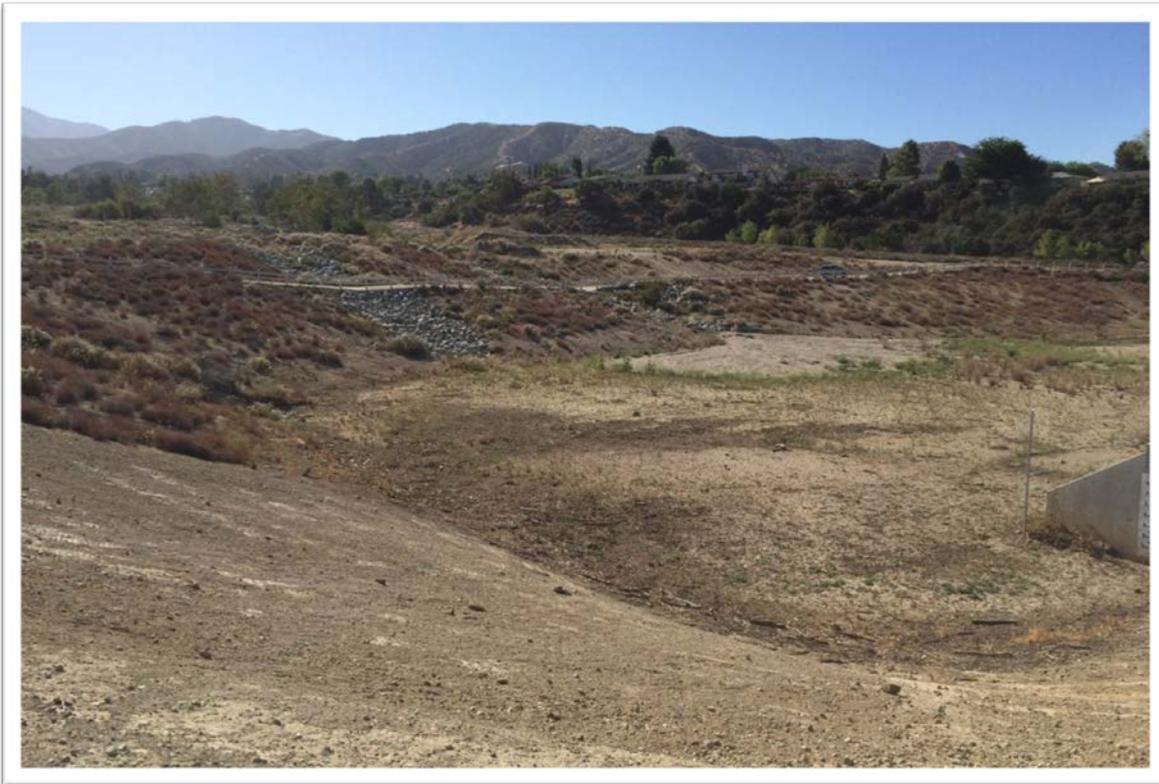


**Biological Technical Report for the First Line of
Defense (FLOD) 5-Year Maintenance Projects, Near
the Foothills of the San Gabriel and San Bernardino
Mountains, Rancho Cucamonga to Yucaipa
San Bernardino County, California**



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June 2015



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1.0 INTRODUCTION

The San Bernardino County Flood Control District (District) is responsible for the maintenance of all County owned and operated flood control basin facilities. Although maintenance of the basin facilities occurs regularly, it often is in direct response to a storm event. The District intends to gain regulatory authorization to provide regular, routine maintenance in its First Line of Defense (FLOD) priority flood control facilities. The maintenance activities would begin in advance of the 2015-2016 rain season, and continue annually for five years, ending in the 2019-2020 rain season. The following report details biological investigations conducted in support of environmental documentation and regulatory permitting for the annual routine maintenance at 33 FLOD flood control basin facilities managed by the District between San Antonio Heights and Yucaipa, California. Note that two additional facilities included in the FLOD group of basin facilities, Day Creek Dam and Day Creek Spreading Grounds, are subjects of separate biological report documentation.

ECORP Consulting, Inc. (ECORP), on behalf of the District, conducted a biological reconnaissance survey and jurisdictional delineation at these facilities and SJM Biological Consultants conducted focused trapping for San Bernardino kangaroo rat (*Dipodomys merriami parvus*; SBKR) at four of these facilities. Previous work, conducted by others, included focused surveys for the coastal California gnatcatcher (*Polioptila californica californica*), least Bell's vireo (*Vireo bellii pusillus*) and southwestern willow flycatcher (*Empidonax traillii extimus*) for various basin facilities. This biological technical report provides the methods and results of the reconnaissance survey and SBKR trapping and other previous studies; the jurisdictional wetland delineation and complete SBKR trapping report are provided under separate cover.

The purpose of the biological reconnaissance survey was to document baseline biological conditions at each facility to determine whether Project implementation would impact sensitive biological resources at the Dam and Basins, as required under the California Environmental Quality Act (CEQA). The assessment included: 1) a review of state and private databases for special-status species and previously-conducted surveys in the immediate area of the facilities, 2) a general characterization of plant communities at each facility, 3) a general inventory of plant and wildlife species observed during the reconnaissance, and 4) an assessment of the special-status plant and animal species that have the potential to occur in or immediately adjacent to each facility.

1.1 Project Objectives

The purpose of the FLOD Maintenance Project (Project) is to conduct routine maintenance at 33 flood control basin facilities (dams, basins, and spreading grounds). The Project would provide flood protection by routinely maintaining the basin facilities as constructed. Routine maintenance will assist in preventing damage to public and private property and protect other District facilities. The Project would not expand existing basin facilities nor would it add any new facilities.

1.2 Project Location

The District is divided into six zones. The Proposed Project is located in three of these six zones, as described in this section (Figure 1.1). Zone 1 is a 275-square-mile area in the western portion of the San Bernardino valley extending from Beech Avenue in Fontana west to the Los Angeles/San Bernardino County boundary, south of the San Gabriel Mountains. Included in the zone are the incorporated cities of Chino, Chino Hills, Fontana, Montclair, Ontario, Rancho Cucamonga, and Upland and the unincorporated community of Etiwanda. Thirteen Project facilities are located in Zone 1 (Figure 1.2). Table 1.1 lists the District’s unique basin number, name, United States Geological Survey (USGS) 7.5-minute topographic quadrangle, Township, Range, and Section information for each facility.

Zone 2 is located in the central area of the San Bernardino Valley, east of Zone 1. It is a 318-square-mile area mostly affected by the Santa Ana River and City Creek. Zone 2 includes portions of the cities of Colton, Fontana, Grand Terrace, Highland, Loma Linda, Redlands, Rialto, and San Bernardino and the unincorporated communities of Bloomington, Del Rosa, Devore, and Muscoy. Eleven Project facilities are located in Zone 2 (Figure 1.3). Table 1.1 lists the District’s unique basin number, name, USGS 7.5-minute topographic quadrangle, Township, Range, and Section information for each facility.

Zone 3 is a 366-square-mile area located on the east end of the San Bernardino Valley, east of Zone 2. Zone 3 includes portions of the cities of Highland, Loma Linda, Redlands, San Bernardino, and Yucaipa and the unincorporated community of Mentone. Eight Project facilities are located in Zone 3 (Figure 1.4). Table 1.1 lists the District’s unique basin number, name, USGS 7.5-minute topographic quadrangle, Township, Range, and Section information for each facility.

Table 1.1 - General Basin Locations

Redbook	Name	Quad	PLSS
Zone 1			
1-313-4A	San Antonio Heights Basin #1	Mount Baldy	CUCAMONGA LAND GRANT
1-313-4B	San Antonio Heights Basin #5	Mount Baldy	CUCAMONGA LAND GRANT, S.19 T.01N R.07W
1-313-4D	San Antonio Heights Basin	Mount Baldy	CUCAMONGA LAND GRANT
1-313-4E	San Antonio Heights Basin #3	Mount Baldy	CUCAMONGA LAND GRANT
1-313-4F	San Antonio Heights Basin #2	Mount Baldy	CUCAMONGA LAND GRANT
1-313-4G	San Antonio Heights Basin #4	Mount Baldy	CUCAMONGA LAND GRANT
1-313-4H	San Antonio Heights Basin #6	Mount Baldy	CUCAMONGA LAND GRANT, S.20 T.01N R.07W
1-352-3A	Cucamonga Dam	Mount Baldy	CUCAMONGA LAND GRANT
1-402-3A	Demens Basin #1	Cucamonga Peak	CUCAMONGA LAND GRANT

Biological Technical Report – FLOD Maintenance Project

Redbook	Name	Quad	PLSS
1-506-3A	Deer Creek Debris Basin	Cucamonga Peak	S.13 T.01N R.07W
1-552-4A	Hillside Basin	Cucamonga Peak	S.14 T.01N R.07W, S.23 T.01N R.07W
1-707-9A	Etiwanda Debris Basin	Cucamonga Peak	S.21 T.01N R.06W
1-807-4A	Rich Basin	Devore	S.23 T.01N R.06W
Zone 2			
2-303-3A	Devil Canyon Dam (Basin #1)	San Bernardino North	MUSCUPIABE LAND GRANT
2-304-4A	Devil Basin #2	San Bernardino North	MUSCUPIABE LAND GRANT
2-304-4B	Devil Basin #3	San Bernardino North	MUSCUPIABE LAND GRANT
2-305-4A	Wiggins Basin #1	San Bernardino North	MUSCUPIABE LAND GRANT
2-365-3A	Little Mountain Dam	San Bernardino North	MUSCUPIABE LAND GRANT
2-368-4D	MacQuiddy Basin #4 (#1-4 combined)	San Bernardino North	MUSCUPIABE LAND GRANT
2-406-4A	Twin Creek Spreading Grounds	San Bernardino North	MUSCUPIABE LAND GRANT
2-412-4A	Brush Canyon Basin	San Bernardino North	MUSCUPIABE LAND GRANT, S.10 T.01N R.04W, S.15 T.01N R.04W
2-414-4A	Harrison Basin	San Bernardino North	MUSCUPIABE LAND GRANT
2-503-4A	Sand Canyon Basin	Harrison Mountain	S.19 T.01N R.03W
2-506-4A	Daley Basin	Harrison Mountain	S.13 T.01N R.04W
2-510-4A	Little Sand Canyon Basin	Harrison Mountain	MUSCUPIABE LAND GRANT, S.19 T.01N R.03W
Zone 3			
3-204-4A	Oak Creek Basin	Redlands	S.6 T.01S R.02W
3-302-3A	Small Canyon Dam	Harrison Mountain	S.28 T.01N R.03W
3-304-4A	Dynamite Basin	Harrison Mountain	S.28 T.01N R.03W
3-305-4A	Cook Canyon Basin	Harrison Mountain	S.27 T.01N R.03W, S.34 T.01N R.03W
3-602-4A	Wilson Creek Basin #1	Yucaipa	S.30 T.01S R.01W
3-603-4A	Oak Glen Creek Basin #1	Yucaipa	S.31 T.01S R.01W, S.36 T.01S R.02W
3-603-4B	Oak Glen Creek Basin #2	Yucaipa	S.31 T.01S R.01W
3-603-4C	Oak Glen Creek Basin #3	Yucaipa	S.31 T.01S R.01W

1.3 Project Description

1.3.1 Routine Maintenance Activities and Equipment

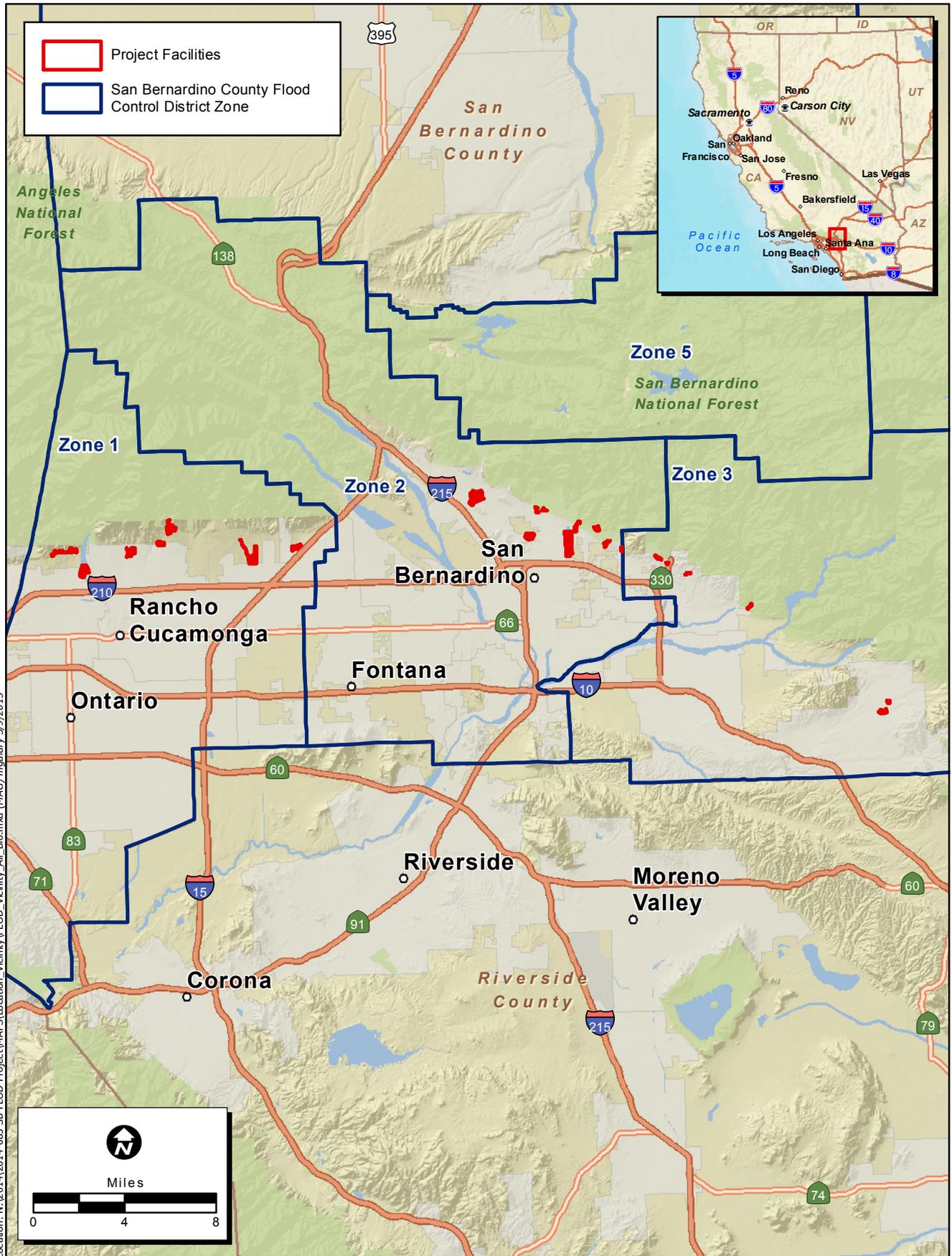
The routine maintenance activities for the Proposed Project include vegetation management, land clearing/excavation, herbicide/rodenticide application, stockpiling, bank repair, and ingress/egress road maintenance. Tables 1.2, 1.3, and 1.4 provide a summary of the maintenance activities and acreage of impact for each Project area.

Maintenance equipment that would be used for the Project ranges from hand weed removal tools to large construction equipment such as dozers and excavators. For the purposes of assessing impacts to biological resources, the total footprint of each proposed activity is evaluated separately.

For detailed maps and descriptions of the maintenance activities, the types of equipment and how they will be used to complete maintenance activities, and applicable Best Management Practices, please refer to the CEQA document.

1.3.2 Timing

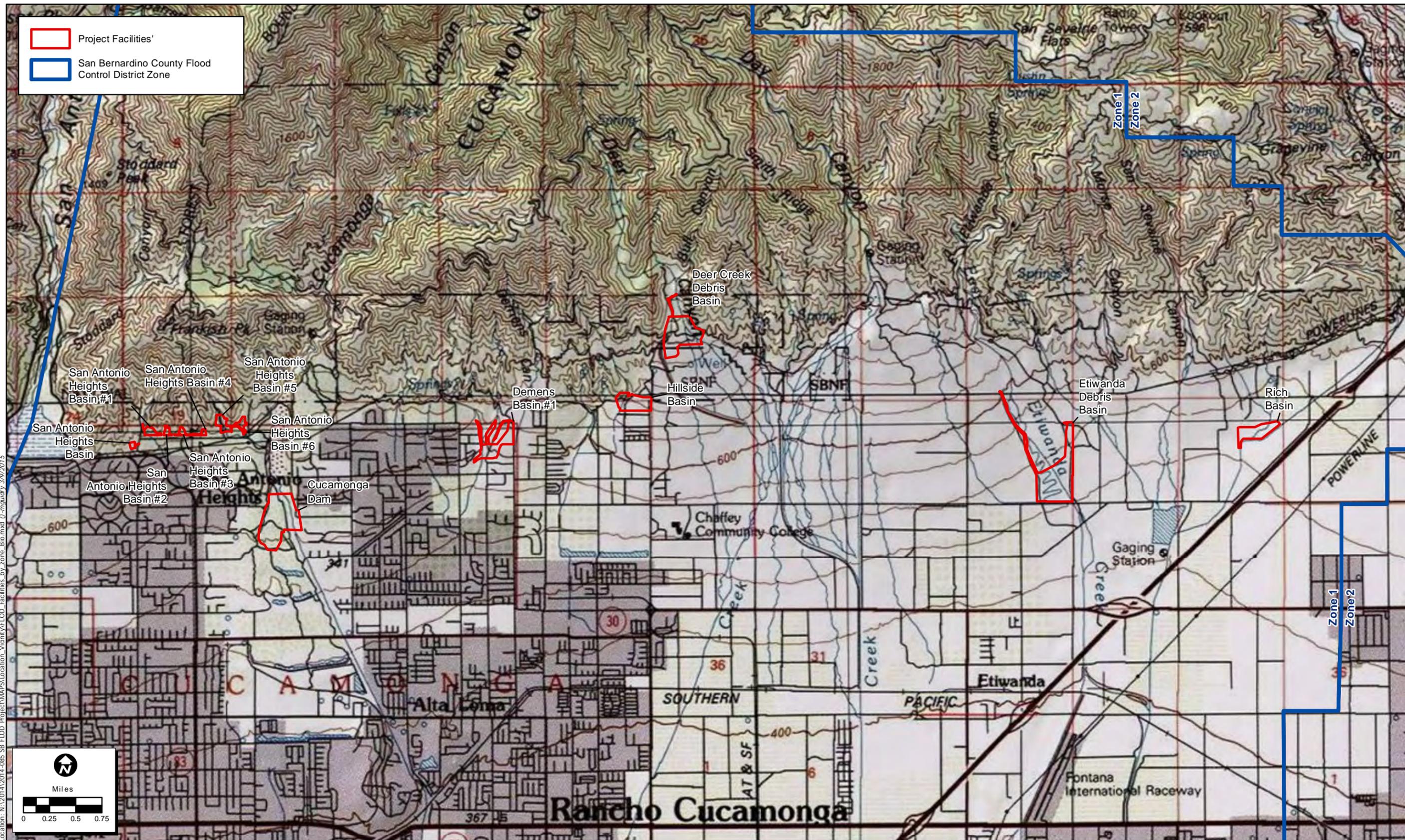
The Proposed Project is a five year routine maintenance request, which would begin shortly after permit authorization, and is expected to continue for a period of 5 years, ending in 2020. Maintenance activities would take place once per year in the late fall/early winter prior to the onset of winter rains. Maintenance activity will be scheduled between 7 a.m. and 7 p.m. Monday through Saturday, excluding federal holidays, in accordance with BMP 6 and the County's development code.



Map Date: 3/9/2015
 Service Layer Credits: Sources: USGS, ESRI, TANA, AND

Figure 1.1 Regional Map

2014-085 San Bernardino County FLOOD Project



Location: N:\2014\2014-085_SBFLOOD_Project\MAPS\Location_Victim\FLOOD_Facilities_by_zone_Bio.mxd 03/09/2015

Figure 1.2
Project Facilities in Zone 1

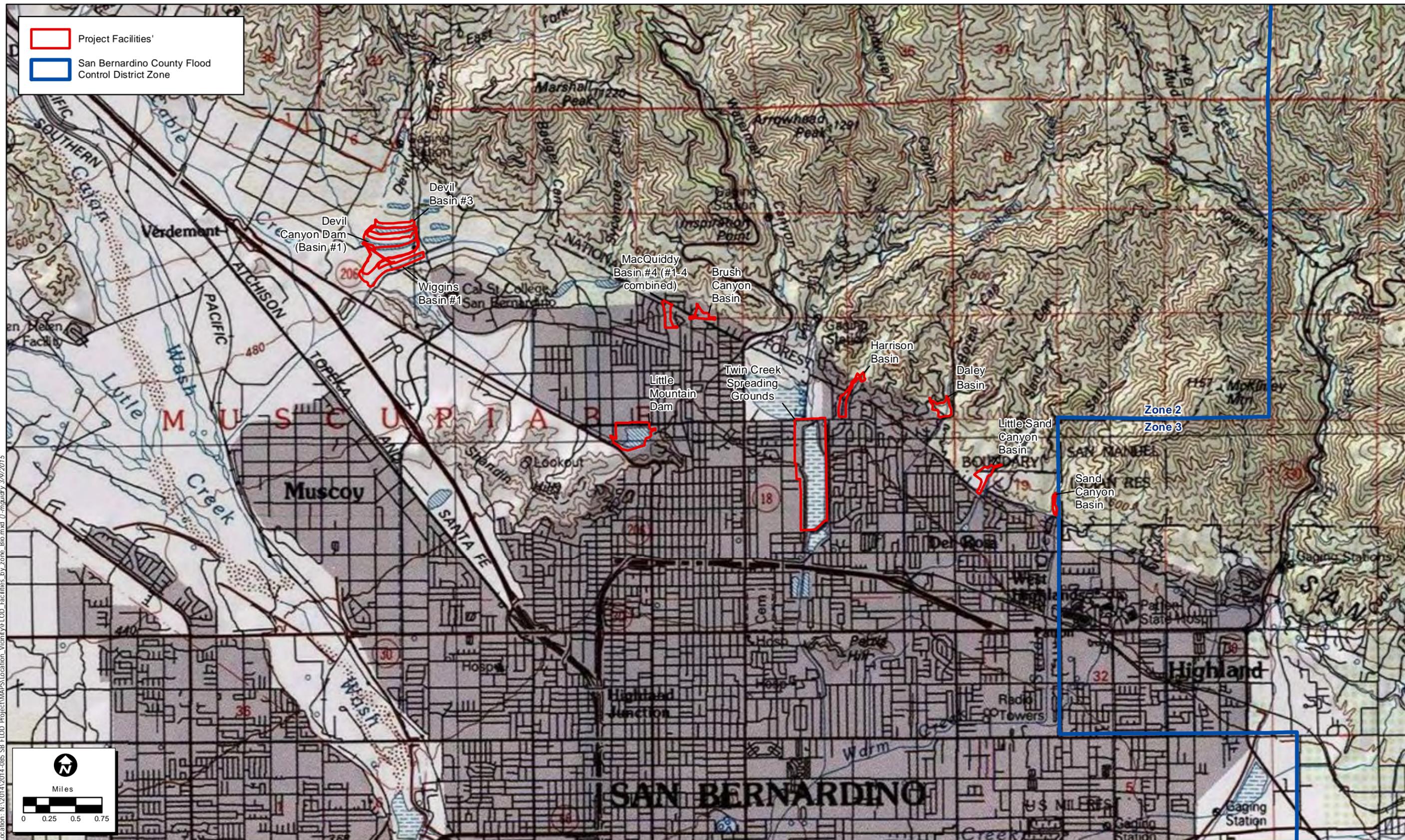


Figure 1.3
Project Facilities in Zone 2

Table 1.2 - Summary of Project Maintenance Activities Zone 1

Facility Name and Number	Activity Category (size in acres) ¹						Total	Footprint ²
	Vegetation Management	Land Clearance/Excavation	Herbicide/Rodenticide	Stockpile	Bank Repair	Ingres/Egress		
San Antonio Heights Basin (1-313-4D)	0.72	0.23	0.27	0	0	0.27	1.48	0.87
San Antonio Heights Basin #1 (1-313-4A)	0	0.49	0.62	0	0	0.46	1.56	1.12
San Antonio Heights Basin #2 (1-313-4F)	1.22	0.32	0.14	0	0	0.14	1.82	1.42
San Antonio Heights Basin #3 (1-313-4E)	1.72	0.47	0.21	0	0	0.22	2.62	1.95
San Antonio Heights Basin #4 (1-313-4G)	1.26	0.33	0.15	0	0	0.17	1.92	1.39
San Antonio Heights Basin #5 (1-313-4B)	3.37	1.29	1.48	2.18	0	0.79	9.11	6.93
San Antonio Heights Basin #6 (1-313-4H)	2.45	0.43	1.38	0	0	0.32	4.58	2.77
Cucamonga Dam (1-352-3A)	16.64	26.44	5.74	20.14	7.90	4.63	81.47	69.27
Demens Basin #1 (1-402-3A)	28.13	6.48	4.47	4.48	0	3.65	47.21	31.54
Hillside Basin (1-552-4A)	18.77	3.88	10.80	5.50	0	2.75	41.70	21.15
Deer Creek Debris Basin (1-506-3A)	11.79	7.68	9.17	14.23	0	5.67	48.53	42.14
Etiwanda Debris Dam (1-707-9A)	23.82	20.59	16.65	0	0	9.96	71.02	50.67
Rich Basin (1-807-4A)	10.64	7.78	5.61	0	0	3.30	27.32	23.49
Total	120.53	76.41	56.69	46.53	7.90	32.33	340.34	254.71

Note: 1 All impacts are temporary impacts.
 2 The size of the maintenance footprint may be smaller than the total number of acres, because areas for maintenance activities may overlap.

Table 1.3 - Summary of Project Maintenance Activities Zone 2

Facility Name and Number	Activity Category (size in acres) ¹						Total	Footprint ²
	Vegetation Management	Land Clearance/Excavation	Herbicide/Rodenticide	Stockpile	Bank Repair	Ingress/Egress		
Devil Canyon Dam (Basin #1) (2-303-3A)	5.47	10.61	8.20	0	1.05	2.38	27.70	18.81
Devil Basin #2 (2-304-4A)	16.93	13.78	3.32	0	0	2.47	36.50	20.30
Devil Basin #3 (2-304-4B)	9.17	9.17	11.7	0	0	0.55	30.59	11.7
Wiggins Basin #1 (2-305-4A)	24.64	24.26	4.6	0	0	4.40	57.90	29.34
Little Mountain Dam (2-365-3A)	41.65	40.41	16.06	6.10	0	3.77	107.99	47.66
MacQuiddy Basin #4 (2-368-4D)	6.11	5.68	3.53	0	0	1.43	16.75	9.57

Facility Name and Number	Activity Category (size in acres) ¹							Footprint ²
	Vegetation Management	Land Clearance/Excavation	Herbicide/Rodenticide	Stockpile	Bank Repair	Ingress/Egress	Total	
Twin Creek Spreading Grounds (2-406-2A)	29.49	77.88	28.54	6.52	5.08	22.53	170.04	135.70
Brush Canyon Basin (2-412-4A)	2.81	2.34	2.00	0	0	0.97	8.12	4.78
Harrison Basin (2-414-4A)	7.19	5.54	4.46	0	3.00	1.49	21.68	11.95
Sand Canyon Basin (2-503-4A)	0.73	1.55	1.05	0	0	0.45	3.78	2.61
Daley Basin (2-506-4A)	0.85	5.99	3.16	0	1.00	1.68	12.68	10.40
Little Sand Canyon Basin (2-510-4A)	1.82	4.63	3.37	2.08	0	1.65	13.54	10.03
Total	128.38	183.32	77.43	14.70	10.13	42.83	456.76	290.87

Note: 1 All impacts are temporary impacts.
 2 The size of the maintenance footprint may be smaller than the total number of acres, because areas for maintenance activities may overlap.

Table 1.4 - Summary of Project Maintenance Activities Zone 3

Facility Name and Number	Activity Category (size in acres)							Footprint ²
	Vegetation Management	Land Clearance/Excavation	Herbicide/Rodenticide	Stockpile	Bank Repair	Ingress/Egress	Total	
Oak Creek Basin (3-204-4A)	1.53	1.58	2.55	1.47	0.85	0.77	8.75	4.52
Small Canyon Dam (3-302-3A)	1.24	1.75	2.88	0	2.19	1.75	9.81	5.64
Dynamite Basin (3-304-4A)	0.99	1.18	1.13	0	0	0.53	3.83	3.30
Cook Canyon Basin (3-305-4A)	0.60	0.38	0.99	0	0	0.71	2.68	1.59
Wilson Creek Basin #1 (3-602-4A)	1.23	2.22	1.72	0	0	0.81	5.97	5.19
Oak Glen Creek Basin #1 (3-603-4A)	0	0.91	0.67	0	0	0.63	2.22	1.58
Oak Glen Creek Basin #2 (3-603-4B)	0	1.63	1.39	0	0	1.38	4.40	2.99
Oak Glen Creek Basin #3 (3-603-4C)	0	2.25	0.77	1.49	1.79	0.79	7.09	6.07
Total	5.59	11.90	12.10	2.96	4.83	7.37	44.75	30.88

Note: 1 All impacts are temporary impacts.
 2 The size of the maintenance footprint may be smaller than the total number of acres, because areas for maintenance activities may overlap.

2.0 REGULATORY REQUIREMENTS

2.1 Federal Regulations

2.1.1 Federal Endangered Species Act

The federal Endangered Species Act (FESA) protects plants and animals that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service. Section 9 of FESA prohibits the taking of endangered wildlife, where taking is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct” (50 CFR 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law (16 USC 1538). Under Section 7 of FESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of FESA provides for issuance of incidental take permits where no other federal actions are necessary provided a habitat conservation plan is developed.

2.1.2 Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits.

2.1.3 Federal Clean Water Act

The federal Clean Water Act’s (CWA) purpose is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Section 404 of the CWA prohibits the discharge of dredged or fill material into “Waters of the United States” without a permit from the U.S. Army Corps of Engineers (USACE). The definition of Waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes and wetlands. Wetlands are defined as those areas “that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3 7b). The U.S. Environmental Protection Agency (EPA) also has authority over wetlands and may override a USACE permit.

Substantial impacts to wetlands may require an individual permit. Projects that involve routine maintenance of existing facilities or only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is also required for Section 404 permit actions; this certification or waiver is issued by the Santa Ana Regional Water Quality Control Board (SARWQCB).

2.2 State and Local Regulations

2.2.1 *California Endangered Species Act*

The California Endangered Species Act (CESA) generally parallels the main provisions of the FESA, but unlike its federal counterpart, CESA applies the take prohibitions to species proposed for listing (called “candidates” by the state). Section 2080 of the FGC prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in Section 86 of the FGC as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” CESA allows for take incidental to otherwise lawful development projects. State lead agencies are required to consult with California Department of Fish and Wildlife (CDFW) to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of essential habitat.

2.2.2 *Fully Protected Species*

The State of California first began to designate species as “fully protected” prior to the creation of the CESA and FESA. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under CESA and/or FESA, though there are a number of exceptions. The regulations that implement the Fully Protected Species Statute (FGC Section 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, CDFW prohibits any state agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

2.2.3 *Native Plant Protection Act*

The Native Plant Protection Act (NPPA) of 1977 (FGC Sections 1900-1913) was created with the intent to “preserve, protect and enhance rare and endangered plants in this State.” The NPPA is administered by CDFW. The California Fish and Game Commission has the authority to designate native plants as “endangered” or “rare” and to protect endangered and rare plants from take. The CESA (FGC Section 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the FGC.

2.2.4 Fish and Game Code

Streambed Alteration Agreement

Section 1602 of the FGC requires that a Notification of Lake or Streambed Alteration be submitted to CDFW for “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.” The CDFW reviews the notification and, if necessary, responds with a draft Streambed Alteration Agreement to protect affected fish and wildlife resources. The terms of the Streambed Alteration Agreement may be negotiated.

Migratory Birds

CDFW also enforces the protection of non-game native songbirds and raptors in Sections 3503, 3503.5, and 3800 of the FGC. Furthermore, Section 3513 of the FGC prohibits the possession or take of birds listed under the federal MBTA. These sections mandate the protection of California non-game native birds’ nests and also make it unlawful to take these birds.

2.2.5 CEQA Significance Criteria

Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant. Based on these examples, impacts to biological resources would normally be considered significant if the project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA. This occurs when impacts would result in an adverse alteration of existing conditions, but not substantially diminish, or result in the permanent loss of an important resource on a population-wide or region-wide basis.

3.0 METHODS

3.1 Literature Search

Prior to conducting the biological reconnaissance survey, ECORP biologists performed a literature search to determine the listed and sensitive species that have been documented in their respective 7.5-minute topographic quadrangles, as identified in Table 1.1. This literature search included the CDFW California Natural Diversity Database (CNDDDB; CDFW 2015a) and the California Native Plant Society's (CNPS) online Inventory of Rare and Endangered Plants of California (Inventory; CNPS 2015). Additional information was gathered from the following sources:

- *State and federally listed endangered and threatened animals of California* (CDFW 2015b);
- *CNDDDB Special Animals list* (CDFW 2015c),
- *CNDDDB Special Vascular Plants, Bryophytes and Lichens List* (CDFW 2015d);
- *The Jepson Manual* (Baldwin *et al.* 2012);
- Various online websites (e.g., Consortium of California Herbaria); and
- *The Manual of California Vegetation, 2nd Edition* (Sawyer *et al.* 2009).

Using this information and observations made during the biological reconnaissance and protocol SBKR trapping survey (where applicable), a list of special-status plant and wildlife species that could potentially occur within or immediately adjacent to the Project site was generated. For the purposes of this assessment, special-status species are defined as plants or animals that:

- Have been listed as either rare, threatened, or endangered by CDFW or the USFWS, and are protected under either the CESA and FESA;
- Are candidate species being considered or proposed for listing under these same acts;
- Are fully protected by the FGC, Sections 3511, 4700, 5050, or 5515;
- Are monitored by the CDFW or the CNPS and included in the CNDDDB and/or Inventory; and/or
- Are of expressed concern to resource and regulatory agencies, or local jurisdictions.

Special-status species reported in the Project vicinity in the literature search or for which suitable habitat occurs in the Project site were assessed for potential to occur and assigned to one of the following categories:

- N:** The Project site is outside known distribution/range of the species.
- A:** Species is considered absent based on focused, protocol surveys conducted within the Project site.
- U:** Occurrence of the species within the Project site is unlikely based on lack of habitat.
- P:** Occurrence of the species within the Project site is possible as suitable habitat is present.
- L:** Occurrence of the species within the Project site is likely as suitable habitat is present and the species is known from nearby locations.
- Y:** Species is known to occur within the Project site and/or was present during the survey.
- C:** Critical habitat for this species has been mapped in the vicinity, including within the Project site.

(Note: Location information on some special-status species may be of questionable accuracy or unavailable; therefore, for survey purposes, environmental factors associated with species occurrence requirements may be considered sufficient reason to give a species a positive potential for occurrence).

In addition to the inclusion of plant and wildlife species records, the CNDDDB includes records for sensitive vegetation communities.

Focused surveys for the SBKR were conducted as recommended by the District from August 11 through 30, 2014 for the Devil Canyon Dam (Basin #1), Devil Basin #2, Devil Basin #3, and Wiggins Basin #1, including all access roads. Although not a part of this Project, the other basins and washes surrounding these basins were also trapped between August 5 and September 8, 2014. Trapping was conducted by SJM Biological Consultants, following the basic protocol established for SBKR by the USFWS. The proposed methodology for this trapping effort was submitted to and approved by the USFWS. Within these four basins and associated access roads, a total of 968 traps were set out during the 18 nights of trapping, totaling 4,755 trap-nights.

As part of the literature search, ECORP reviewed the soil types in the Project site to further assess conditions that provide habitat for special-status plant and wildlife species. Soils types were determined using the Natural Resources Conservation Service Web Soil Survey (USDA 2015).

3.2 Field Surveys

The biological reconnaissance survey consisted of driving existing access roads and walking to vantage points so that 100 percent visual coverage of the Project site and surrounding vicinity was achieved. The areas surveyed will be referred to as the Biological Study Area (BSA), the area outlined in red in Figure 1.2, throughout the remainder of this report. The field survey included the following:

- Recording all plant and animal species observed in the BSA;
- Verifying previously-mapped vegetation communities and characterizing areas in the BSA that were not;
- Searching for wildlife sign (e.g., detections of burrows, scat, tracks, vocalizations);
- Taking photographs of the BSA; and
- Recording weather data including time, temperature, cloud cover, and wind speed at the beginning and end of the survey day.

Vegetation types were classified according to CNPS nomenclature (Sawyer *et al.* 2009) or other systems as applicable (e.g., Holland 1986). Plant nomenclature follows that of The Jepson Manual: Higher Plants of California (Baldwin *et al.* 2012). Wildlife nomenclature follows Checklist of North American Birds (AOU 2012), Standard Common and Current Scientific Names (CNAH 2012) for reptiles and amphibians, and the Revised Checklist of North American Mammals North of Mexico (Baker *et al.* 2003).

4.0 RESULTS

The results of the literature search for previously documented special-status vegetation communities, plant, and wildlife species and field survey results for each facility will be presented below, separated by their respective zone. The zones represent roughly different biomes.

4.1 Zone 1

4.1.1 Literature Search

Vegetation Communities

Riversidean Alluvial Fan Sage Scrub (RAFSS) and California walnut woodland are considered sensitive habitats by CDFW and CNPS (CDFW 2014; CNPS 2014). RAFSS has been previously documented in several Zone 1 facilities, including San Antonio Heights-West Frankish Basin, Cucamonga Dam, Demens Basin #1, Hillside Basin, Deer Creek Debris Basin, and Etiwanda Debris Basin. California walnut woodland has been previously documented in the Etiwanda Debris Basin. (CDFW 2012a). Figure 4.1 shows the locations of sensitive habitats identified in the literature search in relation to the Zone 1 facilities. More information on these vegetation communities is presented in Section 4.1.6 of this report.

Plant Species Evaluated

Provided in Table 4.1 is a master list of the 100 special-status plant species evaluated during the literature search for the facilities in Zones 1, 2, and 3. The plants were combined into one table because many of them overlap in geographical range between the three zones.

The Zone 1 literature search documented 48 special-status plant species in the vicinity of the 13 facilities in Zone 1 (Figure 4.1; Table 4.2). Table 4.1 provides the federal and state legal status, flowering period, elevation range, and general habitat characteristics of each species in Table 4.2. Each of the species are also ranked based on level of concern as part of the CNPS Inventory.

The biological reconnaissance survey did not include a focused survey for rare plants and the timing of the surveys was not ideal for detecting the presence of all of the sensitive plants listed below. However, the habitat associated with each species was evaluated and used to determine their specific potential for occurrence within the habitat types in the facilities. Twenty-six of these plant species were determined to have a potential to occur in one or more of the 13 facilities within Zone 1 (Table 4.2). Included in this list was the federally- and state-listed (endangered) Nevin's barberry (*Berberis nevinii*), slender-horned spineflower (*Dodecahema leptoceras*), Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum*), and the federally-listed (threatened) and state-listed (endangered) thread-leaved brodiaea (*Brodiaea filifolia*). The habitat characteristics and specific occurrence information with regard to each facility for each of the federally- or state-listed species will be discussed separately below. The remaining 22 species were presumed to be absent from the Project site, mostly due to elevation factors. Figure 4.1 shows the locations of special-status plant species occurrences identified in the literature search in relation to the Zone 1 facilities.

Nevin's barberry

Nevin's barberry (*Berberis nevinii*) is federally- and state-listed as endangered and a CNPS California Rare Plant Rank (CRPR) 1B.1 species. This perennial shrub, endemic to California, is found in chaparral, cismontane woodland, coastal scrub, and riparian scrub communities at elevations ranging from 274 to 825 meters (898 to 2,706 feet) above mean sea level (msl). Nevin's barberry typically blooms from March to June and prefers sandy or gravelly soils (CNPS 2015).

Suitable habitat for Nevin's barberry is present in all 13 basins located within Zone 1. In addition, this species has been documented approximately 2.4 miles southwest of the seven San Antonio Heights Basins. However, this species would have likely been observed during the biological reconnaissance survey if it was present.

Slender-horned spineflower

Slender-horned spineflower (*Dodecahema leptoceras*) is an annual herb that is federally- and state-listed as endangered and is also a CNPS CRPR 1B.1 species. This species is found in Los Angeles, Riverside, and San Bernardino Counties. Slender-horned spineflower grows in sandy

soil within chaparral, cismontane woodland, and alluvial fan scrub communities at elevations ranging from 200 to 760 meters (656 to 2,493 feet) above msl. Slender-horned spineflower blooms from April to June (CNPS 2015).

Suitable habitat for slender-horned spineflower is present in 12 of the 13 basins located within Zone 1; Deer Creek Debris Basin is outside the elevation range of this species. Slender-horned spineflower has been documented in Lytle Creek approximately 2.7 miles northeast of Rich Basin, the easternmost of the Zone 1 basins. However, Cucamonga Dam and the San Antonio Heights Basins are more than 10 miles from this documented occurrence.

Santa Ana River Woolly-star

Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum*) is federally- and state-listed as endangered and a CNPS CRPR 1B.1 species. This perennial herb is found in Orange, Riverside, and San Bernardino Counties. Santa Ana River woolly-star grows in sandy or gravelly soil within chaparral and alluvial fan scrub communities at elevations ranging from 91 to 610 meters (298 to 2,001 feet) above msl. The blooming period for the Santa Ana River woolly-star extends from April to September (CNPS 2015).

Minor amounts of suitable habitat for Santa Ana River woolly-star are present in Cucamonga Dam, Demens Basin #1, and Etiwanda Debris Basin within Zone 1. The habitat areas within these basin facilities are located along the perimeter of the facilities outside of proposed maintenance footprints. The other nine basins within Zone 1 are outside the elevation range of this species. Several occurrences of Santa Ana River woolly-star have been documented in Cajon Creek, which is located approximately 5.5 miles east of Rich Basin, the easternmost of the Zone 1 basins.

Thread-leaved brodiaea

Thread-leaved brodiaea (*Brodiaea filifolia*) is federally threatened and state-listed as endangered. This perennial bulbiferous herb, endemic to California, is also CNPS CRPR 1B.1 species. Thread-leaved brodiaea is often found in clay soils within communities such as chaparral, cismontane woodland, coastal sage scrub, playas, valley and foothill grasslands, and vernal pools. Thread-leaved brodiaea blooms from March to June at elevations ranging from 25 to 1120 meters (82 to 3,674 feet) above msl (CNPS 2015).

No occurrences of this species have been documented within 10 miles of the Zone 1 basins. Because there are no clay soils present in any of the basins, thread-leaved brodiaea is not expected to be present in any of the 13 basins located within Zone 1.

