia salsola</i>	Common burrobrush
<i>Artemisia dracunculus</i>	Tarragon
<i>Artemisia ludoviciana</i>	Mugwort
<i>Baccharis brachyphylla</i>	Short leaved baccharis
<i>Baccharis sergiloides</i>	Desert baccharis
<i>Bahiopsis parishii</i>	Parish's goldeneye
<i>Bebbia juncea</i> var. <i>aspera</i>	Sweetbush
<i>Brickellia desertorum</i>	Desert brickellbush
<i>Brickellia incana</i>	Woolly brickellia
<i>Chaenactis carphoclinia</i>	Pebble pincushion
<i>Chaenactis fremontii</i>	Fremont pincushion
<i>Chaenactis stevioides</i>	Desert pincushion
<i>Cirsium occidentale</i> var. <i>californicum</i>	California thistle
<i>Encelia actoni</i>	Acton brittlebush
<i>Encelia farinosa</i>	Brittlebush
<i>Encelia frutescens</i>	Rayless encelia
<i>Ericameria paniculata</i>	Black-banded rabbitbrush
<i>Eriophyllum wallacei</i>	Wallace's woolly daisy
<i>Gutierrezia microcephala</i>	Sticky snakeweed
<i>Isocoma acradenia</i> var. <i>eremophila</i>	Alkali goldenbush
<i>Lepidospartum squamatum</i>	Scale-broom
<i>Logfia filaginoides</i>	California cottonrose
<i>Malacothrix glabrata</i>	Desert dandelion
<i>Monoptilon bellioides</i>	Desert star
<i>Nicolletia occidentalis</i>	Hole-in-the-sand plant
* <i>Oncosiphon piluliferum</i>	Stinknet
<i>Palafoxia arida</i>	Spanish needles
<i>Perityle emoryi</i>	Emory's rock daisy
<i>Pleurocoronis plurisetia</i>	Arrowleaf

<i>Stephanomeria exigua</i>	Small wreath-plant
<i>Stephanomeria pauciflora</i>	Wire-lettuce, desert straw
<i>Stylocline micropoides</i>	Desert nest straw
<i>Tetradymia axillaris</i> var. <i>longispina</i>	Cottonthorn
<i>Trixis californica</i> var. <i>californica</i>	California trixis
<i>Xylorhiza tortifolia</i> var. <i>tortifolia</i>	Mojave-aster
BIGNONIACEAE	TRUMPET-CREEPER FAMILY
<i>Chilopsis linearis</i> ssp. <i>arcuata</i>	Desert-willow
BORAGINACEAE	BORAGE FAMILY
<i>Amsinckia tessellata</i>	Checker fiddleneck
<i>Cryptantha</i> spp.	Unid. annual cryptantha
<i>Cryptantha angustifolia</i>	Narrow-leaved cryptantha
<i>Cryptantha barbiger</i>	Bearded cryptantha
<i>Cryptantha circumscissa</i>	Western cryptantha
<i>Cryptantha dumetorum</i>	Bush loving cryptantha
<i>Cryptantha intermedia</i>	Common cryptantha
<i>Cryptantha maritima</i>	Guadalupe cryptantha
<i>Cryptantha micrantha</i>	Purple root cryptantha
<i>Cryptantha nevadensis</i>	Nevada cryptantha
<i>Cryptantha pterocarya</i> var. <i>pterocarya</i>	Wingnut cryptantha
<i>Cryptantha pterocarya</i> var. <i>cycloptera</i>	Tucson cryptantha
<i>Emmenanthe penduliflora</i>	Whispering bells
<i>Eriodictyon trichocalyx</i>	Yerba santa
<i>Eucrypta micrantha</i>	Desert eucrypta
<i>Nama demissum</i>	Purple mat
<i>Pectocarya platycarpa</i>	Wide-toothed pectocarya
<i>Pectocarya penicillata</i>	Northern pectocarya
<i>Pectocarya recurvata</i>	Arched-nut pectocarya
<i>Phacelia campanularia</i>	Desert bluebells
<i>Phacelia crenulata</i>	Heliotrope phacelia
<i>Phacelia distans</i>	Common heliotrope
<i>Phacelia pedicellata</i>	Pedicellate phacelia
<i>Pholistoma membranaceum</i>	White fiesta-flower
<i>Tiquilia plicata</i>	Fan-leaved tiquilia
BRASSICACEAE	MUSTARD FAMILY
* <i>Brassica tournefortii</i>	Sahara mustard
<i>Caulanthus cooperi</i>	Cooper jewelflower
<i>Descurainia pinnata</i>	Tansy mustard
* <i>Descurainia sophia</i>	Herb sophia
<i>Lepidium lasiocarpum</i>	Sand peppergrass
* <i>Sisymbrium altissimum</i>	Tumble mustard
* <i>Sisymbrium irio</i>	London rocket
* <i>Sisymbrium orientale</i>	Hare's ear cabbage
<i>Streptanthella longirostris</i>	Streptanthella
CACTACEAE	CACTUS FAMILY
** <i>Coryphantha alversonii</i>	Foxtail cactus