Table 4.1 – Zones 1-3 Plant Species Evaluated

Scientific Name Common Name	Status		Flowering Period Elevation (meters)	Habitat
	Fed:	CRPR:		
<i>Abronia villosa</i> var. <i>aurita</i> chaparral sand-verbena	Ca: CRPR:	none none 1B.1	January- September 75-1600	Chaparral, coastal scrub, desert dunes; sandy
<i>Acanthoscyphus parishii</i> var. <i>parishii</i> Parish's oxytheca	Fed: Ca: CRPR:	none none 4.2	June- September 1220-2600	Chaparral, lower montane coniferous forest; sandy or gravelly
<i>Allium marvinii</i> Yucaipa onion	Fed: Ca: CRPR:	none none 1B.1	April-May 760-1065	Chaparral (openings); clay
<i>Amaranthus watsonii</i> Watson's amaranth	Fed: Ca: CRPR:	none none 4.3	April- September 20-1700	Mojavean desert scrub, Sonoran desert scrub
<i>Ambrosia monogyra</i> singlewhorl burrobrush	Fed: Ca: CRPR:	none none 2B.2	August- November 10-500	Chaparral, Sonoran desert scrub; sandy
<i>Arctostaphylos glandulosa</i> ssp. <i>gabrielensis</i> San Gabriel manzanita	Fed: Ca: CRPR:	none none 1B.2	March 595-1500	Chaparral; rocky
<i>Arenaria lanuginosa</i> var. <i>saxosa</i> rock sandwort	Fed: Ca: CRPR:	none none 2B.3	July-August 1800-2600	Subalpine coniferous forest, upper montane coniferous forest; mesic, sandy
<i>Artemisia palmeri</i> San Diego sagewort	Fed: Ca: CRPR:	none none 4.2	February- September 15-915	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; sandy, mesic
<i>Asplenium vespertinum</i> western spleenwort	Fed: Ca: CRPR:	none none 4.2	February-June 180-1000	Chaparral, coastal scrub, cismontane woodland; rocky
<i>Astragalus bicristatus</i> crested milk-vetch	Fed: Ca: CRPR:	none none 4.3	May-August 1700-2745	Lower montane forest, upper montane forest; sandy or rocky
<i>Astragalus lentiginosus</i> var. <i>borreganus</i> Borrego milk-vetch	Fed: Ca: CRPR:	none none 4.3	February-May 30-320	Mojavean desert scrub, Sonoran desert scrub; sandy
<i>Astragalus lentiginosus</i> var. <i>cochellae</i> Coachella Valley milk-vetch	Fed: Ca: CRPR:	END none 1B.2	February-May 60-655	Desert dunes, Sonoran desert scrub (sandy)
<i>Astragalus pachypus</i> var. <i>jaegeri</i> Jaeger's bush milk-vetch	Fed: Ca: CRPR:	none none 1B.1	December- June 365- 915	Chaparral, coastal scrub, cismontane woodland, valley and foothill grassland; sandy or rocky
<i>Atriplex coronata</i> var. <i>notatior</i> San Jacinto Valley crownscale	Fed: Ca: CRPR:	END none 1B.1	April-August 139-500	Playas, valley and foothill grassland, vernal pools; alkaline

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Scientific Name Common Name	Status		Flowering Period Elevation (meters)	Habitat
<i>Atriplex serenana</i> var. davidsonii Davidson's saltscale	Fed: Ca: CRPR:	none none 1B.2	April-October 10-200	Coastal bluff scrub, coastal scrub; alkaline
<i>Berberis nevinii</i> Nevin's barberry	Fed: Ca: CRPR:	END END 1B.1	March-June 274 - 825	Chaparral, cismontane, woodland, coastal scrub, riparian scrub; sandy or gravelly
<i>Botrychium crenulatum</i> scalloped moonwort	Fed: Ca: CRPR:	none none 2B.2	June- September 1268 - 3280	Bogs and fens, lower montane coniferous forest, meadows and seeps, marshes and swamps (freshwater), upper montane coniferous forest
<i>Brodiaea filifolia</i> thread-leaved brodiaea	Fed: Ca: CRPR:	THR END 1B.1	March-June 25-1120	Chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools; often clay
<i>Calochortus clavatus</i> var. gracilis slender mariposa lily	Fed: Ca: CRPR:	none none 1B.2	March-June 320-1000	Chaparral, coastal scrub, valley and foothill grassland
<i>Calochortus palmeri</i> var. palmeri Palmer's mariposa lily	Fed: Ca: CRPR:	none none 1B.2	April-July 1000 - 2390	Chaparral, lower montane coniferous forest, meadows and seeps; mesic
<i>Calochortus plummerae</i> Plummer's mariposa lily	Fed: Ca: CRPR:	none none 4.2	May-July 100 - 1700	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland; granitic, rocky
<i>Castilleja lasiorhyncha</i> San Bernardino Mountains owl-clover	Fed: Ca: CRPR:	none none 1B.2	May-August 1300-2390	Chaparral, meadows and seeps, pebble (pavement) plain, riparian woodland, upper montane coniferous forest; mesic
<i>Castilleja montigena</i> Heckard's paintbrush	Fed: Ca: CRPR:	none none 4.3	May-August 1950-2800	Lower montane coniferous forest, pinyon and juniper woodland, upper montane coniferous forest
<i>Caulanthus simulans</i> Payson's Jewelflower	Fed: Ca: CRPR:	none none 4.2	February-June 90-2200	Chaparral, coastal scrub; sandy, granitic
<i>Centromadia pungens</i> ssp. laevis smooth tarplant	Fed: Ca: CRPR:	none none 1B.1	April- September 0-640	chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland; alkaline
<i>Chorizanthe leptotheca</i> Peninsular spineflower	Fed: Ca: CRPR:	none none 4.2	May-August 300-1900	Chaparral, coastal scrub, lower montane coniferous forest; alluvial fan, granitic
<i>Chorizanthe parryi</i> var. parryi Parry's spineflower	Fed: Ca: CRPR:	none none 1B.1	April-June 275-1220	Chaparral, cismontane woodland, coastal scrub, valley and foothill grasslands; sandy or rocky, openings
<i>Chorizanthe xanti</i> var. leucotheca white-bracted spineflower	Fed: Ca: CRPR:	none none 1B.2	April-June 300-1200	Coastal scrub (alluvial fans), Mojavean desert scrub pinyon and juniper woodland; sandy or gravelly

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Scientific Name Common Name	Status		Flowering Period Elevation (meters)	Habitat
<i>Claytonia lanceolata</i> var. <i>peirsonii</i> Peirson's spring beauty	Fed: Ca: CRPR:	none none 3.1	May-June 2135-2745	Subalpine coniferous forest, upper montane coniferous forest; scree
<i>Convolvulus simulans</i> small-flowered morning-glory	Fed: Ca: CRPR:	none none 4.2	March-July 30-700	Chaparral (openings), coastal scrub, valley and foothill grassland; clay, serpentine seeps
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i> Peruvian dodder	Fed: Ca: CRPR:	none none 2B.2	July-October 15-280	Marshes and swamps (freshwater)
<i>Deinandra mohavensis</i> Mojave tarplant	Fed: Ca: CRPR:	none END 1B.3	May-January 640-1600	Chaparral, coastal scrub, riparian scrub; mesic
<i>Delphinium parishii</i> ssp. <i>subglobosum</i> Colorado Desert larkspur	Fed: Ca: CRPR:	none none 4.3	March-June 600-1800	Chaparral, cismontane woodland, pinyon and juniper woodland, Sonoran desert scrub
<i>Delphinium parryi</i> ssp. <i>purpureum</i> Mt. Pinos larkspur	Fed: Ca: CRPR:	none none 4.3	May-June 1000-2600	Chaparral, Mojavean desert scrub, pinyon and juniper woodland
<i>Dodecahema leptoceras</i> Slender-horned spineflower	Fed: Ca: CRPR:	END END 1B.1	April-June 200-760	Chaparral, coastal scrub/alluvial fan, cismontane woodland (sandy)
<i>Dudleya multicaulis</i> many-stemmed dudleya	Fed: Ca: CRPR:	none none 1B.2	April-July 15-790	Chaparral, coastal Scrub, valley and foothill grassland; often clay
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i> Santa Ana River woolly-star	Fed: Ca: CRPR:	END END 1B.1	April- September 91-610	Coastal scrub (alluvial fan), chaparral; sandy or gravelly
<i>Eriogonum evanidum</i> vanishing wild buckwheat	Fed: Ca: CRPR:	none none 1B.1	July-October 1100-2225	Chaparral, cismontane woodland, lower montane coniferous forest, pinyon and juniper woodland; sandy or gravelly
<i>Eriogonum kennedyi</i> var. <i>alpigenum</i> southern alpine buckwheat	Fed: Ca: CRPR:	none none 1B.3	July- September 2600-3500	Alpine boulder and rock fields, subalpine coniferous forest; granitic, gravelly
<i>Eriogonum microthecum</i> var. <i>alpinum</i> northern limestone buckwheat	Fed: Ca: CRPR:	none none 4.3	July- September 2500-3300	Alpine dwarf scrub, Great basin scrub; sometimes rocky or gravelly
<i>Eriogonum microthecum</i> var. <i>johnstonii</i> Johnston's buckwheat	Fed: Ca: CRPR:	none none 1B.3	July- September 1829-2926	Subalpine coniferous forest, upper montane coniferous forest; rocky
<i>Eriogonum umbellatum</i> var. <i>minus</i> Alpine sulfur-flowered buckwheat	Fed: Ca: CRPR:	none none 4.3	June- September 1800-3068	Subalpine coniferous forest, upper montane coniferous forest; gravelly

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<i>Eriophyllum lanatum</i> var. <i>obovatum</i> southern Sierra woolly sunflower	Fed: Ca: CRPR:	none none 4.3	June-July 1114-2500	Lower montane coniferous forest, upper montane coniferous forest; sandy loam
<i>Fimbristylis thermalis</i> hot springs fimbristylis	Fed: Ca: CRPR:	none none 2B.2	July- September 110-1340	Meadows and seeps (alkaline, near hot springs)
<i>Frasera neglecta</i> pine-green gentian	Fed: Ca: CRPR:	none none 4.3	May-July 1400-2500	Lower montane coniferous forest, pinyon and juniper woodland, upper montane coniferous forest
<i>Galium angustifolium</i> ssp. <i>gabrielense</i> San Antonio Canyon bedstraw	Fed: Ca: CRPR:	none none 4.3	April-August 1200-2650	Chaparral, lower montane coniferous forest; granitic, sandy, or rocky
<i>Galium Johnstonii</i> Johnston's bedstraw	Fed: Ca: CRPR:	none none 4.3	June-July 1220-2300	Chaparral, lower montane coniferous forest, pinyon and juniper woodland, riparian woodland
<i>Gilia leptantha</i> ssp. <i>leptantha</i> San Bernardino gilia	Fed: Ca: CRPR:	none none 1B.3	June-August 1500-2560	Lower montane coniferous forest (sandy or gravelly)
<i>Hellanthus nuttallii</i> ssp. <i>parishii</i> Los Angeles sunflower	Fed: Ca: CRPR:	none none 1A	August- October 10-1675	Marshes and swamps (coastal salt and freshwater)
<i>Heuchera caespitosa</i> urn-flowered alumroot	Fed: Ca: CRPR:	none none 4.3	May-August 1155-2650	Cismontane woodland, lower montane coniferous forest, riparian forest (montane), upper montane coniferous forest; rocky
<i>Heuchera parishii</i> Parish's alumroot	Fed: Ca: CRPR:	none none 1B.3	June-August 1500-3800	Alpine boulder and rock field, lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest; rocky, sometimes carbonate
<i>Horkelia cuneata</i> ssp. <i>puberula</i> mesa horkelia	Fed: Ca: CRPR:	none none 1B.1	February- September 70-810	Chaparral (maritime), cismontane woodland, coastal scrub; sandy or gravelly
<i>Hulsea vestita</i> ssp. <i>parryi</i> Parry's sunflower	Fed: Ca: CRPR:	none none 4.3	April-August 1370-2895	Lower montane coniferous forest, pinyon and juniper woodland, upper montane coniferous forest; granitic or carbonate, rocky openings
<i>Hulsea vestita</i> ssp. <i>pygmaea</i> pygmy hulsea	Fed: Ca: CRPR:	none none 1B.3	June-October 2835-3900	Alpine boulder and rock field, subalpine coniferous forest; granitic, gravelly
<i>Imperata brevifolia</i> California satintail	Fed: Ca: CRPR:	none none 2B.1	September- May 0- 1215	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), riparian scrub; mesic

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<i>Ivesia argyrocoma</i> var. <i>argyrocoma</i> silver-haired ivesia	Fed: Ca: CRPR:	none none 1B.2	June-August 1463-2960	Meadows and seeps (alkaline), pebble (pavement) plain, upper montane coniferous forest
<i>Juglans californica</i> Southern California black walnut	Fed: Ca: CRPR:	none none 4.2	March-August 50-900	Chaparral, cismontane woodland, coastal scrub; alluvial
<i>Juncus duranii</i> Duran's rush	Fed: Ca: CRPR:	none none 4.3	July-August 1768-2804	Lower montane coniferous forest, upper montane coniferous forest, meadows and seeps
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i> Coulter's goldfields	Fed: Ca: CRPR:	none none 1B.1	February-June 1-1220	Marshes and swamps (coastal salt), playas, vernal pools
<i>Lepechinia fragrans</i> fragrant pitcher sage	Fed: Ca: CRPR:	none none 4.2	March-October 20-1310	Chaparral
<i>Lepidium virginicum</i> var. <i>robinsonii</i> Robinson's pepper-grass	Fed: Ca: CRPR:	none none 4.3	January-July 1-885	Chaparral, coastal scrub
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i> ocellated Humboldt lily	Fed: Ca: CRPR:	none none 4.2	March-August 30-1800	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland
<i>Lilium parryi</i> lemon lily	Fed: Ca: CRPR:	none none 1B.2	July-August 1220-2745	Lower montane coniferous forest, meadows and seeps, riparian forest, upper montane coniferous forest; mesic
<i>Linanthus concinnus</i> San Gabriel linanthus	Fed: Ca: CRPR:	none none 1B.2	April-July 1520-2800	Chaparral, lower montane coniferous forest, upper montane coniferous forest; rocky openings
<i>Lycium parishii</i> Parish's desert-thorn	Fed: Ca: CRPR:	none none 2B.3	March-April 305-1000	Coastal Scrub, Sonoran desert scrub
<i>Malacothamnus parishii</i> Parish's bush mallow	Fed: Ca: CRPR:	none none 1A	June-July 305-455	Chaparral, coastal sage scrub
<i>Mentzelia tricuspis</i> spiny-hair blazing star	Fed: Ca: CRPR:	none none 2B.1	March-May 150-1280	Mojavean desert scrub (sandy, gravelly, slopes, and washes)
<i>Mimulus johnstonii</i> Johnston's monkeyflower	Fed: Ca: CRPR:	none none 4.3	May-August 975-2920	Lower montane coniferous forest (scree, disturbed areas, rocky or gravelly, roadside)
<i>Monardella australis</i> ssp. <i>jokersti</i> Jokerst's monardella	Fed: Ca: CRPR:	none none 1B.1	July-September 1350-1750	Chaparral, lower montane coniferous forest; steep scree or talus slopes between breccia, secondary alluvial benches along drainages and washes

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Scientific Name Common Name	Status		Flowering Period Elevation (meters)	Habitat
<i>Monardella macrantha</i> ssp. hallii Hall's monardella	Fed: Ca: CRPR:	none none 1B.3	June-October 730-2195	Broadleaved upland forest, chaparral, lower montane coniferous forest, cismontane woodland, valley and foothill grassland
<i>Monardella saxicola</i> rock monardella	Fed: Ca: CRPR:	none none 4.2	June- September 500-1800	Closed-cone coniferous forest, chaparral, lower montane coniferous forest; rocky, usually serpentine
<i>Muhlenbergia californica</i> California muhly	Fed: Ca: CRPR:	none none 4.3	June- September 100-2000	Chaparral, coastal scrub, lower montane coniferous forest, meadows and seeps; mesic, seeps and streambanks
<i>Mulla coronata</i> crowned muilla	Fed: Ca: CRPR:	none none 4.2	March-May 765-1960	Chenopod scrub, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland
<i>Nama stenocarpum</i> mud nama	Fed: Ca: CRPR:	none none 2B.2	January-July 5-500	Marshes and swamps (lake margins, riverbanks)
<i>Opuntia basilaris</i> var. brachyclada short-joint beavertail	Fed: Ca: CRPR:	none none 1B.2	April-August 425-1800	Chaparral, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland
<i>Oreonana vestita</i> woolly mountain-parsley	Fed: Ca: CRPR:	none none 1B.3	March- September 1615-3500	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest; gravel or talus
<i>Orobanche valida</i> ssp. valida Rock Creek broomrape	Fed: Ca: CRPR:	none none 1B.2	May- September 1250-2000	chaparral, pinyon and juniper woodland; granitic
<i>Oxytropis oreophila</i> var. oreophila rock-loving oxytrope	Fed: Ca: CRPR:	none none 2B.3	June- September 3400-3800	Alpine boulder and rock field, subalpine coniferous forest; gravelly or rocky
<i>Parnassia cirrata</i> San Bernardino grass-of- Parnassus	Fed: Ca: CRPR:	none none 1B.3	August- September 1250-2440	Lower montane coniferous forest, meadows and seeps, upper montane coniferous forest; mesic, streamsides, sometimes calcareous
<i>Perideridia parishii</i> ssp. parishii Parish's yampah	Fed: Ca: CRPR:	none none 2B.2	June-August 1465-3000	Lower montane coniferous forest, meadows and seeps, upper montane coniferous forest
<i>Phacelia mohavensis</i> Mojave phacelia	Fed: Ca: CRPR:	none none 4.3	April-August 1400-2500	Cismontane woodland, lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland; sandy or gravelly
<i>Pickeringia montana</i> var. tomentosa woolly chaparral-pea	Fed: Ca: CRPR:	none none 4.3	May-August 0-1700	Chaparral (gabbroic, granitic, clay)
<i>Piperia leptopetala</i> narrow-petaled rein orchid	Fed: Ca: CRPR:	none none 4.3	May-July 380-2225	Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest

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Scientific Name Common Name	Status		Flowering Period Elevation (meters)	Habitat
<i>Quercus durata</i> <i>var. gabrielensis</i> San Gabriel oak	Fed: Ca: CRPR:	none none 4.2	April-May 450-1000	Chaparral, cismontane woodland
<i>Ribes divaricatum</i> <i>var. parishii</i> Parish's gooseberry	Fed: Ca: CRPR:	none none 1A	February-April 65-300	Riparian woodland
<i>Rupertia rigida</i> Parish's rupertia	Fed: Ca: CRPR:	none none 4.3	June-August 700-2500	Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, pebble (pavement) plain, valley and foothill grassland
<i>Sagittaria sanfordii</i> Sanford's arrowhead	Fed: Ca: CRPR:	none none 1B.2	May-October 0-650	Marshes And Swamps (assorted shallow freshwater)
<i>Schoenus nigricans</i> black bog-rush	Fed: Ca: CRPR:	none none 2B.2	August- September 150-2000	Marshes and swamps (often alkaline)
<i>Sedum niveum</i> Davidson's stonecrop	Fed: Ca: CRPR:	none none 4.2	June-August 2075-3000	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest; rocky
<i>Senecio astephanus</i> San Gabriel ragwort	Fed: Ca: CRPR:	none none 4.3	May-July 400-1500	Coastal bluff scrub, chaparral; rocky slopes
<i>Sidalcea hickmanii</i> <i>ssp. parishii</i> Parish's checkerbloom	Fed: Ca: CRPR:	none RAR 1B.2	June-August 1000-2499	Chaparral, cismontane woodland, lower montane coniferous forest
<i>Sidalcea malviflora</i> <i>ssp. dolosa</i> Bear Valley checkerbloom	Fed: Ca: CRPR:	none none 1B.2	May-August 1495-2685	Lower montane coniferous forest (meadows and seeps), meadows and seeps, riparian woodland, upper montane coniferous forest (meadows and seeps)
<i>Sidothea caryophylloides</i> Chickweed oxytheca	Fed: Ca: CRPR:	none none 4.3	July- September 1114-2600	Lower montane coniferous forest (sandy)
<i>Streptanthus bernardinus</i> Laguna Mountains jewel-flower	Fed: Ca: CRPR:	none none 4.3	June-July 670-2500	Chaparral, lower montane coniferous forest
<i>Streptanthus campestris</i> southern jewel-flower	Fed: Ca: CRPR:	none none 1B.3	April-July 900-2300	Chaparral, lower montane coniferous forest, pinyon and juniper woodland; rocky
<i>Symphotrichum defoliatum</i> San Bernardino aster	Fed: Ca: CRPR:	none none 1B.2	July- November 2-2040	Coastal scrub, cismontane woodland, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic); near ditches, streams, and springs

Scientific Name Common Name	Status		Flowering Period Elevation (meters)	Habitat
<i>Symphotrichum greatae</i> Greata's aster	Fed: Ca: CRPR:	none none 1B.3	June-October 300-2010	Broadleaf upland forest, chaparral, cismontane woodland, lower montane coniferous forest, riparian woodland; mesic sites
<i>Thelypteris puberula</i> <i>var. sonorensis</i> Sonoran maiden fern	Fed: Ca: CRPR:	none none 2B.2	January- September 50-610	Meadows and seeps (seeps and streams)
<i>Thysanocarpus rigidus</i> rigid fringepod	Fed: Ca: CRPR:	none none 1B.2	February-May 600-2200	Pinyon and juniper woodland (dry and rocky slopes)
<i>Trichocoronis wrightii</i> <i>var. wrightii</i> Wright's trichocoronis	Fed: Ca: CRPR:	none none 2B.1	May- September 5-435	Marshes and swamps, meadows and seeps, riparian forest, vernal pools; alkaline
<p>Federal Designations: (Federal Endangered Species Act, United State Fish and Wildlife Service [USFWS]) END: Federally listed, endangered THR: Federally listed, threatened</p>		<p>State Designations: (California Endangered Species Act, California Department of Fish and Wildlife [CDFW]) END: State-listed, endangered THR: State-listed, threatened RARE: State-listed, rare</p>		
<p>California Rare Plant Ranks (CRPR): 1A: Presumed extirpated in California and rare or extinct elsewhere 1B: Rare, threatened, or endangered in California and elsewhere 2A: Presumed extirpated in California, but more common elsewhere 2B: Rare, threatened, or endangered in California, but more common elsewhere 3: Review list of plants requiring more study 4: Watch list of plants of limited distribution 1A: Presumed extirpated in California and rare or extinct elsewhere 1B: Rare, threatened, or endangered in California and elsewhere 2A: Presumed extirpated in California, but more common elsewhere 2B: Rare, threatened, or endangered in California, but more common elsewhere 3: Review list of plants requiring more study 4: Watch list of plants of limited distribution</p> <p>California Native Plant Society (CNPS) Threat Code: 0.1: Seriously threatened in California 0.2: Moderately threatened in California 0.3: Not very threatened in California</p>				
<p>Sources: California Natural Diversity Data Base (CNDDB; CDFW 2014a) and California Native Plant Society Electronic Inventory (CNPSEI; CNPS 2014) Beaumont, Cucamonga Peak, Devore, El Casco, Forest Falls, Harrison Mountain, Mt. Baldy, Redlands, San Bernardino North, and Yucaipa 7.5 minute USGS quads</p>				

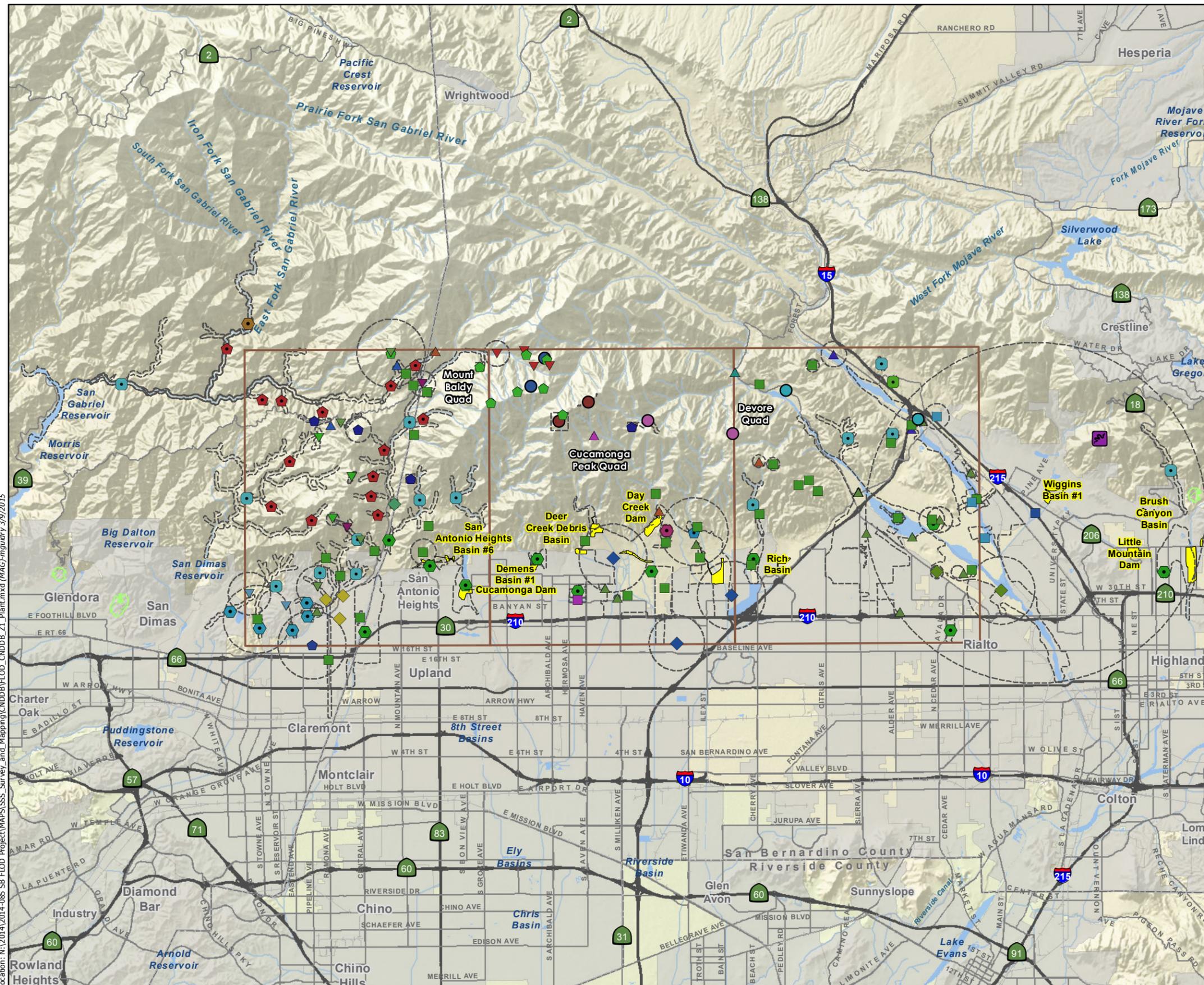
Table 4.2 - Special-Status Plant Species Potential for Occurrence – Zone 1

Basin Name / Common Name	SAHB – West Frankish	SAHB #1	SAHB #2	SAHB #3	SAHB #4	SAHB #5	SAHB #6	Cucamonga Dam	Demens Basin #1	Hillside Basin	Deer Creek Debris Basin	Etiwanda Debris Basin	Rich Basin
Parish's oxytheca	N	N	N	N	N	N	N	N	N	N	N	N	N
Watson's amaranth	U	U	U	U	U	U	U	U	U	U	U	U	U
singlewhorl burrobrush	N	N	N	N	N	N	N	N	N	N	N	N	U
San Gabriel manzanita	L	L	L	L	L	L	L	N	L	L	L	N	N
western spleenwort	P	P	P	P	P	P	P	P	P	P	P	P	P
crested milk-vetch	N	N	N	N	N	N	N	N	N	N	N	N	N
Nevin's barberry	L	L	L	L	L	L	L	L	P	P	P	P	P
thread-leaved brodiaea	P	P	P	P	P	P	P	P	P	P	P	P	P
slender mariposa lily	L	L	L	L	L	L	L	L	P	P	P	P	P
Plummer's mariposa lily	L	L	L	L	L	L	L	L	L	L	L	L	L
Peninsular spineflower	L	L	L	L	L	L	L	L	L	L	L	L	L
Parry's spineflower	L	L	L	L	L	L	L	L	L	L	L	L	L
white-bracted spineflower	P	P	P	P	P	P	P	P	P	P	P	P	L
Peirson's spring beauty	N	N	N	N	N	N	N	N	N	N	N	N	N
slender-horned spineflower	P	P	P	P	P	P	P	P	P	P	N	P	P
many-stemmed dudleya	L	L	L	L	L	L	L	L	P	P	P	P	P
Santa Ana River woolly-star	N	N	N	N	N	N	N	P	P	N	N	P	P
vanishing wild buckwheat	N	N	N	N	N	N	N	N	N	N	N	N	N
northern limestone buckwheat	N	N	N	N	N	N	N	N	N	N	N	N	N
Johnston's buckwheat	N	N	N	N	N	N	N	N	N	N	N	N	N
alpine sulfur-flowered buckwheat	N	N	N	N	N	N	N	N	N	N	N	N	N
San Antonio Canyon bedstraw	N	N	N	N	N	N	N	N	N	N	N	N	N
Johnston's bedstraw	N	N	N	N	N	N	N	N	N	N	N	N	N
urn-flowered alumroot	N	N	N	N	N	N	N	N	N	N	N	N	N
mesa horkelia	P	P	P	P	P	P	P	P	P	L	N	L	L
Southern California black walnut	U	U	U	U	U	U	U	U	P	P	P	L	U
Duran's rush	N	N	N	N	N	N	N	N	N	N	N	N	N
fragrant pitcher sage	L	L	L	L	L	L	L	L	P	P	P	P	P
Robinson's pepper-grass	L	L	L	L	L	L	L	L	P	P	P	P	P

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Basin Name / Common Name	SAHB – West Frankish	SAHB #1	SAHB #2	SAHB #3	SAHB #4	SAHB #5	SAHB #6	Cucamonga Dam	Demens Basin #1	Hillside Basin	Deer Creek Debris Basin	Etiwanda Debris Basin	Rich Basin
ocellated Humboldt lily	L	L	L	L	L	L	L	L	L	L	L	L	L
lemon lily	N	N	N	N	N	N	N	N	N	N	N	N	N
San Gabriel linanthus	N	N	N	N	N	N	N	N	N	N	N	N	N
Parish's desert thorn	P	P	P	P	P	P	P	P	P	P	P	P	P
Jokerst's monardella	N	N	N	N	N	N	N	N	N	N	N	N	N
Hall's monardella	N	N	N	N	N	N	N	N	N	N	P	N	N
rock monardella	L	L	L	L	L	L	L	L	L	L	L	L	N
California muhly	L	L	L	L	L	L	L	L	L	L	L	L	L
short-joint beavertail	P	P	P	P	P	P	P	P	P	P	P	P	P
woolly mountain-parsley	N	N	N	N	N	N	N	N	N	N	N	N	N
Rock Creek broomrape	N	N	N	N	N	N	N	N	N	N	N	N	N
Mojave phacelia	N	N	N	N	N	N	N	N	N	N	N	N	N
San Gabriel oak	L	L	L	L	L	L	L	L	L	L	L	L	L
Sanford's arrowhead	N	N	N	N	N	N	N	N	N	N	N	N	N
San Gabriel ragwort	P	P	P	P	P	P	P	P	P	P	P	P	P
chickweed oxytheca	N	N	N	N	N	N	N	N	N	N	N	N	N
Laguna Mountains jewel-flower	P	P	P	P	P	P	P	N	N	P	P	N	N
Greata's aster	L	L	L	L	L	L	L	L	P	P	P	P	P
rigid fringedpod	N	N	N	N	N	N	N	N	N	N	N	N	N
Potential for Occurrence Information:													
N: Outside known distribution/range of the species													
U: Occurrence of the species is unlikely based on lack of habitat													
P: Occurrence of the species is possible; suitable habitat is present													
L: Occurrence of the species is likely; suitable habitat is present and the species is known from nearby locations													
Y: Species is known to occur and/or was present during the survey													
C: Critical habitat for this species has been mapped in the area													
Sources: California Natural Diversity Data Base (CNDDB; CDFW 2014a) and California Native Plant Society Electronic Inventory (CNPSEI; CNPS 2014) Mt. Baldy, Cucamonga Peak, Devore 7.5 minute USGS quads													

Figure 4.1. CNDDDB Occurrences of Special-Status Plant Species and Vegetation Communities Zone 1



Distance From Project

- USGS Quadrangle

Boundaries

- Biological Study Area ¹
- CNDDB Polygon Extent

CNDDDB Occurrences ²

- Laguna Mountains Jewelflower
- White-bracted Spineflower
- Peiron's Spring Beauty
- Johnston's Buckwheat
- Woolly Mountain-parsley
- Rigid Fringepod
- San Gabriel Manzanita
- Hall's Monardella
- San Gabriel Linanthus
- Many-stemmed Dudleya
- Slender Mariposa-lily
- Greata's Aster
- Short-joint Beavertail
- Joker's Monardella
- Lemon Lily
- Rock Creek Broomrape
- Slender-homed Spineflower
- Parry's Spineflower
- Nevin's Barbary
- Mesa Horkelia
- Robinson's Pepper-grass
- Singlehorst Burrobrush
- Plummer's Mariposa-lily
- Santa Ana River Woollystar
- Parish's Desert-thorn
- Sanford's Arrowhead
- Southern Riparian Forest
- Southern Sycamore Alder Riparian Woodland
- Coastal And Valley Freshwater Marsh
- Riversidian Alluvial Fan Sage Scrub
- Southern Coast Live Oak Riparian Forest
- Southern California Arroyo Chub/santa Ana Sucker Stream
- Canyon Live Oak Ravine Forest
- California Walnut Woodland

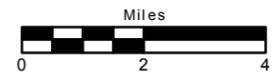
Critical Habitat

- Thread Leaved Brodiaea

This map may include multiple species' occurrences at each location, some of which may not be visible on this graphic. The CNDDDB occurrences shown may not reflect the actual location of the occurrence.

¹Source: San Bernardino County Flood District
²CDFW California Natural Diversity Database (CNDDDB), April 2014 Update (GIS Shapefile)
³US Fish and Wildlife Service
 CNDDDB Occurrences Located on USGS 7.5' Quadrangles:

Location: N:\2014\2014-085 SB FLOOD Project\MAPS\SSS_Survey_and_Mapping\CNDDDB\FLOOD_CNDDDB_Z1_Plant.mxd (MAG:magudry 3/9/2015)



Wildlife Species Evaluated

Provided in Table 4.3 is a master list of the 54 special-status wildlife species evaluated during the literature search for the facilities in Zones 1, 2, and 3. Table 4.3 includes species that are federally and state listed and protected under the CESA or FESA, as well as other sensitive species that are not yet formally listed, but are on the CDFW Species of Special Concern (SSC) watch list due to significant habitat loss or population declines. The wildlife were combined into one table because many of them overlap in geographical range between the three Zones.

The biological reconnaissance survey did not include a focused survey for special-status wildlife. However, the habitat conditions within each facility, species requirements, and the results of any focused surveys, were used to determine their specific potential for occurrence within each facility. Of the 54 species, 23 are outside the known distribution/range of the species, or their occurrence is unlikely based on lack of habitat. Thirty-one species were determined to have a potential to occur in one or more of the 13 facilities within Zone 1, four of which are federally and/or state listed species (Table 4.4). Figure 4.2 shows the locations of special-status wildlife species occurrences identified in the literature search in relation to the Zone 1 facilities. These include the federally-listed (endangered) San Bernardino kangaroo rat, lesser long-nosed bat (*Leptonycteris yerbabuena*), coastal California gnatcatcher, and the state-listed (threatened) Swainson's hawk (*Buteo swainsonii*). The habitat characteristics and specific occurrence information with regard to each facility for each of the federally- or state-listed species will be discussed separately below.

Reptiles and Amphibians

The western spadefoot toad (*Spea hammondi*), coast horned lizard (*Phrynosoma coronatum*), orange-throated whiptail (*Aspidoscelis hyperythrus*), silvery legless lizard (*Anniella pulchra*), two-striped garter snake (*Thamnophis hammondi*), and coast patch-nosed snake (*Salvadora hexalepis virgulata*) are SSC with habitat in more than one facility within Zone 1. ICF International (ICF) previously conducted focused California gnatcatcher surveys between April 26 and June 27, 2013 at 12 of the 13 facilities in Zone 1 (Rich Basin was excluded from the survey). Incidental observations of coast horned lizard and orange-throated whiptail occurred regularly during these focused California gnatcatcher surveys at all of the basins surveyed except Cucamonga Dam. Because the locations of these observations either have not been reported or the database has not been updated, it is not known whether they occurred within the BSA or in the buffer area for the survey (ICF 2013a). These species are all of lower levels of sensitivity and abundant habitat remains within areas adjacent to the site.

Birds

Coastal California Gnatcatcher

The coastal California gnatcatcher (CAGN) is a federally listed (endangered) and California SSC bird species. This small gray-blue non-migratory bird is endemic to coastal southern California. Its known geographic range includes portions of Ventura, Los Angeles, San Bernardino, Riverside, Orange, and San Diego Counties and extends south into northwestern Baja California, Mexico. The CAGN is not known to occur at elevations up to 3,000 ft. (914 m) above msl

(USFWS 2000). This species is associated with low-growing, drought-tolerant sage scrub habitat including Riversidean alluvial fan sage scrub. Dominant plant types within these sage scrub communities include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), encelias (*Encelia californica* and *E. farinosa*), and various sages (*Salvia mellifera*, *S. apiana*, and *S. leucophylla*). CAGN have also been documented within chaparral, grassland, and riparian habitats where they occur in proximity to sage scrub. These non-sage scrub habitats are used for dispersal and foraging (Atwood *et al.* 1998; Campbell *et al.* 1998). The breeding season of the CAGN extends from late February through July with the peak of nest initiations occurring from mid-March through mid-May. Nests are often located in California sagebrush about 3ft (1m) above the ground with an average clutch size of four eggs. The incubation and nestling periods encompass about 14 and 16 days, respectively. Both sexes participate in all phases of the nesting cycle. The CAGN may produce two broods in one nesting season but the frequency of this behavior is not well documented. This species is threatened due to the direct loss of coastal sage scrub habitat to development, habitat conversion (increased fire regime coupled with invasive non-native vegetation), and habitat fragmentation.

The facilities in the western portion of Zone 1 are located approximately nine miles northeast of USFWS-designated critical habitat for CAGN and the facilities in the east end are approximately eight miles north of designated CAGN critical habitat. Most of the records for this species occur around the Etiwanda Basin, with the closest observation approximately 0.5 mile north of the Dam (CNDDDB). California gnatcatchers were not detected during the focused surveys conducted by ICF in 2013 (ICF 2013a). At Hillside Basin, one dispersing juvenile CAGN was observed foraging northeast of the Basin, therefore it is considered present. The ICF (2013) report stated that although the focused surveys were negative, potential presence of CAGN in the Project sites may be possible in the future. Based on the negative results from focused, protocol surveys at each of the facilities in Zone 1 (except Rich Basin), this species is considered absent within those facilities. CAGN were determined to be unlikely to occur at Rich Basin because the basin is isolated from potential habitat and does not contain enough suitable habitat for breeding to occur.

Incidental observations of loggerhead shrike (*Lanius ludovicianus*) and yellow warbler (*Dendroica petechial brewsteri*) regularly occurred at the seven San Antonio Heights Basins, Demens, Deer Creek, Hillside, and Etiwanda Basins. At Deer Creek Basin, a golden eagle (*Aquila chrysaetos*) was observed flying over the site and a yellow-breasted chat (*Icteria virens*) was observed during the focused surveys. There is no nesting habitat for golden eagle at this facility.

Swainson's Hawk

The Swainson's hawk is a state-listed threatened species. It prefers savanna, open woodlands, and cultivated lands. Its diet consists mainly of mammals and other vertebrates, but it will also eat various insects during the non-breeding season. Swainson's hawks winter in southern South America and begin migrating to North America in February for breeding, then departing around September or October. The majority of California's breeding sites are in the desert, shrubsteppe, grassland, and agricultural habitats of the Great Basin and Central Valley (Woodbridge 1998). It prefers to nest in open, riparian habitat with scattered trees or small groves in sparsely vegetated flatlands (Woodbridge 1998). The species' migration patterns

occur over the Zones 1, 2, and 3 Project areas, however they have never been found to nest there (Woodbridge 1998).

It is likely this species will fly over all of the facilities in Zone 1 during its migration period. It is unlikely that this species will nest at any of the Zone 1 facilities.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is designated as a CDFW SSC. The SSC designation includes burrow sites in breeding locations throughout California and wintering sites in several counties in northern California (CDFW 2013b). The burrowing owl is not formally listed under the CESA or the FESA. The primary reasons for burrowing owl population decline are habitat loss, degradation, and fragmentation due to agricultural and urban development. Predation by natural predators (hawks, larger owls, and mammals) and introduced predators (domestic cats and dogs) may also contribute to population declines.

Two records of burrowing owls are located near the east end of Zone 1 facilities. During the focused CAGN surveys in 2013, ICF (2013a) reported observing one burrowing owl regularly at the Etiwanda Basin. The other record of burrowing owl is from 0.5 mile west of the Rich Basin (CDFW 2014). Suitable burrows created by small mammals were observed during the biological reconnaissance survey at most of the facilities in Zone 1. Based on the distribution of the burrowing owl, the known occurrences of this species in the vicinity of each facility, and the vegetation community and habitat characteristics within and adjacent to the facilities, the potential for occurrence of this species was assessed as 'possible' or 'likely' at most of the facilities in Zone 1.

Other Birds

Several other bird SSC have the potential to occur in the Zone 1 facilities. These include Cooper's hawk (*Accipiter cooperii*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), California horned lark (*Eremophila alpestris actia*), and Bell's sage sparrow (*Amphispiza belli belli*). Their specific potential to occur within each of the facilities is provided in Table 4.4.

Suitable habitat for migratory birds and raptors protected under the MBTA and FGC was found within and immediately adjacent to the each facility.

Mammals

San Bernardino Kangaroo Rat

The SBKR is federally listed (endangered) and a California SSC small mammal species. The historical range of the SBKR extended from the San Bernardino Valley in San Bernardino County to the Menifee Valley in Riverside County (Lidicker 1960). The species is currently known from four localities: the Santa Ana River wash, the San Jacinto River, Cajon Wash/Lytle Creek, Etiwanda Wash, and Reche Canyon. The Santa Ana River wash contains approximately 3,861

acres of SBKR habitat, which represents approximately 34 percent of the total remaining SBKR habitat (9,797 acres) (USFWS 2009).

The SBKR occurs mainly within Riversidean alluvial fan sage scrub habitat, also termed scalebroom scrub, a plant community with coastal sage scrub and chaparral elements on alluvial terraces and braided river channels in southern California (McKernan 1997). SBKR abundance is greatest in sandy substrates with low to moderate perennial vegetative cover (less than 30 to 50 percent), and not exhibiting a dense cover of non-native annual plants (McKernan 1997). This species may also occur in abandoned agricultural fields and orchards, but usually only when such habitats occur in proximity to suitable natural habitats that are already occupied by SBKR.

Suitable habitat is found in the Hillside Basin, Deer Creek Debris Basin, and Etiwanda Debris Basin. Deer Creek and Etiwanda Basin are located within USFWS-designated critical habitat for SBKR, and the critical habitat ends at the northeast corner of the Hillside Basin. There are no records of SBKR near Deer Creek or Hillside Basin, however there are records adjacent to the northwest corner of the Etiwanda Basin (CNDDDB). SBKR were determined to be unlikely at the other Zone 1 facilities based on lack of suitable habitat.

Lesser Long-Nosed Bat

The lesser long-nosed bat is federally listed as endangered and is found in the southwestern United States and Central America. The lesser long-nosed bat is a medium-sized bat species that is reddish in color with a leaflike projection at the end of a long snout (NatureServe 2014). In the United States, this bat roosts in old mines and caves at the base of mountains near alluvial fans and the young are born in maternity colonies. As agave and columnar cacti (flowers and fruits) serve as the main food source, the lesser long-nosed bat is considered to be an important pollinator in desert communities. Maternity roost disturbance and effects of habitat loss are the primary threats for this species. Although there are no old mines or caves at any of the Zone 1 facilities, this species was given a potential to occur at each of them because they may forage in the facilities and may occasionally day roost in the concrete vent pipes, rip-rap, or other well-ventilated structure within the facilities.

Other mammals

Several other mammalian SSC have the potential to occur at the facilities, or in nearby adjacent habitats. These include the San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), Dulzura pocket mouse (*Chaetodipus californicus femoralis*), Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), Bryant's [San Diego desert] woodrat (*Neotoma bryantii [lepida]*), southern grasshopper mouse (*Onychomys torridus*), American badger (*Taxidea taxus*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), western yellow bat (*Lasiurus xanthinus*), and western mastiff bat (*Eumops perotis californicus*). These species are all of lower levels of sensitivity and abundant habitat remains within areas adjacent to the facilities.

Table 4.3 – Zones 1-3 Wildlife Species Evaluated

<i>Scientific Name</i> Common Name	Status		Habitat
INVERTEBRATES			
DIPTERA (flies)			
<i>Rhaphiomidas terminatus abdominalis</i> Delhi Sands flower-loving fly	Fed: Ca:	END none	Restricted to the Colton Dunes in San Bernardino County. Inhabits Delhi series soils; soils that are fine, sandy, and well-drained. Also require areas suited to subterranean larval insect growth, a sufficient source of nectar, and adequate perching sites.
FISH			
CYPRINIDAE (minnows and carp)			
<i>Gila orcuttii</i> arroyo chub	Fed: Ca:	none SSC	This species prefers slow flowing streams characterized by sandy or muddy substrates and moderate temperatures.
<i>Rhinichthys osculus ssp. 3</i> Santa Ana speckled dace	Fed: Ca:	none SSC	Prefers habitats characterized by clear moving water. Can be found in the Santa Ana and San Gabriel Rivers.
CATOSTOMIDAE (suckers)			
<i>Catostomus santaanae</i> Santa Ana Sucker	Fed: Ca:	THR SSC	Inhabits small, shallow, permanent streams characterized by gravely and rocky bottoms. This species is endemic to Los Angeles Basin coastal streams.
AMPHIBIANS			
BUFONIDAE (true toads)			
<i>Anaxyrus californicus</i> arroyo toad	Fed: Ca:	END SSC	Inhabits semi-arid regions near washes or intermittent streams with sandy or gravely soils.
RANIDAE (frogs)			
<i>Rana aurora draytonii</i> California red-legged frog	Fed: Ca:	THR SSC	Inhabits lowlands and foothills in or near permanent sources of water characterized by riparian vegetation.
<i>Rana muscosa</i> mountain yellow-legged frog	Fed: Ca:	END END/ SSC	Found in mountain communities near or in permanent water sources in the Sierra Nevada Mountains and mountain ranges of Southern California.
SALAMANDRIDAE (newts)			
<i>Taricha torosa torosa</i> Coast Range newt	Fed: Ca:	none SSC	Inhabits areas near coastal drainages from Mendocino to San Diego County.
SCAPHIOPODIDAE (spadefoot toads)			
<i>Spea hammondi</i> western spadefoot toad	Fed: Ca:	none SSC	Inhabits various habitats including grassland, scrub, and chaparral. Requires seasonal waters for breeding.
REPTILES			
PHRYNOSOMATIDAE (spiny lizards)			
<i>Phrynosoma coronatum</i> coast horned lizard	Fed: Ca:	none SSC	Inhabits various habitats but prefers lowlands near sandy washes with sparse low vegetation.
TEIIDAE (whiptails and relatives)			
<i>Aspidoscelis hyperythrus</i> orange-throated whiptail	Fed: Ca:	none SSC	Inhabits various habitats including low-elevation coastal scrub, chaparral, and valley-foothill woodland.
ANNIELLIDAE (legless lizards)			
<i>Anniella pulchra</i> silvery legless lizard	Fed: Ca:	none SSC	Inhabits various habitats characterized by loose loamy soils with sparse vegetation.
BOIDAE (boas)			
<i>Charina umbratica</i> southern rubber boa	Fed: Ca:	none THR	Range is restricted to montane forests in the San Bernardino and San Jacinto Mountains.
COLUBRIDAE (egg-laying snakes)			

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<i>Scientific Name</i> Common Name	Status		Habitat
<i>Lampropeltis zonata (parvirubra)</i> California mountain kingsnake (San Bernardino population)	Fed: Ca:	none SSC	Inhabits bigcone spruce woodland and chaparral communities at lower elevations and various types of deciduous and coniferous woodlands at higher elevations.
<i>Salvadora hexalepis virgultea</i> coast patch-nosed snake	Fed: Ca:	none SSC	Inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains.
NATRICIDAE (live-bearing snakes)			
<i>Thamnophis hammondi</i> two-striped garter snake	Fed: Ca:	none SSC	Typically found near water sources, often in rocky areas. Inhabits various habitats including oak woodland, chaparral, brushland, and coniferous forest.
BIRDS			
ACCIPITRIDAE (hawks, kites, harriers and eagles)			
<i>Accipiter cooperii</i> Cooper's hawk	Fed: Ca:	none WL	Prefers open woodland communities. Nests in riparian areas in or near river-flood plains.
<i>Aquila chrysaetos</i> golden eagle	Fed: Ca:	none WL	Inhabits various habitats including foothills, mountain communities, sage-juniper flats, and desert.
<i>Buteo swainsoni</i> Swainson's hawk	Fed: Ca:	none THR	Inhabits various habitats including grasslands, juniper-sage flats, riparian communities, savannahs, and agricultural lands.
<i>Circus cyaneus</i> northern harrier	Fed: Ca:	none SSC	Inhabits coastal habitats characterized by salt and fresh-water marsh. Nests in grasslands in shrubby vegetation.
<i>Elanus leucurus</i> white-tailed kite (nesting)	Fed: Ca:	none FP	Inhabits foothills and valleys characterized by scattered oaks. Typically found in river bottomlands or marshes near deciduous woodland.
<i>Haliaeetus leucocephalus</i> bald eagle	Fed: Ca:	DL END	Inhabits various communities near water including ocean shores, lakes, and rivers. Typically nests within 1 mile of water.
ALAUDIDAE (larks)			
<i>Eremophila alpestris actia</i> California horned lark	Fed: Ca:	none WL	Inhabits coastal habitats from Sonoma County to San Diego County. Can also be found in the San Joaquin Valley and to the east in the foothills.
HIRUNDINIDAE (swallows and martins)			
<i>Progne subis</i> purple martin	Fed: Ca:	none SSC	Inhabits coniferous forests characterized by Douglas-fir, ponderosa pine, and Monterey pine. Typically found at lower elevations.
APODIDAE (swifts)			
<i>Cypseloides niger</i> black swift	Fed: Ca:	none SSC	Associated with sheer cliffs near waterfalls from Santa Cruz and Monterey County to the San Bernardino and San Jacinto Mountains.
CUCULIDAE (cuckoos and relatives)			
<i>Coccyzus americanus</i> yellow-billed cuckoo (nesting)	Fed: Ca:	FC END	Inhabits riparian forest near lower flood-bottoms of larger river systems characterized by willows and cottonwoods.
EMBERIZIDAE (sparrows, buntings, warblers and relatives)			
<i>Almophila ruficeps canescens</i> Southern California rufous-crowned sparrow	Fed: Ca:	none WL	Inhabits coastal sage scrub and sparse mixed chaparral communities in Southern California.
<i>Amphispiza belli belli</i> Bell's sage sparrow	Fed: Ca:	none WL	Inhabits chaparral communities dominated by chamise. Can also be found in coastal sage scrub communities.
ICTERIDAE (blackbirds)			
<i>Agelaius tricolor</i> tri-colored blackbird (nesting colony)	Fed: Ca:	none SSC	Endemic to California this species inhabits areas near open water. Most numerous in California's central valley and surrounding area.
LANIIDAE (shrikes)			
<i>Lanius ludovicianus</i> loggerhead shrike (nesting)	Fed: Ca:	none SSC	Inhabits various habitats including pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, savannah and scrubland communities.