<i>Cylindropuntia acanthocarpa</i> var. <i>coloradensis</i>	Buckhorn cholla
<i>Cylindropuntia echinocarpa</i>	Silver cholla
<i>Cylindropuntia ramosissima</i>	Diamond cholla
<i>Echinocereus engelmannii</i>	Engelmann hedgehog cactus
<i>Ferocactus cylindraceus</i>	California barrel cactus
<i>Opuntia basilaris</i> var. <i>basilaris</i>	Beavertail cactus
<i>Opuntia phaeacantha</i>	Brown spined prickly pear
CAMPANULACEAE	BELLFLOWER FAMILY
<i>Nemacladus longiflorus</i>	Thread plant
<i>Nemacladus rubescens</i>	Desert nemacladus
CHENOPODIACEAE	GOOSEFOOT FAMILY
<i>Atriplex canescens</i>	Four-wing saltbush
<i>Chenopodium fremontii</i>	Fremont's goosefoot
* <i>Salsola tragus</i>	Russian thistle
CLEOMACEAE	SPIDERFLOWER FAMILY
<i>Peritoma arborea</i> ( <i>Isomeris arborea</i> )	Bladderpod
CRASSULACEAE	STONECROP FAMILY
<i>Dudleya saxosa</i> spp. <i>aloides</i>	Desert dudleya
CROSSOSOMATAACEAE	CROSSOSOMA FAMILY
<i>Crossosoma bigelovii</i>	Bigelow crossosoma
CUCURBITACEAE	GOURD FAMILY
<i>Brandegea bigelovii</i>	Desert star-vine
<i>Cucurbita palmata</i>	Coyote melon
EUPHORBIACEAE	SPURGE FAMILY
<i>Croton californicus</i>	California croton
<i>Ditaxis lanceolata</i>	Narrow-leaved ditaxis
<i>Euphorbia albomarginata</i>	Rattlesnake sandmat
<i>Euphorbia micromera</i>	Sonoran sandmat
<i>Euphorbia setiloba</i>	Yuma sandmat
<i>Stillingia linearifolia</i>	Narrow-leaved stillingia
FABACEAE	LEGUME FAMILY
<i>Acmispon glaber</i>	Deerweed
<i>Acmispon strigosus</i>	Desert lotus
<i>Astragalus douglasii</i>	Douglas's milkvetch
* <i>Caesalpinia gilliesii</i>	Bird of paradise
<i>Dalea mollis</i>	Silk dalea
<i>Dalea mollissima</i>	Rust dalea
<i>Lupinus concinnus</i>	Bajada lupine
<i>Lupinus microcarpus</i> var. <i>horizontalis</i>	Chick lupine
<i>Lupinus sparsiflorus</i>	Coulter's lupine
<i>Marina parryi</i> ( <i>Dalea parryi</i> )	Parry dalea
* <i>Parkinsonia aculeata</i>	Mexican palo verde
<i>Parkinsonia florida</i>	Blue palo verde
<i>Prosopis glandulosa</i> var. <i>torreyana</i>	Honey mesquite
<i>Psoralethamnus schottii</i>	Indigo-bush
<i>Psoralethamnus spinosus</i>	Smoke tree
<i>Senegalia greggii</i>	Catclaw, catclaw acacia