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<i>Scientific Name</i> Common Name	Status		Habitat
PARULIDAE (wood-warblers)			
<i>Dendroica petechia brewsteri</i> yellow warbler	Fed: Ca:	none SSC	Inhabits riparian communities. Prefers willows, cottonwoods, sycamores, aspens, and alders for nesting.
<i>Icteria virens</i> yellow-breasted chat (nesting)	Fed: Ca:	none SSC	Summer resident of riparian willow thickets.
STRIGIDAE (owls)			
<i>Athene cunicularia</i> burrowing owl (burrow sites)	Fed: Ca:	none SSC	Inhabits various habitats including grasslands, deserts, and scrublands with loose soils for burrowing.
SYLVIIDAE (gnatcatchers)			
<i>Polioptila californica californica</i> coastal California gnatcatcher	Fed: Ca:	THR SSC	Inhabits coastal sage scrub communities below 2500 feet in Southern California.
THRESKIORNITHIDAE (ibises and spoonbills)			
<i>Plegadis chihi</i> white-faced ibis	Fed: Ca:	none WL	Inhabits habitats characterized by shallow fresh-water marsh.
TYRANNIDAE (tyrant flycatchers)			
<i>Empidonax traillii extimus</i> southwestern willow flycatcher	Fed: Ca:	END END	Inhabits riparian woodlands of Southern California.
VIREONIDAE (vireos)			
<i>Vireo bellii pusillus</i> least Bell's vireo	Fed: Ca:	END END	Summer resident of Southern California in riparian habitats or dry river bottoms. Inhabits elevations below 2000 ft.
MAMMALS			
VESPERTILIONIDAE (evening bats)			
<i>Antrozous pallidus</i> pallid bat	Fed: Ca:	none SSC	Inhabits various habitats including deserts, grasslands, shrublands, and woodlands. Prefers drier habitats with rocky outcrops for roosting.
<i>Lasiurus xanthinus</i> western yellow bat	Fed: Ca:	none SSC	Inhabits a number of habitats including valley foothill and desert riparian, desert wash, and palm oasis communities.
MOLOSSIDAE (free-tailed bats)			
<i>Eumops perotis californicus</i> western mastiff bat	Fed: Ca:	none SSC	Inhabits a variety of habitats including conifer & deciduous woodland, grassland, coastal scrub, and chaparral communities.
<i>Nyctinomops femorosaccus</i> pocketed free-tailed bat	Fed: Ca:	none SSC	Inhabits rocky and arid areas in Southern California including desert scrub, palm oasis, desert wash and pine-juniper woodlands.
PHYLLOSTOMIDAE (leaf-nosed bats)			
<i>Leptonycteris yerbabuena</i> Lesser long-nosed bat	Fed: Ca:	END none	Inhabits arid habitats including desert grasslands and shrub land with suitable day roosts.
LEPORIDAE (rabbits and hares)			
<i>Lepus californicus bennettii</i> San Diego black-tailed jackrabbit	Fed: Ca:	none SSC	Inhabits coastal sage scrub communities in Southern California.
SCIURIDAE (squirrels and relatives)			
<i>Glaucomys sabrinus californicus</i> San Bernardino flying squirrel	Fed: Ca:	none SSC	Inhabits fir dominated woodlands in the San Bernardino and San Jacinto Mountains.
HETEROMYIDAE (kangaroo rats, pocket mice and kangaroo mice)			
<i>Chaetodipus californicus femoralis</i> Dulzura pocket mouse	Fed: Ca:	none SSC	Inhabits various habitats including grassland, chaparral and coastal scrub communities.

<i>Scientific Name</i> Common Name	Status		Habitat
<i>Chaetodipus fallax fallax</i> northwestern San Diego pocket mouse	Fed: Ca:	none SSC	Inhabits various habitats including coastal scrub, chaparral, grassland, and sagebrush communities.
<i>Chaetodipus fallax pallidus</i> pallid San Diego pocket mouse	Fed: Ca:	none SSC	Inhabits various habitats including desert wash, desert scrub, desert succulent scrub, and pinyon-juniper woodland.
<i>Dipodomys merriami parvus</i> San Bernardino kangaroo rat	Fed: Ca:	END SSC	Inhabits alluvial scrub habitats with sandy loam soils.
<i>Dipodomys stephensi</i> Stephens' kangaroo rat	Fed: Ca:	END THR	Typically found in grasslands, but can also occur in coastal scrub and sagebrush communities with sparse canopy cover.
<i>Perognathus alticolus alticolus</i> San Bernardino white-eared pocket mouse	Fed: Ca:	none SSC	Inhabits several habitats in the San Bernardino Mountains including Ponderosa and Jeffrey pine woodland, mixed chaparral and sagebrush communities.
<i>Perognathus longimembris brevinasus</i> Los Angeles pocket mouse	Fed: Ca:	none SSC	Inhabits lower elevation grasslands and coastal sage scrub habitats.
MURIDAE (mice, rats and voles)			
<i>Neotoma bryanti (lepida)</i> Bryant's (San Diego desert) woodrat	Fed: Ca:	none SSC	Inhabits coastal scrub habitats from San Diego County to San Luis Obispo County.
<i>Onychomys torridus</i> southern grasshopper mouse	Fed: Ca:	none SSC	Inhabits arid areas, especially scrub habitats with loose soils and low to moderate shrub cover.
MUSTELIDAE (weasels and relatives)			
<i>Taxidea taxus</i> American badger	Fed: Ca:	none SSC	Inhabits dry open areas of shrub, forest, and herbaceous habitats, with loose soils.
Federal Designations (Federal Endangered Species Act, USFWS)		State designations: (California Endangered Species Act, CDFG)	
END: federally-listed, endangered THR: federally-listed, threatened FC: federal candidate species FSC: federal species of concern FPD: federal proposed for delisting DL: federally-delisted		END: state-listed, endangered THR: state-listed, threatened CSC: California special concern species FP: DFG fully protected species	

Table 4.4 - Special-Status Wildlife Species Potential for Occurrence – Zone 1

Basin Name / Common Name	SAHB – West Frankish	SAHB #1	SAHB #2	SAHB #3	SAHB #4	SAHB #5	SAHB #6	Cucamonga Dam	Demens Basin #1	Hillside Basin	Deer Creek Debris Basin	Etiwanda Debris Basin	Rich Basin
Delhi Sands flower-loving fly	U	U	U	U	U	U	U	U	U	U	U	U	U
arroyo chub	U	U	U	U	U	U	U	U	U	U	U	U	U
Santa Ana speckled dace	U	U	U	U	U	U	U	U	U	U	U	U	U
Santa Ana Sucker	U	U	U	U	U	U	U	U	U	U	U	U	U
arroyo toad	U	U	U	U	U	U	U	U	U	U	U	U	U
California red-legged frog	U	U	U	U	U	U	U	U	U	U	U	U	U
mountain yellow-legged frog	U	U	U	U	U	U	U	U	U	U	U	U	U
Coast Range newt	U	U	U	U	U	U	U	U	U	U	U	U	U
western spadefoot toad	P	P	P	P	P	P	P	P	P	P	P	P	P
coast horned lizard	Y	Y	Y	Y	Y	Y	Y	L	Y	Y	Y	Y	P
orange-throated whiptail	Y	Y	Y	Y	Y	Y	Y	P	Y	Y	Y	Y	P
silvery legless lizard	L	L	L	L	L	L	L	L	L	L	L	Y	L
southern rubber boa	U	U	U	U	U	U	U	U	U	U	U	U	U
California mountain kingsnake (San Bernardino population)	N	N	N	N	N	N	N	N	N	N	N	N	N
two-striped garter snake	U	U	U	U	U	U	U	P	U	U	P	U	U
Coast patch-nosed snake	P	P	P	P	P	P	P	P	P	P	P	P	P
Cooper's hawk	P	P	P	P	P	P	P	P	P	P	P	P	P
golden eagle (nesting)	U	U	U	U	U	U	U	U	U	U	U/Y (observed flying)	U	U
Swainson's hawk	P	P	P	P	P	P	P	P	P	P	P	P	P
northern harrier	P	P	P	P	P	P	P	P	P	P	P	P	P
white-tailed kite (nesting)	U	U	U	P	U	U	U	U	P	P	U	U	U
bald eagle	U	U	U	U	U	U	U	U	U	U	U	U	U
California horned lark	P	P	P	P	P	P	P	P	P	P	P	P	P
purple martin	U	U	U	U	U	U	U	U	U	U	U	U	U
black swift	U	U	U	U	U	U	U	U	U	U	U	U	U
yellow-billed cuckoo (nesting)	U	U	U	U	U	U	U	U	U	U	U	U	U
Southern California rufous-crowned sparrow	L	L	L	L	L	L	L	Y	L	L	L	L	L
Bell's sage sparrow	L	L	L	L	L	L	L	L	L	L	L	L	L

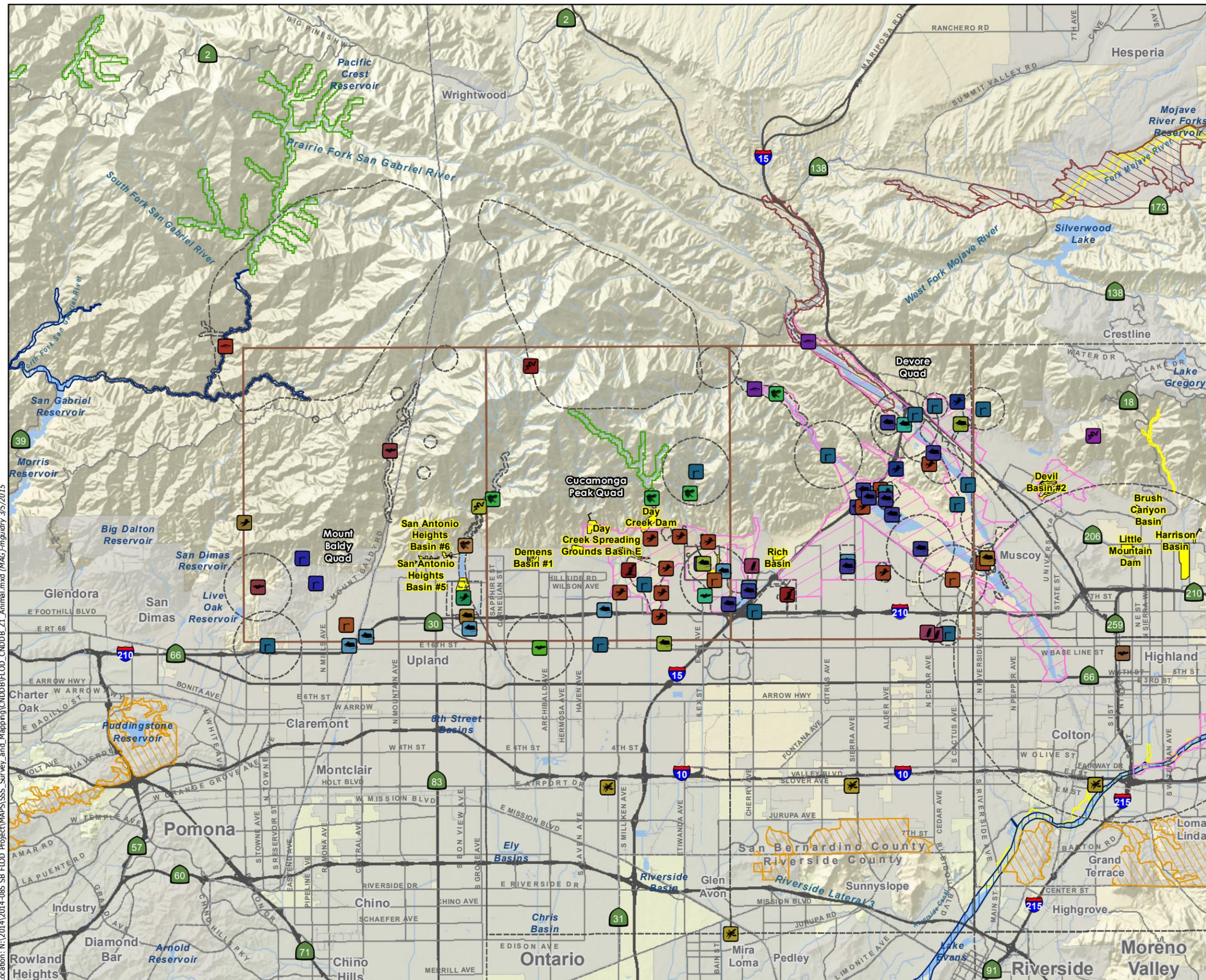
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Basin Name / Common Name	SAHB – West Frankish	SAHB #1	SAHB #2	SAHB #3	SAHB #4	SAHB #5	SAHB #6	Cucamonga Dam	Demens Basin #1	Hillside Basin	Deer Creek Debris Basin	Etiwanda Debris Basin	Rich Basin
tri-colored blackbird (nesting colony)	U	U	U	U	U	U	U	U	U	U	U	U	U
loggerhead shrike (nesting)	Y	Y	Y	Y	Y	Y	Y	P	Y	Y	Y	Y	L
yellow warbler	Y	Y	Y	Y	Y	Y	Y	U	Y	Y	Y	Y	P
yellow-breasted chat (nesting)	U	U	U	U	U	U	U	U	U	U	Y	U	U
burrowing owl (burrow sites)	U	L	U	L	U	U	U	P	L	L	L	Y	L
coastal California gnatcatcher	A	A	A	A	A	A	A	A	A	Y	A	A	U
white-faced ibis	U	U	U	U	U	U	U	U	U	U	U	U	U
southwestern willow flycatcher	U	U	U	U	U	U	U	U	U	U	U	U	U
least Bell's vireo	U	U	U	U	U	U	U	U	U	U	U	U	U
pallid bat	U	U	U	U	U	U	U	U	U	U	U	U	U
western yellow bat	P	P	P	P	P	P	P	P	P	P	P	P	P
western mastiff bat	P	P	P	P	P	P	P	P	P	P	P	P	P
pocketed free-tailed bat	P	P	P	P	P	P	P	P	P	P	P	P	P
lesser long-nosed bat	P	P	P	P	P	P	P	P	P	P	P	P	P
San Diego black-tailed jackrabbit	L	L	L	L	L	L	L	L	L	L	L	L	L
San Bernardino flying squirrel	U	U	U	U	U	U	U	U	U	U	U	U	U
Dulzura pocket mouse	P	P	P	P	P	P	P	P	P	P	P	P	P
northwestern San Diego pocket mouse	L	L	L	L	L	L	L	L	L	L	L	L	L
pallid San Diego pocket mouse	L	L	L	L	L	L	L	L	L	L	L	L	P
San Bernardino kangaroo rat	U	U	U	U	U	U	U	U	U	P	P/C	P/C	U
Stephens' kangaroo rat	U	U	U	U	U	U	U	U	U	U	U	U	U
San Bernardino white-eared pocket mouse	U	U	U	U	U	U	U	U	U	U	U	U	U
Los Angeles pocket mouse	L	L	L	L	L	L	L	L	L	L	L	Y	L
Bryant's (San Diego desert) woodrat	L	L	L	L	L	L	L	L	L	L	L	L	L
southern grasshopper mouse	P	P	P	P	P	P	P	P	P	P	P	P	P
American badger	P	P	P	P	P	P	P	P	P	P	P	P	P

Potential for Occurrence Information: N: Outside known distribution/range of the species, A: Species considered absent based on focused survey, U: Occurrence of the species is unlikely based on lack of habitat, P: Occurrence of the species is possible; suitable habitat is present, L: Occurrence of the species is likely; suitable habitat is present and the species is known from nearby locations, Y: Species is known to occur and/or was present during the survey, C: Critical habitat for this species has been mapped in the area

Sources: California Natural Diversity Data Base (CNDDB; CDFW 2014a) and California Native Plant Society Electronic Inventory (CNPSEI; CNPS 2014) Mt. Baldy, Cucamonga Peak, Devore 7.5 minute USGS quads

Figure 4.2. CNDDB Occurrences of Special-Status Animal Species Zone 1

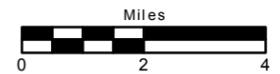


Distance From Project	Boundaries
USGS Quadrangle	Biological Study Area ¹
	CNDDB Polygon Extent
CNDDB Occurrences ²	
Invertebrates	Black Swift
Delhi Sands Flower-loving Fly	Burrowing Owl
Fish	Mammals
Santa Ana Sucker	Western Yellow Bat
Santa Ana Speckled Dace	Pallid San Diego Pocket Mouse
Arroyo Chub	Hoary Bat
Amphibians/Reptiles	Northwestern San Diego Pocket Mouse
Mountain Yellow-legged Frog	Los Angeles Pocket Mouse
Arroyo Toad	Pocketed Free-tailed Bat
California Mountain Kingsnake (san Bernardino Population)	San Diego Black-tailed Jackrabbit
Coast Range Newt	San Bernardino Kangaroo Rat
Two-striped Garter Snake	San Diego Desert Woodrat
Southern Rubber Boa	Western Mastiff Bat
Coast Horned Lizard	
Silvery Legless Lizard	
Birds	
Bell's Sage Sparrow	
Coastal California Gnatcatcher	
Least Bell's Vireo	
Southern California Rufous-crowned Sparrow	
Critical Habitat	
San Bernardino Kangaroo Rat	Santa Ana Sucker
Mountain Yellow Legged Frog	Southwestern Willow Flycatcher
Arroyo Toad	
Costal California Gnatcatcher	

This map may include multiple species' occurrences at each location, some of which may not be visible on this graphic. The CNDDB occurrences shown may not reflect the actual location of the occurrence.

¹Source: San Bernardino County Flood District
²CDFW California Natural Diversity Database (CNDDB), April 2014 Update (GIS Shapefile)
³US Fish and Wildlife Service
 CNDDB Occurrences Located on USGS 7.5' Quadrangles:

Location: N:\2014\2014-085 SB FLOOD Project\MAPS\SSS_Survey_and_Mapping\CNDDB\FLOOD_CNDDB_Z1_Animal.mxd (MAG)imgdiry_3/5/2015



4.1.2 Critical Habitat

A portion of Deer Creek Basin and all of the Etiwanda Debris Basin contains USFWS-designated critical habitat for SBKR (Figure 4.2).

4.1.3 Soils

Six different soil series occur within Zone 1 (USDA 2015). Soils within the Zone 1 BSA primarily consist of Cieneba-Rock outcrop complex (Cr), Soboba gravelly loamy sand, 0 to 9 percent slopes (SoC), and Ramona sandy loam, 2 to 9 percent slopes (RmC) which cover the western portion of the Zone, with small areas scattered throughout the eastern portion. The central portion of the Zone 1 BSA is characterized by Psamments and fluvents, frequently flooded (Ps) and Soboba stony loamy sand, 2 to 9 percent slopes (SpC), with portions of Cieneba-rock outcrop complex (Cr) and Tujunga gravelly loamy sand, 0 to 9 percent slopes (TvC) also prominent. The eastern portion of the Zone 1 BSA consists of Tujunga gravelly loamy sand, 0 to 9 percent slopes (TvC), psamments and fluvents (Ps) and Soboba stony loamy sand, 2 to 9 percent slopes (SpC). Additional soils within the Zone 1 BSA include small areas of Hanford coarse sandy loam (HaD, HaC) located within the central and eastern areas of the BSA and several small areas of Tujunga gravelly loamy sand (TvC) within the western portion.

Table 4.5 – Soil Types - Zone 1

Redbook	Name	Soil Types	Acres in Biological Study Area
1-313-4A	San Antonio Heights Basin #1	CIENEBA-ROCK OUTCROP COMPLEX	3.19
		SOBOBA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	1.99
1-313-4B	San Antonio Heights Basin #5	CIENEBA-ROCK OUTCROP COMPLEX	7.76
		RAMONA SANDY LOAM, 2 TO 9 PERCENT SLOPES	2.36
		TUJUNGA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	0.29
1-313-4D	San Antonio Heights Basin	CIENEBA-ROCK OUTCROP COMPLEX	1.91
1-313-4E	San Antonio Heights Basin #3	CIENEBA-ROCK OUTCROP COMPLEX	0.57
		RAMONA SANDY LOAM, 15 TO 30 PERCENT SLOPES, ERODED	1.77
		SOBOBA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	0.18
1-313-4F	San Antonio Heights Basin #2	CIENEBA-ROCK OUTCROP COMPLEX	1.98
		SOBOBA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	0.46
1-313-4G	San Antonio Heights Basin #4	CIENEBA-ROCK OUTCROP COMPLEX	0.61
		RAMONA SANDY LOAM, 15 TO 30 PERCENT SLOPES, ERODED	0.03
		RAMONA SANDY LOAM, 2 TO 9 PERCENT SLOPES	0.59

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Redbook	Name	Soil Types	Acres in Biological Study Area
		SOBOBA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	0.63
1-313-4H	San Antonio Heights Basin #6	CIENEBA-ROCK OUTCROP COMPLEX	2.28
		RAMONA SANDY LOAM, 2 TO 9 PERCENT SLOPES	1.98
		TUJUNGA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	0.38
1-352-3A	Cucamonga Dam	PSAMMENTS AND FLUVENTS, FREQUENTLY FLOODED	65.88
		SOBOBA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	1.14
		SOBOBA STONY LOAMY SAND, 2 TO 9 PERCENT SLOPES	23.21
1-402-3A	Demens Basin #1	HANFORD COARSE SANDY LOAM, 2 TO 9 PERCENT SLOPES	2.21
		HANFORD COARSE SANDY LOAM, 9 TO 15 PERCENT SLOPES	4.23
		PSAMMENTS AND FLUVENTS, FREQUENTLY FLOODED	10.80
		SOBOBA STONY LOAMY SAND, 2 TO 9 PERCENT SLOPES	16.50
		TUJUNGA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	1.35
1-506-3A	Deer Creek Debris Basin	CIENEBA-ROCK OUTCROP COMPLEX	6.48
		PSAMMENTS AND FLUVENTS, FREQUENTLY FLOODED	14.48
		SOBOBA STONY LOAMY SAND, 2 TO 9 PERCENT SLOPES	42.18
1-552-4A	Hillside Basin	CIENEBA-ROCK OUTCROP COMPLEX	5.67
		SOBOBA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	0
		SOBOBA STONY LOAMY SAND, 2 TO 9 PERCENT SLOPES	23.86
1-707-9A	Etiwanda Debris Basin	HANFORD COARSE SANDY LOAM, 2 TO 9 PERCENT SLOPES	0.03
		PSAMMENTS AND FLUVENTS, FREQUENTLY FLOODED	61.56
		SOBOBA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	6.69
		SOBOBA STONY LOAMY SAND, 2 TO 9 PERCENT SLOPES	29.44
1-807-4A	Rich Basin	HANFORD COARSE SANDY LOAM, 2 TO 9 PERCENT SLOPES	0.23
		SOBOBA STONY LOAMY SAND, 2 TO 9 PERCENT SLOPES	0.32
		TUJUNGA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	26.59

4.1.4 Field Surveys

ECORP biologists Brad Haley and Cara Snellen conducted the biological reconnaissance field survey on June 11, 12, and August 6, 2014. Summarized below are the results of the survey, including existing conditions, vegetation communities, general plants, general wildlife, raptors and migratory birds, and potential wildlife corridors. Weather conditions during the survey are summarized in Table 4.6. Field datasheets are included in Appendix A.

Table 4.6 - Weather Conditions during the Biological Survey – Zone 1

Date	Surveyor	Time		Temperature (°F)		Cloud Cover (%)		Wind Speed (mph)		Basins Surveyed
		Start	End	Start	End	Start	End	Start	End	
6/11/14	BH, CS	0750	1245	59	75	50	0	0	0	Cucamonga Dam, Demens Basin #1, Deer creek Debris Basin, Hillside Basin, Etiwanda Debris Basin
6/12/14	BH, CS	0730	0950	61	80	0	0	< 1	2	San Antonio Heights Basin (West Frankish), San Antonio Heights Basins 1-6
8/6/14	BH	1900	1935	78	77	0	0	3	5	Rich Basin
Notes: BH=Brad Haley, CS=Cara Snellen										

4.1.5 Site Characteristics

The characteristics of each facility within Zone 1 are discussed separately below. Representative photographs of each facility are included in Appendix B.

San Antonio Heights Basin – West Frankish

San Antonio Heights Basin – West Frankish is an undeveloped percolation basin that is partially vegetated with weedy plant species. The areas above the basin depression are vegetated with native scrub habitat within varying levels of disturbance from the basin access road. The eastern and southern boundaries of the basin are fenced with chain-link fencing approximately eight feet high. The land immediately surrounding San Antonio Heights Basin is undeveloped and dominated by native scrub habitat. Residential developments are located a short distance to the east and south. Disturbances in the vicinity of the San Antonio Heights Basin included dirt access roads as well as paved residential roads in the nearby neighborhoods.

San Antonio Heights Basins 1-6

The San Antonio Heights Basins 1-6 are a series of six partially-developed detention basins located along a one-mile stretch of West 26th Street. These basins are mostly spaced approximately 500 feet apart, often with residential developments between each and acting as a physical barrier. Each basin is partially vegetated with weedy species with a concrete culvert near the southern end of the basin depression to channel water flow. The remaining portions of each basin are vegetated with native scrub habitat with varying levels of disturbance from their respective basin access roads. Each basin is fenced with chain-link fencing approximately eight feet high. Native scrub habitat is interspersed with the residential developments located around San Antonio Basins 1-4. Additionally, undeveloped land dominated by native scrub habitat is located directly north of Basins 1-4 and completely surrounds Basins 5 and 6. Disturbances in the vicinity of the San Antonio Heights Basins 1-6 included partially paved West 26th Street, but which did not appear to experience high volumes of vehicular traffic.

Cucamonga Dam

The Cucamonga Dam is partially developed with the dam structure located at the southern end of the facility. The depression north of the dam is partially vegetated with both weedy and native scrub species. A large area of disturbance located south of the dam and west of the concrete channel is also partially vegetated with weedy species. The remaining portions of the dam are vegetated with native scrub habitat with varying levels of disturbance from several access roads. The dam facility is fenced with chain-link fencing approximately eight feet high. High-density residential developments are located to the west and east of the dam facility. Native scrub habitat is present within the river channel to the north. Both undeveloped disturbed land and native scrub habitat are located south of the facility. Additional disturbances in the vicinity of the Cucamonga Dam included residential construction at the western boundary.

Demens Basin #1

Demens Basin #1 is an undeveloped detention basin that is partially vegetated with both weedy and scrub species. The areas above the basin depression are vegetated with native scrub habitat within varying levels of disturbance from the basin access road. A residential walking trail and ornamental landscaping are present along the southern and eastern edge of the basin facility. The upland boundaries of the basin are fenced with chain-link fencing approximately eight feet high. The land immediately surrounding San Antonio Heights Basin to the west, east, and south consists of high-density residential development. To the north, a single residential development is present surrounded by native scrub habitat. Disturbances in the vicinity of the Demens Basin #1 included dirt access roads and trails.

Deer Creek Debris Basin

Deer Creek Debris Basin is a partially-developed detention basin with relatively undisturbed habitat located in the north and active construction activities in the south. The northern portion is vegetated with native scrub habitat with varying levels of disturbance, most likely due to

construction activities and access roads that crisscross throughout the facility. The land surrounding the debris basin is mostly undisturbed native scrub habitat with two houses located nearby. A concrete-lined channel runs from the middle of the debris basin and out the eastern edge. The basin facility is fenced with chain-link fencing approximately eight feet high.

Deer Creek Debris Basin is located partially within designated critical habitat for SBKR. In addition, it is located approximately two miles west of the North Etiwanda Preserve, a 1200-acre habitat preservation area that was created as mitigation for impacts resulting from construction of Interstate 210.

Etiwanda Debris Basin

Etiwanda Debris Basin is a partially-developed detention basin with native scrub habitat present in the north and along the edges. The center of the basin is disturbed and sparsely vegetated with weedy plant species. Paved and dirt access roads run along the edge of the basin and surround the associated channels. These two unlined channels run from the northern corners of the debris basin and collect in the center. The two channels exit the basin in the south; the western channel exits the debris basin unlined, while the eastern channel is lined in concrete. The land surrounding the Etiwanda Debris Basin is disturbed scrub habitat surrounded by residential developments.

Etiwanda Debris Basin is located partially within designated critical habitat for SBKR. In addition, it is located approximately one mile southeast of the North Etiwanda Preserve.

Hillside Basin

Hillside Basin is a partially-developed detention basin with native vegetation situated in patches throughout the basin and an area of disturbance in the center. There is a patch of riparian vegetation in the northwestern corner of the basin and native scrub habitat along the edges and scattered throughout the remainder of the site. Both of the habitats have varying levels of disturbance. Sparse weedy vegetation is present within the basin depression in the western portion of the facility. Several roads run through the basin, including both paved and dirt roads. The land to the north of Hillside Basin consists of native scrub habitat while the remainder of the basin is surrounded by residential development. A concrete-lined channel runs from the middle of the debris basin and out the southern edge. The basin is mostly fenced with chain-link fencing approximately eight feet high; a short rail fence and gate encloses the eastern border.

Hillside Basin is not located within any designated critical habitat. It is, however, located approximately three miles west of the North Etiwanda Preserve.

Rich Basin

Rich Basin is a partially-developed detention basin with native vegetation situated in patches throughout the basin and an area of disturbance in the east and west ends. There is a patch of riparian vegetation just outside the north end of the basin and native scrub habitat along the

edges. Both of the habitats have varying levels of disturbance. Sparse weedy vegetation is present within the basin depression in the central portion of the facility. Several roads run along the basin edges, including both paved and dirt roads. The land to the south of Rich Basin consists of native scrub habitat while the remainder of the basin is surrounded by residential development. A concrete-lined channel feeds the basin from the eastern end and then at the southwestern end it begins again. The basin is mostly fenced with chain-link fencing approximately eight feet high; a short rail fence and gates at the eastern and western borders.

Rich Basin is not located within any designated critical habitat. However, the western edge of the closest SBKR critical habitat is on the east side of Interstate 15, less than 0.5 mile to the east of the basin.

4.1.6 *Vegetation Communities*

As mentioned previously, only a portion of vegetation communities within each facility have been mapped. As part of the biological reconnaissance survey, ECORP mapped the remainder of vegetation communities within each facility. Four native vegetation communities were mapped in the Zone 1 facilities: mulefat scrub, RAFSS, Riparian, and RSS. Ornamental vegetation was within the BSA for Demens Basin #1. One land cover type (disturbed and developed) was present at all of the Zone 1 facilities (Figure 4.3). The plant species observed within these communities consist mainly of native scrub and chaparral species, as well as non-native weedy herbaceous species.

As part of the vegetation mapping, ECORP recorded all plant species present within each community during the biological reconnaissance survey. Because the survey was conducted outside of the blooming period for most native plants, some plant species may have not been detected during the survey. Accordingly, there may actually be more plants present in the facilities than are listed in the plant compendium (Appendix C). Descriptions of the vegetation communities and land cover types that were mapped during the biological reconnaissance survey are included below.

Figure 4.3.
Vegetation Communities
San Antonio Heights Basin #0-3



Biological Study Area

Maintenance Activity Footprint

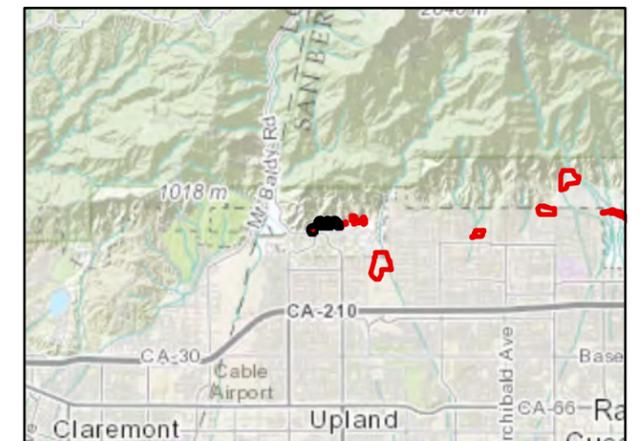
Vegetation Communities

Mulefat Scrub

Riversidean Alluvial Fan Sage Scrub

Riversidean Sage Scrub

Disturbed

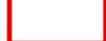
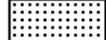


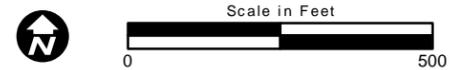
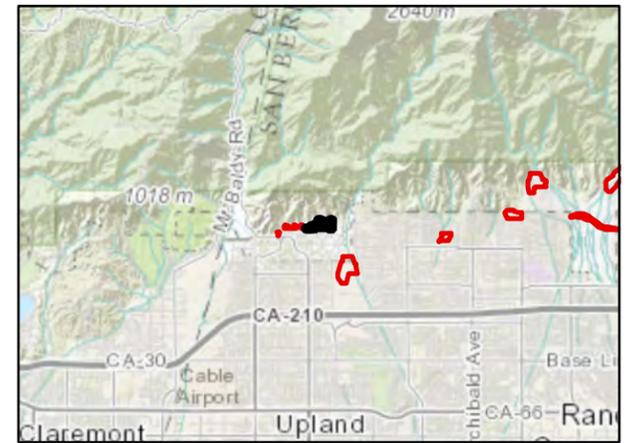
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Figure 4.3.
Vegetation Communities
San Antonio Heights Basin #4-6

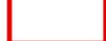
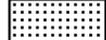
-  Biological Study Area
-  Maintenance Activity Footprint
- Vegetation Communities**
-  Riversidean Alluvial Fan Sage Scrub
-  Riversidean Sage Scrub
-  Disturbed

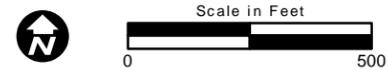
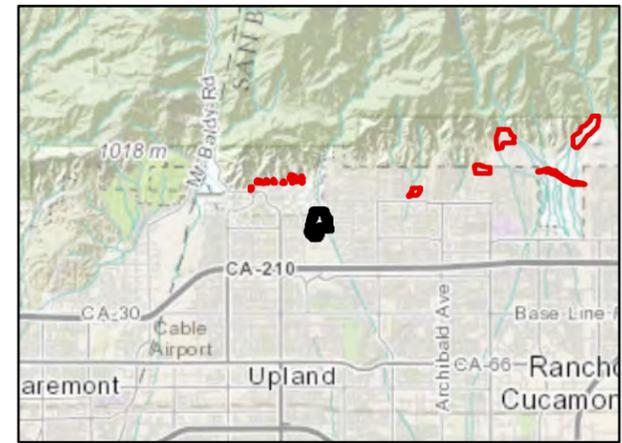


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Figure 4.3.
Vegetation Communities
Cucamonga Dam

-  Biological Study Area
 -  Maintenance Activity Footprint
- Vegetation Communities
-  Riversidean Alluvial Fan Sage Scrub
 -  Riversidean Sage Scrub
 -  Riparian
 -  Disturbed

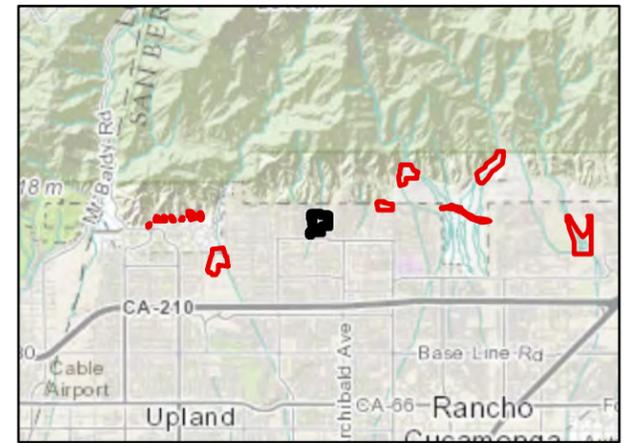


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Figure 4.3.
Vegetation Communities
Demens Basin #1

-  Biological Study Area
-  Maintenance Activity Footprint
- Vegetation Communities**
-  Ornamental
-  Riversidean Alluvial Fan Sage Scrub
-  Riversidean Sage Scrub
-  Disturbed



Location: N:\2014\2014-085 SB FLOOD Project\MAPS\Vegetation\FLOOD_Veg_v2.mxd (MAG:mgudry, 3/9/2015)

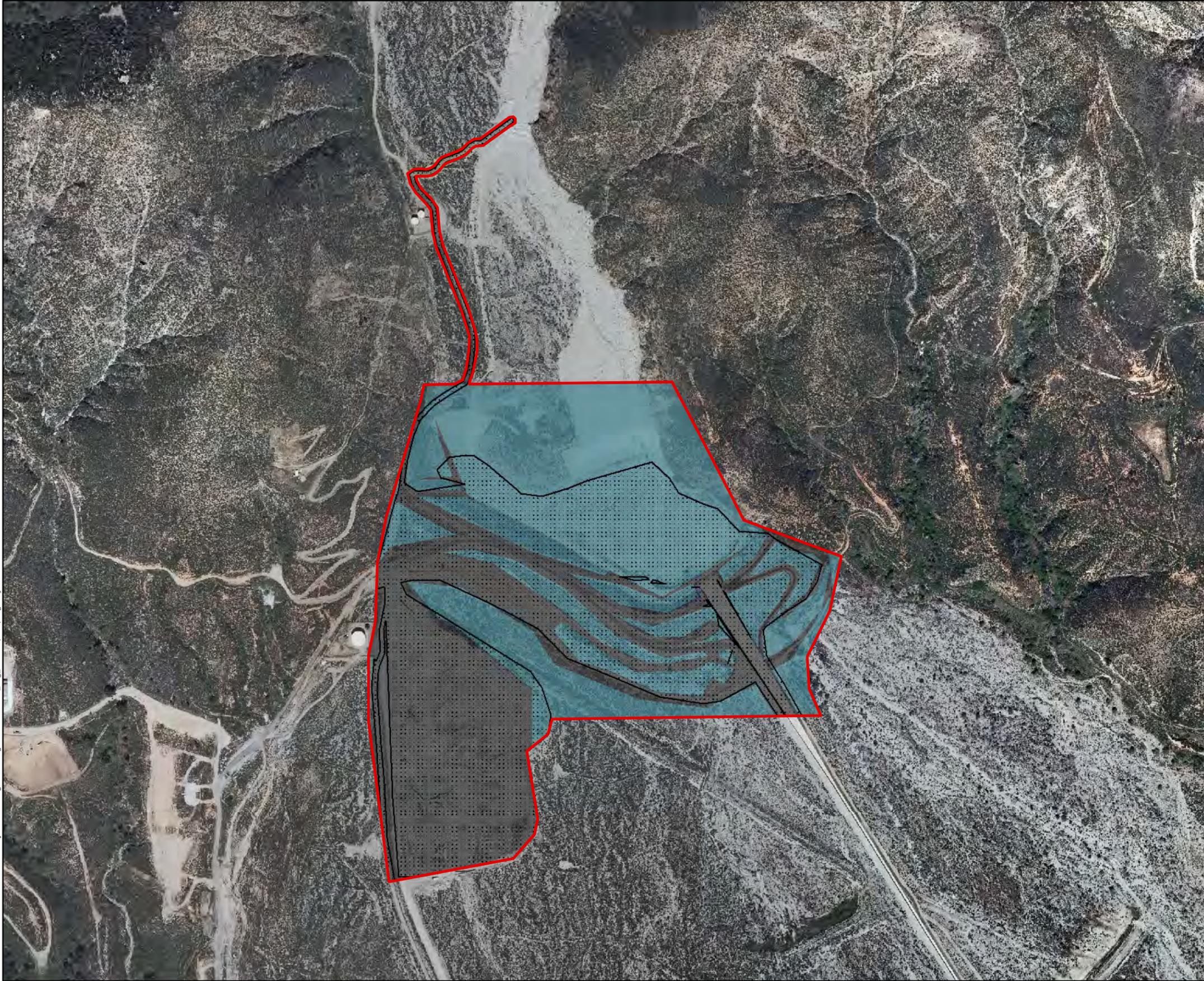
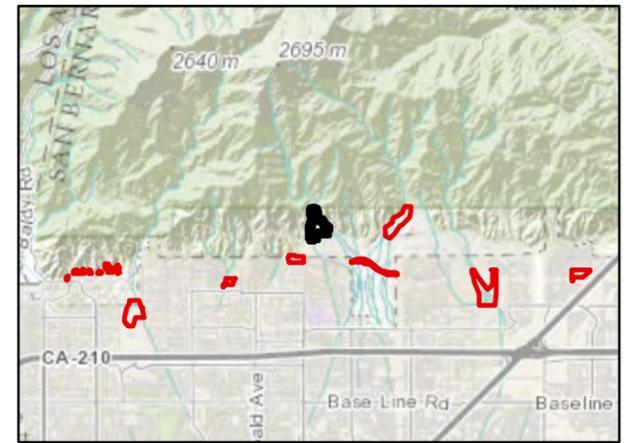
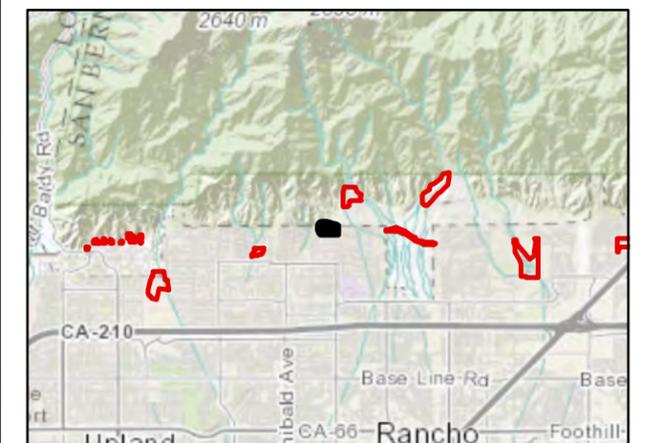
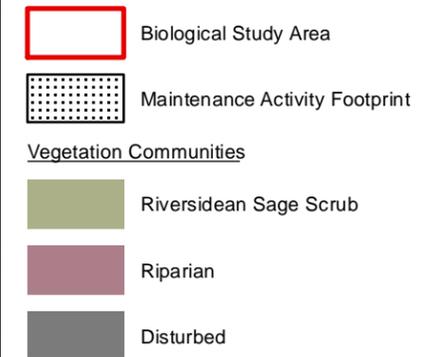


Figure 4.3.
Vegetation Communities
Deer Creek Debris Basin

-  Biological Study Area
 -  Maintenance Activity Footprint
- Vegetation Communities
-  Riversidean Alluvial Fan Sage Scrub
 -  Riversidean Sage Scrub
 -  Disturbed



**Figure 4.3.
Vegetation Communities
Hillside Basin**



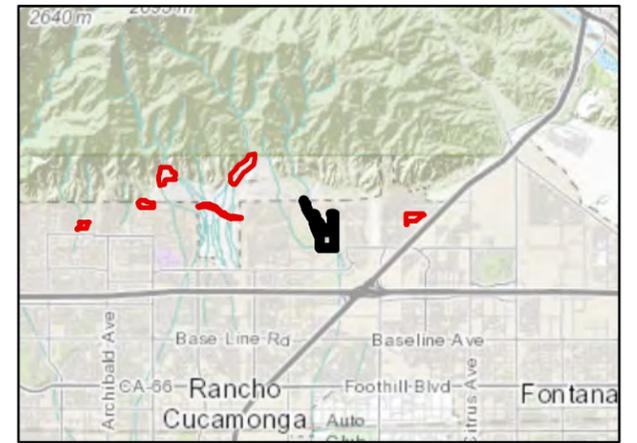
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Figure 4.3.
Vegetation Communities
Etiwanda Debris Basin

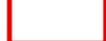
-  Biological Study Area
 -  Maintenance Activity Footprint
- Vegetation Communities
-  Riversidean Alluvial Fan Sage Scrub
 -  Disturbed

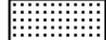


Location: N:\2014\2014-085 SB FLOOD Project\MAPS\Vegetation\FLOOD_Veg_v2.mxd (MAG) mgridby 3/9/2015



**Figure 4.3.
Vegetation Communities
Rich Basin**

 Biological Study Area

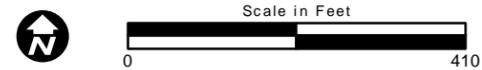
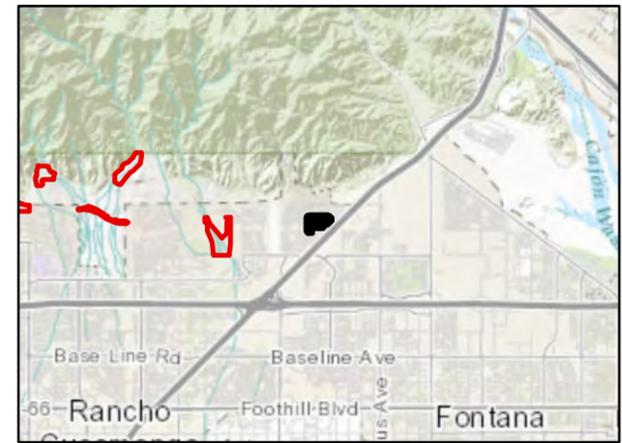
 Maintenance Activity Footprint

Vegetation Communities

 Riversidean Sage Scrub

 Riparian

 Disturbed



Riversidean Alluvial Fan Sage Scrub (RAFSS)

RAFSS (*Lepidospartum squamatum* shrubland alliance) is a vegetation community in which scale broom (*Lepidospartum squamatum*) is dominant, co-dominant, or conspicuous in the shrub canopy. Scale broom, a member of the aster family, is a long-lived, deep-rooted shrub found in riverine or alluvial soils, often in dry washes. The occurrence of the RAFSS vegetation community in the Zone 1 facilities are depicted in Figure 4.3.

RAFSS is a community restricted to intermittently or rarely-flooded, low-gradient alluvial deposits along streams, washes, and fans within large canyons on the coastal slopes of the SanGabriel Mountains and San Bernardino Mountains in San Bernardino County. This community is composed of a variety of drought-deciduous subshrubs and large evergreen woody shrubs. In addition to scale broom, woody shrubs such as chamise (*Adenostoma fasciculatum*), California buckwheat, white sage, and yerba santa (*Eriodictyon trichocalyx*) are present in RAFSS. Common subshrubs include deerweed (*Acmispon glaber*), matchweed (*Gutierrezia californica*), and Douglas' nightshade (*Solanum douglasii*). Native species found within the herbaceous understory include common fiddleneck (*Amsinckia* sp.), croton (*Croton californicus*), and cryptantha (*Cryptantha* sp.). Due to intense, periodic flooding and erosion within the alluvial plain, a series of step-like terraces are created above wash channels, each exhibiting a different successional phase. These phases are related to the amount of time elapsed since the most recent flood and occur as a sequential gradation of terrace types with increasing distance from the active channel (Sawyer et al. 2009; Dudek 2003).

Terrace 1 (Young or Pioneer Phase) is sparsely vegetated with low species diversity and it is typically located within active stream channels or recently scoured streambeds. This terrace requires approximately 3 to 6 years to become established after a flood disturbance.

Terrace 2 (Intermediate Phase) consists of relatively dense vegetation dominated by scale broom and California buckwheat, as well as grasses and other herbaceous species. This terrace requires approximately 5 to 14 years to become established after a flood disturbance.

Terrace 3 (Old or Mature Phase) is even denser and also includes yerba santa, cacti (*Opuntia* spp.), and chaparral yucca (*Hesperoyucca whipplei*). Very few annual species are present. This terrace requires approximately 6 to 18 years to become established after a flood disturbance.

Terrace 4 (Isolated Phase) consists of other fully developed shrubs such as chamise, yerba santa, white sage, black sage, and chaparral yucca. Emergent trees including mountain mahogany (*Cercocarpus betuloides*) and blue elderberry (*Sambucus nigra* ssp. *caerulea*) are also present at low cover. This terrace requires up to 15 years to become established after a flood disturbance.

Terrace 5 is the designation given to terraces located outside of the floodplain that are cut off from the active stream channel. Terrace 5 vegetation is succeeding to upland chaparral. Additional species present in this terrace include bigpod ceanothus (*Ceanothus megacarpus*), laurel sumac (*Malosma laurina*), holly-leaved cherry (*Prunus ilicifolia*), and California sycamore (*Platanus racemosa*).

California Walnut Woodland

California walnut woodland (*Juglans californica* woodland alliance) is a woodland vegetation community with Southern California walnut (*Juglans californica*) as the dominant or co-dominant species in the tree canopy. This species is a deciduous tree that grows up to 15 meters tall and is often located in riparian corridors and on hillslopes. Although it was not observed within the Etiwanda Basin BSA during the survey, the CNDDDB has a record of it occurring nearby. Southern California walnut is CNPS CRPR 4.2 species and the USFWS Wetland Inventory lists this species as a facultative species (Lichvar 2013).

Other tree species found within California walnut woodlands include white alder (*Alnus rhombifolia*), California ash (*Fraxinus dipetala*), toyon (*Heteromeles arbutifolia*), oaks (*Quercus agrifolia* and *Q. berberidifolia*), willows (*Salix* spp.), blue elderberry, and California bay (*Umbellularia californica*), forming an open to continuous tree canopy. The shrub layer is sparse to intermittent, often with a sparse carpet of grassy herbaceous species (Sawyer *et al.* 2009).

Riversidean Sage Scrub (RSS)

RSS is a community found on steep slopes on the Transverse and Peninsular Mountain Ranges in southern California. It is found in dry, well-drained soils and is typically dominated by California sagebrush and California buckwheat. This community is found in small amounts through most of the facilities, and in larger amounts in the Demens, Hillside, and Rich Basins. Dominant plant species found within this community in the facilities include California sagebrush, California buckwheat, chaparral yucca, and white sage. The occurrence of the RSS vegetation community in the Zone 1 facilities is depicted in Figure 4.3.

Riparian

Riparian is a vegetation community that occurs in areas with a perennial or ephemeral source of water. It is dominated by hydrophytic (water-loving) plants such as willow and mulefat (*Baccharis salicifolia*) that are associated with stream channels, flood plains, canyon bottoms, and irrigation ditches with alluvial soils. Small pockets of riparian vegetation was recorded in the Cucamonga Dam, Hillside Basin, and Rich Basin. The riparian vegetation in this area is dominated by mulefat and is only sparsely vegetated, likely due to the dynamic nature of water flow. There was no riparian vegetation at the remaining facilities. The occurrence of the riparian vegetation community in the Zone 1 facilities is depicted in Figure 4.3.

Mulefat Scrub

Mulefat scrub (*Baccharis salicifolia*) is a subset of the riparian vegetation community where mulefat is the only species present in an area. Mulefat thickets consist of mulefat as a dominant or co-dominant in the shrub canopy and emergent trees may be present at low cover. Mulefat thickets are found in canyon bottoms, floodplains, irrigation ditches, lake margins, and stream channels; soils are mixed alluvium. The USFWS Wetland Inventory lists mulefat as a facultative

wetland species (USFWS 1996). A narrow strip of mulefat thickets totaling less than one acre was located along the road at San Antonio Heights Basin #3.

Ornamental

This community is made up of landscaped plants that are not native to the area and are watered by an irrigation system. This community only occurred at the south end of Demens Basin #1.

Disturbed or Developed Areas

Disturbed or developed is not a vegetation classification, but rather a land cover type. Areas mapped as this cover type are largely devoid of vegetation due to human development or disturbance and are dominated by open areas or non-native vegetation. Areas of roads, bare dirt, concrete channels, and buildings were also mapped as disturbed/developed. The occurrence of the disturbed or developed areas in the Zone 1 facilities is depicted in Figure 4.3.

4.1.7 General Plants

Plant species observed within Zone 1 facilities were characteristic of the scrub habitats typically found in southern California. The common shrub species include scalebroom, California buckwheat, chamise, black sage, mountain mahogany, and California sagebrush. Common annual species include golden aster (*Heterotheca sessiliflora*), telegraph weed (*Heterotheca grandiflora*), shortpod mustard (*Hirschfeldia incana*), Russian thistle (*Salsola tragus*), and common sunflower (*Helianthus annuus*). A complete list of all plant species observed within Zone 1 during the biological reconnaissance survey is included in Appendix C.

4.1.8 General Wildlife

The Project site and surrounding areas provide habitat for a number of wildlife species that are adapted to dry conditions and habitat within vegetation communities that are subject to occasional flooding and scouring. No reptiles or amphibians were observed during the reconnaissance surveys of the Zone 1 facilities. Common amphibian and reptile species that likely occur within and adjacent to the Zone 1 facilities include Pacific chorus frog (*Pseudacris regilla*), California chorus frog (*Pseudacris cadaverina*), western toad (*Anaxyrus boreas*), western fence lizard (*Sceloporus occidentalis*), side-blotched lizard (*Uta stansburiana*), common kingsnake (*Lampropeltis getula*), and gopher snake (*Pituophis catenifer*).

Birds were the most abundant species observed within the facilities and the immediate vicinity. Resident (year-round) bird species observed during the biological reconnaissance survey included Anna's hummingbird (*Calypte anna*), common raven (*Corvus corax*), barn swallow (*Hirundo rustica*), hooded oriole (*Icterus cucullatus*), northern mockingbird (*Mimus polyglottos*), phainopepla (*Phainopepla nitens*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*), western kingbird (*Tyrannus verticalis*), and mourning dove (*Zenaida macroura*). These species were commonly observed throughout the scrub habitat within and adjacent to most of the facilities. In addition, the open habitat and occasional perching structures interspersed throughout the facilities provide ideal habitat for a number of raptor (birds of prey)

species. Two raptor species, red-tailed hawk (*Buteo jamaicensis*) and American kestrel (*Falco sparverius*) were identified during the biological reconnaissance survey. Other raptor species expected to occur on the Project site and its immediate vicinity include great-horned owl (*Bubo virginianus*), Cooper's hawk, and prairie falcon (*Falco mexicanus*).

Small mammals are likely abundant throughout the facilities in Zone 1 and immediate vicinity, and four common mammal species were detected during the biological reconnaissance survey, including desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), coyote (*Canis latrans*), and mule deer (*Odocoileus hemionus*) (as evidenced by tracks). Additional small mammal species expected to occur within the Project site include Dulzura kangaroo rat (*Dipodomys simulans*), deer mouse (*Peromyscus maniculatus*), California mouse (*Peromyscus californicus*), and Botta's pocket gopher (*Thomomys bottae*). An additional medium-sized mammal species that is expected to occur includes the bobcat (*Felis rufus*). A complete list of all wildlife species observed within the Zone 1 facilities during the biological reconnaissance survey is included in Appendix D.

4.1.9 Raptors and Migratory Birds

The shrubs and small trees within the Zone 1 facilities provide suitable nesting habitat for a variety of migratory small passerines and songbirds. Several of the facilities, San Antonio Heights #3-6, Deer Creek Debris Basin, Hillside Basin, and Demens Basin provide the larger trees necessary for raptors to nest in. However, there is an electrical transmission line and associated towers south of the San Antonio Heights Basins and Rich Basin that may provide hunting perches and nesting habitat for larger raptors. Though nesting opportunities for raptors are fairly rare within each facility, abundant populations of small mammals, reptiles, and songbirds provide an excellent prey base for foraging raptors. Raptors typically breed between February and August while non-raptors generally nest between March and August.

4.1.10 Wildlife Movement Corridors and Linkages

ECORP biologists assessed areas within the Zone 1 facilities for their potential function in providing wildlife movement corridors and linkages while conducting the biological reconnaissance survey. A wildlife corridor is defined as a linear landscape element which serves as a linkage between historically connected habitats/natural areas, and is meant to facilitate movement between these natural areas (Beirer and Loe 1992). Linkages and corridors facilitate regional animal movement and generally consist of waterways, riparian corridors, flood control channels, contiguous habitat, and upland habitat. Drainages often serve as movement corridors because wildlife can move easily through these areas and fresh water is periodically available. Corridors also offer wildlife unobstructed terrain to move about their home range which can benefit foraging and the dispersal of young individuals. Ridgelines may also serve as movement corridors.

Some of the facilities provide opportunities for wildlife movement within flood control channels. Additionally, wildlife may use access roads, trails, and flood control channels within the facilities because they provide easy and unimpeded movement pathways. These features provide relatively open and unimpeded areas compared to the habitat over most of the remainder of the facilities or surrounding areas. Although these features probably facilitate wildlife

movement, other conditions within the facilities may deter or impede wildlife movement. Most of the facilities are surrounded by chain link fencing and are mostly impenetrable to larger, terrestrial wildlife species. Some of the dam structures consist of concrete and riprap, and likely discourages wildlife use of those portions of the facilities. Portions of the facilities may facilitate some wildlife movement in areas that lack vegetation; however the concrete lined drainage channel contains chain link fencing that likely impedes movement of larger wildlife species.

Thus, larger mammals, including coyote, bobcat, mule deer, and American badger may opportunistically use more easily accessible portions of the facilities during movements within their territories or dispersal to new areas. Because of the presence of large expanses of contiguous habitat surrounding the facilities, wildlife are not obligated or limited to using the facilities for movement. Instead, wildlife likely find ample opportunities for movement throughout the native scrub habitat surrounding each facility. Furthermore, the open expanses of land, streambeds, washes, dirt roads, foothill canyons, and ridgelines in the surrounding areas will provide similar movement opportunities and gives wildlife multiple options when moving about their home ranges. As such, the facilities in Zone 1 likely do not function as important wildlife movement corridors.

4.2 Zone 2

4.2.1 Literature Search

Vegetation Communities

RAFSS has been previously documented in the Twin Creek Spreading Grounds. The information on this vegetation community has been presented in Section 4.1.6 of this report. Southern sycamore alder riparian woodland, also considered a sensitive habitat by CDFW and CNPS, has been previously documented in the Sand Canyon Basin (CNDDDB). Figure 4.4 shows the locations of sensitive habitats identified in the literature search in relation to the Zone 2 facilities. More information on this community is presented in Section 4.2.6 of this report.

Plant Species Evaluated

The Zone 2 literature search documented 36 special-status plant species in the vicinity of the 12 facilities in Zone 2 (Figure 4.4; Table 4.7). Table 4.1 provides the federal and state legal status, CNPS rank, flowering period, elevation range, and general habitat characteristics of each species in Table 4.7.

The biological reconnaissance survey did not include a focused survey for rare plants and the timing of the surveys was not ideal for detecting the presence of all of the sensitive plants listed below. However, the habitat associated with each species was evaluated and used to determine their specific potential for occurrence within the habitat types in the Project site. Fifteen of these plant species were determined to have a potential to occur in one or more of the 12 facilities within Zone 2 (Table 4.7). Included in this list was the federally- and state-listed (endangered) Nevin's barberry, slender-horned spineflower, Santa Ana River woolly-star, and the federally-listed (threatened) and state-listed (endangered) thread-leaved brodiaea. The habitat characteristics and specific occurrence information with regard to each facility for each

of the federally- or state-listed species will be discussed separately below. The remaining 21 species were presumed to be absent from the facilities, mostly due to elevation factors.

Nevin's barberry

The habitat requirements for this species are described in Section 4.1.1.

Suitable habitat for Nevin's barberry is present in all 12 facilities located within Zone 2. However, no recent extant occurrences of this species have been documented within 10 miles of the Zone 2 facilities and the species would have likely been observed during the biological reconnaissance survey if it was present.

Slender-horned spineflower

The habitat requirements for this species are described in Section 4.1.1.

Suitable habitat for slender-horned spineflower is present in all 12 facilities located within Zone 2. Furthermore, each of the Zone 2 facilities is within 10 miles of a known occurrence of this species, although some occurrences may be extirpated. The closest recent occurrence was found approximately 4.6 miles southeast of Sand Canyon Basin, which is the eastern-most of the Zone 2 facilities.

Santa Ana River woolly-star

The habitat requirements for this species are described in Section 4.1.1.

Suitable habitat for Santa Ana River woolly-star is present in all 12 facilities located within Zone 2. Known occurrences of this species have also been documented to the west and the south of the Zone 2 area. The closest basin, Sand Canyon Basin, is 3.1 miles away from a population of Santa Ana River woolly-star seen in 1997 (CNDDDB).

Thread-leaved brodiaea

The habitat requirements for this species are described in Section 4.1.1.

Suitable habitat for thread-leaved brodiaea is present in all 12 facilities located within Zone 2. Critical habitat and two documented occurrences of this species can be found in the center of the Zone 2 area, approximately 1.5 miles north of the central facilities. The most distant basins from these records, Devil's Basin #3 to the west and Sand Canyon Dam to the east, are 3.5 miles away.

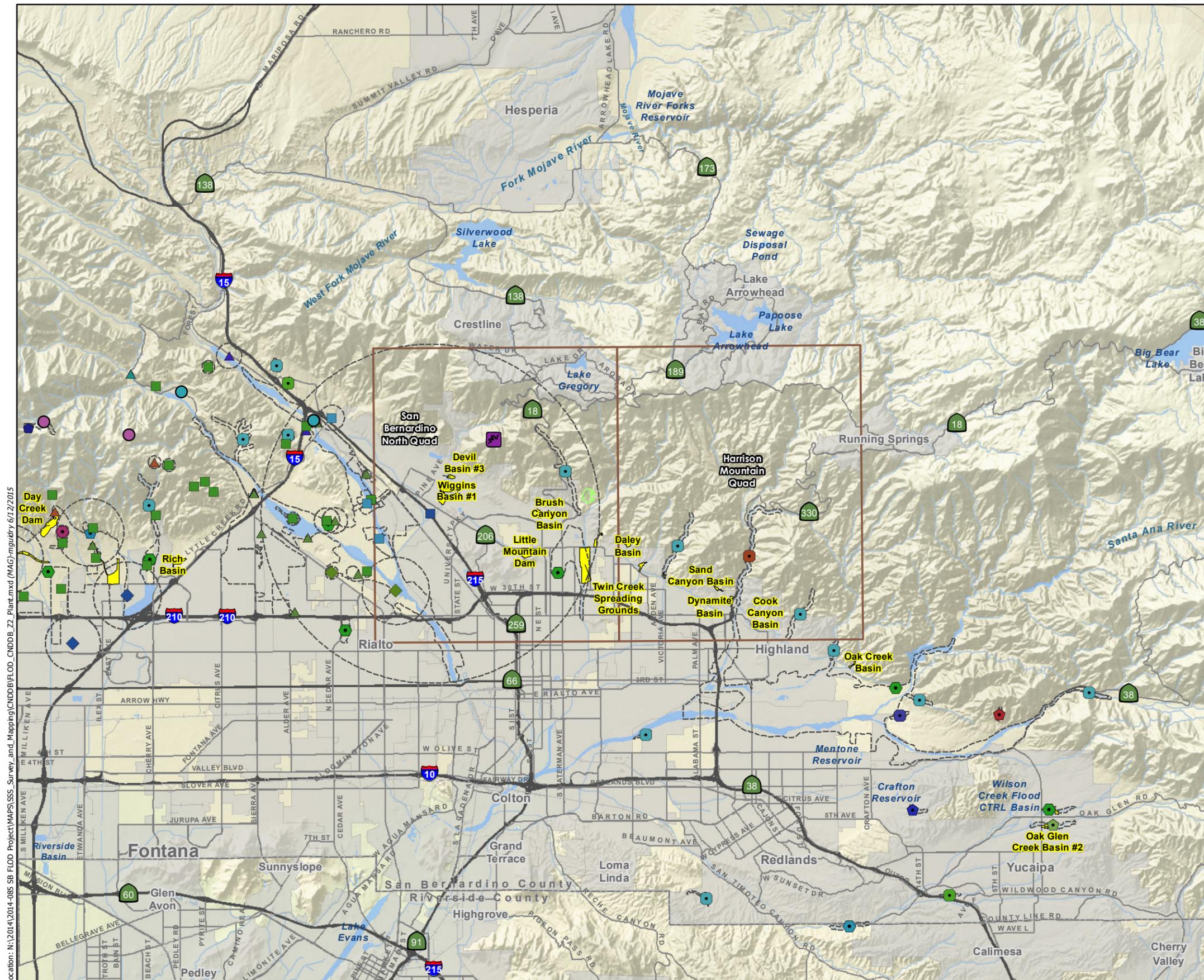
Table 4.7 - Special-Status Plant Species Potential for Occurrence – Zone 2

Basin Name / Common Name	Wiggins Basin	Devil Canyon Dam#1	Devil Basin #2	Devil Basin #3	Little Mountain Dam	MacQuiddy Basin #1-4	Brush Canyon Basin	Twin Creek Spreading Grounds	Harrison Basin	Daley Basin	Little Sand Canyon Basin	Sand Canyon Basin
Parish's oxytheca	N	N	N	N	N	N	N	N	N	N	N	N
singlewhorl burrobrush	P	P	N	N	P	P	P	P	P	P	P	P
Nevin's barberry	P	P	P	P	P	P	P	P	P	P	P	P
thread-leaved brodiaea	L	L	L	L	L	L	L	L	L	L	L	L
Palmer's mariposa lily	N	N	N	N	N	N	N	N	N	N	N	N
Plummer's mariposa lily	L	L	L	L	L	L	L	L	L	L	L	L
San Bernardino Mountains owl's-clover	N	N	N	N	N	N	N	N	N	N	N	N
smooth tarplant	U	U	U	U	U	U	U	U	U	U	U	U
Parry's spineflower	L	L	L	L	L	L	L	Y	L	L	L	L
white-bracted spineflower	P	P	P	P	P	P	P	P	P	P	P	P
slender-horned spineflower	P	P	P	P	P	P	P	P	P	P	P	P
Santa Ana River woolly-star	P	P	P	P	P	P	P	P	P	P	P	P
southern Sierra woolly sunflower	N	N	N	N	N	N	N	N	N	N	N	N
hot springs fimbristylis	U	U	U	U	U	U	U	U	U	U	U	U
pine green-gentian	N	N	N	N	N	N	N	N	N	N	N	N
urn-flowered alumroot	N	N	N	N	N	N	N	N	N	N	N	N
Parry's sunflower	N	N	N	N	N	N	N	N	N	N	N	N
California satintail	L	L	L	L	L	L	L	L	L	L	L	L
silver-haired ivesia	N	N	N	N	N	N	N	N	N	N	N	N
Southern California black walnut	L	L	L	Y	L	L	L	L	L	L	L	Y
Duran's rush	N	N	N	N	N	N	N	N	N	N	N	N
ocellated Humboldt lily	P	P	P	P	P	P	P	P	P	P	P	P
Parish's desert-thorn	L	L	L	L	L	L	L	P	P	P	P	P
Hall's monardella	N	N	N	N	N	N	N	N	N	N	N	N
California muhly	P	P	P	P	L	L	L	L	L	L	L	L
Parish's yampah	N	N	N	N	N	N	N	N	N	N	N	N
Mojave phacelia	N	N	N	N	N	N	N	N	N	N	N	N
woolly chaparral-pea	P	P	P	P	P	P	P	P	P	P	P	P
narrow-petaled rein orchid	U	U	U	U	U	U	U	U	U	U	U	U
black bog-rush	U	U	U	U	U	U	U	U	U	U	U	U
Bear Valley checkerbloom	N	N	N	N	N	N	N	N	N	N	N	N
chickweed oxytheca	N	N	N	N	N	N	N	N	N	N	N	N
Laguna Mountains jewel-flower	N	N	N	N	N	N	N	N	N	N	N	N
southern jewel-flower	N	N	N	N	N	N	N	N	N	N	N	N
San Bernardino aster	L	L	L	L	L	L	L	L	L	L	L	L
Sonoran maiden fern	U	U	U	U	U	U	U	U	U	U	U	U

Potential for Occurrence Information: N: Outside known distribution/range of the species, U: Occurrence of the species is unlikely based on lack of habitat, P: Occurrence of the species is possible; suitable habitat is present, L: Occurrence of the species is likely; suitable habitat is present and the species is known from nearby locations, Y: Species is known to occur and/or was present during the survey, C: Critical habitat for this species has been mapped in the area

Sources: California Natural Diversity Data Base (CNDDB; CDFW 2014a) and California Native Plant Society Electronic Inventory (CNPSEI; CNPS 2014) San Bernardino North, Harrison Mountain 7.5 minute USGS quads

Figure 4.4. CNDDB Occurrences of Special-Status Plant Species and Vegetation Communities Zone 2



Distance From Project

- USGS Quadrangle

Boundaries

- Biological Study Area¹
- CNDDB Polygon Extent

CNDDB Occurrences²

- Laguna Mountains Jewelflower
- White-bracted Spineflower
- San Gabriel Manzanita
- Short-joint Beavertail
- Lemon Lily
- Slender-homed Spineflower
- Parry's Spineflower
- Mesa Horkelia
- Singlehorst Burrobrush
- Plummer's Mariposa-lily
- Santa Ana River Woollystar
- Parish's Desert-thorn
- Southern Riparian Scrub
- Southern Riparian Forest
- Southern Mixed Riparian Forest
- Southern Sycamore Alder Riparian Woodland
- Coastal And Valley Freshwater Marsh
- Riversidian Alluvial Fan Sage Scrub
- Southern Coast Live Oak Riparian Forest
- Southern Cottonwood Willow Riparian Forest
- Southern Willow Scrub
- Canyon Live Oak Ravine Forest
- California Walnut Woodland

Critical Habitat³

- Thread Leaved Brodiaea

This map may include multiple species' occurrences at each location, some of which may not be visible on this graphic. The CNDDB occurrences shown may not reflect the actual location of the occurrence.

¹Source: San Bernardino County Flood District
²CDFW California Natural Diversity Database (CNDDB), April 2014 Update (GIS Shapefile)
³US Fish and Wildlife Service
 CNDDB Occurrences Located on USGS 7.5' Quadrangles:

Location: N:\2014\2014-085 SB FLOOD Project\MAPS\SSS_Survey_and_Mapping\CNDDB\FLOOD_CNDDB_Z2_Plant.mxd (MAG:magdry 6/12/2015)



Wildlife Species Evaluated

Of the 54 wildlife species identified in Table 4.3, 22 are outside the known distribution/range of the species, or their occurrence is unlikely based on lack of habitat. The biological reconnaissance survey did not include a focused survey for special-status wildlife. However, the habitat conditions within each facility, species requirements, and the results of any focused surveys, were used to determine their specific potential for occurrence within each facility. Thirty-two species were determined to have a potential to occur in one or more of the 12 facilities within Zone 2, four of which are federally and/or state listed species (Table 4.8). Figure 4.5 shows the locations of special-status wildlife species occurrences identified in the literature search in relation to the Zone 2 facilities. These include the federally- and state-listed (endangered) southwestern willow flycatcher (SWFL) and least Bell's vireo (LBVI), federally-listed (endangered) lesser long-nosed bat, and the state-listed (threatened) Swainson's hawk. The habitat characteristics and specific occurrence information with regard to each facility for each of the federally- or state-listed species will be discussed separately below.

Table 4.8 - Special-Status Wildlife Species Potential for Occurrence – Zone 2

Basin Name / Common Name	Wiggins Basin	Devil Canyon Dam#1	Devil Basin #2	Devil Basin #3	Little Mountain Dam	MacQuiddy Basin #1-4	Brush Canyon Basin	Twin Creek Spreading Grounds	Harrison Basin	Daley Basin	Little Sand Canyon Basin	Sand Canyon Basin
Delhi Sands flower-loving fly	U	U	U	U	U	U	U	U	U	U	U	U
arroyo chub	U	U	U	U	U	U	U	U	U	U	U	U
Santa Ana speckled dace	U	U	U	U	U	U	U	U	U	U	U	U
Santa Ana Sucker	U	U	U	U	U	U	U	U	U	U	U	U
arroyo toad	U	U	U	U	U	U	U	U	U	U	U	U
California red-legged frog	U	U	U	U	U	U	U	U	U	U	U	U
mountain yellow-legged frog	U	U	U	U	U	U	U	U	U	U	U	U
Coast Range newt	U	U	U	U	U	U	U	U	U	U	U	U
western spadefoot toad	L	L	L	L	P	P	P	P	P	P	P	P
coast horned lizard	L	L	L	L	L	P	L	L	L	L	L	L
orangethroat whiptail	L	L	L	L	L	P	L	L	L	L	L	L
silvery legless lizard	L	L	L	P	L	P	L	L	L	L	L	L
southern rubber boa	U	U	U	U	U	U	U	U	U	U	U	U
California mountain kingsnake (San Bernardino population)	N	N	N	N	N	N	N	N	N	N	N	N
two-striped garter snake	P	P	P	P	U	U	U	P	U	U	P	P
Coast patch-nosed snake	P	P	P	P	P	U	P	P	P	P	P	P
Cooper's hawk	P	P	P	P	P	P	P	P	P	P	P	Y
golden eagle (nesting)	U	U	U	U	U	U	U	U	U	U	U	U
Swainson's hawk	Y	Y	Y	Y	P	P	P	P	P	P	P	P
northern harrier	P	P	P	P	P	P	P	P	P	P	P	P
white-tailed kite (nesting)	U	U	U	U	U	P	P	U	P	P	P	U
bald eagle	U	U	U	U	U	U	U	U	U	U	U	U
California horned lark	L	L	L	L	L	L	L	L	L	L	L	L
purple martin	U	U	U	U	U	U	U	U	U	U	U	U
black swift	U	U	U	U	U	U	U	U	U	U	U	U
yellow-billed cuckoo (nesting)	U	U	U	U	U	U	U	U	U	U	U	U
Southern California rufous-crowned sparrow	P	P	P	P	P	U	P	P	P	P	P	P
Bell's sage sparrow	P	P	P	P	P	U	P	P	P	P	P	P
tri-colored blackbird (nesting colony)	U	U	U	U	U	U	U	U	U	U	U	U

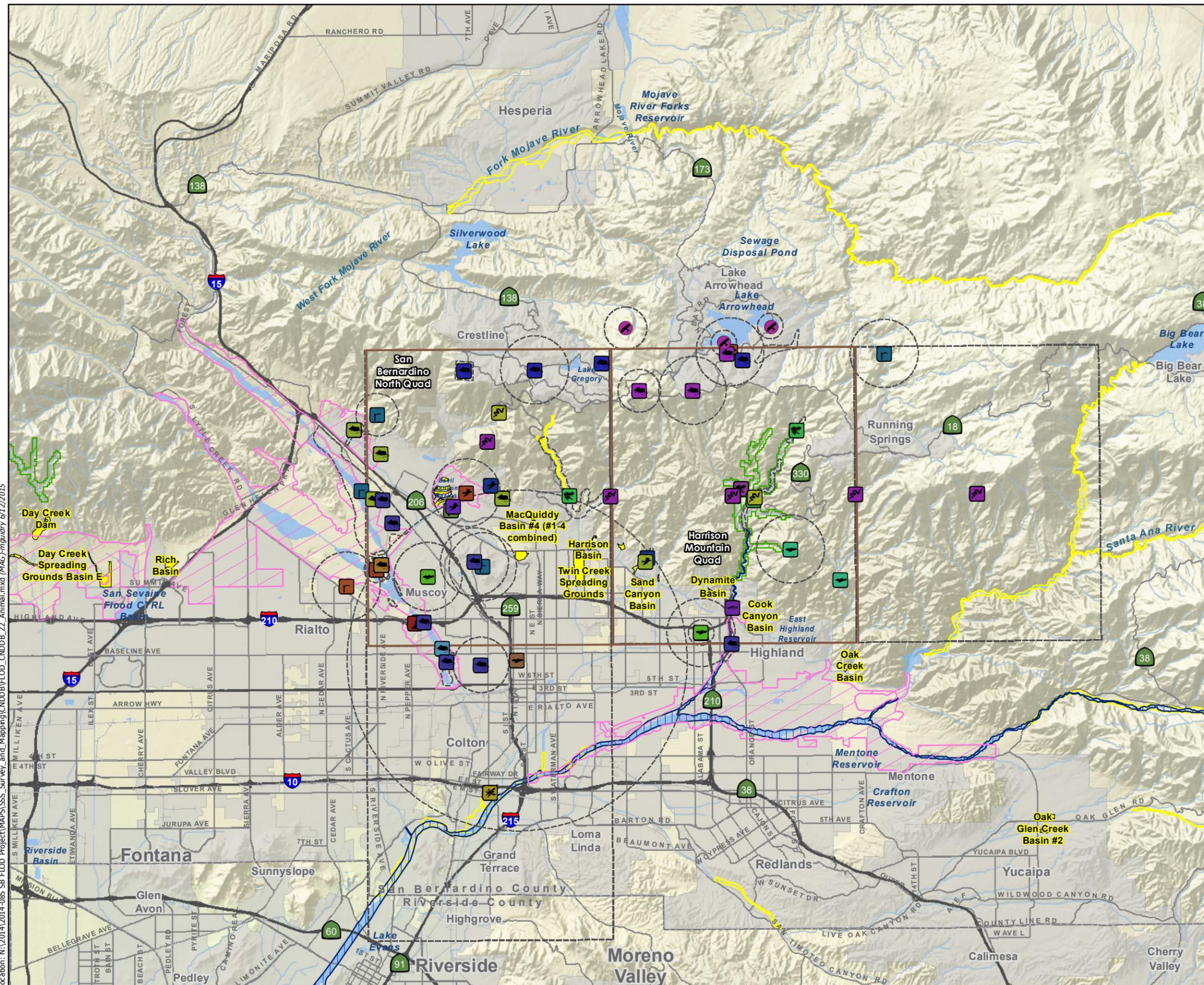
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Basin Name / Common Name	Wiggins Basin	Devil Canyon Dam#1	Devil Basin #2	Devil Basin #3	Little Mountain Dam	MacQuiddy Basin #1-4	Brush Canyon Basin	Twin Creek Spreading Grounds	Harrison Basin	Daley Basin	Little Sand Canyon Basin	Sand Canyon Basin
loggerhead shrike (nesting)	P	P	P	P	U	U	P	U	U	P	U	U
yellow warbler	U	U	U	P	P	U	P	P	U	U	P	P
yellow-breasted chat (nesting)	U	U	U	P	P	U	P	P	U	U	P	P
burrowing owl (burrow sites)	L	U	U	U	L	L	L	L	U	L	L	U
coastal California gnatcatcher	A	A	A	A	U	U	U	U	U	U	U	U
white-faced ibis	U	U	U	P	U	U	U	U	U	U	U	U
southwestern willow flycatcher	U	U	U	U	U	U	U	U	U	U	L	U
least Bell's vireo	U	U	U	U	U	U	U	U	A	U	L	U
pallid bat	U	U	U	U	U	U	U	U	U	U	U	U
western yellow bat	P	P	P	P	P	P	P	P	P	P	P	P
western mastiff bat	P	P	P	P	P	P	P	P	P	P	P	P
pocketed free-tailed bat	P	P	P	P	P	P	P	P	P	P	P	P
lesser long-nosed bat	P	P	P	P	P	P	P	P	P	P	P	P
San Diego black-tailed jackrabbit	L	L	L	L	L	L	L	L	L	L	L	L
San Bernardino flying squirrel	U	U	U	U	U	U	U	U	U	U	U	U
Dulzura pocket mouse	U	U	U	U	P	P	P	P	P	P	P	P
northwestern San Diego pocket mouse	Y	Y	Y	Y	L	P	L	L	L	L	L	L
pallid San Diego pocket mouse	A	A	A	A	L	P	L	L	L	L	L	L
San Bernardino kangaroo rat	A/C	A/C	A/C	A/C	U	U	U	U	U	U	U	U
Stephens' kangaroo rat	U	U	U	U	U	U	U	U	U	U	U	U
San Bernardino white-eared pocket mouse	U	U	U	U	U	U	U	U	U	U	U	U
Los Angeles pocket mouse	Y	Y	Y	Y	L	L	L	L	L	L	L	L
Bryant's (San Diego desert) woodrat	Y	Y	Y	Y	L	P	L	L	L	L	L	L
southern grasshopper mouse	A	A	A	A	P	P	P	P	P	P	P	P
American badger	P	P	P	P	P	P	P	P	P	P	P	P

Potential for Occurrence Information: N: Outside known distribution/range of the species, A: Species considered absent based on focused survey, U: Occurrence of the species is unlikely based on lack of habitat, P: Occurrence of the species is possible; suitable habitat is present, L: Occurrence of the species is likely; suitable habitat is present and the species is known from nearby locations, Y: Species is known to occur and/or was present during the survey, C: Critical habitat for this species has been mapped in the area

Sources: California Natural Diversity Data Base (CNDDB; CDFW 2014a) and California Native Plant Society Electronic Inventory (CNPSEI; CNPS 2014) San Bernardino North, Harrison Mountain 7.5 minute USGS quads

Figure 4.5. CNDDDB Occurrences of Special-Status Animal Species Zone 2



Distance From Project
 USGS Quadrangle

Boundaries
 Biological Study Area ¹
 CNDDB Polygon Extent

CNDDB Occurrences ²

Invertebrates
 Delhi Sands Flower-loving Fly

Fish
 Santa Ana Sucker
 Santa Ana Speckled Dace

Amphibians/Reptiles
 California Red-legged Frog
 Mountain Yellow-legged Frog
 Two-striped Garter Snake
 Orangethroat Whiptail
 Southern Rubber Boa
 Coast Horned Lizard
 Silvery Legless Lizard

Birds
 Southwestern Willow Flycatcher
 Bald Eagle
 Coastal California Gnatcatcher
 Least Bell's Vireo
 California Horned Lark

Mammals
 Western Yellow Bat

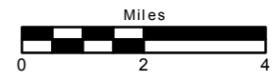
Critical Habitat ³
 San Bernardino Kangaroo Rat
 Mountain Yellow Legged Frog
 Santa Ana Sucker
 Southwestern Willow Flycatcher

Other Species
 American Badger
 San Bernardino Flying Squirrel
 San Bernardino White-eared Pocket Mouse
 Northwestern San Diego Pocket Mouse
 Los Angeles Pocket Mouse
 Pocketed Free-tailed Bat
 San Diego Black-tailed Jackrabbit
 San Bernardino Kangaroo Rat
 San Diego Desert Woodrat
 Western Mastiff Bat

This map may include multiple species' occurrences at each location, some of which may not be visible on this graphic. The CNDDDB occurrences shown may not reflect the actual location of the occurrence.

¹Source: San Bernardino County Flood District
²CDFW California Natural Diversity Database (CNDDDB), April 2014 Update (GIS Shapefile)
³US Fish and Wildlife Service
 CNDDDB Occurrences Located on USGS 7.5' Quadrangles:

Location: N:\2014\2014-085 SB FLOOD Project\MAPS\SSS_Survey_and_Mapping\CNDDDB\FLOOD_CNDDDB_Z2_Animal.mxd (MAG:mgquiddy 6/12/2015)



Reptiles and Amphibians

The western spadefoot toad, coast horned lizard, orange-throated whiptail, two-striped garter snake, coast patch-nosed snake, and silvery legless lizard are SSC with habitat in more than one facility within Zone 2. SJM Biological Consultants conducted focused SBKR trapping at Devil Canyon Dam, Devil Basins #2 and 3, and Wiggins Basin, along with many of the other surrounding basins. Spadefoot toads were observed in the wash west of Devil Basins #1-3 (SJM unpublished data). All of these species are all of lower levels of sensitivity and abundant habitat remains within areas adjacent to the site.

Birds

Coastal California Gnatcatcher

The habitat requirements for this species are described in Section 4.1.1.

The facilities in Zone 2 are located approximately seven miles north of USFWS-designated critical habitat for CAGN. Most of the records for this species occur approximately seven miles to the southwest around the Etiwanda Basin and approximately seven miles to the southeast around Highland. There is a record of a CAGN nest from 1925 approximately 0.5 mile east of the Devil Canyon Dam (Basin #1), Devil Basin #2-3, and Wiggins Basin #1 (CNDDDB 2014b).

Bloom Biological, Inc. (Bloom) conducted focused, protocol CAGN surveys between March 28 and May 6, 2013 at Devil Canyon Dam (Basin #1), Devil Basin #2-3, and Wiggins Basin #1. Survey results were negative at each facility, however, one CAGN was detected between Sweetwater Basin and Devil Basin #6 (approximately 2,460 feet [750 m] east of Devil Basins #2 and #3). The CAGN appeared to be an unpaired bird, and was only detected once during the 12 survey days (Bloom 2013).

The Bloom (2013) report stated that the facilities contain extensive areas of Riversidean sage scrub habitat that appears to be suitable for occupancy by CAGN. However, southwestern San Bernardino County is at the extreme northeastern edge of the gnatcatcher's current and historical range. Based on the negative results from focused, protocol surveys at these four facilities, this species is considered absent within those facilities. Based on lack of suitable habitat at the remaining facilities in Zone 2, this species is considered unlikely.

Southwestern willow flycatcher

Southwestern willow flycatcher is a federally- and state-listed endangered species. Willow flycatchers are an uncommon migrant species within the southern California area, and the subspecies *extimus* is the only subspecies known to breed in the area. Breeding SWFLs typically occupy only the most extensive riparian stream systems in the region, such as the Santa Ana River and Santa Margarita River. The closest substantial known breeding populations of SWFL to the Project are in Prado Basin. The southwestern willow flycatcher typically breeds within dense trees or shrubby riparian vegetation that is equal to or greater than 10 ft (3m) tall (Allison et al. 2003). Breeding territories tend to be in close association with perennial water areas and streams.

ICF conducted a habitat assessment for SWFL within Harrison Canyon and City Creek, near to Harrison Basin and somewhat close to Dynamite Basin. No suitable habitat was found in the survey areas. Suitable breeding habitat occurs in the northern end of Little Sand Canyon where there are dense trees and shrubby riparian vegetation. There is a record of a territorial male SWFL approximately 800 feet east of the Little Sand Canyon Basin, upstream of the same wash that runs into the Basin (CDFW 2014). Non-protocol surveys conducted in 2007 did not locate the bird again. This species is considered likely to occur in the riparian habitat on the east end of the Basin. Based on lack of suitable habitat, this species is considered unlikely at the remaining Zone 2 facilities and in any of the Zone 1 or 3 facilities.

Least Bell's Vireo

Least Bell's vireo (*Vireo belli pusillus*) is a federally- and state-listed endangered species. Least Bell's vireos are found in arid regions in such habitats as dense brush, mesquite, willow-cottonwood forest, streamside thickets, willow-dominated riparian woodlands, and scrub oak, but often near water (NatureServe 2009). This species requires dense riparian thickets, mesquite, scrub oak, or other scrubby habitat near aquatic habitat for nesting. Threats to this species include the widespread loss of riparian habitat coupled with the increased effects of nest parasitism by brown-headed cowbirds (*Molothrus ater*).

ICF conducted LBVI surveys between April 29 and July 30, 2013 at Harrison Basin. Survey results were negative, no LBVI were detected during the habitat assessment or the eight focused protocol surveys (ICF 2013b). Bloom (2013) heard an LBVI singing between the Sweetwater Basin and Devils Basin #6 (approximately 750m east of Devil Basin #2 and 3). The biologist determined the bird was most likely a migrant because no suitable habitat existed in the four basins being surveyed and it was not observed again (Bloom 2013). Approximately 1,600 feet east of the Little Sand Canyon Basin, upstream of the same wash that runs into the Basin, there are multiple records of LBVI breeding between 2003 and 2008 (CNDDDB). This species is considered likely to occur in the riparian habitat on the east end of the Basin.

Swainson's Hawk

The habitat requirements for this species are described in Section 4.1.1.

During the focused CAGN surveys at Devil Canyon Dam, Devil Basin #2 and #3, and Wiggins Basin, a rufous-morph adult Swainson's hawk was observed on two separate days gradually moving north towards the mountains (Bloom 2013). The biologists determined that the birds were exhibiting the typical behavior of a northbound spring migrant. Although it is likely that this species will fly over all of the facilities in Zone 2 during its migration period, it is unlikely that this species will nest at any of the Zone 2 facilities.

Burrowing Owl

The habitat requirements for this species are described in Section 4.1.1.

Suitable burrows created by small mammals were observed during the biological reconnaissance survey at Wiggins Basin, Little Mountain Dam, MacQuiddy Basin, Brush Canyon, Twin Creek Spreading Grounds, Daley Basin, and Little Sand Canyon Basin. There were no

records of burrowing owl within the USGS quadrangles searched in the CNDDDB. However, based on the distribution of the burrowing owl, the vegetation communities, and habitat characteristics within and adjacent to the facilities, the potential for occurrence of this species was assessed as possible at these facilities. This species was determined to be unlikely to occur at the remaining facilities in Zone 2.

Other Birds

A Cooper's hawk was detected adjacent to the Sand Canyon Basin during the biological reconnaissance survey on June 16, 2014, and was given a potential to occur at the remaining facilities. Several other bird SSC have the potential to occur in the Zone 2 facilities. These include northern harrier, white-tailed kite, southern California rufous-crowned sparrow, California horned lark, loggerhead shrike, yellow warbler, yellow breasted-chat, and Bell's sage sparrow. White-faced ibis (*Plegadis chihi*) was given a potential to occur at Devil Basin #3. Their specific potential to occur within each of the facilities is provided in Table 4.8.

Suitable habitat for migratory birds and raptors protected under the MBTA and FGC was found within and immediately adjacent to each facility.

Mammals

San Bernardino Kangaroo Rat

The habitat requirements for this species are described in Section 4.1.1.

Focused SBKR trapping at Devil Canyon Dam (Basin #1), Devil Basin #2, Devil Basin #3, and Wiggins Basin took place over 18 nights between August 11 and 30, 2014. No SBKR were captured at any of the four facilities during the trapping survey. The incidental sensitive small mammal species captured during the survey will be presented below. As stated previously, a complete SBKR report will be submitted under a separate cover.

Based on the negative trapping results, the SBKR is considered absent from these facilities in spite of the presence of critical habitat for SBKR. The SBKR are considered unlikely at the remaining Zone 2 facilities.

Lesser Long-Nosed Bat

The habitat requirements for this species are described in Section 4.1.1.

Although there are no old mines or caves at any of the Zone 2 facilities, this species was given a potential to occur at each of them because they may forage in the facilities and may occasionally day roost in the concrete vent pipes, rip-rap, or other well-ventilated structure within the facilities.

Other mammals

At Wiggins Basin, 739 total rodents were captured over the 15 nights of trapping, of which 81 were Los Angeles pocket mice, 399 northwestern San Diego pocket mice, and 15 were Bryant's

woodrat (SJM unpublished data). At Devil Canyon Dam, 169 total rodents were captured over the 5 nights of trapping, of which 6 were Los Angeles pocket mice and 97 were northwestern San Diego pocket mice. Devil's Basins #2 and 3 were part of the same trapping grids, so the trapping results are presented together. At Devil Basin #2 and 3, 461 total rodents were captured over the 10 nights of trapping, of which two were Los Angeles pocket mice, 220 were northwestern San Diego pocket mice, and nine were Bryant's woodrat (SJM unpublished data). Because the SSC Dulzura pocket mouse, pallid San Diego pocket mouse, and southern grasshopper mouse were not captured, they are considered absent or unlikely at these four facilities. However, these species, along with the species detected during the trapping survey, were given a potential to occur at the remaining facilities in Zone 2.

Several other mammalian California SSC have the potential to occur at these Zone 2 facilities or in adjacent habitats. These include the American badger, San Diego black-tailed jackrabbit, pocketed free-tailed bat, western yellow bat, western mastiff bat. These species are all of lower levels of sensitivity and abundant habitat remains within areas adjacent to the facilities.

4.2.2 Critical Habitat

Devil Canyon Dam (Basin #1), Devil Basin #2, Devil Basin #3, and Wiggins Basin contains USFWS-designated critical habitat for SBKR (Figure 4.5).

4.2.3 Soils

Eleven different soil series occur within Zone 2 of the BSA (USDA 2014). Soils within the northwest portion of this Zone primarily consist of Soboba stony loamy sand, 2 to 9 percent slopes (SpC), with a small portion of Friant-rock outcrop complex (Fr) present. The central and southeast portions of the Zone 2 BSA consist of combination of soil types including Soboba stony loamy sand, 2 to 9 percent slopes (SpC), Tujunga gravelly loamy sand, 0 to 9 percent slopes (TvC), Hanford coarse sandy loam, 2 to 9 percent slopes (HaC) and 9 to 15 percent slopes (HaD), Greenfield sandy loam 2 to 9 percent slopes (GtC), Ramona sandy loam, 15 to 30 percent slopes (RmE2), Ramona family – Typic Xerorthents, warm association, 2 to 30 percent slopes (ChDE), Psamments and fluvents, frequently flooded (Ps), Trigo family – Lithic Xerorthents, warm complex 50 to 75 percent slopes (DnG), and Osito-Modesto families association, 30 to 50 percent slopes (CmF). Very small areas of Cieneba-rock outcrop complex (Cr) and Riverwash (Rw) are also present in the southeastern portion of this Zone.