<i>Senna armata</i>	Spiny senna
GERANIACEAE	GERANIUM FAMILY
* <i>Erodium cicutarium</i>	Redstem filaree
KRAMERIACEAE	RHATANY FAMILY
<i>Krameria erecta</i>	Pima rhatany
<i>Krameria bicolor</i>	White rhatany
LAMIACEAE	MINT FAMILY
<i>Condea emoryi</i>	Desert lavender
<i>Salvia columbariae</i>	Chia
<i>Scutellaria mexicana</i>	Bladder-sage
LOASACEAE	STICK-LEAF FAMILY
<i>Mentzelia albicaulis</i>	White-stemmed stick-leaf
<i>Mentzelia involucreta</i>	Sand blazing star
<i>Mentzelia veatchiana</i>	Veatch's blazing star
<i>Petalonyx thurberi</i>	Sandpaper-plant
MALVACEAE	MALLOW FAMILY
<i>Sphaeralcea ambigua</i> var. <i>ambigua</i>	Apricot mallow
MONTIACEAE	MONTIA FAMILY
<i>Calyptidium monandrum</i>	Pussypaws
NYCTAGINACEAE	FOUR O'CLOCK FAMILY
<i>Abronia villosa</i> var. <i>villosa</i>	Sand verbena
<i>Allionia incarnata</i>	Trailing windmills
<i>Mirabilis laevis</i>	Desert wishbone bush
OLEACEAE	OLIVE FAMILY
* <i>Olea europaea</i>	Olive
ONAGRACEAE	EVENING-PRIMROSE FAMILY
<i>Camissonia campestris</i>	Field evening-primrose
<i>Camissoniopsis pallida</i>	Pale suncup
<i>Chylismia brevipes</i>	Desert primrose
<i>Chylismia claviformis</i>	Clavate evening primrose
<i>Eremothera boothii</i> ssp. <i>desertorum</i>	Desert primrose
<i>Eremothera chamaenerioides</i>	Willow-herb primrose
<i>Eulobus californica</i>	California false mustard
<i>Oenothera californica</i> ssp. <i>californica</i>	California desert primrose
PAPAVERACEAE	POPPY FAMILY
<i>Argemone munita</i>	Chicalote, prickly poppy
** <i>Eschscholzia androuxii</i>	Joshua tree poppy
<i>Eschscholzia glyptosperma</i>	Desert golden-poppy
<i>Eschscholzia parishii</i>	Parish's gold poppy
PHRYMACEAE	LOPSEED FAMILY
<i>Mimulus bigelovii</i>	Bigelow monkeyflower
PLANTAGINACEAE	PLANTAIN FAMILY
<i>Plantago ovata</i>	Desert plantain
POLEMONIACEAE	PHLOX FAMILY
<i>Eriastrum diffusum</i>	Miniature eriastrum
<i>Eriastrum eremicum</i> ssp. <i>eremicum</i>	Desert woolly-star
<i>Gilia brecciarum</i> ssp. <i>brecciarum</i>	Nevada gilia