Table 4.9 - Soil Types - Zone 2

Redbook	Name	Soil Types	Acres in Biological Study Area
2-303-3A	Devil Canyon Dam (Basin #1)	SOBOBA STONY LOAMY SAND, 2 TO 9 PERCENT SLOPES	24.01
2-304-4A	Devil Basin #2	SOBOBA STONY LOAMY SAND, 2 TO 9 PERCENT SLOPES	13.01
2-304-4B	Devil Basin #3	SOBOBA STONY LOAMY SAND, 2 TO 9 PERCENT SLOPES	10.80

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Redbook	Name	Soil Types	Acres in Biological Study Area
2-305-4A	Wiggins Basin #1	FRIANT-ROCK OUTCROP COMPLEX	0.35
		SOBOBA STONY LOAMY SAND, 2 TO 9 PERCENT SLOPES	31.75
2-365-3A	Little Mountain Dam	FRIANT-ROCK OUTCROP COMPLEX	8.10
		HANFORD COARSE SANDY LOAM, 2 TO 9 PERCENT SLOPES	0.58
		TUJUNGA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	40.47
2-368-4D	MacQuiddy Basin #4 (#1-4 combined)	GREENFIELD SANDY LOAM, 2 TO 9 PERCENT SLOPES	3.96
		HANFORD COARSE SANDY LOAM, 2 TO 9 PERCENT SLOPES	3.74
		RAMONA FAMILY- TYPIC XERORTHENTS, WARM ASSOCIATION, 2 TO 30 PERCENT SLOPES	0.10
		RAMONA SANDY LOAM, 15 TO 30 PERCENT SLOPES, ERODED	2.39
2-406-4A	Twin Creek Spreading Grounds	SOBOBA STONY LOAMY SAND, 2 TO 9 PERCENT SLOPES	173.47
		TUJUNGA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	6.38
2-412-4A	Brush Canyon Basin	RAMONA FAMILY- TYPIC XERORTHENTS, WARM ASSOCIATION, 2 TO 30 PERCENT SLOPES	6.98
		RAMONA SANDY LOAM, 15 TO 30 PERCENT SLOPES, ERODED	0.78
2-414-4A	Harrison Basin	OSITO-MODESTO FAMILIES ASSOCIATION, 30 TO 50 PERCENT SLOPES	4.61
		TUJUNGA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	9.48
2-503-4A	Sand Canyon Basin	CIENEBA-ROCK OUTCROP COMPLEX	0.09
		PSAMMENTS AND FLUVENTS, FREQUENTLY FLOODED	3.22
2-506-4A	Daley Basin	SOBOBA-HANFORD FAMILIES ASSOCIATION, 2 TO 15 PERCENT SLOPES	10.50
		TRIGO FAMILY-LITHIC XERORTHENTS, WARM COMPLEX, 50 TO 75 PERCENT SLOPES	3.10
2-510-4A	Little Sand Canyon Basin	HANFORD COARSE SANDY LOAM, 9 TO 15 PERCENT SLOPES	4.95
		PSAMMENTS AND FLUVENTS, FREQUENTLY FLOODED	6.00
		RAMONA FAMILY- TYPIC	0.24

Redbook	Name	Soil Types	Acres in Biological Study Area
		XERORTHENTS, WARM ASSOCIATION, 2 TO 30 PERCENT SLOPES	
		RIVERWASH-SOBOBA FAMILIES FAMILIES ASSOCIATION, 2 TO 15 PERCENT SLOPES	1.20
		TUJUNGA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	0.31

4.2.4 Field Surveys

ECORP biologists Brad Haley, Cara Snellen, and Katherine Vienne conducted the biological reconnaissance field survey on June 12 and 16, 2014. Summarized below are the results of the survey, including existing conditions, vegetation communities, general plants, general wildlife, raptors and migratory birds, and potential wildlife corridors. Weather conditions during the survey are summarized in Table 4.10. Field datasheets are included in Appendix A.

Table 4.10 - Weather Conditions during the Biological Survey – Zone 2

Date	Surveyor	Time		Temperature (°F)		Cloud Cover (%)		Wind Speed (mph)		Basins Surveyed
		Start	End	Start	End	Start	End	Start	End	
6/12/14	BH, CS	1100	1330	81	83	30	0	3	1	Devil Canyon Dam (Basin 1), Devil Basin 2, Devil Basin 3, Wiggins Basin 1
6/16/14	BH, KV	0700	1405	63	82	0-3	3-5	40	15	Little Mountain Dam, MacQuiddy Basin 4 (1-4 combined), Brush Canyon Basin, Twin Creek Spreading Grounds, Harrison Basin, Daley Basin, Little Sand Canyon Basin, Sand Canyon Basin

BH=Brad Haley, CS=Cara Snellen, KV=Katherine Vienne

4.2.5 Site Characteristics

The characteristics of each facility within Zone 2 are discussed separately below. Representative photographs of each facility are included in Appendix B.

Wiggins Basin

Wiggins Basin is partially developed with native habitat situated throughout most of the basin, except within the concrete-lined portion of the channel and along roads. A strip of riparian vegetation consisting of mulefat is present at the western end of the basin. Riversidean sage scrub is present on the slope south of the channel and Riversidean alluvial fan sage scrub is present throughout the remainder of Wiggins Basin. All habitats have varying levels of disturbance. Several roads run through the basin, including both paved and dirt roads. The land to the north of Wiggins Basin is Riversidean alluvial fan sage scrub while the remainder of the basin is surrounded by residential development. The channel, which runs east to west through the basin, becomes lined in concrete as it exits the basin to the southwest.

Wiggins Basin is located partially within designated critical habitat for SBKR.

Devil Canyon Dam

Devil Canyon Dam is partially developed with native habitat situated in strips throughout the dam transected by roads. Strips of riparian vegetation and Rumex marsh are located in the center of the dam with Riversidean alluvial fan sage scrub located around the edges and between the other vegetation communities. All habitats have varying levels of disturbance. Several dirt and gravel roads run through the dam. Devil Basins #2 and #3 are located to the north, Riversidean alluvial fan sage scrub is located to the south, a channel runs north to south along the western edge, and a percolation basin is located to the east of Devil Canyon Dam.

Devil Canyon Dam is located entirely within designated critical habitat for SBKR.

Devil Basins #2 and #3

Devil Basins #2 and #3 are partially disturbed with native habitat situated in patches in Devil Basin #2 and in larger blocks in Devil Basin #3. Devil Basin #2 contains sparse patches of disturbed Riversidean alluvial fan sage scrub in the south. Devil Basin #3 contains a strip of riparian vegetation in the south and Riversidean alluvial fan sage scrub in strips throughout much of the remainder of the basin, except along access roads. A small amount of Riversidean sage scrub also occurs within Devil's Basin #3. All habitats have varying levels of disturbance. Several dirt and gravel roads run through both basins. Devil Canyon Dam is located to the south, Riversidean alluvial fan sage scrub is located to the north, a channel runs north to south along the western edge, and a percolation basin is located to the east of Devil Canyon Dam.

Devil Basins #2 and #3 are located entirely within designated critical habitat for SBKR.

Little Mountain Dam

Little Mountain Dam is mostly disturbed with small portions of native habitat in the east and west. A small patch of Riversidean sage scrub is located in the east and a small patch of riparian habitat is located in the west. Both habitats have varying levels of disturbance. The

remainder of the dam is disturbed or developed with a channel entering the site from the east and exiting in the west. Little Mountain Dam is surrounded on all sides by residential development.

Little Mountain Dam is not located within any designated critical habitat.

MacQuiddy Basin #1-4

MacQuiddy Basin is mostly disturbed with a small stand of eucalyptus trees in the northwest corner. A small patch of partially disturbed riparian habitat consisting of mulefat is located in the north. The remainder of the basin is disturbed or developed with a channel entering the site from the north and exiting in the south. Dirt roads run along the borders of the channel. MacQuiddy Basin is surrounded on all sides by residential development.

MacQuiddy Basin is not located within any designated critical habitat.

Brush Canyon Basin

Brush Canyon Basin is partially disturbed with native habitat located in the north. Areas of Riversidean sage scrub and riparian habitat are located adjacent to one another in the northern portion of the basin. Both habitats have varying levels of disturbance. The remainder of the basin is disturbed or developed with a stand of eucalyptus trees in the northwest corner. Several dirt roads run throughout the basin. A channel runs through the basin exits the southwest corner. Brush Canyon Basin is surrounded by Riversidean sage scrub to the north and residential developments to the west, south, and east.

Brush Canyon Basin is not located within any designated critical habitat.

Twin Creek Spreading Grounds

Twin Creek Spreading Grounds is mostly disturbed with small portions of native habitat concentrated in the north. Small strips of Riversidean alluvial fan sage scrub are present throughout the spreading grounds along with two strips of riparian vegetation in the north. Both habitats have varying levels of disturbance. The remainder of the spreading grounds is a series of channels and depressions surrounded by dirt roads. The main channel is unlined and runs north to south through the spreading grounds. Twin Creek Spreading Grounds is surrounded by residential development.

Twin Creek Spreading Grounds is not located within any designated critical habitat.

Harrison Basin

Harrison Basin is partially disturbed with large areas of native habitat. A large strip of riparian habitat runs through the center of the basin with Riversidean alluvial fan sage scrub surrounding the riparian area. Both habitats have varying levels of disturbance. Eucalyptus and palm trees are present in the northern portion of the basin. A concrete-lined channel runs along

the western edge from north to south. Several dirt access roads run through the basin. Harrison Basin is surrounded by residential development.

Harrison Basin is not located within any designated critical habitat.

Daley Basin

Daley Basin is partially disturbed with areas of native habitat around the edges of the basin. Riversidean alluvial fan sage scrub is located in the northern corners of the basin with Riversidean sage scrub located primarily in the southwestern corner but also adjacent to Riversidean alluvial fan sage scrub in the north. Both habitats have varying levels of disturbance. Stands of eucalyptus trees are present in the northern corners of the basin. Two channels enter the basin from the northern corners, collect in the center of the basin, and exit from the southwestern corner. Several dirt roads are present in the basin. Daley Basin is surrounded by disturbed Riversidean alluvial fan sage scrub and residential development.

Daley Basin is not located within any designated critical habitat.

Little Sand Canyon Basin

Little Sand Canyon Basin is mostly disturbed with areas of native habitat in the north. A small strip of riparian habitat consisting of sycamores is present in the northeastern corner of the site and a strip of Riversidean sage scrub is present in the northwestern corner. Both habitats have varying levels of disturbance. The remainder of the basin is disturbed with two channels running north to south along with several access roads. Little Sand Canyon Basin is surrounded by residential development and disturbed Riversidean sage scrub.

Little Sand Canyon Basin is not located within any designated critical habitat.

Sand Canyon Basin

Sand Canyon Basin is mostly disturbed with strips of native habitat located along the eastern edge. Several small strips of disturbed riparian habitat with Fremont cottonwood are located along the eastern edge. The remainder of the basin consists of the graded channel and access roads. The channel enters the basin from the north and exits as a concrete-lined channel to the south. Sand Canyon Basin is surrounded by scrub oak woodland.

Sand Canyon Basin is not located within any designated critical habitat.

4.2.6 *Vegetation Communities*

Five native vegetation communities were mapped in the Zone 2 facilities: RAFSS, Riparian, Mule fat scrub, RSS, Rumex marsh, and Southern California black walnut. One land cover type (disturbed and developed) was present at all of the Zone 2 facilities (Figure 4.6). The plant species observed within these communities consist mainly of native scrub and chaparral species, as well as non-native weedy herbaceous species.

As part of the vegetation mapping, ECORP recorded all plant species present within each community during the biological reconnaissance survey. Because the survey was conducted outside of the blooming period for most native plants, some plant species may have not been detected during the survey. Accordingly, there may actually be more plants present in the facilities than are listed in the plant compendium (Appendix C). Descriptions of the vegetation communities and land cover types, if not already described, that were mapped during the biological reconnaissance survey are included below.

RAFSS, RSS, Mule fat scrub, and Riparian have already been described in Section 4.1.6. RAFSS and Riparian were found to occur in nearly all of the Zone 2 facilities. RSS was only found to occur in three of the facilities, Brush, Daley, and Little Sand Canyon Basins in small quantities.

Rumex marsh

Devil Canyon Dam #1 was the only basin found to contain Rumex marsh. Willow dock (*Rumex salicifolius*) is a subset of the riparian vegetation community where willow dock is the only species present in an area. Rumex marsh is found in many different plant communities, always in wetland-riparian areas. A narrow strip of rumex marsh totaling just over one acre was located within Devil Canyon Dam (Basin 1).

Southern Sycamore Alder Riparian Woodland

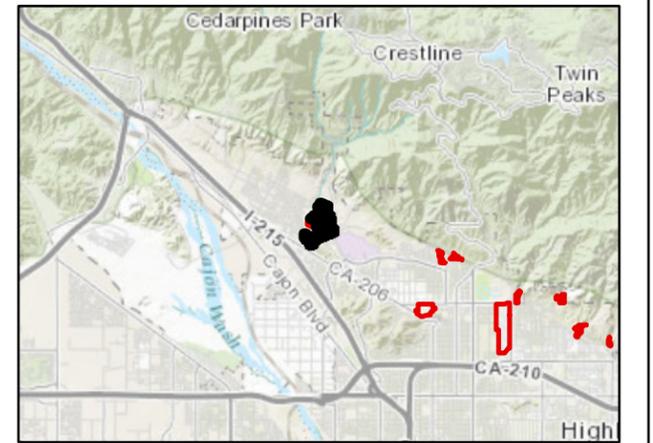
Southern sycamore alder riparian woodland is a vegetation community with California sycamore (*Platanus racemosa*) as a dominant or co-dominant in the tree canopy. This woodland can be found in gullies, intermittent streams, springs, seeps, stream banks, and floodplain-adjacent terraces that are subject to high-intensity flooding (Holland 1986). California sycamore is a fast-growing deciduous tree that can reach heights of 25 meters. Within the Southern sycamore alder riparian woodland, this species occurs alongside white alder, Southern California walnut, Fremont cottonwood, oaks, willows, and California bay to create an open to continuous tree canopy. The shrub layer is open to continuous, dominated by California blackberry (*Rubus ursinus*) and poison oak (*Toxicodendron diversilobum*). The sparse herbaceous layer often consists of grassy species. Sawyer *et al.* (2009) classifies this community as California sycamore woodland (*Platanus racemosa* woodland alliance). Based on the biological reconnaissance survey, this community does not occur within the BSA of the Sand Canyon Basin. The notes on this community occurrence stated that the community may not extend to the end of the Sand Canyon, which is where the BSA is located (CNDDDB). Oak trees, Fremont cottonwoods, and a Southern California walnut tree were observed on the eastern edge of the BSA.

The disturbed land cover type has been previously described in Section 4.1.6. The occurrence of the disturbed or developed areas in the Zone 2 facilities is depicted in Figure 4.6.

Location: N:\2014\2014-085 SB FLOOD Project\MAPS\Vegetation\FLOOD_Veg_v2.mxd (MAG:mguidry 6/11/2015)



Figure 4.6.
Vegetation Communities
Devil Canyon Dam (#1), Devil Basin
#2 and #3, and Wiggins Basin #1

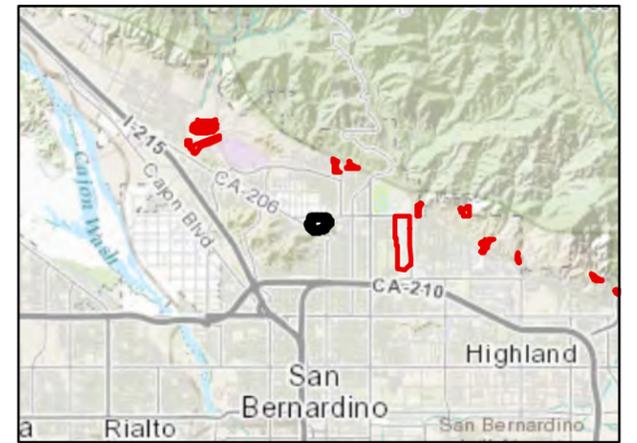


Location: N:\2014\2014-085 SB FLOD Project\MAPS\Vegetation\FLOD_Veg_v2.mxd (MAG) mgudrey 3/9/2015



Figure 4.6.
Vegetation Communities
Little Mountain Dam

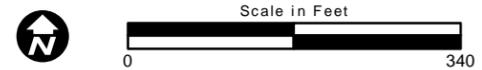
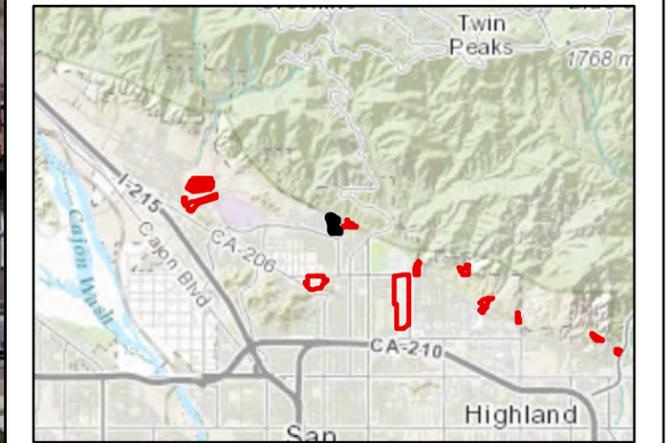
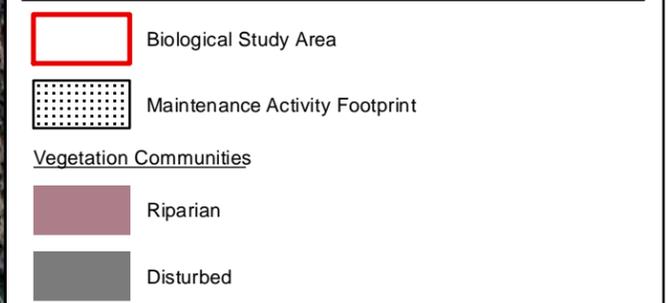
-  Biological Study Area
 -  Maintenance Activity Footprint
- Vegetation Communities
-  Riversidean Sage Scrub
 -  Riparian
 -  Disturbed



Location: N:\2014\2014-085 SB FLOOD Project\MAPS\Vegetation\FLOOD_Veg_v2.mxd (MAG)mguidry 3/9/2015



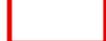
Figure 4.6.
Vegetation Communities
MacQuiddy Basin #4 (#1-4 combined)

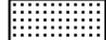


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Figure 4.6.
Vegetation Communities
Brush Canyon Basin

 Biological Study Area

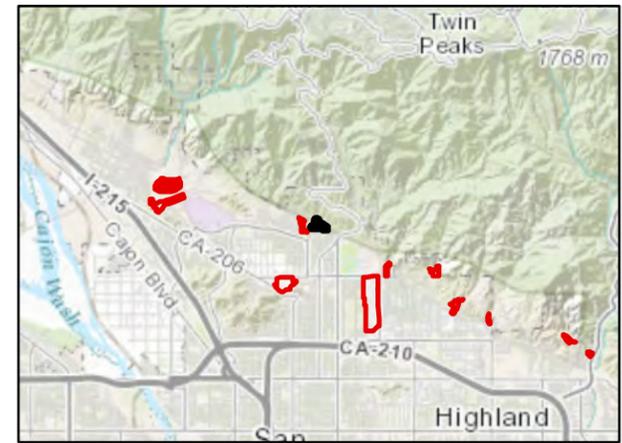
 Maintenance Activity Footprint

Vegetation Communities

 Riversidean Sage Scrub

 Riparian

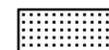
 Disturbed

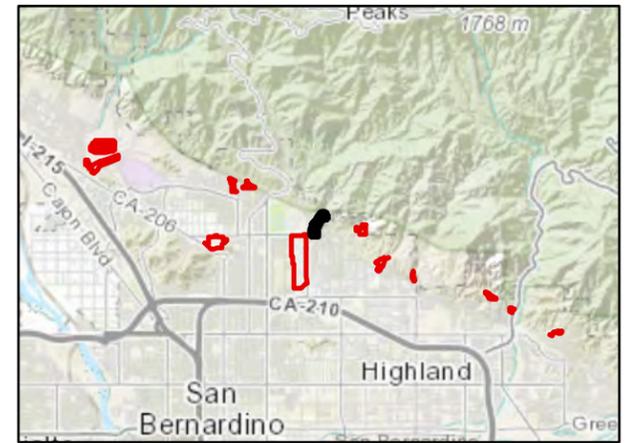


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Figure 4.6.
Vegetation Communities
Harrison Basin

-  Biological Study Area
-  Maintenance Activity Footprint
- Vegetation Communities**
 -  Riversidean Alluvial Fan Sage Scrub
 -  Riparian
 -  Disturbed



Location: N:\2014\2014-085 SB FLOOD Project\MAPS\Vegetation\FLOOD_Veg_v2.mxd (MAG)mguidry_3/9/2015

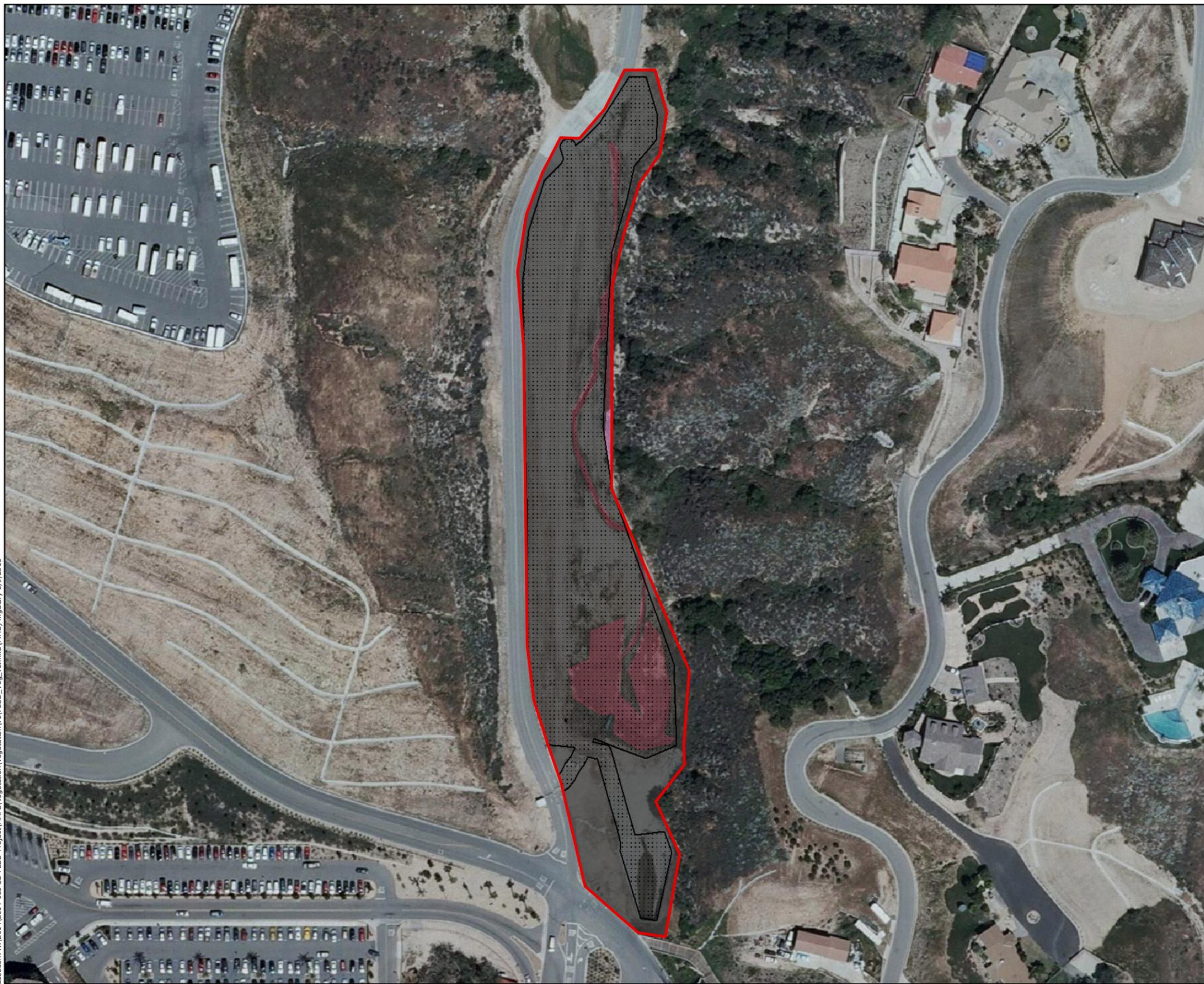
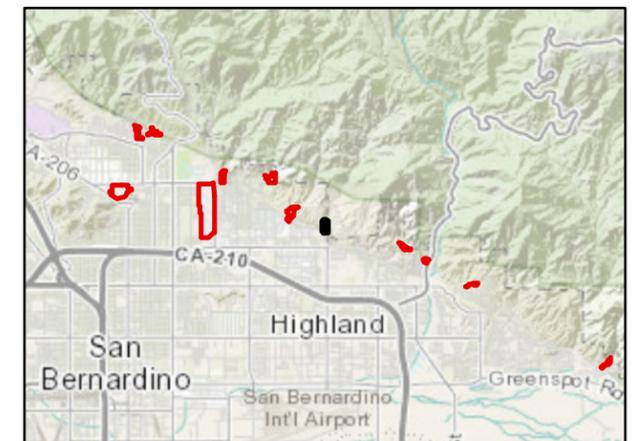
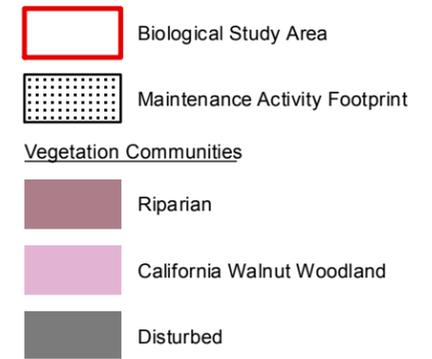


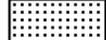
Figure 4.6.
Vegetation Communities
Sand Canyon Basin

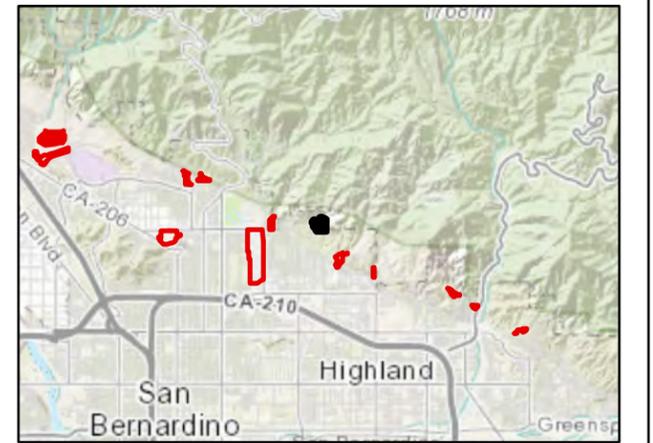


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Figure 4.6.
Vegetation Communities
Daley Basin

-  Biological Study Area
 -  Maintenance Activity Footprint
- Vegetation Communities
-  Riversidean Alluvial Fan Sage Scrub
 -  Riversidean Sage Scrub
 -  Disturbed

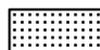


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Figure 4.6.
Vegetation Communities
Little Sand Canyon Basin

 Biological Study Area

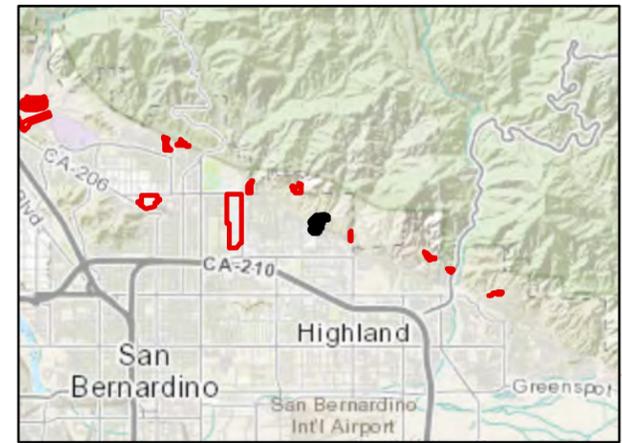
 Maintenance Activity Footprint

Vegetation Communities

 Riversidean Sage Scrub

 Riparian

 Disturbed

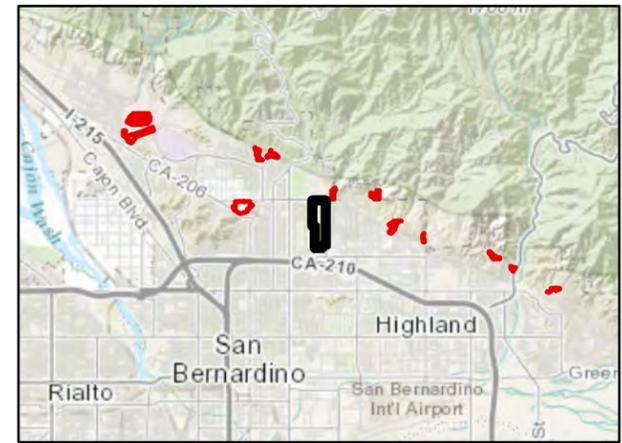


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Figure 4.6.
Vegetation Communities
Twin Creek Spreading Grounds

-  Biological Study Area
 -  Maintenance Activity Footprint
- Vegetation Communities
-  Riversidean Alluvial Fan Sage Scrub
 -  Riparian
 -  Disturbed



4.2.7 General Plants

General plant species observed within Zone 2 facilities were similar to those described in Section 4.1.7. A complete list of all plant species observed within Zone 2 during the biological reconnaissance survey is included in Appendix C.

4.2.8 General Wildlife

General wildlife species observed and expected to occur within the Zone 2 facilities were similar to those described in Section 4.1.8. A complete list of all wildlife species observed within Zone 2 during the biological reconnaissance survey is included in Appendix D.

4.2.9 Raptors and Migratory Birds

The shrubs and mature trees within the Zone 2 facilities provide suitable nesting habitat for a variety of migratory small passerines and songbirds. Many of the facilities, including Little Mountain Dam, MacQuiddy Basin, Brush Canyon, Harrison Basin, Daley Basin, Little Sand Canyon Basin, and Sand Canyon Basin provide the larger trees necessary for raptors to nest in. Though nesting opportunities for raptors are fairly rare within each facility, abundant populations of small mammals, reptiles, and songbirds provide an excellent prey base for foraging raptors. Raptors typically breed between February and August while non-raptors generally nest between March and August.

4.2.10 Wildlife Movement Corridors and Linkages

The wildlife movement corridors and linkages within the Zone 2 facilities are similar to those discussed in Section 4.1.10.

4.3 Zone 3

4.3.1 Literature Search

Vegetation Communities

RAFSS has been previously documented in the Wilson Creek Basin #1. The information on this vegetation community is presented in Section 4.1.6 of this report. Southern cottonwood willow riparian forest, also considered a sensitive habitat by CDFW and CNPS, has been previously documented in the three Oak Glen Creek Basins within Zone 3 (CNDDDB). Figure 4.7 shows the locations of sensitive habitats identified in the literature search in relation to the Zone 3 facilities. More information on this community is presented in Section 4.3.6 of this report.

Plant Species Evaluated

The Zone 3 literature search documented 74 special-status plant species in the vicinity of the eight facilities in Zone 3 (Figure 4.7; Table 4.11). Table 4.1 provides the federal and state legal status, CNPS rank, flowering period, elevation range, and general habitat characteristics of each species in Table 4.11.

The biological reconnaissance survey did not include a focused survey for rare plants and the timing of the surveys was not ideal for detecting the presence of all of the sensitive plants listed below. However, the habitat associated with each species was evaluated and used to determine their specific potential for occurrence within the habitat types in the Project site. Twenty-eight of these plant species were determined to have a potential to occur in one or more of the eight facilities within Zone 3 (Table 4.11). Included in this list was the federally- and state-listed (endangered) Nevin's barberry, slender-horned spineflower, Santa Ana River woolly-star, the federally-listed (threatened) and state-listed (endangered) thread-leaved brodiaea, and the state-listed (endangered) Mojave tarplant (*Deinandra mohavensis*). The habitat characteristics and specific occurrence information with regard to each facility for each of the federally- or state-listed species will be discussed separately below. The remaining 46 species were presumed to be absent from the facilities, mostly due to elevation factors.

Nevin's barberry

The habitat requirements for this species are described in Section 4.1.1.

Suitable habitat for Nevin's barberry is present in the four basins located in the western portion of Zone 3 (Small Canyon Dam, Dynamite Basin, Cook Canyon Basin, and Oak Creek Basin). Nevin's barberry has also been documented approximately eight miles to the southwest. However, the eastern basins, Wilson Creek Basin and the three Oak Glen Creek Basins, are outside the elevation range for this species. However, this species would have likely been observed during the biological reconnaissance survey if it was present.

Slender-horned spineflower

The habitat requirements for this species are described in Section 4.1.1.

Suitable habitat for slender-horned spineflower is present in the four basins located in the western portion of Zone 3 (Small Canyon Dam, Dynamite Basin, Cook Canyon Basin, and Oak Creek Basin). Several known occurrence of this species have been documented in the center of Zone 3 and range from one to three miles away from these four basins. The eastern basins, Wilson Creek Basin and the three Oak Glen Creek Basins, are outside the elevation range for this species.

Santa Ana River woolly-star

The habitat requirements for this species are described in Section 4.1.1.

Each of the Zone 3 basins is located within six miles of a known occurrence. Suitable habitat for Santa Ana River woolly-star is present in the four basins located in the western portion of Zone 3 (Small Canyon Dam, Dynamite Basin, Cook Canyon Basin, and Oak Creek Basin). Several known occurrences of this species have been documented southwest of the four western basins. A known occurrence is located approximately one mile from Oak Creek Basin. Small Canyon Dam is the furthest suitable Zone 3 basin at 2.2 miles away. The eastern basins, Wilson

Creek Basin and the three Oak Glen Creek Basins, are outside the elevation range for this species.

Thread-leaved brodiaea

The habitat requirements for this species are described in Section 4.1.1.

Suitable habitat for thread-leaved brodiaea is present in all of the facilities in Zone 3. Thread-leaved brodiaea has been documented in Arrowhead Hot Springs approximately 4.5 miles northwest of Small Canyon Dam, the westernmost of the Zone 3 basins. However, Wilson Creek Basin #1 and the Oak Glen Creek Basins are more than 10 miles from this documented occurrence.

Mojave Tarplant

Mojave tarplant (*Deinandra mohavensis*) is a California endemic that is state-listed as endangered and is a CNPS CRPR 1B.3 species. Mojave tarplant is an annual herb that grows in mesic soil within chaparral, coastal sage scrub, and riparian scrub communities at elevations ranging from 640 to 1600 meters (2,099 to 5,249 feet) above msl. The blooming period for this species ranges from May to January (CNPS 2015).

Suitable habitat for Mojave tarplant is present in Wilson Creek Basin #1 and the Oak Glen Creek Basins, all located in the eastern portion of Zone 3. However, the nearest documented occurrence of this species is located approximately 13 miles southeast of Oak Glen Creek Basin #3, the easternmost Zone 3 basins. Furthermore, the four western basins are outside the elevation range for this species (Small Canyon Dam, Dynamite Basin, Cook Canyon Basin, and Oak Creek Basin).

Table 4.11 - Special-Status Plant Species Potential for Occurrence – Zone 3

Basin Name / Common Name	Small Canyon Dam	Dynamite Basin	Cook Canyon Basin	Oak Creek Basin	Wilson Creek Basin #1	Oak Glen Creek Basin #1	Oak Glen Creek Basin #2	Oak Glen Creek Basin #3
chaparral sand-verbena	P	P	P	P	P	P	P	P
Parish's oxytheca	N	N	N	N	N	N	N	N
Yucaipa onion	N	N	N	N	L	L	L	L
rock sandwort	N	N	N	N	N	N	N	N
San Diego sagewort	P	P	P	P	P	P	P	P
Borrego milk-vetch	N	N	N	N	N	N	N	N
Coachella Valley milk-vetch	N	N	N	N	U	U	U	U
Jaeger's bush milk-vetch	P	P	P	P	P	P	P	P
San Jacinto Valley crownscale	N	N	N	N	N	N	N	N
Davidson's saltscale	N	N	N	N	N	N	N	N
Nevin's barberry	P	P	P	P	N	N	N	N
scalloped moonwort	N	N	N	N	N	N	N	N
thread-leaved brodiaea	P	P	P	P	P	P	P	P
Palmer's mariposa lily	N	N	N	N	N	N	N	N
Plummer's mariposa lily	L	L	L	L	L	L	L	L
San Bernardino Mountains owl's-clover	N	N	N	N	N	N	N	N
Heckard's paintbrush	N	N	N	N	N	N	N	N
Payson's jewel-flower	P	P	P	P	P	P	P	P
smooth tarplant	U	U	U	U	N	N	N	N
Peninsular spineflower	P	P	P	P	P	P	P	P
Parry's spineflower	L	L	L	L	L	L	L	L
white-bracted spineflower	P	P	P	P	L	L	L	L
small-flowered morning-glory	P	P	P	P	N	N	N	N
Peruvian dodder	N	N	N	N	N	N	N	N
Mojave tarplant	N	N	N	N	P	P	P	P
Colorado Desert larkspur	N	N	N	N	P	P	P	P
Mt. Pinos larkspur	N	N	N	N	N	N	N	N
slender-horned spineflower	L	L	L	L	N	N	N	N
Santa Ana River woolly-star	L	L	L	L	N	N	N	N
southern alpine buckwheat	N	N	N	N	N	N	N	N
southern Sierra woolly sunflower	N	N	N	N	N	N	N	N
hot springs fimbristylis	U	U	U	U	U	U	U	U
Johnston's bedstraw	N	N	N	N	N	N	N	N
San Bernardino gilia	N	N	N	N	N	N	N	N
Los Angeles sunflower	U	U	U	U	U	U	U	U
urn-flowered alumroot	N	N	N	N	N	N	N	N
Parish's alumroot	N	N	N	N	N	N	N	N
mesa horkelia	P	P	P	P	N	N	N	N

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Basin Name / Common Name	Small Canyon Dam	Dynamite Basin	Cook Canyon Basin	Oak Creek Basin	Wilson Creek Basin #1	Oak Glen Creek Basin #1	Oak Glen Creek Basin #2	Oak Glen Creek Basin #3
Parry's sunflower	N	N	N	N	N	N	N	N
pygmy hulsea	N	N	N	N	N	N	N	N
California satintail	L	L	L	L	P	P	P	P
silver-haired ivesia	N	N	N	N	N	N	N	N
Southern California black walnut	L	L	L	L	L	L	L	L
Duran's rush	N	N	N	N	N	N	N	N
Coulter's goldfields	U	U	U	U	U	U	U	U
Robinson's pepper-grass	P	P	P	P	P	P	P	P
ocellated Humboldt lily	L	L	L	L	L	L	L	L
lemon lily	N	N	N	N	N	N	N	N
Parish's bush-mallow	N	N	N	N	N	N	N	N
spiny-hair blazing star	U	U	U	U	U	U	U	U
Johnston's monkeyflower	N	N	N	N	N	N	N	N
Hall's monardella	N	N	N	N	L	L	L	L
California muhly	L	L	L	L	P	P	P	P
crowned muilla	N	N	N	N	U	U	U	U
mud nama	N	N	N	N	N	N	N	N
rock-loving oxytrope	N	N	N	N	N	N	N	N
San Bernardino grass-of-Parnassus	N	N	N	N	N	N	N	N
Parish's yampah	N	N	N	N	N	N	N	N
Mojave phacelia	N	N	N	N	N	N	N	N
woolly chaparral-pea	P	P	P	P	P	P	P	P
narrow-petaled rein orchid	U	U	U	U	U	U	U	U
Parish's gooseberry	N	N	N	N	N	N	N	N
Parish's rupertia	N	N	N	N	P	P	P	P
black bog-rush	U	U	U	U	U	U	U	U
Davidson's stonecrop	N	N	N	N	N	N	N	N
San Gabriel ragwort	P	P	P	P	P	P	P	P
Parish's checkerbloom	N	N	N	N	N	N	N	N
Bear Valley checkerbloom	N	N	N	N	N	N	N	N
chickweed oxytheca	N	N	N	N	N	N	N	N
Laguna Mountains jewel-flower	N	N	N	N	L	L	L	L
southern jewel-flower	N	N	N	N	N	N	N	N
San Bernardino aster	P	P	P	P	P	P	P	P
Sonoran maiden fern	U	U	U	U	N	N	N	N
Wright's trichocoronis	N	N	N	N	N	N	N	N

Potential for Occurrence Information: **N:** Outside known distribution/range of the species, **U:** Occurrence of the species is unlikely based on lack of habitat, **P:** Occurrence of the species is possible; suitable habitat is present, **L:** Occurrence of the species is likely; suitable habitat is present and the species is known from nearby locations, **Y:** Species is known to occur and/or was present during the survey, **C:** Critical habitat for this species has been mapped in the area

Sources: California Natural Diversity Data Base (CNDDB; CDFW 2014a) and California Native Plant Society Electronic Inventory (CNPSEI; CNPS 2014) Redlands, Harrison Mountain, and Yucaipa 7.5 minute USGS quads

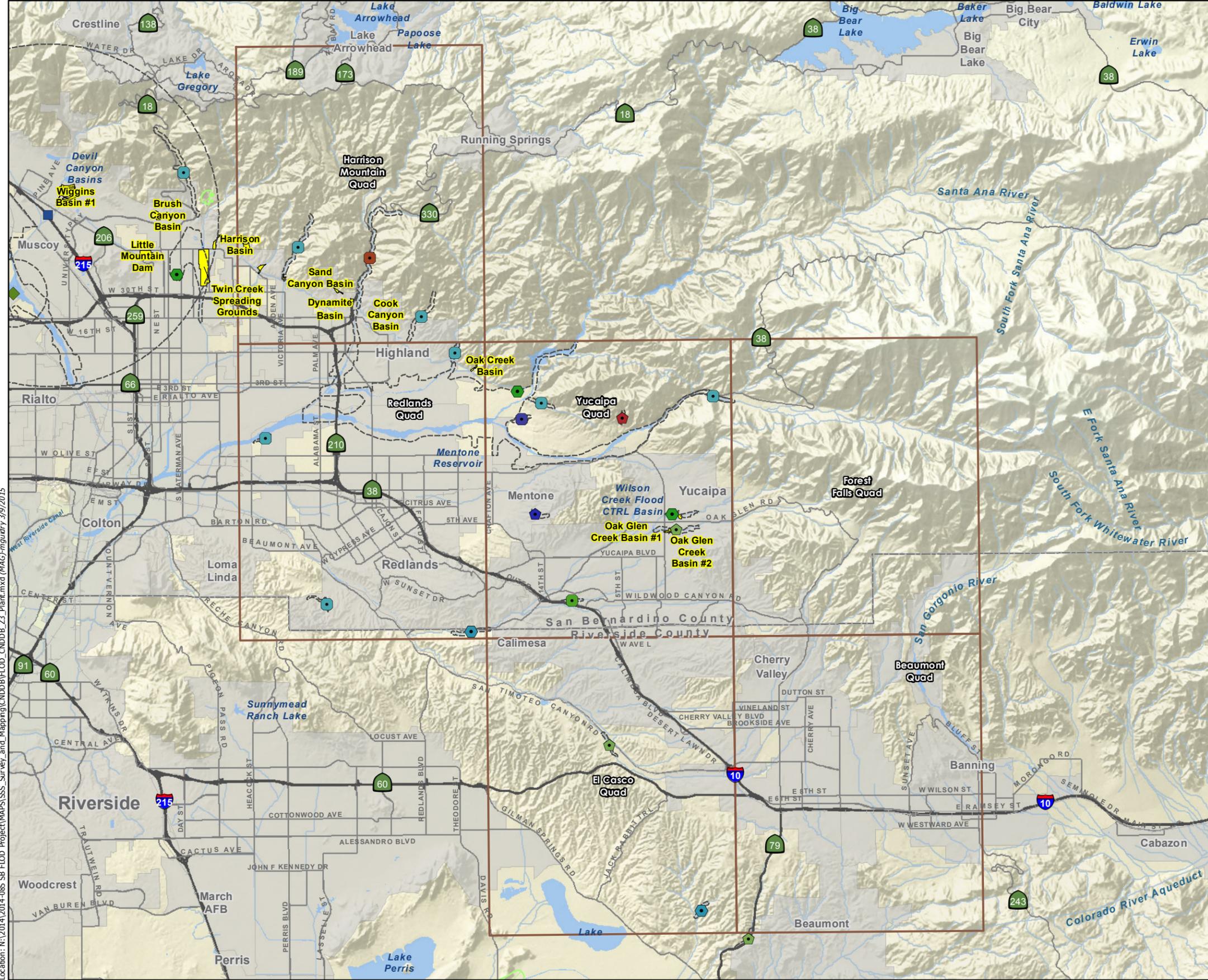


Figure 4.7. CNDDB Occurrences of Special-Status Plant Species and Vegetation Communities Zone 3

Distance From Project
 USGS Quadrangle

Boundaries
 Biological Study Area ¹
 CNDDB Polygon Extent

- CNDDB Occurrences ²**
- Singlehoort Burrobrush
 - Parish's Desert-thorn
 - Southern Riparian Scrub
 - Southern Riparian Forest
 - Southern Mixed Riparian Forest
 - Southern Sycamore Alder Riparian Woodland
 - Riversidian Alluvial Fan Sage Scrub
 - Southern Coast Live Oak Riparian Forest
 - Southern Cottonwood Willow Riparian Forest
 - Southern Willow Scrub
 - Canyon Live Oak Ravine Forest

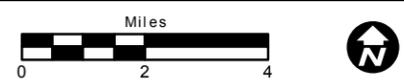
Critical Habitat ³
 Thread Leaved Brodiaea

This map may include multiple species' occurrences at each location, some of which may not be visible on this graphic. The CNDDB occurrences shown may not reflect the actual location of the occurrence.

¹Source: San Bernardino County Flood District
²CDFW California Natural Diversity Database (CNDDDB), April 2014 Update (GIS Shapefile)
³US Fish and Wildlife Service
 CNDDB Occurrences Located on USGS 7.5' Quadrangles:



Location: N:\2014\2014-085 SB FLOOD Project\MAPS\SSS_Survey_and_Mapping\CNDDB\FLOOD_CNDDB_23_Plant.mxd (MAG:mgudry 3/9/2015)



Wildlife Species Evaluated

Of the 54 wildlife species identified in Table 4.3, 23 are outside the known distribution/range of the species, or their occurrence is unlikely based on lack of habitat. The biological reconnaissance survey did not include a focused survey for special-status wildlife. However, the habitat conditions within each facility, species requirements, and the results of any focused surveys, were used to determine their specific potential for occurrence within each facility. Thirty-one species were determined to have a potential to occur in one or more of the eight facilities within Zone 3, two of which are federal- or state-listed species (Table 4.12). Figure 4.8 shows the locations of special-status wildlife species occurrences identified in the literature search in relation to the Zone 3 facilities. These include the federally-listed (endangered) lesser long-nosed bat and the state-listed (threatened) Swainson's hawk. The habitat characteristics and specific occurrence information with regard to each facility for each of the federally- or state-listed species will be discussed separately below.

Amphibians and Reptiles

The western spadefoot toad, coast horned lizard, orange-throated whiptail, silvery legless lizard, two-striped garter snake, and coast patch-nosed snake are SSC with habitat in more than one facility within Zone 3. These species are all of lower levels of sensitivity and abundant habitat remains within areas adjacent to the site.

Birds

Swainson's Hawk

The habitat requirements for this species are described in Section 4.1.1.

It is likely this species will fly over all of the facilities in Zone 3 during its migration period. It is unlikely that this species will nest at any of the Zone 3 facilities.

Burrowing Owl

The habitat requirements for this species are described in Section 4.1.1.

Suitable burrows created by small mammals were observed during the biological reconnaissance survey at Small Canyon Dam, Cook Canyon, Oak Creek Basin, and Wilson Creek Basin #1. The Oak Glen Creek Basins #1-3 are unlikely to support burrowing owl because of the well-maintained graded slopes do not have suitable burrows and the soils are very compacted. The closest record of burrowing owl was approximately four miles southwest of the Small Canyon Dam and Dynamite Basin (CNDDDB). Based on the distribution of the burrowing owl, the vegetation communities, and habitat characteristics within and adjacent to the facilities, the potential for occurrence of this species was assessed as possible at these facilities.

Other Birds

Several other bird SSC have the potential to occur in the Zone 3 facilities. These include Cooper's hawk, northern harrier, white-tailed kite, southern California rufous-crowned sparrow,

California horned lark, loggerhead shrike, yellow warbler, yellow breasted-chat, and Bell's sage sparrow. Tri-colored blackbirds (*Agelaius tricolor*) were given a potential to occur at the Small Canyon Dam and Dynamite Basin and the white-faced ibis was given a potential to occur at Dynamite Basin. Their specific potential to occur within each of the facilities is provided in Table 4.12.

Suitable habitat for migratory birds and raptors protected under the MBTA and FGC was found within and immediately adjacent to each facility.

Mammals

Lesser Long-Nosed Bat

The habitat requirements for this species are described in Section 4.1.1.

Although there are no old mines or caves at any of the Zone 3 facilities, this species was given a potential to occur at each of them because they may forage in the facilities and may occasionally day roost in the concrete vent pipes, rip-rap, or other well-ventilated structure within the facilities.

Other mammals

Several other sensitive mammalian California species (SSCs) have the potential to occur at these Zone 3 facilities or in adjacent habitats. These include the Los Angeles pocket mouse, northwestern San Diego pocket mouse, Bryant's woodrat, Dulzura pocket mouse, pallid San Diego pocket mouse, southern grasshopper mouse, American badger, San Diego black-tailed jackrabbit, pocketed free-tailed bat, western yellow bat, and western mastiff bat. These species are all of lower levels of sensitivity and abundant habitat remains within areas adjacent to the facilities.

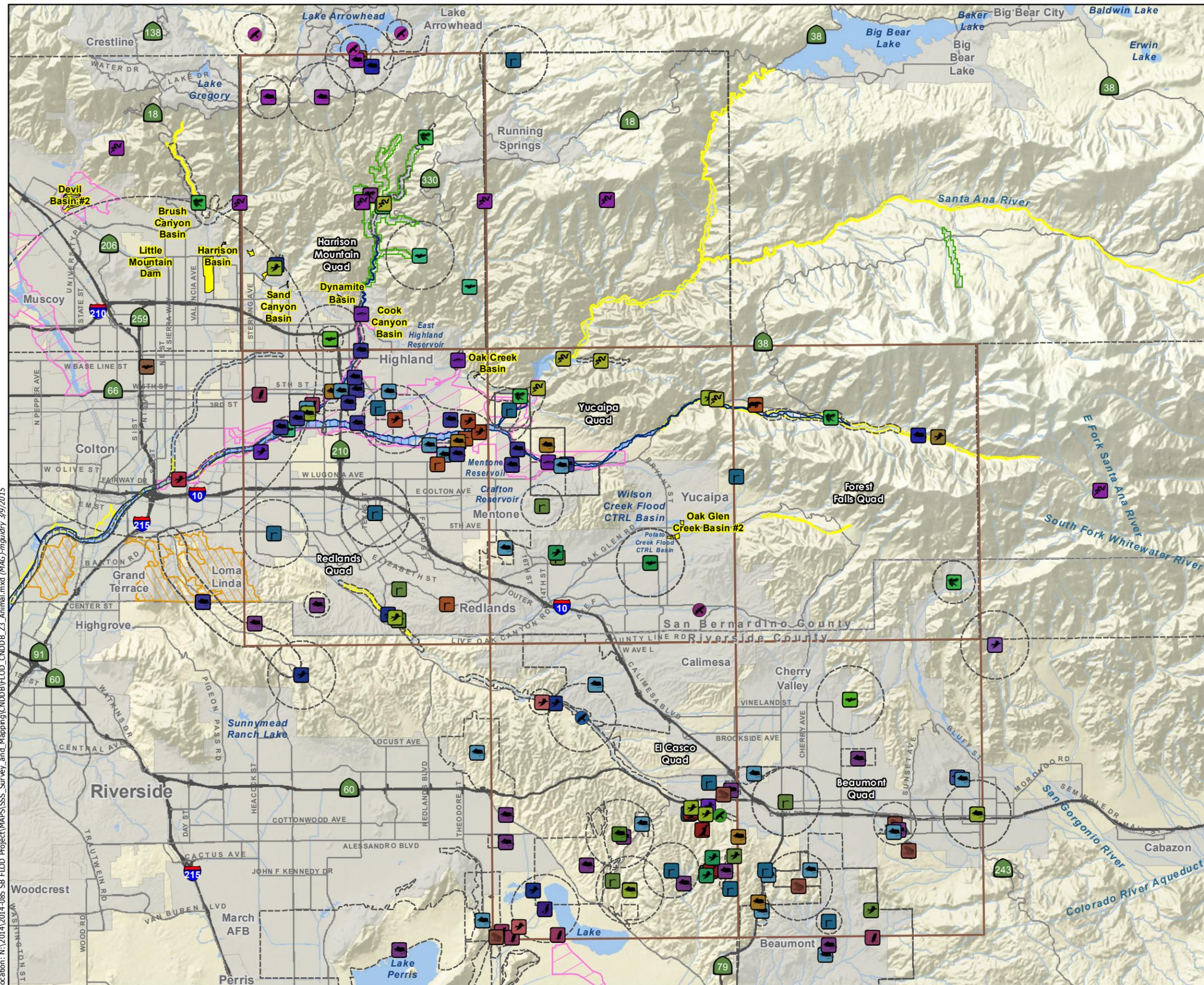
Table 4.12 - Special-Status Wildlife Species Potential for Occurrence – Zone 3

Basin Name / Common Name	Small Canyon Dam	Dynamite Basin	Cook Canyon Basin	Oak Creek Basin	Wilson Creek Basin #1	Oak Glen Creek Basin #1	Oak Glen Creek Basin #2	Oak Glen Creek Basin #3
Delhi Sands flower-loving fly	U	U	U	U	U	U	U	U
arroyo chub	U	U	U	U	U	U	U	U
Santa Ana speckled dace	U	U	U	U	U	U	U	U
Santa Ana Sucker	U	U	U	U	U	U	U	U
arroyo toad	U	U	U	U	U	U	U	U
California red-legged frog	U	U	U	U	U	U	U	U
mountain yellow-legged frog	U	U	U	U	U	U	U	U
Coast Range newt	U	U	U	U	U	U	U	U
western spadefoot toad	P	P	P	P	P	P	P	P
coast horned lizard	P	L	L	L	L	L	L	L
orange-throated whiptail	P	P	P	L	L	L	L	L
silvery legless lizard	P	P	P	L	L	L	L	L
southern rubber boa	U	U	U	U	U	U	U	U
California mountain kingsnake (San Bernardino population)	U	U	U	U	U	U	U	U
two-striped garter snake	P	P	P	P	U	U	U	U
Coast patch-nosed snake	P	P	P	P	P	U	U	U
Cooper's hawk	P	P	P	P	P	P	P	P
golden eagle (nesting)	U	U	U	U	U	U	U	U
Swainson's hawk	P	P	P	P	P	P	P	P
northern harrier	P	P	P	P	P	P	P	P
white-tailed kite (nesting)	U	P	U	P	U	U	P	U
bald eagle	U	U	U	U	U	U	U	U
California horned lark	P	P	P	P	P	P	P	P
purple martin	U	U	U	U	U	U	U	U
black swift	U	U	U	U	U	U	U	U
yellow-billed cuckoo (nesting)	U	U	U	U	U	U	U	U
Southern California rufous-crowned sparrow	P	P	P	L	L	L	L	L
Bell's sage sparrow	P	P	P	P	P	P	P	P
tri-colored blackbird (nesting colony)	P	P	U	U	U	U	U	U
loggerhead shrike (nesting)	P	P	P	U	P	U	U	P
yellow warbler	P	P	P	P	U	U	P	U
yellow-breasted chat (nesting)	P	P	P	P	U	U	P	U
burrowing owl (burrow sites)	P	P	P	P	P	U	U	U
coastal California gnatcatcher	U	U	U	U	U	U	U	U

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Basin Name / Common Name	Small Canyon Dam	Dynamite Basin	Cook Canyon Basin	Oak Creek Basin	Wilson Creek Basin #1	Oak Glen Creek Basin #1	Oak Glen Creek Basin #2	Oak Glen Creek Basin #3
white-faced ibis	U	P	U	U	U	U	U	U
southwestern willow flycatcher	U	U	U	U	U	U	U	U
least Bell's vireo	U	U	U	U	U	U	U	U
pallid bat	U	U	U	U	U	U	U	U
western yellow bat	P	P	P	P	P	P	P	P
western mastiff bat	P	P	P	P	P	P	P	P
pocketed free-tailed bat	P	P	P	P	P	P	P	P
lesser long-nosed bat	P	P	P	P	P	P	P	P
San Diego black-tailed jackrabbit	P	P	P	P	P	P	P	P
San Bernardino flying squirrel	U	U	U	U	U	U	U	U
Dulzura pocket mouse	P	P	P	P	P	P	P	P
northwestern San Diego pocket mouse	P	P	P	P	L	L	L	L
pallid San Diego pocket mouse	P	P	P	P	P	P	P	P
San Bernardino kangaroo rat	U	U	U	U	U	U	U	U
Stephens' kangaroo rat	U	U	U	U	U	U	U	U
San Bernardino white-eared pocket mouse	U	U	U	U	U	U	U	U
Los Angeles pocket mouse	P	P	P	L	P	P	P	P
Bryant's (San Diego desert) woodrat	P	P	P	P	P	P	P	P
southern grasshopper mouse	P	P	P	P	P	P	P	P
American badger	P	P	P	P	P	P	P	P
Potential for Occurrence Information: N: Outside known distribution/range of the species, U: Occurrence of the species is unlikely based on lack of habitat, P: Occurrence of the species is possible; suitable habitat is present, L: Occurrence of the species is likely; suitable habitat is present and the species is known from nearby locations, Y: Species is known to occur and/or was present during the survey, C: Critical habitat for this species has been mapped in the area								
Sources: California Natural Diversity Data Base (CNDDB; CDFW 2014a) and California Native Plant Society Electronic Inventory (CNPSEI; CNPS 2014) Harrison Mountain, Redlands, Yucaipa, El Casco, Beaumont, Forest Falls 7.5 minute USGS quads								

Figure 4.8. CNDDB Occurrences of Special-Status Animal Species Zone 3



Distance From Project
 USGS Quadrangle

Boundaries
 Biological Study Area ¹
 CNDDB Polygon Extent

CNDDB Occurrences ²

Fish	Santa Ana Sucker	Purple Martin
Santa Ana Speckled Dace	Swainson's Hawk	Tricolored Blackbird
Amphibians/Reptiles	California Red-legged Frog	Western Yellow-billed Cuckoo
Mountain Yellow-legged Frog	White-faced Ibis	White-tailed Kite
California Mountain Kingsnake (san Bernardino Population)	Yellow Warbler	Yellow-breasted Chat
Two-striped Garter Snake	Mammals	
Orangethroat Whiptail	Dulzura Pocket Mouse	
Southern Rubber Boa	Western Yellow Bat	
Coast Horned Lizard	American Badger	
Silver Legless Lizard	San Bernardino Flying Squirrel	
Western Spadefoot	San Bernardino White-eared Pocket Mouse	
Birds	Southwestern Willow Flycatcher	Lesser Long-nosed Bat
Bald Eagle	Northwestern San Diego Pocket Mouse	
Coastal California Gnatcatcher	Stephens' Kangaroo Rat	
Least Bell's Vireo	Los Angeles Pocket Mouse	
Southern California Rufous-crowned Sparrow	Pocketed Free-tailed Bat	
Black Swift	Southern Grasshopper Mouse	
Burrowing Owl	San Diego Black-tailed Jackrabbit	
California Homed Lark	San Bernardino Kangaroo Rat	
Cooper's Hawk	San Diego Desert Woodrat	
Golden Eagle	Pallid Bat	
Loggerhead Shrike	Western Mastiff Bat	

Critical Habitat

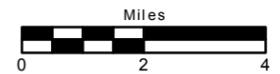
San Bernardino Kangaroo Rat	Southwestern Willow Flycatcher
Mountain Yellow Legged Frog	
Costal California Gnatcatcher	
Santa Ana Sucker	

This map may include multiple species' occurrences at each location, some of which may not be visible on this graphic. The CNDDB occurrences shown may not reflect the actual location of the occurrence.

¹Source: San Bernardino County Flood District
²CDFW California Natural Diversity Database (CNDDB), April 2014 Update (GIS Shapefile)
³US Fish and Wildlife Service
 CNDDB Occurrences Located on USGS 7.5' Quadrangles:



Location: N:\2014\2014-085 SB FLOOD Project\MAPS\SSS_Survey_and_Mapping\CNDDB\FLOOD_CNDDB_23_Animal.mxd (MAG)imgdiry_39/2015



4.3.2 Critical Habitat

None of the facilities in Zone 3 are located within critical habitat.

4.3.3 Soils

Seven different soil series occur within Zone 3 of the BSA (USDA 2014). Cieneba-rock outcrop complex (Cr) and Trigo family – Lithic Xerorthents, warm complex, 50 to 75 percent slopes (DnG) are prominent in the northern and central portions of this Zone of the BSA. Hanford coarse sandy loam with slopes of 9 to 15 percent (HaD) has a larger presence in the northern portion of this Zone, while slopes of 0 to 9 percent (HaC) are more commonly found in the southern portion. Also found primarily in the southern portion of Zone 3 are the Tujunga gravelly loamy sand, 0 to 9 percent slopes (TvC) and Saugus sandy loam, 30 to 50 percent slopes (ShF) soil series. A small area of Greenfield sandy loam, 2 to 9 percent slopes (GtC) and Psamments and fluvents (Ps) is located in the southern area of Zone 3.

Table 4.13 - Soil Types - Zone 3

Redbook	Name	Soil Types	Acres in Biological Study Area
3-204-4A	Oak Creek Basin	CIENEBA-ROCK OUTCROP COMPLEX	2.08
		TRIGO FAMILY-LITHIC XERORTHENTS, WARM COMPLEX, 50 TO 75 PERCENT SLOPES	3.43
3-302-3A	Small Canyon Dam	CIENEBA-ROCK OUTCROP COMPLEX	4.83
		TRIGO FAMILY-LITHIC XERORTHENTS, WARM COMPLEX, 30 TO 50 PERCENT SLOPES	2.47
3-304-4A	Dynamite Basin	CIENEBA-ROCK OUTCROP COMPLEX	3.84
3-305-4A	Cook Canyon Basin	HANFORD COARSE SANDY LOAM, 9 TO 15 PERCENT SLOPES	2.12
		RAMONA SANDY LOAM, 9 TO 15 PERCENT SLOPES	0.42
3-602-4A	Wilson Creek Basin #1	GREENFIELD SANDY LOAM, 2 TO 9 PERCENT SLOPES	0.09
		HANFORD COARSE SANDY LOAM, 2 TO 9 PERCENT SLOPES	0.04
		PSAMMENTS AND FLUVENTS, FREQUENTLY FLOODED	1.07
		TUJUNGA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	5.21
		TUJUNGA LOAMY SAND, 0 TO 5 PERCENT SLOPES	0.09
3-603-4A	Oak Glen Creek Basin #1	HANFORD COARSE SANDY LOAM, 2 TO 9 PERCENT SLOPES	2.63

Redbook	Name	Soil Types	Acres in Biological Study Area
		SAUGUS SANDY LOAM, 30 TO 50 PERCENT SLOPES	1.10
3-603-4B	Oak Glen Creek Basin #2	HANFORD COARSE SANDY LOAM, 2 TO 9 PERCENT SLOPES	5.27
		SAUGUS SANDY LOAM, 30 TO 50 PERCENT SLOPES	2.01
		TUJUNGA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	2.46
3-603-4C	Oak Glen Creek Basin #3	HANFORD COARSE SANDY LOAM, 2 TO 9 PERCENT SLOPES	5.05
		SAUGUS SANDY LOAM, 30 TO 50 PERCENT SLOPES	4.12
		TUJUNGA GRAVELLY LOAMY SAND, 0 TO 9 PERCENT SLOPES	2.16

4.3.4 Field Surveys

ECORP biologists Brad Haley and Katherine Vienne conducted the biological reconnaissance field survey on June 17 and 18, 2014. Summarized below are the results of the survey, including existing conditions, vegetation communities, general plants, general wildlife, raptors and migratory birds, and potential wildlife corridors. Weather conditions during the survey are summarized in Table 4.14. Field datasheets are included in Appendix A.

Table 4.14 - Weather Conditions during the Biological Survey – Zone 3

Date	Surveyor	Time		Temperature (°F)		Cloud Cover (%)		Wind Speed (mph)		Basins Surveyed
		Start	End	Start	End	Start	End	Start	End	
6/17/14	BH, KV	1636	1903	84	74	3-5	3-4	0	0	Oak Creek Basin, Small Canyon Dam, Dynamite Basin, Cook Canyon Basin
6/18/14	BH, KV	0701	1009	58	68	0-1	1-3	0	0	Wilson Creek Basin 1, Oak Glen Creek Basins 1-3
BH=Brad Haley, KV=Katherine Vienne										

4.3.5 Site Characteristics

The characteristics of each facility within Zone 3 are discussed separately below. Representative photographs of each facility are included in Appendix B.

Small Canyon Dam

Small Canyon Dam is mostly disturbed with areas of native habitat surrounding the concrete-lined channel, roads, and other graded areas. A strip of riparian vegetation is present where the channel enters the site in the northwest. A stand of riparian vegetation is also present within the basin, both areas consist of dense cattails. Riversidean sage scrub is present on the slopes surrounding the basin and in the southeast corner. Both habitat types have varying levels of disturbance. A concrete-lined channel runs northwest to southeast through the basin and several dirt access roads are present surrounding the basin. Small Canyon Dam is surrounded to the south by residential development and to the west, north, and east by native habitat.

The Small Canyon Dam Project is located approximately 3,500 feet northwest of the USFWS-designated critical habitat for SBKR.

Dynamite Basin

Dynamite Basin is partially disturbed with native habitat throughout, except along access roads and the edges of the basin. Areas of riparian habitat consisting of large willows and sycamore trees are present within the basin and at the mouth of the channel. An area of Riversidean sage scrub is present on the slope between the basin and the channel entrance. Both habitat types have varying levels of disturbance. Dirt roads surround the perimeter of the basin. Dynamite Basin is surrounded by residential development to the west, State Route 330 to the south and east, and native habitat to the north.

The Dynamite Basin Project is located approximately 1,100 feet northwest of the USFWS-designated critical habitat for SBKR.

Oak Creek Basin

Oak Creek Basin is partially disturbed with native habitat along the edges of the channel. Areas of riparian habitat are located within the channel in the northern portion of the site. A grove of sycamore woodland is present in the middle of the site, and small patches of Riversidean sage scrub are located throughout. All habitats have varying levels of disturbance. The channel, which runs north to southwest through the site, becomes concrete lined along the southern end. An access road runs along the eastern side of the channel. Oak Creek Basin is surrounded by residential development to the southwest and native habitat on all other sides.

The Oak Creek Basin Project is located approximately 2,300 feet east and 1,700 feet north of the USFWS-designated critical habitat for SBKR.

Cook Canyon Basin

Cook Canyon Basin is partially disturbed with areas of native habitat surrounding the access road. The basin contains three habitat types: Riversidean sage scrub, oak woodland, and riparian habitat. Riversidean sage scrub is located on the slopes of the entrance road and the slopes of the basin, a small patch of oak woodland is located in the southwest corner of the site, and riparian habitat consisting of mulefat and willows is located within the basin. Flowing water was present in the basin. An unlined channel runs east to west through the site. Much of the southeast corner has been graded and an access road runs east to west along the channel. Cook Canyon Basin is surrounded by native habitat to the north and disturbed areas and residential development.

The Cook Canyon Basin Project is located approximately 1,000 feet east of the USFWS-designated critical habitat for SBKR.

Wilson Creek Basin #1

Wilson Creek Basin #1 is mostly disturbed with small areas of native habitat. Riversidean alluvial sage scrub is present along the eastern bank of the basin and along the northern edge of the site. Most of the site is disturbed with weedy vegetation present inside the basin. A berm is present in the north, separating a channel that runs east to west from the basin. Access roads run around the edge of the basin. Wilson Creek Basin #1 is surrounded by Wilson Creek to the north, the remaining Wilson Creek Basins to the west, disturbed habitat to the east, and residential development to the south.

The Wilson Creek Basin #1 Project is located more than 2.5 miles southeast of the USFWS-designated critical habitat for SBKR.

Oak Glen Creek Basins #1-3

Oak Glen Creek Basins #1-3 are partially disturbed with areas of native habitat throughout the three sites. Riversidean alluvial fan sage scrub is present in all three sites, particularly along the slopes of the basins. Oak woodland is found in Basins #1 and #3 along the southern edge of each of the sites. A strip of riparian habitat is present along the creek in Basin #2. Strips of Riversidean sage scrub are present along the northern border of Basins #2 and #3. A concrete nature trail, lined with a small wooden fence, is present throughout the three sites along with signage depicting the restoration efforts. Several access roads run through all three sites and there is a parking area in Basin #1 for the nature trail visitors. A well was under construction in the northeast corner of Basin #2 at the time of the survey. Oak Glen Creek Basins #1-3 are surrounded by residential development to the north and south, Oak Glen Creek to the east, and Bryant Street to the west.

The Oak Glen Creek Basins #1-3 Projects are located more than 2.5 miles southeast of the USFWS-designated critical habitat for SBKR.

4.3.6 *Vegetation Communities*

Five native vegetation communities were mapped in the Zone 3 facilities: RAFSS, Riparian, RSS, Sycamore woodland, and open water. One land cover type (disturbed and developed) was present at all of the Zone 3 facilities (Figure 4.9). The plant species observed within these communities consist mainly of native scrub and chaparral species, as well as non-native weedy herbaceous species.

As part of the vegetation mapping, ECORP recorded all plant species present within each community during the biological reconnaissance survey. Because the survey was conducted outside of the blooming period for most native plants, some plant species may have not been detected during the survey. Accordingly, there may actually be more plants present in the facilities than are listed in the plant compendium (Appendix C). Descriptions of the vegetation communities and land cover types, if not already described, that were mapped during the biological reconnaissance survey are included below.

RAFSS, RSS, and Riparian have already been described in Section 4.1.6. The open water designation applies to Dynamite Basin, where it is devoid of any vegetation except on the edges by riparian vegetation. RAFSS and RSS were only observed at the Oak Glen Creek Basins #1-3. The Riparian community was found at the Oak Creek Basin, Small Canyon Dam, Dynamite Basin, and Cook Canyon Basin.

Sycamore Woodland

Sycamore trees are fast-growing and well-adapted to intermittent flooding conditions of streams. The species occurs almost exclusively in drainages and on north-facing slopes. A small grove of sycamore woodland was observed in the Oak Creek Basin.

Southern Cottonwood Willow Riparian Forest

The Southern cottonwood willow riparian forest vegetation community is dominated by Fremont's cottonwood (*Populus fremontii*) occurs along streams and in canyons. Often, Fremont cottonwood is found in pure stands, although minor stands of other riparian tree species can also occur. Fremont cottonwood requires moist, bare mineral soil for germination and establishment. Such soil conditions occur following a flood event, leading to uniform aged stands within this vegetation type (Holland 1986).

Associated tree species includes tree willows, California sycamore, mulefat, and coast live oak. The shrub layer is typically dominated by willows, and the understory herbaceous layer contained stinging nettle and mugwort. Sawyer *et al.* (2009) classifies this community as Fremont cottonwood forest (*Populus fremontii* woodland alliance). This is considered a sensitive community and is found at the Oak Creek Basin #2 on the northern edge of the BSA. This forest appeared to be the result of a restoration effort for the original construction of the Oak Glen Creek Basins. This community does not occur in Basins #1 or 3, which the CNDDDB has records for.

Location: N:\2014\2014-085 SB FLOD Project\MAPS\Vegetation\FLOOD_Veg_v2.mxd (MAG:mgubdry, 3/9/2015)

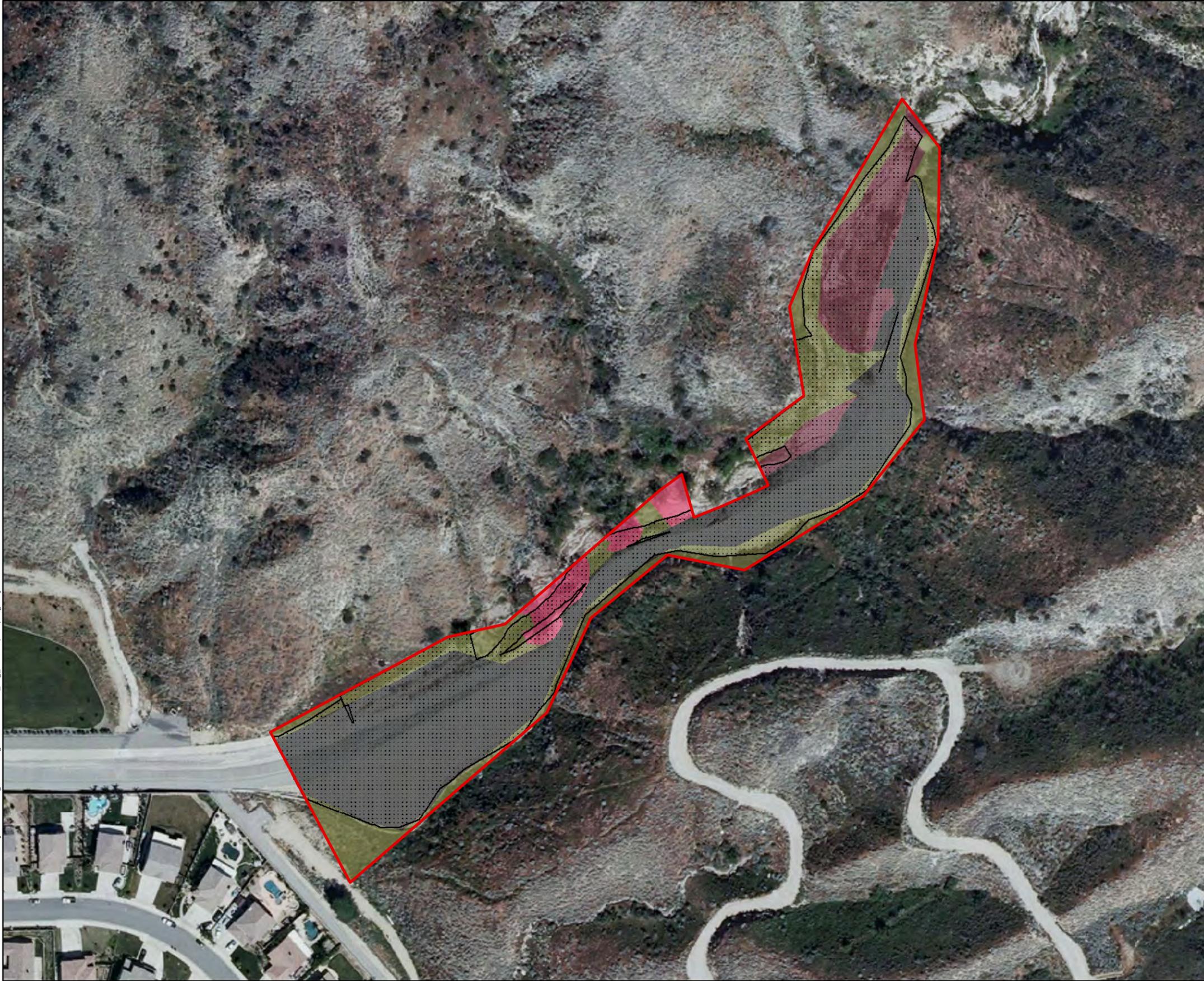
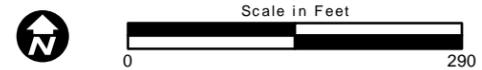
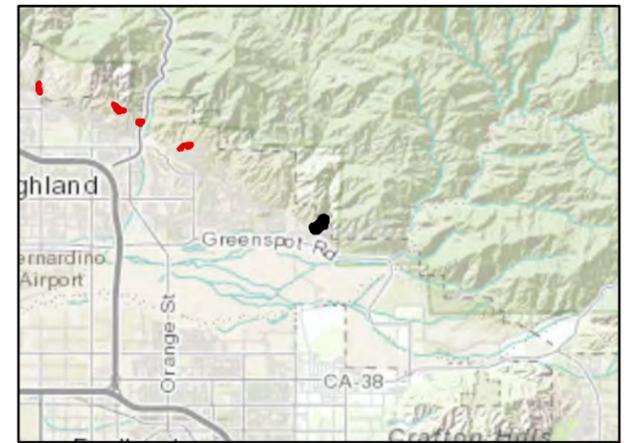


Figure 4.9.
Vegetation Communities
Oak Creek Basin

-  Biological Study Area
-  Maintenance Activity Footprint
- Vegetation Communities**
-  Riversidean Sage Scrub
-  Riparian
-  Sycamore Woodland
-  Disturbed

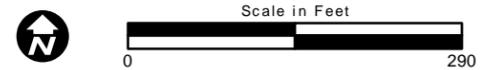
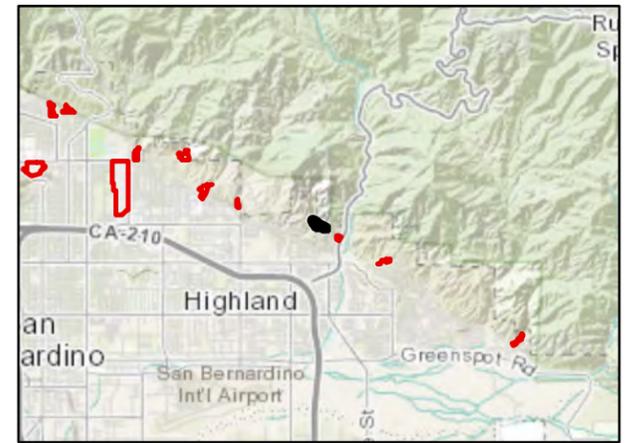


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Figure 4.9.
Vegetation Communities
Small Canyon Dam

-  Biological Study Area
-  Maintenance Activity Footprint
- Vegetation Communities**
-  Riversidean Sage Scrub
-  Riparian
-  Disturbed

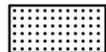


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Figure 4.9.
Vegetation Communities
Dynamite Basin

 Biological Study Area

 Maintenance Activity Footprint

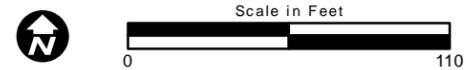
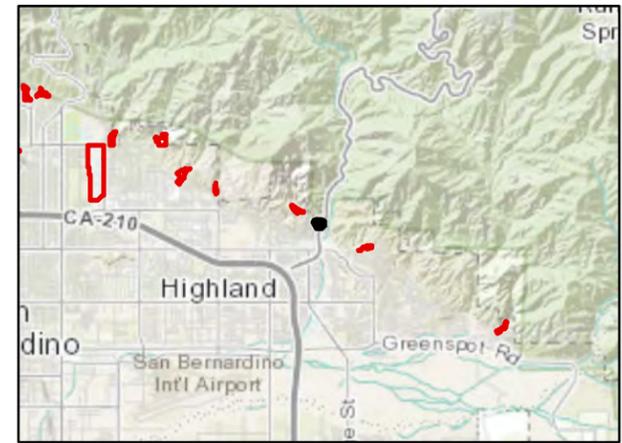
Vegetation Communities

 Riversidean Sage Scrub

 Riparian

 Open Water

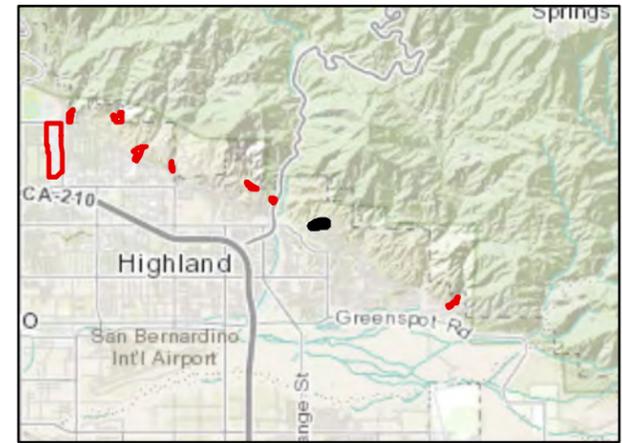
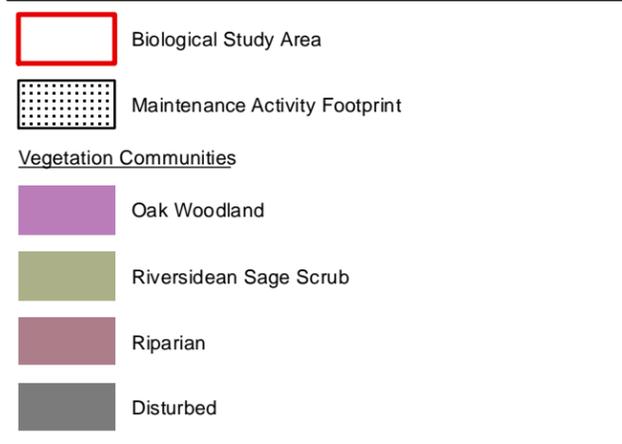
 Disturbed



Location: N:\2014\2014-085 SB FLOOD Project\MAPS\Vegetation\FLOOD_Veg_v2.mxd (MAG) mgubdry 3/9/2015



Figure 4.9.
Vegetation Communities
Cook Canyon Basin

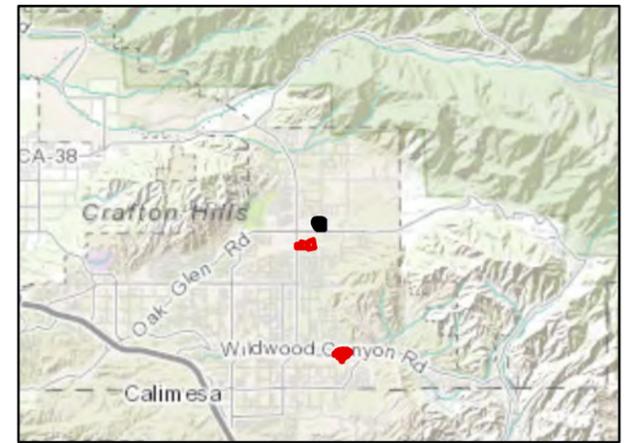


Location: N:\2014\2014-085 SB FLOOD Project\MAPS\Vegetation\FLOOD_Veg_v2.mxd (MAG) mgubdry 3/9/2015



Figure 4.9.
Vegetation Communities
Wilson Creek Basin #1

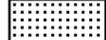
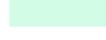
-  Biological Study Area
 -  Maintenance Activity Footprint
- Vegetation Communities
-  Riversidean Alluvial Fan Sage Scrub
 -  Riversidean Sage Scrub
 -  Disturbed

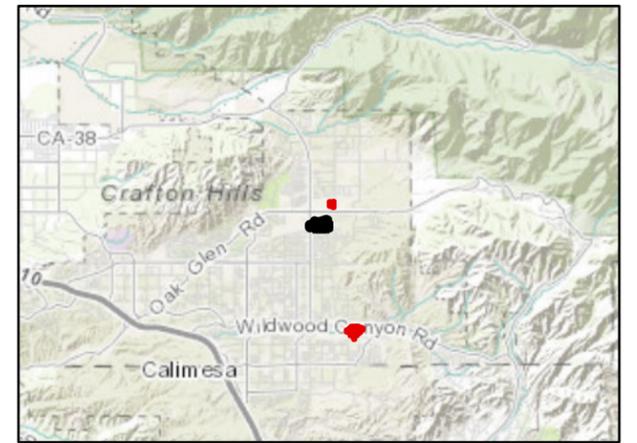


Location: N:\2014\2014-085 SB FLOD Project\MAPS\Vegetation\FLOD_Veg_v2.mxd (MAG)mguidry_3/9/2015



Figure 4.9.
Vegetation Communities
Oak Glen Creek Basin #1-3

-  Biological Study Area
-  Maintenance Activity Footprint
- Vegetation Communities**
-  Oak Woodland
-  Riversidean Alluvial Fan Sage Scrub
-  Riversidean Sage Scrub
-  Southern Cottonwood Willow Riparian Forest
-  Disturbed



4.3.7 General Plants

General plant species observed within Zone 3 facilities were similar to those described in Section 4.1.7. A complete list of all plant species observed within Zone 3 during the biological reconnaissance survey is included in Appendix C.

4.3.8 General Wildlife

General wildlife species observed and expected to occur within the Zone 3 facilities were similar to those described in Section 4.1.8. A complete list of all wildlife species observed within Zone 3 during the biological reconnaissance survey is included in Appendix D.

4.3.9 Raptors and Migratory Birds

The shrubs and mature trees within the Zone 3 facilities provide suitable nesting habitat for a variety of migratory small passerines and songbirds. Many of the facilities, including Small Canyon Dam, Dynamite Basin, Cook Canyon Dam, Oak Creek Basin, Oak Glen Creek Basin #2 provide the larger trees necessary for raptors to nest in. The facilities that do not contain suitable trees within the BSA all have suitable trees for perching or nesting just outside the facility. Raptors typically breed between February and August while non-raptors generally nest between March and August.

4.3.10 Wildlife Movement Corridors and Linkages

The wildlife movement corridors and linkages within the Zone 3 facilities are similar to those discussed in Section 4.1.10.

5.0 IMPACT ANALYSIS

The Project's anticipated impacts at each facility, separated by their respective zone, are shown and described below. Direct, indirect, short-term, and long-term impacts to vegetation communities, sensitive plants, sensitive wildlife, and SBKR designated critical habitat at each facility, separated by their respective zone, are discussed below.

5.1 Zone 1

Potential Project impacts to biological resources include ground and vegetation disturbances that would occur during implementation of the various maintenance activities within each facility. Impacts include 79.37 acres of natural vegetation and 63.5 acres of USFWS-designated SBKR critical habitat within the maintenance footprint for Project activities in Zone 1. Tables 5.1 and 5.2 below summarize the Project's anticipated impacts to vegetation communities and SBKR critical habitat within the facilities of Zone 1.

Table 5.1 – Zone 1 Vegetation Impact Acreages

Redbook	Facility	Mulefat Scrub	RAFSS	Riparian	RSS	Orna-mental	Disturbed	Grand Total
1-313-4A	San Antonio Heights Basin (SAHB) #1	0	0	0	0.33	0	0.79	1.12
1-313-4B	SAHB #5	0	0.19	0	1.60	0	5.94	7.73
1-313-4D	SAHB (West Frankish)	0	0	0	0.42	0	0.45	0.87
1-313-4E	SAHB #3	0.02	0	0	1.16	0	0.77	1.95
1-313-4F	SAHB #2	0	0	0	0.93	0	0.49	1.42
1-313-4G	SAHB #4	0	0	0	0.93	0	0.46	1.39
1-313-4H	SAHB #6	0	0.01	0	1.15	0	1.61	2.77
1-352-3A	Cucamonga Dam	0	18.39	0.30	0.10	0	50.48	69.27
1-402-3A	Demens Basin #1	0	1.05	0	8.21	2.80	19.48	31.54
1-506-3A	Deer Creek Debris Basin	0	16.92	0	0.24	0	24.97	42.14
1-552-4A	Hillside Basin	0	0	0.68	9.34	0	11.13	21.15
1-707-9A	Etiwanda Debris Basin	0	12.24	0	0	0	38.43	50.67
1-807-4A	Rich Basin	0	0	0.21	4.95	0	18.33	23.49
Grand Total		0.02	48.80	1.19	29.36	2.80	173.34	255.50

Table 5.2 - Zone 1 Impacts to SBKR Critical Habitat

Redbook	Facility	SBKR Critical Habitat
1-506-3A	Deer Creek Debris Basin	29.01
1-707-9A	Etiwanda Debris Basin	34.48
Total		63.50

5.1.1 Vegetation Communities

Impacts to RAFSS, mulefat scrub, riparian, and RSS areas would be considered to be adverse impacts to sensitive vegetation communities. Although impacts to these communities are calculated at close to 80 acres for the Zone 1 facilities, nearly 50 percent of the impacts would consist of thinning with hand tools for the purposes of maintaining functionality of the facilities, removal of non-native vegetation, for fuel modification purposes per State and local fire codes, and for improvement of water quality (Table 1.2). In addition, nearly 70 percent of the maintenance areas for the Zone 1 facilities have been previously disturbed or developed (Table 5.1). Cucamonga Dam, Hillside, and Rich Basin contain the riparian vegetation. None of the other facilities contain riparian vegetation. Most of the vegetation even within the area designated as being impacted would remain intact. Further, there would be no uprooting of vegetation by the roots and all maintenance activities would consist of the minimal removal necessary for maintenance. Maintenance within these areas would also be similar to that conducted during previous years, which has resulted in the maintenance of plant cover and composition of the communities in their current state. For these reasons, the impacts to the

RAFSS, mulefat scrub, riparian, and RSS vegetation communities would be considered adverse but not significant.

BMPs 1, 5, 9, and 10 provide the methods to avoid and minimize unnecessary impacts to these vegetation communities.

Implementation of one Project activity, BMP 12, which includes protocols for removing invasive plants and methods to prevent them from spreading, would be beneficial to these natural vegetation communities.

Impacts to disturbed habitat areas, including ornamental vegetation, would not be considered adverse.

5.1.2 Sensitive Plants

Based on the literature search and reconnaissance survey, the Project has potential to impact the federal- or state-listed Nevin's barberry, thread-leaved brodiaea, slender-horned spineflower, and Santa Ana River woolly-star plant species. Suitable habitats for 22 other species ranked by the CNPS Inventory, including eight CRPR 1B species (those that are considered rare and endangered in California) occur in the Zone 1 facilities. None of these plants have been previously recorded in the facilities; however a focused rare plant survey conducted during appropriate blooming periods has not been completed. The oak tree within the San Antonio Heights Basin #3 is not within the maintenance footprint. Implementation of BMPs 5, 7, 9, 10, 11, and 12 would avoid Proposed Project impacts to any special-status plant species that may occur within the Proposed Project site.

Direct impacts would include the direct take of a plant or its habitat. Indirect impacts would include dust deposition on adjacent plants and habitat outside of the Project limits.

5.1.3 Sensitive Wildlife

Amphibians and Reptiles

The amphibians and reptiles with potential to occur in the Zone 1 facilities are all of lower levels of sensitivity and abundant habitat remains within areas adjacent to the facilities. Due to these factors, the Proposed Project is expected to only entail a temporal loss of habitat for localized populations. The removal of habitat for these species would be minimized to the extent possible with BMPs 1, 5, 7, 9, 10, 11, and 12. It is unlikely that the loss of habitat for these species related to the Proposed Project would lead to listing, and impacts would be less than significant.

Birds

Most of the bird species with potential to occur in the Zone 1 facilities are of lower levels of sensitivity and abundant habitat remains in areas adjacent to the facilities. The exceptions include the coastal California gnatcatcher, Swainson's hawk, and burrowing owl, discussed below. Nesting bird species are also discussed.

Coastal California Gnatcatcher

Focused surveys for this species have been conducted in all of the Zone 1 facilities except Rich Basin (ICF 2013a) and no CAGN were detected in the survey areas except in an area adjacent to Hillside Basin. Adult CAGN pairs were not detected likely in the area of Hillside Basin (1-552-4A) during the focused surveys. Rich Basin (1-807-4A) was found to contain habitat that was suitable for CAGN, but the habitat was not of sufficient acreage and was too isolated from other suitable patches to be able to support CAGN. Direct and indirect impacts to this species and its habitat are not anticipated at the Basins where focused surveys were negative. Implementation of BMPs 8 and 11 would avoid Project impacts to this species.

Swainson's Hawk

Swainson's hawks are known to fly over or within the vicinity of the Zone 1 facilities during their migration period to the Central Valley or western Mojave Desert. They are not known to breed or nest in any of the Zone 1 facilities. Direct and indirect impacts to this species are not anticipated. Implementation of BMPs 8 and 11 would avoid potential Project impacts to this species.

Burrowing owl

Six of the Zone 1 facilities support suitable habitat for burrowing owl. Although no suitable burrows were observed during the biological reconnaissance survey at the remaining facilities, suitable burrows may be created by small mammals prior to the initiation of Project activities. Implementation of BMPs 8, 9, 11, 13, and Mitigation Measure B-1 would reduce potential impacts to burrowing owls to a less than significant level.

B-1: To avoid the potential for project impacts to burrowing owls, a pre-construction survey shall be conducted no less than 14 days prior to the initiation of project-related ground disturbing activities using the methods described in CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012). Any active burrowing owl burrows or nests identified during the survey shall be protected from disturbance by establishing a buffer that would remain free from project activities. The distance of the buffer shall be determined through monitoring the behavior of the owls, and referring to CDFW guidelines (2012), which provide recommended buffer distances based on the time of year and level of disturbance associated with construction activities.

Nesting Birds

There is suitable habitat for migratory birds and raptors protected under the MBTA and FGC within and immediately adjacent to the Project site. The Project would occur outside of the nesting season for nesting bird species. In addition, implementation of BMPs 8, 9, 11, and Mitigation Measure B-2 would avoid Project impacts to nesting and migratory birds.

B-2: A pre-construction nesting bird survey shall be conducted no more than 30 days prior to the start of construction. On-going biological monitoring for nesting birds, if found, during maintenance activities shall be conducted by a qualified biologist. The nest

survey and monitoring shall include the Project site and areas immediately adjacent to the site that could potentially be affected by Project activities such as noise, human activity, dust, etc. If active bird nests are found on or immediately adjacent to the Project site, then the qualified biologist will establish an appropriate buffer zone around the active nests, typically a 300-foot radius for songbirds and a 500-foot radius for raptors. Project activities shall be avoided within the buffer zone until the nest is deemed no longer active by the biologist. Weekly nesting surveys and biological monitoring may be necessary if nesting birds are found on the Project site. All Project personnel must be educated regarding the wildlife species issues for the Project area prior to onset of construction activities.

Mammals

San Bernardino Kangaroo Rat

A protocol, focused trapping survey was not conducted at Hillside Basin, Deer Creek, or Etiwanda Debris Basins so presence or absence of SBKR cannot be confirmed. Although portions of the Project sites have been disturbed, portions of these facilities may still support individual SBKR. Approximately 63.5 acres of a 4,820-acre USFWS-designated Critical Habitat Unit for San Bernardino kangaroo rat, Unit #4 Etiwanda Fan and Wash (USFWS 2002), is within the proposed Project footprints and would be affected by Project activities. However, most (44.88 acres) of this designated Critical Habitat within the southern portions of the Deer Creek and Etiwanda facilities had previously been disturbed by a combination of authorized gravel extraction activities and prior maintenance of the facility. The amount of affected critical habitat that supports native vegetation, therefore, is 18.66 acres, which totals approximately 0.39 percent of the overall Critical Habitat Unit. The disturbance of 18.66 acres of undisturbed critical habitat is not expected to be significant due to the presence of marginal habitat in the Project footprints.

Direct impacts to SBKR from Project activities at Etiwanda and Deer Creek Debris Basins within critical habitat would include stockpiling of excavated spoils within areas that are already disturbed. The proposed location for stockpiling spoils at the Hillside Basin, which is adjacent to critical habitat, is also in an area that has already been disturbed. Because the stockpile areas are considered to not support SBKR, impacts to SBKR from this activity would not be expected. Project activities would also include vegetation management within areas mapped as native RAFSS and RSS, which can support SBKR. Vegetation management within critical habitat and the suitable habitat includes some hand-clearing of vegetation to meet maintenance goals. No mechanical clearing or removal of plant species by the roots is proposed in the areas that contain suitable habitat for the species. Because of the low-impact nature of hand clearing, the loss of SBKR critical habitat at the Etiwanda and Deer Creek Debris Basins and the suitable habitat in Hillside Basin are expected to be temporal and minimal within the areas mapped as RAFSS and RSS. BMPs 5, 6, 9, 11, and 13 would be applicable to further avoiding and minimizing impacts to individual SBKR. Restricting construction activities to the daytime (BMP 6) should avoid direct (mortalities) and indirect (noise) impacts to SBKR, a nocturnal species.