<i>Gilia latiflora</i>	Broad-flowered gilia
<i>Gilia sinuata</i>	Cinder gilia
<i>Gilia stellata</i>	Star gilia
<i>Leptosiphon aureus</i> ssp. <i>aureus</i>	Desert gold
<i>Linanthus jonesii</i>	Jones's linanthus
<i>Loeseliastrum matthewsii</i>	Desert calico
<i>Loeseliastrum schottii</i>	Schott's langloisia
** <i>Saltugilia latimeri</i>	Latimer's woodland gilia
POLYGONACEAE	BUCKWHEAT FAMILY
<i>Chorizanthe brevicornu</i>	Brittle spineflower
<i>Chorizanthe rigida</i>	Devil's spineflower
<i>Chorizanthe watsonii</i>	Watson's spineflower
<i>Eriogonum angulosum</i>	Angle-stem wild buckwheat
<i>Eriogonum fasciculatum</i>	California buckwheat
<i>Eriogonum gracile</i>	Slender buckwheat
<i>Eriogonum inflatum</i>	Desert trumpet
<i>Eriogonum plumatella</i>	Flat topped buckwheat
<i>Eriogonum pusillum</i>	Yellow turbans
<i>Eriogonum thomasii</i>	Thomas' wild buckwheat
<i>Eriogonum trichopes</i>	Little desert trumpet
<i>Rumex hymenosepalus</i>	Wild-rhubarb
RHAMNACEAE	BUCKTHORN FAMILY
<i>Ziziphus parryi</i> var. <i>parryi</i>	Parry's jujube
ROSACEAE	ROSE FAMILY
<i>Prunus fasciculata</i>	Desert almond
SIMAROUBACEAE	QUASSIA FAMILY
* <i>Ailanthus altissima</i>	Tree of heaven
SIMMONDSIACEAE	JOJOBA FAMILY
<i>Simmondsia chinensis</i>	Jojoba
SOLANACEAE	NIGHTSHADE FAMILY
<i>Datura wrightii</i>	Jimsonweed
<i>Lycium andersonii</i>	Box-thorn
<i>Lycium cooperi</i>	Peach desert thorn
<i>Nicotiana obtusifolia</i>	Desert tobacco
<i>Physalis crassifolia</i>	Thick-leaf ground-cherry
TAMARICACEAE	TAMARISK FAMILY
* <i>Tamarix ramosissima</i>	Saltcedar, tamarisk
VISACEAE	MISTLETOE FAMILY
<i>Phoradendron californicum</i>	Desert mistletoe
ZYGOPHYLLACEAE	CALTROP FAMILY
<i>Fagonia laevis</i>	Smooth-stem fagonia
<i>Larrea tridentata</i>	Creosote bush
<b>Monocotyledons</b>	
AGAVACEAE	AGAVE FAMILY
<i>Yucca brevifolia</i>	Joshua tree
<i>Yucca schidigera</i>	Mojave yucca
POACEAE	GRASS FAMILY
<i>Aristida purpurea</i>	Three-awn grass
* <i>Arundo donax</i>	Giant reed

<i>Bouteloua aristidoides</i> var. <i>aristidoides</i>	Needle grama
* <i>Bromus berteroi</i>	Chilean chess
* <i>Bromus diandrus</i>	Ripgut brome
* <i>Bromus madritensis</i> ssp. <i>rubens</i>	Red brome
* <i>Bromus tectorum</i>	Cheat grass
<i>Dasyochloa pulchella</i>	Low fluffgrass
<i>Hilaria rigida</i>	Big galleta
* <i>Hordeum murinum</i>	Wall barley, hare barley
* <i>Pennisetum setaceum</i>	Crimson fountain grass
* <i>Schismus barbatus</i>	Mediterranean schismus
<i>Stipa hymenoides</i>	Sand rice grass

Species introduced to California are indicated by an asterisk. Special-status species are indicated by two asterisks. This list includes only species observed within the facilities, other may have been overlooked or unidentifiable due to season. Plants were identified using keys, descriptions, and illustrations in Baldwin et al (2012). Plant taxonomy and nomenclature generally follow Jepson Flora Project (2017).