Other Small Mammals

The small mammal species with potential to occur are all of lower levels of sensitivity and abundant habitat remains within areas adjacent to the Dam. Due to these factors, the project is expected to only entail a temporal loss of habitat for localized populations. In addition, noise from construction equipment (tractors, dump trucks, mowers, vehicles) and human presence in the wash could momentarily prevent wildlife movement. The removal of habitat for these species would be minimized to the extent possible with BMPs 1, 5, 7, 9, 10, 11, and 12. It is unlikely that the loss of habitat for these species related to the Project would lead to listing, and impacts would be less than significant.

5.2 Zone 2

Potential Project impacts to biological resources include ground and vegetation disturbances that would occur during implementation of the various maintenance activities within each facility. Impacts include 58.63 acres of natural vegetation and 67.15 acres of USFWS-designated SBKR critical habitat within the maintenance footprint for Project activities in Zone 2. Tables 5.3 and 5.4 below summarize the Project's anticipated impacts to vegetation communities and SBKR critical habitat within the facilities of Zone 2.

5.2.1 Vegetation Communities

Table 5.3 – Zone 2 Vegetation Impact Acreages

Redbook	Facility	MFS	RAFSS	Riparian	RSS	Rumex Marsh	California Walnut Woodland	Disturbed	Grand Total
2-303-3A	Devil Canyon Dam #1	0	8.35	0.66	0	1.38	0	8.42	18.81
2-304-4A	Devil Basin #2	0	20.30	20.30	0	0	0	12.11	20.30
2-304-4B	Devil Basin #3	1.35	11.7	11.7	00.12	0	0	6.47	11.70
2-305-4A	Wiggins Basin #1	0	24.21	0.88	0	0	0	4.25	29.34
2-365-3A	Little Mountain Dam	0	0	0.30	0	0	0	47.36	47.66
2-368-4D	MacQuiddy Basin #1-4	0	0	0.27	0	0	0	9.31	9.57
2-406-2A	Twin Creek Spreading Grounds	0	1.28	1.11	0	0	0	133.31	135.70
2-412-4A	Brush Canyon Basin	0	0	1.58	0.12	0	0	3.08	4.78
2-414-4A	Harrison Basin	0	2.81	4.66	0	0	0	4.48	11.95

2-503-4A	Sand Canyon Basin	0	0	0.40	0	0	002	2.21	2.61
2-506-4A	Daley Basin	0	1.02	0	0.90	0	0	8.47	10.40
2-510-4A	Little Sand Canyon Basin	0	0	0.26	0.26	0	0	9.52	10.03
Grand Total		1.35	45.85	14.94	1.28	1.38	0.0002	249.00	312.45

Table 5.4 - Zone 2 Impacts to SBKR Critical Habitat

Redbook	Facility	SBKR Critical Habitat
2-303-3A	Devil Canyon Dam #1	18.80
2-304-4A	Devil Basin #2	20.30
2-304-4B	Devil Basin #3	11.70
2-305-4A	Wiggins Basin #1	28.07
Total		78.87

Impacts to RAFSS, riparian, Mule fat scrub, RSS, Rumex marsh, and California walnut woodland areas would be considered to be adverse impacts to sensitive vegetation communities. Although impacts to these communities are calculated at close to 64 acres for the Zone 2 facilities, nearly 40 percent of the impacts would consist of thinning with hand tools for the purposes of maintaining functionality of the facilities, removal of non-native vegetation, for fuel modification purposes per State and local fire codes, and for improvement of water quality (Table 1.3). In addition, nearly 80 percent of the maintenance areas for the Zone 2 facilities have been previously disturbed or developed (Table 5.3). Most of the vegetation, even within the area designated as being impacted would remain intact. Further, there would be no uprooting of vegetation by the roots and all maintenance activities would consist of the minimal removal necessary for maintenance. Maintenance within these areas would also be similar to that conducted during previous years, which has resulted in the maintenance of plant cover and composition of the communities in their current state. For these reasons, the impacts to the RAFSS, Riparian, Mule fat scrub, RSS, Rumex marsh, and walnut woodland vegetation communities would be considered adverse but not significant.

BMPs 1, 5, 9, and 10 provide the methods to avoid and minimize unnecessary impacts to these vegetation communities. Implementation of one Project activity, BMP 12, which includes protocols for removing invasive plants and methods to prevent them from spreading, would be beneficial to these natural vegetation communities.

Impacts to disturbed habitat areas would not be considered adverse.

5.2.2 Sensitive Plants

Based on the literature search and reconnaissance survey, the Project has potential to impact the federal- or state-listed Nevin’s barberry, thread-leaved brodiaea, slender-horned spineflower, and Santa Ana River woolly-star plant species. Suitable habitats for 11 other species ranked by the CNPS Inventory, including three CRPR 1B species (those that are

considered rare and endangered in California) occur in the Zone 2 facilities. None of these plants have been previously recorded in the facilities; however a focused rare plant survey conducted during appropriate blooming periods has not been completed. The Southern California black walnut tree is on the eastern edge of the maintenance footprint at the Sand Canyon Basin. Implementation of BMPs 5, 7, 9, 10, 11, and 12 would avoid Proposed Project impacts to any special-status plant species that may occur within the Proposed Project site.

Direct impacts would include the direct take of a plant or its habitat. Indirect impacts would include dust deposition on adjacent plants and habitat outside of the Project limits.

5.2.3 Sensitive Wildlife

Amphibians and Reptiles

The amphibians and reptiles with potential to occur in the Zone 2 facilities are all of lower levels of sensitivity and abundant habitat remains within areas adjacent to the facilities. Due to these factors, the Proposed Project is expected to only entail a temporal loss of habitat for localized populations. The removal of habitat for these species would be minimized to the extent possible with BMPs 1, 5, 7, 9, 10, 11, and 12. It is unlikely that the loss of habitat for these species related to the Proposed Project would lead to listing, and impacts would be less than significant.

Birds

Most of the bird species with potential to occur in the Zone 2 facilities are of lower levels of sensitivity and abundant habitat remains in areas adjacent to the facilities. The exceptions include the coastal California gnatcatcher, southwestern willow flycatcher, least Bell's vireo, Swainson's hawk, and burrowing owl, discussed below. Nesting bird species are also discussed.

Coastal California Gnatcatcher

Focused surveys for this species have been conducted in four of the facilities in Zone 2 (Bloom 2013) and no breeding CAGN were detected in the survey areas. One unpaired bird was observed once during the 12 survey days. Direct and indirect impacts to this species and its habitat are not anticipated at the Basins where focused surveys were negative. None of the remaining facilities were determined to contain suitable habitat for this species. Implementation of BMPs 8 and 11 would avoid any potential Project impacts to this species.

Southwestern Willow Flycatcher and Least Bell's Vireo

The only Zone 2 facility with potential to support these species was the Little Sand Canyon Basin. Because the habitat type these species prefer terminates almost immediately after it enters the east end of the basin (0.26 acres of impacts to Riparian) and Project timing would avoid these species' breeding season, direct impacts to these species are not anticipated. Implementation of BMPs 1, 5, 8, 9, 10, and 11 would avoid any potential Project impacts to these species and their habitat.

Swainson's Hawk

Swainson's hawks are known to fly over or within the vicinity of the Zone 2 facilities during their migration period to the Central Valley or western Mojave Desert. They are not known to breed or nest in any of the Zone 2 facilities. Direct and indirect impacts to this species are not anticipated. Implementation of BMPs 8 and 11 would avoid potential Project impacts to this species.

Burrowing owl

Seven of the Zone 2 facilities support suitable habitat for burrowing owl. Although no suitable burrows were observed during the biological reconnaissance survey at the remaining facilities, suitable burrows may be created by small mammals prior to the initiation of Project activities. Implementation of BMPs 8, 9, 11, 13, and Mitigation Measure B-1 would reduce potential impacts to burrowing owls to a less than significant level.

Nesting Birds

There is suitable habitat for migratory birds and raptors protected under the MBTA and FGC within and immediately adjacent to the Project site. The Project would occur outside of the nesting season for nesting bird species. In addition, implementation of BMPs 8, 9, 11, and Mitigation Measure B-2 would avoid Project impacts to nesting and migratory birds.

Mammals

San Bernardino Kangaroo Rat

Protocol, focused trapping surveys were conducted at Devil Canyon Dam, Devil Basin #2 and 3, and Wiggins Basin. The remaining facilities were determined to not support suitable habitat. Approximately 67.15 acres of a 787-acre USFWS-designated Critical Habitat Unit for SBKR, Unit #2B Lytle Creek/Cajon Wash (USFWS 2002), is within the proposed Project footprint and would be affected by Project activities. However, 24.78 acres of this designated critical habitat within these facilities had previously been disturbed by prior maintenance of the facilities. The amount of affected critical habitat that supports native vegetation, therefore, is 42.37 acres, which totals approximately 5.38 percent of the overall Critical Habitat Unit. The disturbance of 42.37 acres of undisturbed critical habitat is not expected to be significant due to the absence of the species within the Project footprints. Direct and indirect impacts to SBKR are not anticipated.

Other Small Mammals

The small mammal species determined to be present through focused trapping or with potential to occur are all of lower levels of sensitivity and abundant habitat remains within adjacent areas. Due to these factors, the project is expected to only entail a temporal loss of habitat for localized populations. In addition, noise from construction equipment (tractors, dump trucks, mowers, vehicles) and human presence in the wash could momentarily prevent wildlife movement. The removal of habitat for these species would be minimized to the extent possible

with BMPs 1, 5, 7, 9, 10, 11, and 12. It is unlikely that the loss of habitat for these species related to the Project would lead to listing, and impacts would be less than significant.

5.3 Zone 3

Potential Project impacts to biological resources include ground and vegetation disturbances that would occur during implementation of the various maintenance activities within each facility. Impacts include 7.62 acres of natural vegetation within the maintenance footprint for Project activities in Zone 3. Table 5.5 below summarizes the Project's anticipated impacts to vegetation communities within the facilities of Zone 3.

5.3.1 Vegetation Communities

Table 5.5 – Zone 3 Vegetation Impact Acreages

Redbook	Facility	Open Water	RAFSS	Riparian	RSS	Sycamore Woodland	SCWRF*	Disturbed	Grand Total
3-204-4A	Oak Creek Basin	0	0	0.71	0.93	0.15	0	2.72	4.52
3-302-3A	Small Canyon Dam	0	0	0.38	0.71	0	0	4.55	5.64
3-304-4A	Dynamite Basin	1.36	0	0.26	0.34	0	0	1.34	3.30
3-305-4A	Cook Canyon Basin	0	0	0.34	0.07	0	0	1.18	1.59
3-602-4A	Wilson Creek Basin #1	0	0	0	0	0	0	5.19	5.19
3-603-4A	Oak Glen Creek Basin #1	0	0.02	0	0	0	0	1.56	1.58
3-603-4B	Oak Glen Creek Basin #2	0	0.07	0	0.02	0	03	2.90	2.99
3-603-4C	Oak Glen Creek Basin #3	0	2.25	0	0	0	0	3.82	6.07
Grand Total		1.36	2.33	1.70	2.08	0.15	03	23.26	30.88

*SCWRF: Southern Cottonwood Willow Riparian Forest

Impacts to RAFSS, Riparian, RSS, open water, and Southern Cottonwood Willow Riparian Forest would be considered to be adverse impacts to sensitive vegetation communities. Although impacts to these communities are calculated at close to eight acres for the Zone 3 facilities, nearly 18 percent of the impacts would consist of thinning with hand tools for the purposes of maintaining functionality of the facilities, removal of non-native vegetation, for fuel modification purposes per State and local fire codes, and for improvement of water quality (Table 1.4). In

addition, nearly 75 percent of the maintenance areas for the Zone 3 facilities have been previously disturbed or developed (Table 5.5). Wilson Creek Basin, Oak Glen Creek Basin #1 and #3 do not contain riparian vegetation. Oak Glen Creek Basin #2 contains 03 acres of maintenance activity on Southern Cottonwood Willow Riparian Forest, a CDFW-sensitive community. Most of the vegetation, even within the area designated as being impacted would remain intact. Further, there would be no uprooting of vegetation by the roots and all maintenance activities would consist of the minimal removal necessary for maintenance. Maintenance within these areas would also be similar to that conducted during previous years, which has resulted in the maintenance of plant cover and composition of the communities in their current state. For these reasons, the impacts to the RAFSS, Riparian, RSS, open water, and Southern Cottonwood Willow Riparian Forest vegetation communities would be considered adverse but not significant. BMPs 1, 5, 9, and 10 provide the methods to avoid and minimize unnecessary impacts to these vegetation communities.

Implementation of one Project activity, BMP 12, which includes protocols for removing invasive plants and methods to prevent them from spreading, would be beneficial to these natural vegetation communities.

Impacts to disturbed habitat areas would not be considered adverse.

5.3.2 Sensitive Plants

Based on the literature search and reconnaissance survey, the Project has potential to impact the federal- or state-listed Nevin's barberry, thread-leaved brodiaea, slender-horned spineflower, Mojave tarplant, and Santa Ana River woolly-star plant species. Suitable habitats for 23 other species ranked by the CNPS Inventory, including eight CRPR 1B species (those that are considered rare and endangered in California) occur in the Zone 3 facilities. None of these plants have been previously recorded in the facilities; however a focused rare plant survey conducted during appropriate blooming periods has not been completed. Implementation of BMPs 5, 7, 9, 10, 11, and 12 would avoid Proposed Project impacts to any special-status plant species that may occur within the Proposed Project site.

Direct impacts would include the direct take of a plant or its habitat. Indirect impacts would include dust deposition on adjacent plants and habitat outside of the Project limits.

5.3.3 Sensitive Wildlife

Amphibians and Reptiles

The amphibians and reptiles with potential to occur in the Zone 3 facilities are all of lower levels of sensitivity and abundant habitat remains within areas adjacent to the facilities. Due to these factors, the Proposed Project is expected to only entail a temporal loss of habitat for localized populations. The removal of habitat for these species would be minimized to the extent possible with BMPs 1, 5, 7, 9, 10, 11, and 12. It is unlikely that the loss of habitat for these species related to the Proposed Project would lead to listing, and impacts would be less than significant.

Birds

Most of the bird species with potential to occur in the Zone 3 facilities are of lower levels of sensitivity and abundant habitat remains in areas adjacent to the facilities. The exceptions include the Swainson's hawk and burrowing owl which are discussed below. Nesting bird species are also discussed.

Swainson's Hawk

Swainson's hawks are known to fly over or within the vicinity of the Zone 3 facilities during their migration period to the Central Valley or western Mojave Desert. They are not known to breed or nest in any of the Zone 3 facilities. Direct and indirect impacts to this species are not anticipated. Implementation of BMPs 8 and 11 would avoid potential Project impacts to this species.

Burrowing owl

Five of the Zone 3 facilities support suitable habitat for burrowing owl. Although no suitable burrows were observed during the biological reconnaissance survey at the remaining facilities, suitable burrows may be created by small mammals prior to the initiation of Project activities. Implementation of BMPs 8, 9, 11, 13, and Mitigation Measure B-1 would reduce potential impacts to burrowing owls to a less than significant level.

Nesting Birds

There is suitable habitat for migratory birds and raptors protected under the MBTA and FGC within and immediately adjacent to the Project site. The Project would occur outside of the nesting season for nesting bird species. In addition, implementation of BMPs 8, 9, 11, and Mitigation Measure B-2 would avoid Project impacts to nesting and migratory birds.

Other Small Mammals

The small mammal species determined to have potential to occur are all of lower levels of sensitivity and abundant habitat remains within adjacent areas. Due to these factors, the project is expected to only entail a temporal loss of habitat for localized populations. In addition, noise from construction equipment (tractors, dump trucks, mowers, vehicles) and human presence in the wash could momentarily prevent wildlife movement. The removal of habitat for these species would be minimized to the extent possible with BMPs 1, 5, 7, 9, 10, 11, and 12. It is unlikely that the loss of habitat for these species related to the Project would lead to listing, and impacts would be less than significant.

6.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this assessment was performed by me or under my direct supervision. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project applicant or the applicant's representative and that I have no financial interest in the project.

DATE: June 25, 2015

SIGNED:



Brad Haley
Senior Biologist

DATE: June 25, 2015

SIGNED:



Scott Taylor
Senior Biological Program Manager

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Appendix A
Field Datasheets



Biological Reconnaissance Survey Form

Date: 6/11/14 Zone 1 Project # 2014-085 Phase 1
Project Name SB County FLOD Project

Surveyor Names: Brad Haley + Cara Snellen

Location(s): Etiwanda Debris Basin

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0750	59	∅	5∅
END	0900	75	∅	∅

SUITABLE HABITAT?	
SPECIES	NOTES
Burrow	CGS present (potential Burrow burrows)
Raptors	No raptor habitat except poles

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RAFSS	most of basin BSA except concrete basin
Dist.	Concrete basin & canal, d.Yt rocks

ADDITIONAL NOTES: (e.g., site description, sensitive species identified?)
<p>photos 403-412 photos 1-10 * recovering RAFSS in basin, but plants are very small & surrounded by concrete basin</p>



Biological Reconnaissance Survey Form

Date: 6/11/14 Zone 1 Project # 2014-085 Phase 1
Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and CARA SNELLEN

Location(s): DEER CREEK DEBRIS BASIN

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0915	59	0	50
END	1000	75	0	0

SUITABLE HABITAT?	
SPECIES	NOTES
RAPTOR	(eoc) Single Plavac. for raptor only
No Burrow hab.	

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RAFSS	Most of BSA except dirt roads & SW corner
Dist	Dirt roads & SW portion where there is no veg & equipment is moving & piling rock & gravel

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

PHOTOS 413-426
PHOTOS 1-14



Biological Reconnaissance Survey Form

Date: 6/11/14 Zone 1

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and CARA SNELLEN

Location(s): HILLSIDE BASIN

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	1000	59	0	50
END	1030	75	0	0

SUITABLE HABITAT?	
SPECIES	NOTES
BUOW	CGS PRESENT (potential Buow burrows)
RAPTOR	SUITABLE TREES PRESENT

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RSS	along Northern, western, & southern boundaries
Riparian	in NW portion sycamore & cottonwood
Dist.	along roads ^{concrete channels} & basin bottom & large graded lot

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

PHOTOS 1-10, PHOTOS 427 - 436

Biological Reconnaissance Survey Form

Date: 6/11/14 Zone 1 Project # 2014-085 Phase 1
Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and CARA SNELLEN

Location(s): DEMENS BASIN #1

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	1040	59	0	50
END	1120	75	0	0

SUITABLE HABITAT?	
SPECIES	NOTES
BUOW	CGS PRESENT (pot. Bush burrows)
RAPTOR	SUITABLE TREES PRESENT

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
PA-FSS	in majority of basin (N side) ^{mule fat}
RSS	on slopes in southern part of basin ^{CA buck + FSS}
ORNAMENTAL	eucalyptus, pine, other ornamental shrubs along walking/horse trail on south side

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

PHOTOS 1-10, PHOTOS 437-452

Disturbed concrete canals, roads, portions of basin



Biological Reconnaissance Survey Form

Date: 6/11/14 Zone 1

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and CARA SNELLEN

Location(s): CuCamonga Dam

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	1140	59	0	50
END	1245	75	0	0

SUITABLE HABITAT?	
SPECIES	NOTES
Buow	marginal habitat.

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RSS	on NE corner of BSA
RAFSS	majority is on north end of basin & slopes surrounding
Dist.	Concrete channel, dirt roads, & basin bottoms

ADDITIONAL NOTES: (e.g., site description, sensitive species identified?)
PHOTOS 1-18, PHOTOS 453-471 PHOTOS 532-533 above Dam



Biological Reconnaissance Survey Form

Date: 6/12/14 Zone 1

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and CARA SNELLEN

Location(s): SAN ANTONIO HEIGHTS BASIN WEST FRANKISH

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0730	61	< 1	0
END	0745	80	2	0

SUITABLE HABITAT?	
SPECIES	NOTES
No Buow habitat.	

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RSS	mostly RSS.
Dist	Concrete & dirt roads

ADDITIONAL NOTES: (e.g., site description, sensitive species identified?)
PHOTO 1-4, 472-477



Biological Reconnaissance Survey Form

Date: 6/12/14 Zone 1

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and CARA SHELLEN

Location(s): SAN ANTONIO HEIGHTS BASIN #1

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0750	61	41	0
END	0810	80	2	0

SUITABLE HABITAT?	
SPECIES	NOTES
BUOW	potential due to presence of CGS burrows
Raptors	Mature trees present

VEGETATION COMMUNITIES	
COMMUNITY	Location / SPECIES PRESENT
RAFSS	Very small amount in NW corner
RSS	on hillsides & slopes
Dist.	Concrete apron & in basin & roads

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

PHOTO 1-5, 478-483



Biological Reconnaissance Survey Form

Date: 6/12/14 Zone 1 Project # 2014-085 Phase 1
Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and KATHERINE NIENNE

Location(s): SAN ANTONIO HEIGHTS BASIN #2

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0815	61	21	0
END	0830	80	2	0

SUITABLE HABITAT?	
SPECIES	NOTES
No Buow habitat	

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RSS	Everywhere surrounding basin
Dist	in basin & concrete canal

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

Photo 1-5, 484-491
Photo 6-7
UG Culvert ; deer tracks



Biological Reconnaissance Survey Form

Date: 6/12/14 Zonel

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and CARA SNELLEN

Location(s): SAN ANTONIO HEIGHTS BASIN #3

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0830	61	21	0
END	0840	80	2	0

SUITABLE HABITAT?	
SPECIES	NOTES
BUOW	potential burrows present
Raptors	mature trees (large oak)

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RSS	South side of basin & slopes
Dist.	In basin, roads, concrete apron on north side

ADDITIONAL NOTES: (e.g., site description, sensitive species identified?)
Photo 1-2492-499 photo 6-7 underground culverts. Avocado trees on eastern boundary Large oak tree in SE corner



Biological Reconnaissance Survey Form

Date: 6/12/14 Zone 1

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and CARA SHELLEN

Location(s): SAN ANTONIO HEIGHTS BASIN # 4

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	08:49	61	21	0
END	08:55	80	2	0

SUITABLE HABITAT?	
SPECIES	NOTES
Raptors	Mature trees present
No ^{pot.} Burw burrows.	

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RSS	In most of basin on slopes
Dist.	on access roads, canal, ^{flow} channel

ADDITIONAL NOTES: (e.g., site description, sensitive species identified?)
Photos 1-4, 500-505 UG Culverts Photo 5



Biological Reconnaissance Survey Form

Date: 6/12/14 Zone 1

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and CARA SNELLEN

Location(s): SAN ANTONIO HEIGHTS BASIN # 5 & # 6

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0900	61	<1	0
END	0950	80	2	0

SUITABLE HABITAT?	
SPECIES	NOTES
	No Boon habitat
Raptor	trees present.

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RAFSS	in small patches around basin #5+6
PSS	on slopes of hillsides of both basins
Dist	FA basins & along roads

ADDITIONAL NOTES: (e.g., site description, sensitive species identified?)
PHOTO 1-8, PHOTOS 506-522 #5506-522 #6523-534



Biological Reconnaissance Survey Form

Date: 6/11/14

ZONE 1

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

INCIDENTAL PLANT SPECIES			
HE Tgra	Cerbet	Lot(Pink)	Menlauw
Lo+SCO	Arudon	Denrig	Lepsqa
Erifas	Denmei	Eroct	ISOMEN
Helann	Hotses	Encom	Marmac
*Bromad	Concan	Rincom	Queber
Artcal	Camcal	Camche	malsax
Salapi	Emmpen	Euc Sp.	Planind
En Cact	dodder	Chyrscor	Popfre
Saltra	Sennel	cucfoet	Anacrus
Salmel	Keeter	Mallau	Queager
Balsal	Tetcom	Sehmol	Penset
Penspe	Sendoug	Eschal	oleander
Bacpil	Ribaur	Datwn	YRWR
Adetib	Amaalb	ArtDoug	yucca Sp.
Ceano	Toxidiv	Cirocc	Corfil
Schloar	Pipmel	checal	Engeron
Tamram	Avefat	Stepauc	Solcal
Entert	poodte	Vulmyo	
EriTnc	Prickly Rommin	Yicivil	
Plarac	caly ete y	Allalt	
yuc whi	Paloverde	Bronig	
Solame	Tal thust	Phacic	
Hir inc	Salcol	Bri cal	
Ambaca	Melind	Gnabic	
malfas	malsax	AComic	
Gnacal	Brotoc		
Mic gla	Brodia		
Cpypt sp.	Lupbic		
Cam mex	Stepvir		

INCIDENTAL WILDLIFE SPECIES	
WEIHI	PHAI
ANHU	AMKE
BASW	ECDD
RTHA	SAPH
CAQU	ROWR
NOMO	HOFI
BUSH	HOOR
CATO	NOFL
KILL	ALHU
WEST	AMRO
SPTD	CORA

COTTONTAIL
COYOTE



Biological Reconnaissance Survey Form

Date: 8/6/2014

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: Brad Haley

Location(s): Rich Basin (1-807-4A)

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0700pm	78	3-5	0
END	0730pm	77	3-5	0

SUITABLE HABITAT?	
SPECIES	NOTES
BWOW	Potential habitat
No Raptor	
SBWR	Critical habitat nearby. channelized both up & downstream of basin.

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RSS	CA buck ESS sunflower marribium
Willow + meadow	
Dist + Dev	Access roads, canals

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

houses to N, W, E
SCEPaw to S.
pics 3497-3509



Biological Reconnaissance Survey Form

Date: 6/12/14 Zone 2

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and CARA SNELIEN

Location(s): WIGGINS BASIN #1

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	1100	81	3	0
END	1130	83	1	0

SUITABLE HABITAT?	
SPECIES	NOTES
BUOW	potential habitat CGS present
No Raptor	
SBKR	habitat throughout.

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RAFSS	Most of basin in b/w channel banks
RSS	slopes outside of basin
RIPARIAN Dist	small strip in center of basin w/ mulefat on roads & concrete channels

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

PHOTOS 1-13, 535-549



Biological Reconnaissance Survey Form

Date: 6/12/14 Zone 2

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and CARA SNELLEN

Location(s): DEVIL CANYON DAM BASIN #1

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	1130	81	3	0
END	1200	83	1	0

SUITABLE HABITAT?	
SPECIES	NOTES
Spine-flower	habitat present
Jug Cal [Black walnut]	just outside basin (to north)
No Bu-w	
SBKR	

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RAFSS	majority of southern & northern parts of basin
Riparian	small strip in center of channel
Rumex marsh Dist.	small strip on eastern end. Rumex dominant Bull thistle evening primrose Salt heliotrope on roads & western portion / annual beardgrass

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

PHOTOS - 1-13, PHOTOS 550-557
PHOTOS 551-552 - WALNUT



Biological Reconnaissance Survey Form

Date: 6/12/14 Zone 2

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and CARA SNELLEN

Location(s): DEVIL BASIN #2

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	1200	81	3	0
END	1230	83	1	0

SUITABLE HABITAT?	
SPECIES	NOTES
JugCat ^{Black} walnut	just south of basin #1 & in basin #3
No Burw	
SBKR	

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RAFSS	most of ^{BSA} southern end of basin.
Dist	most of BSA is disturbed b/c of past grading + veg clearing activities

ADDITIONAL NOTES: (e.g., site description, sensitive species identified?)
PHOTOS 1-13, PHOTOS 558-564



Biological Reconnaissance Survey Form

Date: 6/12/14 Zone 2

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and CARA SNELLEN

Location(s): DEVIL BASIN #3

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	1230	81	3	0
END	1330	83	1	0

SUITABLE HABITAT?	
SPECIES	NOTES
Jugl Black walnut	inside basin (took GPS point) on north side of basin berm
NO BUSH	
SBKR	

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
Riparian	flowing water near eastern edge to #2; marshy hab. standing water most of eastern half of BSA
RAFISS	northern portion of BSA
Dist	southwestern portion of BSA & along roads

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

Photos: 1-13, PHOTOS 567-579

Marsh area (RWBLs)



Biological Reconnaissance Survey Form

Date: 6/16/2014 Zone 2

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and Katherine Vienne

Location(s): Little Mountain Dam

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0730	63	0-3	40
END	0800	82	3-5	15

SUITABLE HABITAT?	
SPECIES	NOTES
Buow	CGS burrows present, piles of riprap
Raptor	pot. nesting @ South boundary
Killdeer	rocky habitat in NW, maybe nesting

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
Dist	most of BSA is disturbed ^{including Basin} ongoing tractor activities.
RSS	in se portion of ^{BSA} BSA
Riparian	in SW corner of BSA ^{willows, mudflat, cottonwood}

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

Basin vegetated with weedy veg.
mature riparian area in SW corner

PHOTOS - 580 - 601

Active tractor work occurring in NW portion of BSA (moving soil piles)



Biological Reconnaissance Survey Form

Date: 6/16/2014 Zone 2

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and KATHERINE VIENNE

Location(s): MACQUIDDY BASIN # 4 (1-4 combined)

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	08:15	63	0-3	40
END	08:35	82	3-5	15

SUITABLE HABITAT?	
SPECIES	NOTES
Buow	potential habitat CES burrows
Raptor	in Eucalyptus trees
Swallow	potential habitat in drainage outlet

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
Riparian	Small strip of mullet & willows (less than 4ft. tall) - immature
Dist	Most of BS A is unvegetated or disturbed.
	Stand of eucalyptus grow in NE corner had no veg underneath

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

PHOTOS 602 - 607

Mostly unveg basin, except Eucalyptus trees
ornamental veg surrounding basin in backyards of homes



Biological Reconnaissance Survey Form

Date: 6/16/14 Zone 2 Project # 2014-085 Phase 1
Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and KATHERINE VIENNE

Location(s): BRUSH CANYON BASIN

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0850	63	0-3	40
END	0925	82	3-5	15

SUITABLE HABITAT?	
SPECIES	NOTES
Bufo	potential presence of CGS burrows
Raptor	in mature trees
C. Swallow	under ^{canal} bridge

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
Riparian	many annual sunflowers in basin channel
RSS	on northern slope of BSA.
Dist	eucalyptus grove in NW corner of BSA, roads most of BSA is disturbed/unvegetated, concrete to channels

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)
Photos 608-621



Biological Reconnaissance Survey Form

Date: 6/16/14 Zone 2 Project # 2014-085 Phase 1
Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and KATHERINE VIENNE

Location(s): TWIN CREEK SPREADING GROUNDS

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0940	63	0-3	40
END	1043	82	3-5	15

SUITABLE HABITAT?	
SPECIES	NOTES
BuOW	along berms and in basins presence of CGS
Raptor	adj to APE is Raptor habitat, no trees in APE
C. Swallow	only at the ^{canal} bridge / walkway

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RAFSS	NW corner has small patch of RAFSS small strips throughout BSA along berms in western border & NE corner
Riparian	small strip of willows & mullet in center of standing water in northern basin
Dist	most of this basin is disc'd or unvegetated (roads) (basin beds)

northern basins

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

PHOTOS 622-656



Biological Reconnaissance Survey Form

Date: 6/16/14 Zone 2 Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and KATHERINE VIENNE

Location(s): HARRISON BASIN

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	1100	63	0-3	40
END	1120	82	3-5	15

SUITABLE HABITAT?	
SPECIES	NOTES
Raptors	4 palm trees Eucalyptus trees @ North end
Bat	w/ beards Mature palms (2 in NE corner of BSA)
No SWFL habitat	
No BUBW	

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RAFS	Basin berms on west & east sides
Riparian	Marsh habitat in center of channel & southern end of basin where water collects.
Dist.	Access roads & concrete channels

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

PHOTOS 657 - 669

LBU surveys conducted in 2013 - negative results.
Southern portion not suitable for LBU during survey, but has developed since survey
* running water, riparian habitat See survey report discussion for further details.

Cooper's hawk observed adjacent to west boundary of BSA.
475829 / 3780729



Biological Reconnaissance Survey Form

Date: 6/16/2014 Zone 2

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and KATHERINE VIENNE

Location(s): DALEY BASIN

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	1155	63	0-3	40
END	1225	82	3-5	15

SUITABLE HABITAT?	
SPECIES	NOTES
Buow	CGS present, soft slopes, open space
Raptors	Eucalyptus trees present in NW & NE corners
Swallows	at Canal bridge in south end

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RAFSS	in NW & NE corners of BSA (leading into Daley Basin)
RSS	on slopes along northern edge & SW slopes @ entrance
Dist.	along roads, basin discoid & unvegetated 2 lots mechanically cleared & leveled @ south end of Basin

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

PHOTOS 670-690



Biological Reconnaissance Survey Form

Date: 6/16/14 zone 2

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: DRAD O'HALEY and KATHERINE VIENNE

Location(s): LITTLE SAND CANYON BASIN

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	1250	63	0-3	40
END	1322	82	3-5	15

SUITABLE HABITAT?	
SPECIES	NOTES
Buow	Open field w/ CA ground squirrels present.
Raptors	Eucalyptus trees present
B. Swallows	near Cement Culvert bridge

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RSS	along slopes in NW corner & NE corner.
Dist.	most majority of BSA is disturbed (disced & graded)
Riparian	large grove of sycamores at NE corner & outside BSA leading into Basin

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

Photos 691-711

* weedy veg in center of drainage



Biological Reconnaissance Survey Form

Date: 6/16/14 Zone 2

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and KATHERINE VIENNE

Location(s): SAND CANYON BASIN

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	1338	63	0-3	40
END	1405	82	3-5	15

SUITABLE HABITAT?	
SPECIES	NOTES
Raptors	Fremont Cottonwood trees present
Jug Cal [Black Walnut]	479102/3779156
No BWSW	graded slopes, no no pot burrows obs'd.

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
Riparian	strip of riparian hab culminated to larger riparian area @ south end of basin
Dist.	most of BSA is disturbed. access road & graded slopes

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

PHOTOS - 712 - 724

Scrubs oak woodland adjacent
Juniper (1) within project.
Coopers hawk observed adjacent +



Biological Reconnaissance Survey Form

Date: 6/12/14 - 6/16/14 Zone 2

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

INCIDENTAL PLANT SPECIES			
Mulfat	cheecal	Nicgla	Oenelatay
Elderberry	Hirinc	Salgood	Rumex sal
Aroyo Willow	Bromad	Salen	
Bull rush	Erociac	Verbthap	Polypogon
Cat tails	Ambaca	Salmei	Cirviel
Russian thistle	Hetgra	Crocal	Ceanosp.
Casterbean			
Fremont Cottonwood	lepSqu	Encact	Mallau
Willow sp.	Ama alb	Entrich	Ereset
Evening Primrose	Solcal	Sammex	
Monkey flower	Malfas	Adetas	
Sage Scrub	Rinicom	Senfla	
Chia	Isomen		
Eucalyptus sp	Calystegramac	Salcol	
Jimson weed	Penspe		
Scrub oak	Concan		
LOTSCO	Schlear		
Erofias			
Helann	Erigrac		
Artcal	Uulmyo		
Bacsal	Brania		
Cenmal	Gracal		
Arofat	Hetses		
Brodia	TAMram		
Saltra			

INCIDENTAL WILDLIFE SPECIES		
NOMO	WEKI	BASW
MODO	HO SP	PHAI
ANHU	EUST	GRRO
LEGO	BLGR	
CLSW	LASP	
KILL	AMCR	
	AMKE	
CATO	SPTO	
RWBL	COHA	
HOOR	BUOR	
BLPH	BUSH	

Coyote
Jack Rabbit
CBS



Biological Reconnaissance Survey Form

Date: 6/17/14 Zone 3

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and KATHERINE VIENNE

Location(s): SMALL CANYON DAM

SURVEY CONDITIONS

	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	1030	84	3-5	0
END	1700	74	3-4	0

SUITABLE HABITAT?

SPECIES	NOTES
Buon	potential in ditches/berms
Raptor	potential in Sycamore trees
Swallow	potential @ ^{bridge} overpass

VEGETATION COMMUNITIES

COMMUNITY	SPECIES PRESENT
Riparian	leading into basin from west In basin marsh habitat (cattails dense) Redwinged Blackbirds
PSS	on slopes along edges of BSA & in SE corner
Dist	basin berms, concrete canals, roads, graded lot

ADDITIONAL NOTES:

(e.g., site description, sensitive species identified?)

PHOTOS 729 - 745

Coyotes observed in BSA.



Biological Reconnaissance Survey Form

Date: 6/17/14 zone 3 Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and KATHERINE VIENNE

Location(s): DYNAMITE BASIN

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	1710	84	3-5	0
END	1725	74	3-4	0

SUITABLE HABITAT?	
SPECIES	NOTES
Raptor	presence of mature trees

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
Riparian	large willows + sycamore trees ^{ducks present}
RSS	along SW + north slopes of BSA.
Dist.	along roads + basin edges on N, S, + E edges ^(Russian thistle)

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

PHOTOS 746 - 759
open water w/ ducks present.



Biological Reconnaissance Survey Form

Date: 6/17/14 Zone 3

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and KATHERINE VIENNE

Location(s): COOK CANYON BASIN

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	1745	84	3-5	0
END	1810	74	3-4	0

SUITABLE HABITAT?	
SPECIES	NOTES
BUOW	potential on banks and disturbed areas
RAPTOR	potential in Sycamore trees, Eucalyptus

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RSS	along slopes of entrance road of northern ^{southern slopes of RSS B}
Riparian oak woodland	in central part of Basin b/w banks w/ mulefat, willows, syc water flowing
Dist.	Few trees in SW corner inside BAS. Concrete riprap in channel, large lot in SW corner

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

PHOTOS 760 - 775

- long entrance road
- recently disced dirt lot to west adjacent to entrance road
- water trickling through basin channel



Biological Reconnaissance Survey Form

Date: 6/17/14 Zone 3

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and KATHERINE

Location(s): OAK CREEK BASIN

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	1825	84	3-5	0
END	1848	74	3-4	0

SUITABLE HABITAT?	
SPECIES	NOTES
BUOW	potential open field
RAPTOR	potential in Sycamore trees

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
RSS	along slopes of BSA either side of channel
Riparian	In most of north end of BSA (basin) a small strip through mulefat + willows. tree sycamore present rest of BSA to outlet.
Sycamore wld	grove of syc trees in central portion of BSA
Dist:	Along roads, dirt lot, concrete channel @ south end

ADDITIONAL NOTES: (e.g., site description, sensitive species identified?)
PHOTOS 776-794



Biological Reconnaissance Survey Form

Date: 6/18/14

Zone 3

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and KATHERINE VIENNE

Location(s): Wilson Creek BASIN #1

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0701	58	0-1	0
END	0730	68	1-3	0

SUITABLE HABITAT?	
SPECIES	NOTES
BUOW	CGS burrow's present in berm's

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
Dist.	most of BSA is disturbed weedy veg inside basin
RAFSS	strip of RAFSS along eastern bank of north end BSA

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

PHOTOS 795-809

- Pine + Eucalyptus trees adj. to property across street
- = Parrots in the euc trees across street.
- major channel of Wilson Creek on north side BSA separated by large berm. Wilson Creek seems to have choice to enter basin or keep flowing in major RAFSS channel.

- WL movement should not be affected b/c of this structure



Biological Reconnaissance Survey Form

Date: 6/18/14 zone 3

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and KATHERINE VIENNE

Location(s): OAK GLEN CREEK BASIN #1

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0738	58	0-1	0
END	0754	60	1-3	0

SUITABLE HABITAT?	
SPECIES	NOTES
BUOW	potential CGS burrows present, but unlikely due to graded slopes. potential in mature trees just outside of basin at edges.
RAPTOR	

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
oak woodland	(<i>Q. berberidifolia</i>) along southern edge of BSA
PAFSS	(<i>Verbascum</i> , <i>dearweed</i> , <i>buckwheat</i>) along slopes of eastern part of Basin
Dist	Most of basin is disturbed & roads

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

OAK WOODLAND PRESENT (*Quercus berb.*) in southern end

- Mousley Museum Property adjacent to southern edge of BSA
Separated by oak woodland
PHOTOS - 810 - 820
- Surrounded by open fence lateral fencing as trail system
- area seems to be part of revegetation plan that was successful



Biological Reconnaissance Survey Form

Date: 6/18/14 Zone 3

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and KATHERINE VIENNE

Location(s): OAK GLEN CREEK BASIN #2

SURVEY CONDITIONS

	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0758	58	0-1	0
END	0830	60	1-3	0

SUITABLE HABITAT?

SPECIES	NOTES
BUOW	potential CGS burrows present, but unlikely due to graded slopes
RAPTOR	potential in mature trees, just outside of basins @ edges.

VEGETATION COMMUNITIES

COMMUNITY	SPECIES PRESENT
Oak woodland	along southern edge of BSA south of road
Riparian	along creek in north end BSA (not dense enough to call syc. woodland)
RAPSS Dist	along slopes in central & eastern & southern parts of BSA Most of basin & access roads, concrete channels

ADDITIONAL NOTES:

RSS small patch
edge BSA. (e.g., site description, sensitive species identified?)

OAK WOODLAND

PHOTOS 821-845

- crew drilling well in NE corner
- Riparian area has syc, redwood, willows, mullet, cottonwood present. Clearly part of revegetation (Hump) plan that was successful. Trees all mature. Nature trail along northern edge of BSA talking about revegetation from basin construction & the types of habitat present.
- See pics of nature trail signs for more info



Biological Reconnaissance Survey Form

Date: 6/18/14 Zone 3 Project # 2014-085 Phase 1
Project Name SB County FLOD Project

Surveyor Names: BRAD HALEY and KATHERINE VIENNE

Location(s): OAK GLEN CREEK BASIN #3

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0838	58	0-1	0
END	0903	68	1-3	0

SUITABLE HABITAT?	
SPECIES	NOTES
BUOW	potential CGS burrows present, but unlikely due to graded slopes
RAPTOR	potential in Mature trees, just outside of basins edges

that are well maintained

VEGETATION COMMUNITIES	
COMMUNITY	SPECIES PRESENT
oak woodland	small strip on south edge of BSA, south of road
RAFSS	Primarily on eastern portion of BSA
RSS Dist.	Along slopes of north edge BSA western half of BSA, roads, & graded area on eastern edge

ADDITIONAL NOTES:
(e.g., site description, sensitive species identified?)

OAK WOODLAND present in south
RAFSS on east end.
PHOTOS 846 - 865

- This is the basin that the natural creek flows into
- Revegetation effort along northern edge of BSA that was successful but still a part of sprinkler irrigation
- See photos of nature trail signs for more info.