**Attachment 4**  
**CNDDDB Query Results**



# Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



**Query Criteria:** Quad (Bighorn Canyon (3411635) OR Catclaw Flat (3411616) OR Deadman Lake SE (3411631) OR Deadman Lake SW (3411632) OR Desert Hot Springs (3311685) OR Goat Mountain (3411633) OR Indian Cove (3411612) OR Joshua Tree North (3411623) OR Joshua Tree South (3411613) OR Landers (3411634) OR Lead Mountain SW (3411538) OR Morongo Valley (3411615) OR Queen Mtn. (3411611) OR Rimrock (3411625) OR Seven Palms Valley (3311684) OR Sunfair (3411622) OR Twentynine Palms (3411621) OR Twentynine Palms Mtn. (3411518) OR Valley Mtn. (3411528) OR Yucca Valley South (3411614) OR Yucca Valley North (3411624)) AND Taxonomic Group (Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Astragalus bernardinus</i> San Bernardino milk-vetch	PDFAB0F190	None	None	G3	S3	1B.2
<i>Astragalus lentiginosus var. coachellae</i> Coachella Valley milk-vetch	PDFAB0FB97	Endangered	None	G5T1	S1	1B.2
<i>Astragalus tricarinatus</i> triple-ribbed milk-vetch	PDFAB0F920	Endangered	None	G2	S2	1B.2
<i>Ayenia compacta</i> California ayenia	PDSTE01020	None	None	G4	S3	2B.3
<i>Berberis fremontii</i> Fremont barberry	PDBER06060	None	None	G5	S3	2B.3
<i>Boechnera dispar</i> pinyon rockcress	PDBRA060F0	None	None	G3	S3	2B.3
<i>Boechnera lincolnensis</i> Lincoln rockcress	PDBRA061M3	None	None	G4G5	S3	2B.3
<i>Boechnera parishii</i> Parish's rockcress	PDBRA061C0	None	None	G2	S2	1B.2
<i>Boechnera shockleyi</i> Shockley's rockcress	PDBRA061V0	None	None	G3	S2	2B.2
<i>Calochortus palmeri var. palmeri</i> Palmer's mariposa-lily	PMLIL0D122	None	None	G3T2	S2	1B.2
<i>Calochortus striatus</i> alkali mariposa-lily	PMLIL0D190	None	None	G3	S3	1B.2
<i>Chorizanthe xanti var. leucotheca</i> white-bracted spineflower	PDPGN040Z1	None	None	G4T3	S3	1B.2
<i>Coryphantha alversonii</i> Alverson's foxtail cactus	PDCAC0X060	None	None	G3	S3	4.3
<i>Cymopterus multinervatus</i> purple-nerve cymopterus	PDAPI0U0Q0	None	None	G4G5	S2	2B.2
<i>Dodecahema leptoceras</i> slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
<i>Erigeron parishii</i> Parish's daisy	PDAST3M310	Threatened	None	G2	S2	1B.1



Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Euphorbia arizonica</i></b> Arizona spurge	PDEUP0D060	None	None	G5	S3	2B.3
<b><i>Euphorbia misera</i></b> cliff spurge	PDEUP0Q1B0	None	None	G5	S2	2B.2
<b><i>Grusonia parishii</i></b> Parish's club-cholla	PDCAC0D2H0	None	None	G3G4	S2	2B.2
<b><i>Heuchera parishii</i></b> Parish's alumroot	PDSAX0E0S0	None	None	G3	S3	1B.3
<b><i>Ivesia argyrocoma var. argyrocoma</i></b> silver-haired ivesia	PDROS0X021	None	None	G2T2	S2	1B.2
<b><i>Jaffueliobryum raii</i></b> Rau's jaffueliobryum moss	NBMUS97010	None	None	G4?	S2?	2B.3
<b><i>Jaffueliobryum wrightii</i></b> Wright's jaffueliobryum moss	NBMUS97020	None	None	G4G5	S2?	2B.3
<b><i>Lasthenia glabrata ssp. coulteri</i></b> Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
<b><i>Linanthus bernardinus</i></b> Pioneertown linanthus	PDPLM09190	None	None	G1	S1	1B.2
<b><i>Linanthus maculatus ssp. maculatus</i></b> Little San Bernardino Mtns. linanthus	PDPLM041Y1	None	None	G2T2	S2	1B.2
<b><i>Matelea parvifolia</i></b> spear-leaf matelea	PDASC0A0J0	None	None	G5?	S3	2B.3
<b><i>Menodora spinescens var. mohavensis</i></b> Mojave menodora	PDOLE09061	None	None	G4T2	S2	1B.2
<b><i>Mentzelia tricuspis</i></b> spiny-hair blazing star	PDLOA031T0	None	None	G4	S2	2B.1
<b><i>Monardella robisonii</i></b> Robison's monardella	PDLAM180K0	None	None	G3	S3	1B.3
<b><i>Muhlenbergia appressa</i></b> appressed muhly	PMPOA48020	None	None	G4	S3	2B.2
<b><i>Nemacaulis denudata var. gracilis</i></b> slender cottonheads	PDPGN0G012	None	None	G3G4T3?	S2	2B.2
<b><i>Saltugilia latimeri</i></b> Latimer's woodland-gilia	PDPLM0H010	None	None	G3	S3	1B.2
<b><i>Selaginella eremophila</i></b> desert spike-moss	PPSEL010G0	None	None	G4	S2S3	2B.2
<b><i>Sidalcea neomexicana</i></b> Salt Spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
<b><i>Sphaeralcea rusbyi var. eremicola</i></b> Rusby's desert-mallow	PDMAL140L1	None	None	G4T2	S2	1B.2
<b><i>Streptanthus bernardinus</i></b> Laguna Mountains jewelflower	PDBRA2G060	None	None	G3G4	S3S4	4.3



**Selected Elements by Scientific Name**  
**California Department of Fish and Wildlife**  
**California Natural Diversity Database**



<b>Species</b>	<b>Element Code</b>	<b>Federal Status</b>	<b>State Status</b>	<b>Global Rank</b>	<b>State Rank</b>	<b>Rare Plant Rank/CDFW SSC or FP</b>
<i>Wislizenia refracta ssp. refracta</i> jackass-clover	PDCPP09013	None	None	G5T5?	S1	2B.2

**Record Count: 38**

**Attachment 5**  
**Special-Status Species Not Addressed**

**Attachment 5. Special-status species not addressed**

<b>Scientific Name</b>	<b>Common Name</b>	<b>Reason for Exclusion</b>
<i>Astragalus lentiginosus</i> var. <i>borreganus</i>	Borrego milk vetch	No suitable wind-blown sand habitat.
<i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Coachella Valley milk-vetch	No suitable wind-blown sand habitat.
<i>Berberis fremontii</i>	Fremont barberry	Outside of geographic and elevation range.
<i>Boechera lincolnensis</i>	Lincoln rockcross	No suitable pinyon-juniper woodland habitat.
<i>Boechera parishii</i>	Parish's rockcross	Outside of geographic and elevation range, no suitable pebble plain habitat present.
<i>Boechera shockleyi</i>	Shockley's rockcross	No suitable pinyon-juniper woodland habitat.
<i>Calochortus palmeri</i> var. <i>palmeri</i>	Palmer's mariposa-lily	No suitable mesic or meadow habitats.
<i>Calochortus striatus</i>	Alkali mariposa-lily	No suitable alkali substrates.
<i>Dodecahema leptoceras</i>	Slender-horned spineflower	Outside of geographic and elevation range and no suitable alluvial fan sage scrub habitat.
<i>Euphorbia arizonica</i>	Arizona spurge	Outside of geographic and elevation range.
<i>Euphorbia misera</i>	Cliff spurge	Outside of geographic and elevation range.
<i>Heuchera parishii</i>	Parish's alumroot	Outside of geographic and elevation range and no suitable rock outcrop habitat present.
<i>Ivesia argyrocoma</i> var. <i>argyrocoma</i>	Silver-haired ivesia	Outside of geographic and elevation range and no suitable pebble plain habitat present.
<i>Jaffueliobryum raii</i>	Rau's jaffueliobryum moss	No suitable mesic rock outcrop micro-habitat.
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	No suitable alkali substrates.
<i>Linanthus orcuttii</i>	Orcutt's linanthus	No suitable pinyon-juniper woodland habitat.
<i>Matelea parvifolia</i>	Spear-leaf matelea	No suitable rock outcrop habitat.
<i>Mentzelia tricuspis</i>	Spiny-hair blazing star	No suitable eroded slope habitat.
<i>Nemacaulis denudata</i> var. <i>gracilis</i>	Slender cottonheads	No suitable wind-blown sand habitat.
<i>Quercus dumosa</i>	Coastal sage scrub oak	No suitable coastal habitat; no oaks observed.
<i>Selaginella eremophila</i>	Desert spike-moss	No suitable rock outcrop habitat.
<i>Sidalcea neomexicana</i>	Salt Spring checkerbloom	No suitable alkali substrates.
<i>Sphaeralcea rusbyi</i> var. <i>eremicola</i>	Rusby's desert-mallow	Outside of geographic range.
<i>Streptanthus bernardinus</i>	Laguna Mountains jewelflower	Outside of geographic and elevation range.
<i>Wislizenia refracta</i> ssp. <i>refracta</i>	Jackass-clover	No suitable alkali substrates.
<i>Woodsia plummerae</i>	Plummer's cliff fern	No suitable rock outcrop habitat.