Biological Reconnaissance Survey Form

Date: 6/17/14 - 6/18/14 Zone 3

Project # 2014-085 Phase 1

Project Name SB County FLOD Project

INCIDENTAL PLANT SPECIES

Willow sp	Jimson weed
Cat-tails	Choya
Mulfat	Opuntia
Bull Rush	White Sage
Sunflower	Scatebroom
Buckwheat	Oak Woodland
Eucalyptus sp	Marrubium Vulgare
Fountain grass	Sycamore Woodland
Chia	Querus Berberioitola
Sycamore	Pine sp.
Telegraph weed	Mimulus sp.
Encelia	
Fremont Cottonwood	
Black Sage	
Chemise	
Scrub oak	
Toyon	
Poison oak	
ISOCOMA	
ESS	
Tree Tobacco, White tobacco bush	
CROTON	
Tamarisk	
Russian Thistle	
Mustard Sp.	
Yerba Santa	

INCIDENTAL WILDLIFE SPECIES

CAQU	AMCR
BASW	ANHU
SPTO	CORA
CATO	Mallard
RTHA	Wild Parrot
EUST	
RWBL	
NOMD	
PHAI	
MODD	
LEGO	
HOOR	
SAPH	

Cottontail
C6S
COYOTE

Appendix B

Site Photographs

Zone 1

San Antonio Heights Basin: West Frankish

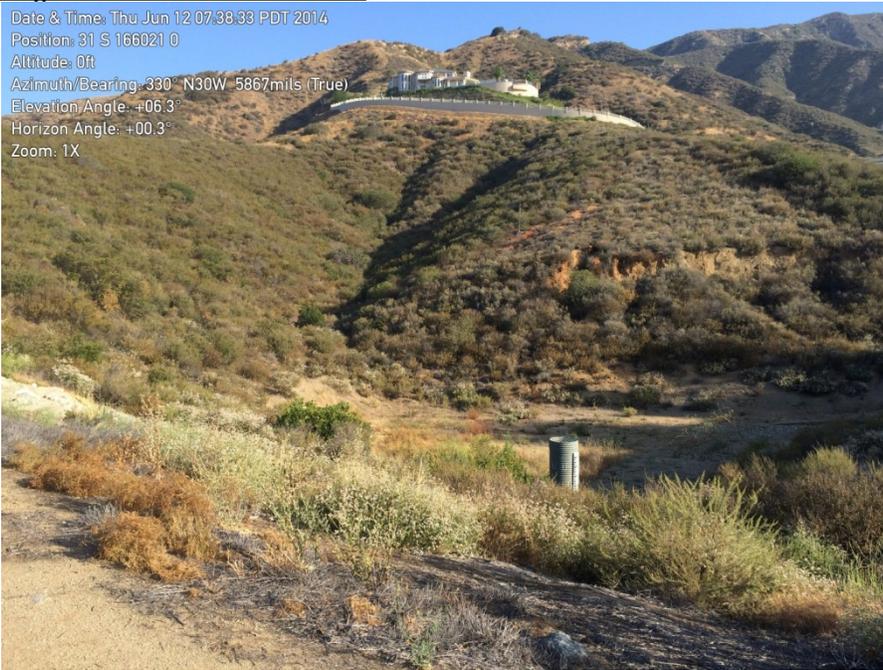


Photo 1. Looking northwest from southeastern corner of Biological Study Area (BSA).
Photo taken: 6/12/2014

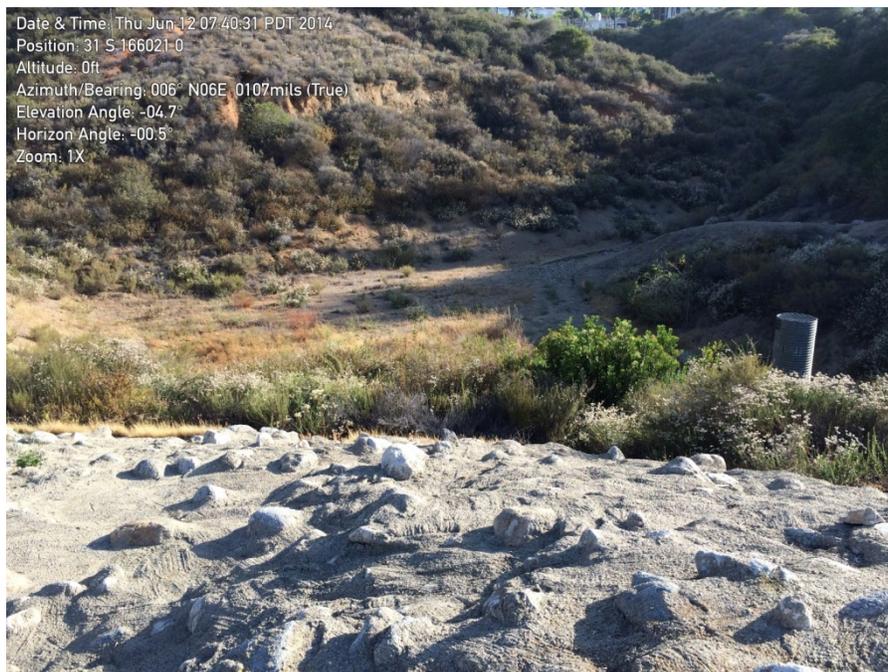


Photo 2. Looking north from central portion of BSA.
Photo taken: 6/12/2014

San Antonio Heights Basin #1



Photo 1. Looking northwest from central portion of BSA.
Photo taken: 6/12/2014

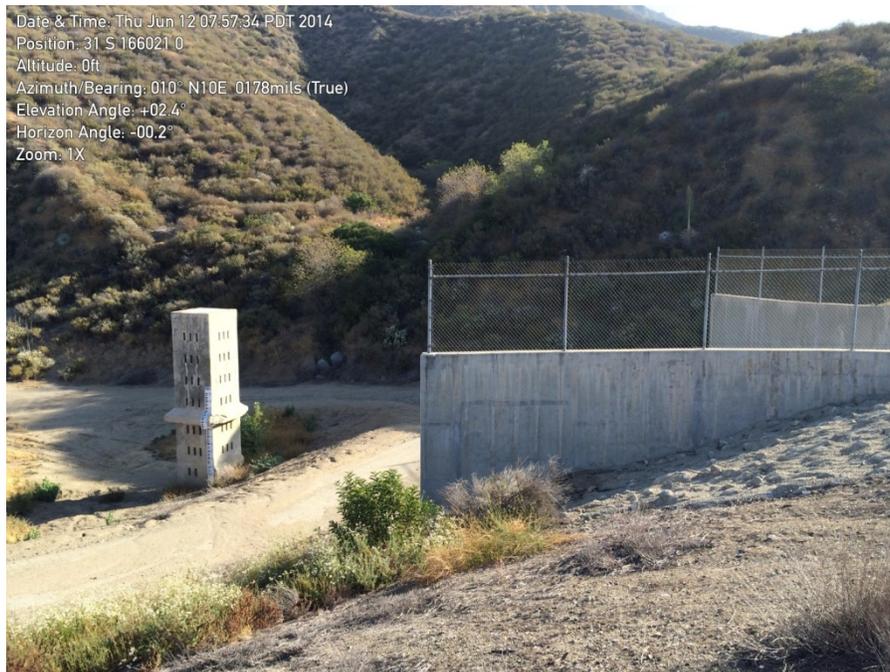


Photo 2. Looking northeast from central portion of BSA.
Photo taken: 6/12/2014

San Antonio Heights Basin #2

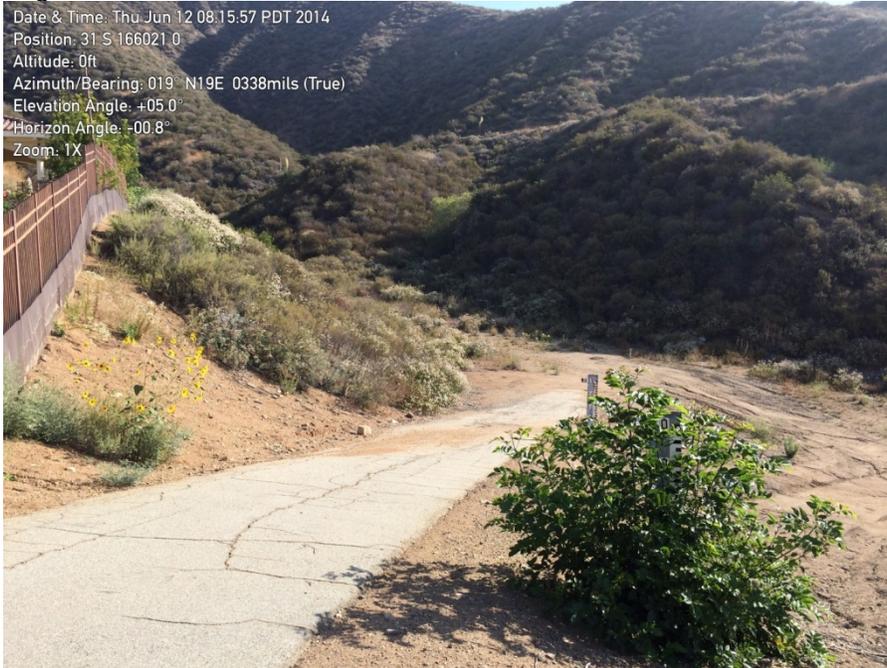


Photo 1. Looking north from western side of BSA.
Photo taken: 6/12/2014

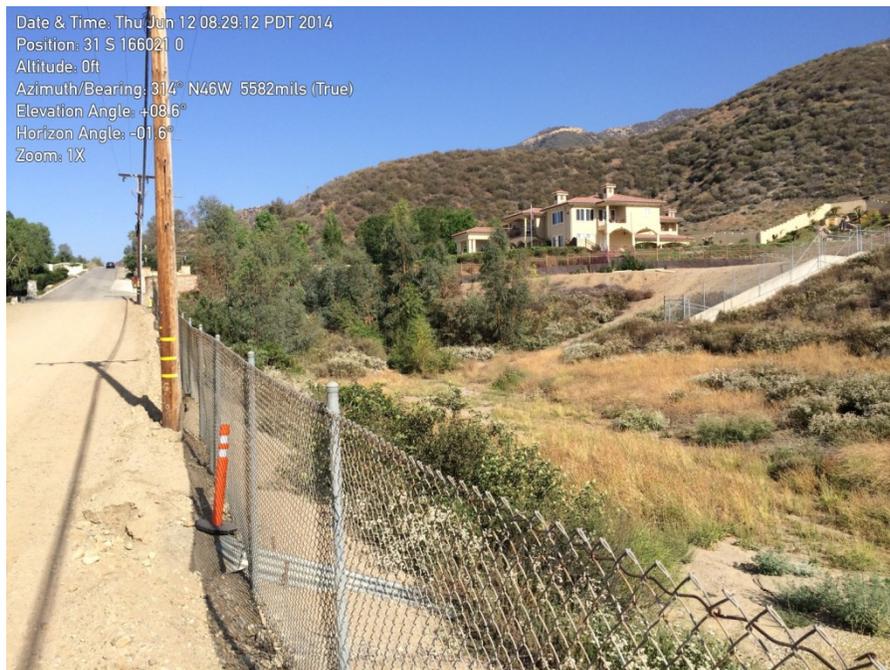


Photo 2. Looking west from southeastern corner of BSA.
Photo taken: 6/12/2014

San Antonio Heights Basin #3



Photo 1. Looking northeast from southwestern corner of BSA.
Photo taken: 6/12/2014



Photo 2. Looking north from central-east portion of BSA.
Photo taken: 6/12/2014

San Antonio Heights Basin #4



Photo 1. Looking northeast from central-west portion of BSA.
Photo taken: 6/12/2014



Photo 2. Looking south from central-west portion of BSA.
Photo taken: 6/12/2014

San Antonio Heights Basin #5



Photo 1. Looking north from central-west portion of BSA.
Photo taken: 6/12/2014



Photo 2. Looking northeast from central-west portion of BSA.
Photo taken: 6/12/2014



Photo 3. Looking southeast from central portion of BSA.
Photo taken: 6/12/2014



Photo 4. Looking northwest from southeastern corner of BSA. This part of the BSA is shared with Basin #6. Photo taken: 6/12/2014

San Antonio Heights Basin #6

Date & Time: Thu Jun 12 09:45:24 PDT 2014
Position: 31 S 166021 0
Altitude: 0ft
Azimuth/Bearing: 359° N01W 6382mils (True)
Elevation Angle: +04.9°
Horizon Angle: +00.2°
Zoom: 1X



Photo 1. Looking north from central-east portion of BSA.
Photo taken: 6/12/2014

Date & Time: Thu Jun 12 09:45:34 PDT 2014
Position: 31 S 166021 0
Altitude: 0ft
Azimuth/Bearing: 272° N88W 4836mils (True)
Elevation Angle: +08.5°
Horizon Angle: +03.0°
Zoom: 1X



Photo 2. Looking west from central-east portion of BSA.
Photo taken: 6/12/2014



Photo 3. Looking south from central-east portion of BSA.
Photo taken: 6/12/2014

Cucamonga Dam

Date & Time: Wed Jun 11 11:41:21 PDT 2014
Position: 31 S 166021 0
Altitude: 0ft
Azimuth/Bearing: 344° N16W 6116mils (True)
Elevation Angle: +07.2°
Horizon Angle: -00.4°
Zoom: 1X



Photo 1. Looking northwest from southeastern corner of BSA.
Photo taken: 6/11/2014

Date & Time: Wed Jun 11 11:41:26 PDT 2014
Position: 31 S 166021 0
Altitude: 0ft
Azimuth/Bearing: 300° N60W 5333mils (True)
Elevation Angle: +04.8°
Horizon Angle: -00.0°
Zoom: 1X



Photo 2. Looking west from southeastern corner of BSA.
Photo taken: 6/11/2014



Photo 3. Looking southwest from central portion of BSA.
Photo taken: 6/11/2014



Photo 4. Looking east from central-west portion of BSA.
Photo taken: 6/11/2014

Demens Basin #1



Photo 1. Looking east from southwest corner of BSA.
Photo taken: 6/11/2014



Photo 2. Looking east from southwest portion of BSA.
Photo taken: 6/11/2014

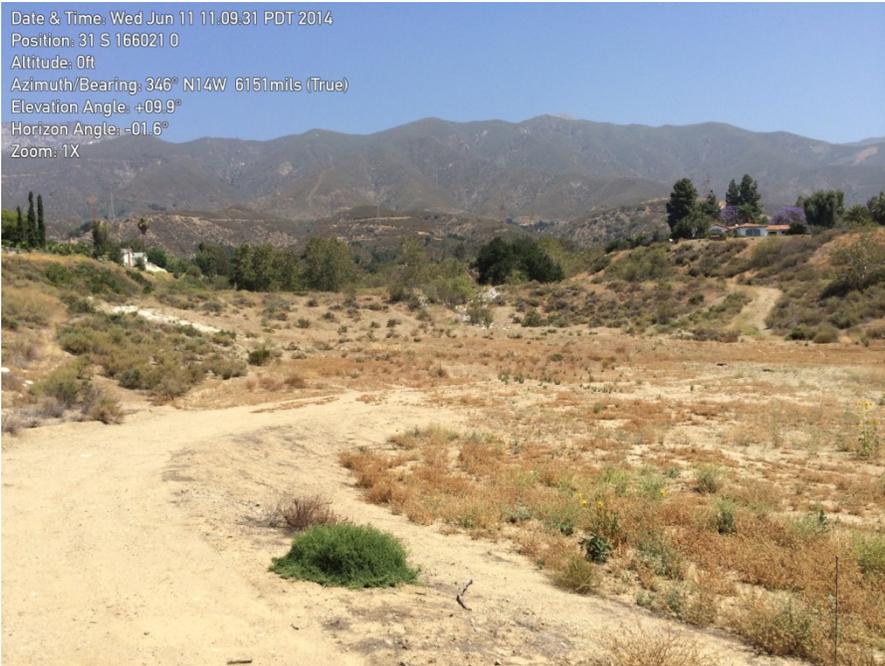


Photo 3. Looking north from central portion of BSA.
Photo taken: 6/11/2014

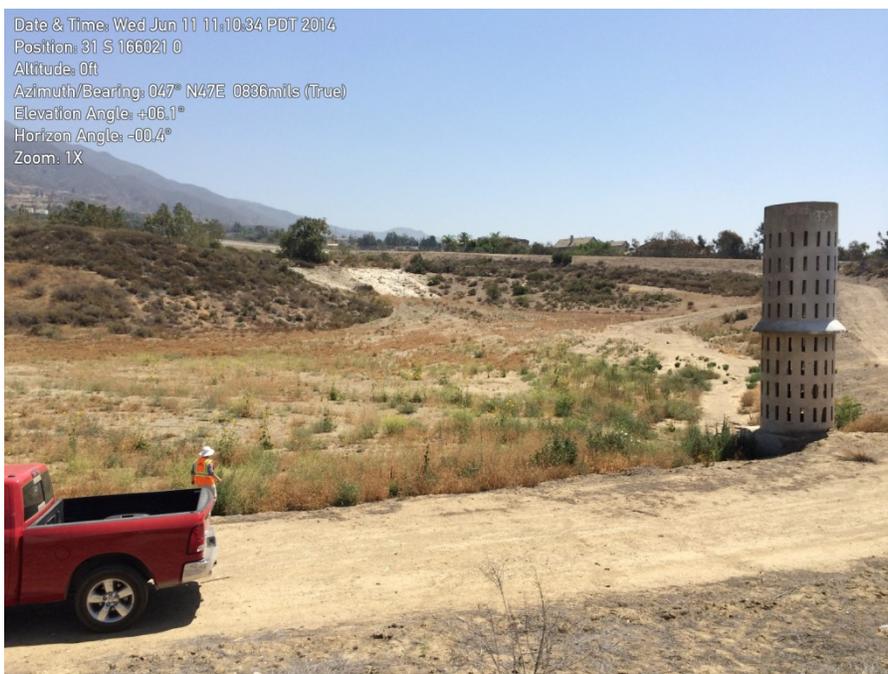


Photo 4. Looking east from central portion of BSA.
Photo taken: 6/11/2014

Hillside Basin



Photo 1. Looking west from northeastern corner of BSA.
Photo taken: 6/11/2014



Photo 2. Looking northwest from central portion of BSA.
Photo taken: 6/11/2014

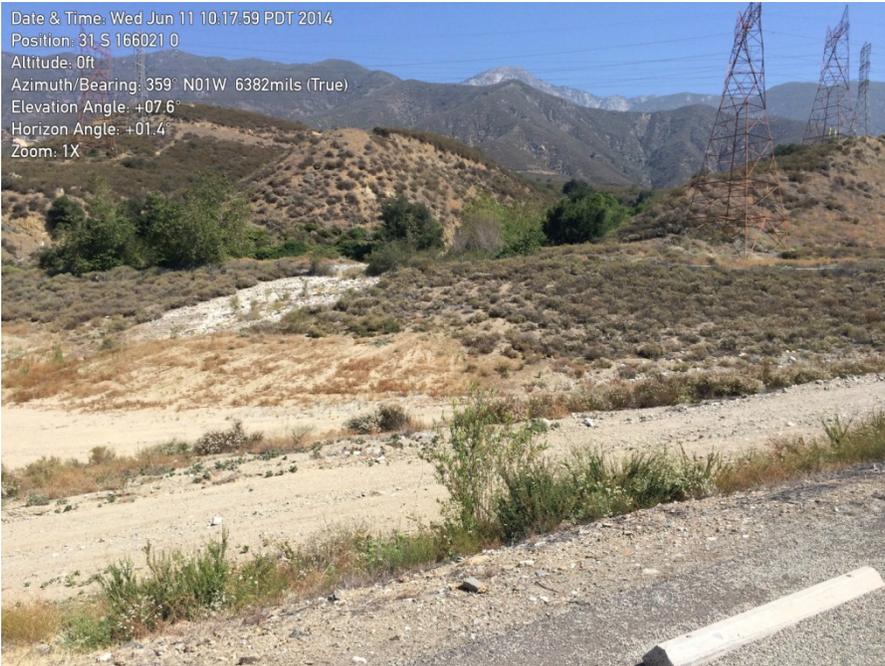


Photo 3. Looking north from central portion of BSA.
Photo taken: 6/11/2014



Photo 4. Looking east from central portion of BSA.
Photo taken: 6/11/2014

Deer Creek Debris Basin



Photo 1. Looking north from central-east portion of BSA.
Photo taken: 6/11/2014



Photo 2. Looking west from central-east portion of BSA.
Photo taken: 6/11/2014



Photo 3. Looking southeast from northwestern corner of BSA.
Photo taken: 6/11/2014



Photo 4. Looking south from southwestern corner of BSA.
Photo taken: 6/11/2014

Etiwanda Debris Basin



Photo 1. Looking south from northeastern corner of BSA.
Photo taken: 6/11/2014



Photo 2. Looking south from northwestern corner of BSA.
Photo taken: 6/11/2014

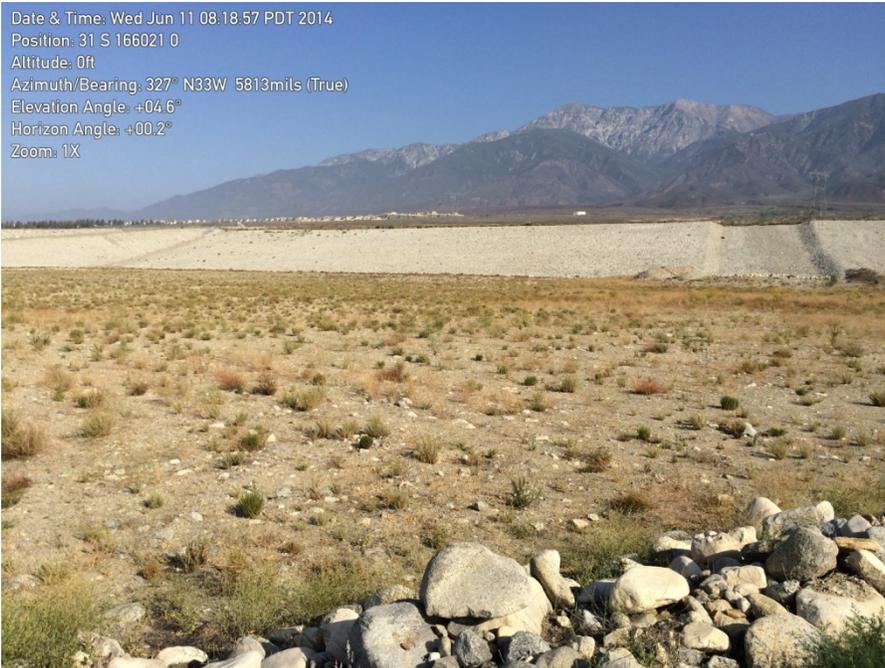


Photo 3. Looking northwest from central portion of BSA.
Photo taken: 6/11/2014



Photo 4. Looking south from north-central portion of BSA.
Photo taken: 6/11/2014

Rich Basin



Photo 1. Looking west from east end of BSA.
Photo taken: 8/6/2014



Photo 2. Looking north from southwest corner of BSA.
Photo taken: 8/6/2014

Zone 2
Wiggins Basin #1



Photo 1. Looking west from northern edge of BSA.
Photo taken: 6/12/2014

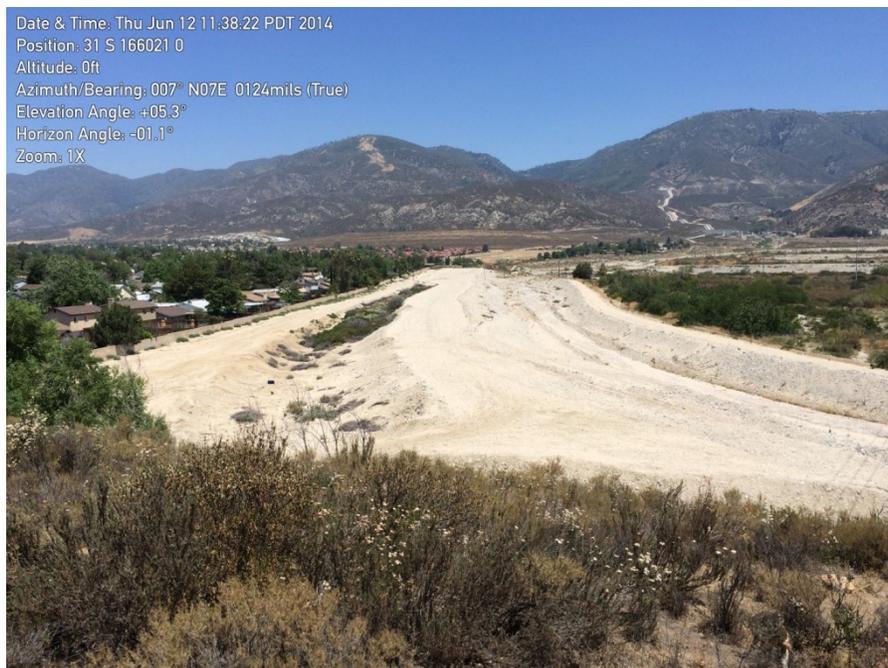


Photo 2. Looking north from central-west edge of BSA.
Photo taken: 6/12/2014

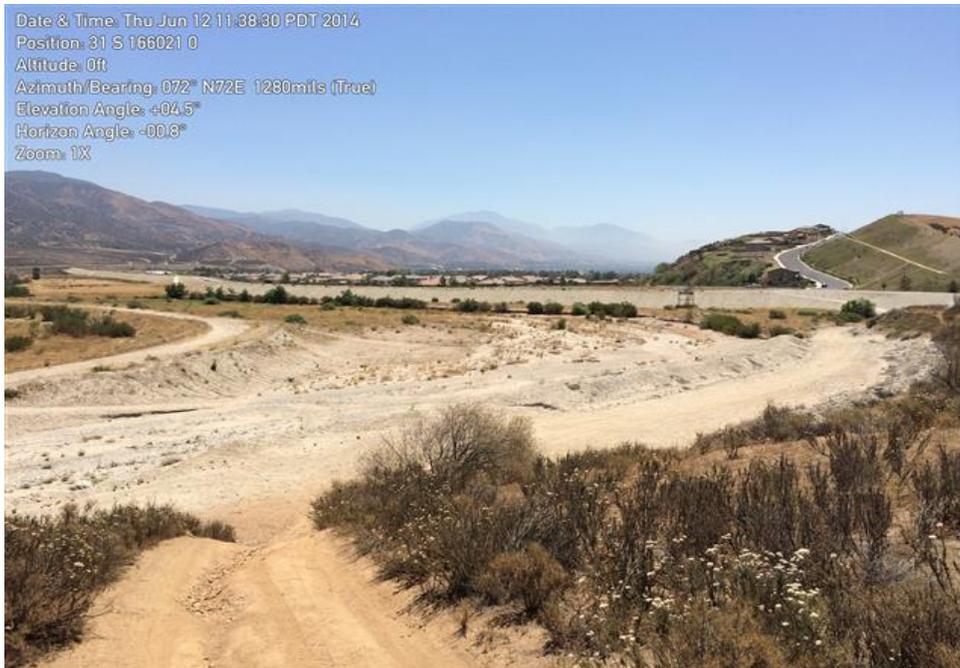


Photo 3. Looking southeast from central-west edge of BSA.
Photo taken: 6/12/2014



Photo 4. Looking west from eastern edge of BSA.
Photo taken: 6/12/2014

Devil Canyon Dam#1



Photo 1. Looking west from eastern edge of BSA.
Photo taken: 6/12/2014



Photo 2. Looking west from central portion of BSA.
Photo taken: 6/12/2014



Photo 3. Looking east from central portion of BSA.
Photo taken: 6/12/2014

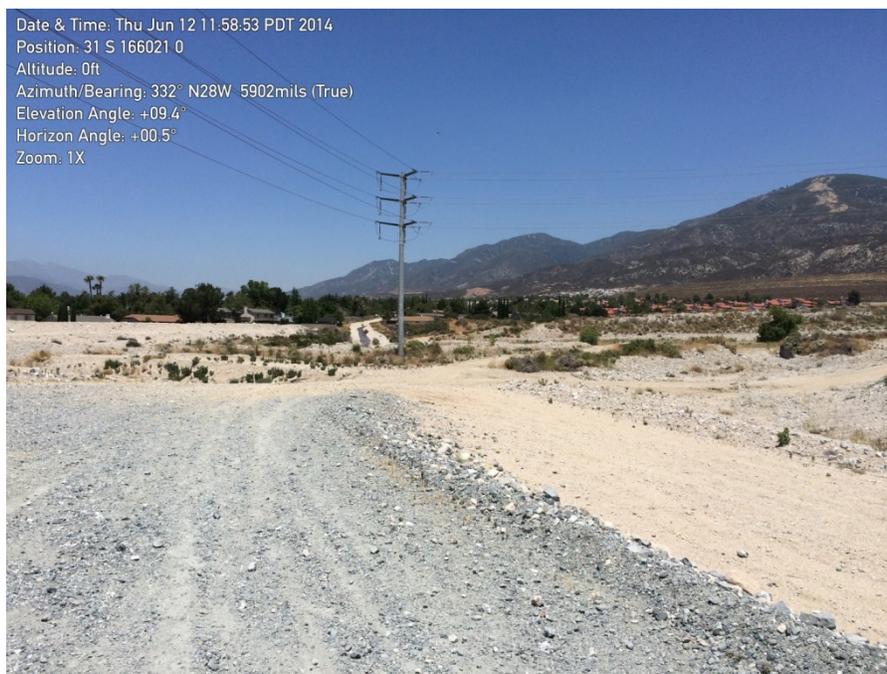


Photo 4. Looking north from western edge of BSA.
Photo taken: 6/12/2014

Devil Basin #2



Photo 1. Looking east from western edge of BSA.
Photo taken: 6/12/2014

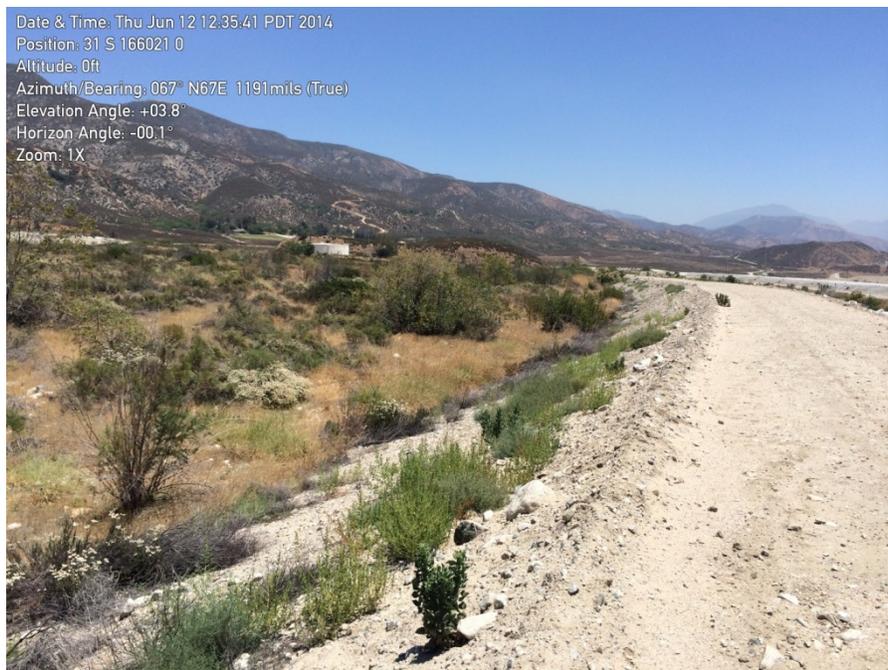


Photo 2. Looking east from central-west portion of BSA. Southern California black walnut shown in center of photo. Photo taken: 6/12/2014



Photo 3. Looking east from central portion of BSA.
Photo taken: 6/12/2014



Photo 4. Looking west from central portion of BSA.
Photo taken: 6/12/2014

Devil Basin #3



Photo 1. Looking west from within basin.
Photo taken: 6/2/2015



Photo 2. Looking east from southern levee around basin.
Photo taken: 6/2/2015



Photo 3. Looking north across BSA.
Photo taken: 6/2/2015



Photo 4. Looking east at outlet structure.
Photo taken: 6/2/2015

Little Mountain Dam



Photo 1. Looking east from western portion of BSA.
Photo taken: 6/12/2014



Photo 2. Looking north from western portion of BSA. Potential burrowing owl burrow in the berm surrounding the basin. Photo taken: 6/16/2014.



Photo 3. Looking west from eastern edge of BSA.
Photo taken: 6/16/2014



Photo 4. Looking southeast from eastern edge of BSA.
Photo taken: 6/16/2014.

MacQuiddy Basin #4 (#1-4 combined)



Photo 1. Looking north from southwest corner of BSA.
Photo taken: 6/16/2014.



Photo 2. Looking south from northwest corner of BSA.
Photo taken: 6/16/2014.

Brush Canyon

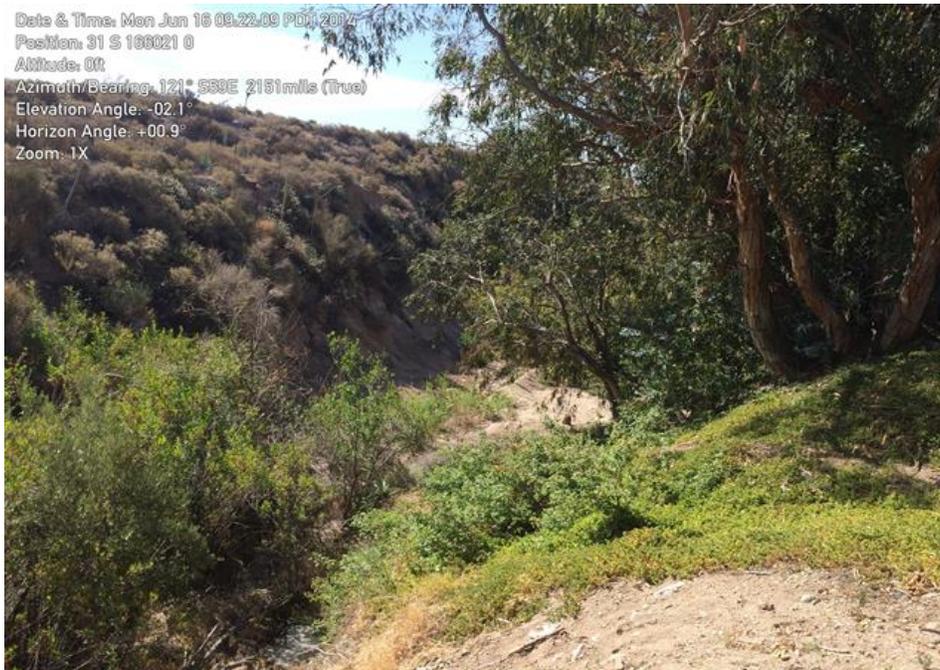


Photo 1. Looking south from northwest corner of BSA.
Photo taken: 6/16/2014.



Photo 2. Looking west from southwest corner of BSA.
Photo taken: 6/16/2014.



Photo 3. Looking northwest from central portion of BSA.
Photo taken: 6/16/2014.



Photo 4. Looking north from southwest corner of BSA.
Photo taken: 6/16/2014

Harrison Basin



Photo 1. Looking north from north-central portion of BSA.
Photo taken: 6/16/2014

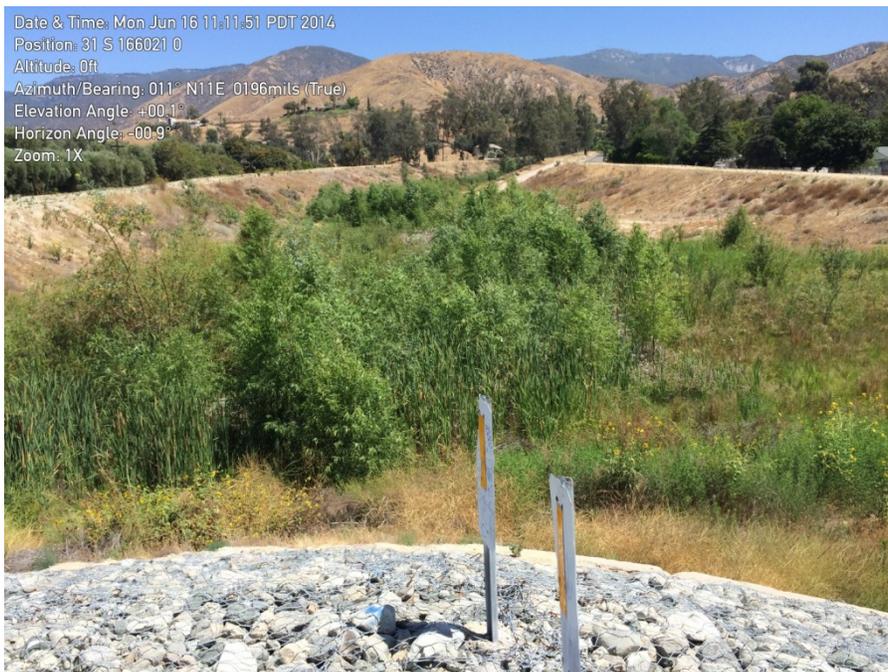


Photo 2. Looking north from southern edge of BSA.
Photo taken: 6/16/2014

Daley Basin



Photo 1. Looking north from south-central portion of BSA.
Photo taken: 6/16/2014.



Photo 2. Looking east from northwest corner of BSA.
Photo taken: 6/16/2014.

Twin Creek Spreading Grounds Basin



Photo 1. Looking northeast from northwestern portion of BSA.
Photo taken: 6/16/2014.



Photo 2. Looking east from northwestern portion of BSA.
Photo taken: 6/16/2014.



Photo 3. Looking east from central-west portion of BSA.
Photo taken: 6/16/2014.



Photo 4. Looking west from central-east portion of BSA.
Photo taken: 6/16/2014.

Little Sand Canyon Basin



Photo 1. Looking north from southern edge of BSA.
Photo taken: 6/16/2014.



Photo 2. Looking southwest from northeast corner of BSA.
Photo taken: 6/16/2014.



Photo 3. Looking southwest from northeast portion of BSA.
Photo taken: 6/16/2014.

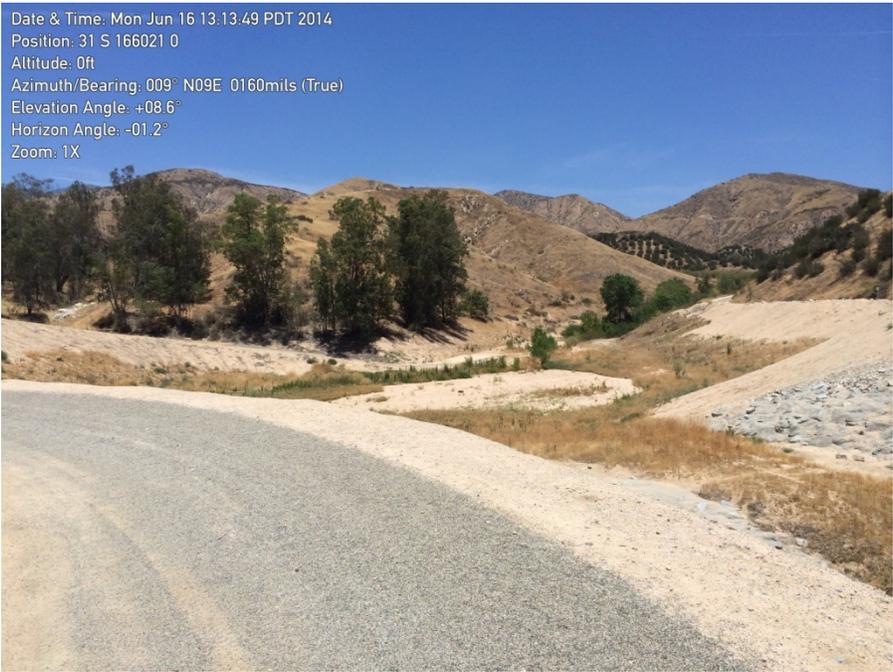


Photo 4. Looking north from central portion of BSA.
Photo taken: 6/16/2014.

Sand Canyon Basin

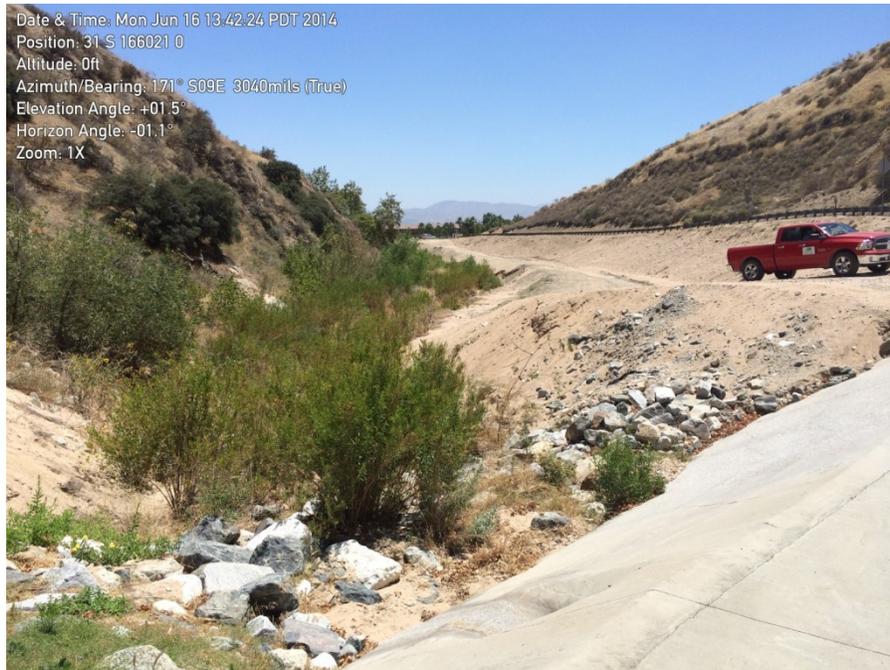


Photo 1. Looking south from north end of BSA. Photo taken: 6/16/2014.



Photo 2. Looking north from south end of BSA. Photo taken: 6/16/2014.

Zone 3
Small Canyon Dam



Photo 1. Looking southeast from the northwest corner of the BSA.
Photo taken: 6/17/2014.



Photo 2. Looking west from the south-central portion of the BSA.
Photo taken: 6/17/2014.



Photo 3. Looking southeast from the south-central portion of the BSA.
Photo taken: 6/17/2014.



Photo 4. Looking west from the central portion of the BSA.
Photo taken: 6/17/2014.

Dynamite Basin



Photo 1. Looking east from western edge of BSA.
Photo taken: 6/17/2014.



Photo 2. Looking north from southern edge of BSA.
Photo taken: 6/17/2014.



Photo 3. Looking west from eastern edge of BSA.
Photo taken: 6/17/2014.



Photo 4. Looking northwest from eastern edge of BSA.
Photo taken: 6/17/2014.

Cook Canyon Basin



Photo 1. Looking northeast from eastern portion of BSA.
Photo taken: 6/17/2014.



Photo 2. Looking northwest from eastern portion of BSA.
Photo taken: 6/17/2014.



Photo 3. Looking northeast from western portion of BSA.
Photo taken: 6/17/2014.



Photo 4. Looking southwest towards western edge of BSA.
Photo taken: 6/17/2014.

Oak Creek Basin



Photo 1. Looking northeast from western edge of BSA.
Photo taken: 6/17/2014.



Photo 2. Looking north from central portion of BSA.
Photo taken: 6/17/2014.

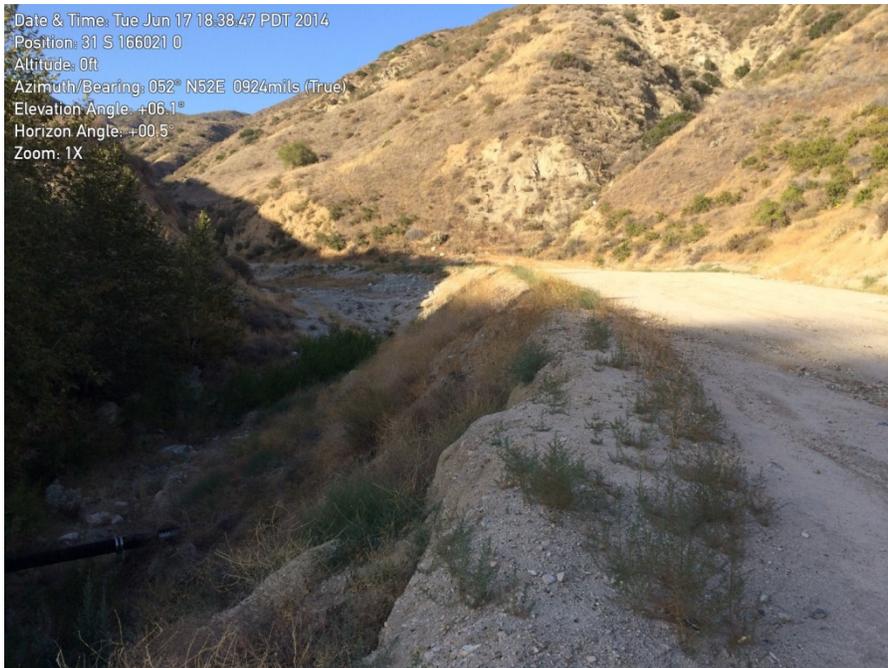


Photo 3. Looking northeast from central portion of BSA.
Photo taken: 6/17/2014.



Photo 4. Looking south from northern portion of BSA.
Photo taken: 6/17/2014.

Wilson Creek Basin #1



Photo 1. Looking north from southeast corner of BSA.
Photo taken: 6/18/2014.



Photo 2. Looking northeast from southwest corner of BSA.
Photo taken: 6/18/2014.

Oak Glen Creek Basin #1



Photo 1. Looking southwest from the northeast corner of BSA.
Photo taken: 6/18/2014.



Photo 2. Looking south from the northeast corner of BSA.
Photo taken: 6/18/2014.

Oak Glen Creek Basin #2



Photo 1. Looking northeast from the northwest portion of the BSA.
Photo taken: 6/18/2014.



Photo 2. Looking south from the north-central portion of the BSA.
Photo taken: 6/18/2014.



Photo 3. Looking south from the north-central portion of the BSA.
Photo taken: 6/18/2014.



Photo 4. Looking west from the northeast corner of the BSA.
Photo taken: 6/18/2014.

Oak Glen Creek Basin #3



Photo 1. Looking southeast from the northwest corner of the BSA.
Photo taken: 6/18/2014.



Photo 2. Looking south from the north-central portion of the BSA.
Photo taken: 6/18/2014.



Photo 3. Looking southwest from the northeast corner of the BSA.
Photo taken: 6/18/2014.



Photo 4. Looking west from the southeast corner of the BSA.
Photo taken: 6/18/2014.

Scientific Name	Common Name	Zone 1	Zone 2	Zone 3
VASCULAR PLANTS				
GYMNOSPERMS				
PINACEAE	PINE FAMILY			
<i>Pinus sp.</i>	pine			X
ANGIOSPERMS (DICOTYLEDONS)				
ADOXACEAE	ELDERBERRY FAMILY			
<i>Sambucus nigra</i> ssp. <i>caerulea</i> (= <i>S. mexicana</i>)	blue elderberry	X	X	
AMARANTHACEAE	AMARANTH FAMILY			
<i>Amaranthus albus</i>	tumbling pigweed	X	X	
ANACARDIACEAE	SUMAC OR CASHEW FAMILY			
<i>Malosma laurina</i>	laurel sumac	X	X	
<i>Schinus molle</i> *	Peruvian pepper tree	X		
<i>Toxicodendron diversilobum</i>	poison oak	X	X	X
APOCYNACEAE (or ASCLEPIADACEAE)	DOGBANE FAMILY			
<i>Nerium oleander</i> *	oleander	X		
ASTERACEAE	SUNFLOWER FAMILY			
<i>Acourtia microcephala</i>	sacapellote	X		
<i>Ambrosia acanthicarpa</i>	annual bur-sage	X	X	
<i>Artemisia californica</i>	California sagebrush	X	X	X
<i>Artemisia douglasiana</i>	mugwort	X		
<i>Baccharis pilularis</i>	coyote brush	X		
<i>Baccharis salicifolia</i>	mulefat	X	X	X
<i>Brickellia californica</i>	California brickellbush	X		
<i>Carduus pycnocephalus</i> *	Italian thistle	X		
<i>Centaurea melitensis</i> *	totalote	X	X	
<i>Cirsium occidentale</i>	cobweb thistle	X		
<i>Cirsium vulgare</i> *	bull thistle		X	
<i>Corethrogyne filaginifolia</i> (= <i>Lessingia f.</i>)	common sandaster	X		
<i>Encelia actoni</i>	Acton daisy	X	X	X
<i>Ericameria teretifolia</i>	green rabbitbrush	X		
<i>Erigeron canadensis</i> (= <i>Conyza c.</i>)	horseweed	X	X	
<i>Erigeron sp.</i>	daisy	X		
<i>Eriophyllum confertiflorum</i>	golden yarrow	X		
<i>Glebionis coronaria</i> * (= <i>Chrysanthemum coronarium</i>)	garland daisy	X		
<i>Helianthus annuus</i>	common sunflower	X	X	X
<i>Heterotheca grandiflora</i>	telegraph weed	X	X	X
<i>Heterotheca sessiliflora</i>	hairy golden-aster	X	X	
<i>Isocoma menziesii</i>	coastal goldenbush	X	X	X
<i>Lepidospartum squamatum</i>	scale-broom	X	X	X
<i>Malacothrix saxatilis</i>	cliff malacothrix	X		
<i>Pseudognaphalium biolettii</i> (= <i>Gnaphalium bicolor</i>)	bicolored cudweed	X		
<i>Pseudognaphalium californicum</i>	California everlasting	X	X	
<i>Senecio flaccidus</i> var. <i>douglasii</i>	sand-wash butterweed	X	X	
<i>Senecio vulgaris</i> *	common groundsel	X		
<i>Solidago californica</i>	California goldenrod	X	X	
<i>Stephanomeria pauciflora</i>	wire lettuce	X		
<i>Stephanomeria virgata</i>	twiggy wreathplant	X		
<i>Tetradymia comosa</i>	hairy horsebrush	X		
BORAGINACEAE	BORAGE FAMILY			

Scientific Name	Common Name	Zone 1	Zone 2	Zone 3
<i>Cryptantha sp.</i>	cryptantha	X		
<i>Emmenanthe penduliflora</i>	whispering bells	X		
<i>Eriodictyon trichocalyx</i>	hairy yerba santa	X	X	X
<i>Heliotropium curassavicum</i>	salt heliotrope		X	
<i>Phacelia cicutaria</i>	caterpillar phacelia	X		
<i>Turricula parryi</i>	poodle-dog bush	X		
BRASSICACEAE	MUSTARD FAMILY			
<i>Brassica nigra</i> *	black mustard	X	X	X
<i>Hirshfeldia incana</i> *	short-podded mustard	X	X	X
CACTACEAE	CACTUS FAMILY			
<i>Cylindropuntia echinocarpa</i> (= <i>Opuntia</i> e.)	golden cholla			X
<i>Opuntia basilaris</i> var. <i>basilaris</i>	beavertail cactus			X
CHENOPODIACEAE	GOOSEFOOT FAMILY			
<i>Chenopodium californicum</i>	California goosefoot	X	X	
<i>Salsola tragus</i> *	Russian thistle; tumbleweed	X	X	X
CONVOLVULACEAE	MORNING-GLORY FAMILY			
<i>Calystegia macrostegia</i>	western bindweed	X	X	
<i>Cuscuta</i> sp.	dodder	X		
CUCURBITACEAE	GOURD FAMILY			
<i>Cucurbita foetidissima</i>	calabazilla	X		
<i>Marah macrocarpa</i> (= <i>M. macrocarpus</i>)	wild cucumber	X		
EUPHORBIACEAE	SPURGE FAMILY			
<i>Croton californicus</i>	California croton		X	X
<i>Croton setiger</i> (= <i>Eremocarpus setigerus</i>)	dove weed		X	
<i>Ricinus communis</i> *	castor-bean	X	X	
FABACEAE	LEGUME FAMILY			
<i>Acmispon americanus</i> var. <i>americanus</i> (= <i>Lotus purshianus</i>)	Spanish clover	X		
<i>Acmispon glaber</i> (= <i>Lotus scoparius</i>)	deerweed	X	X	
<i>Lupinus bicolor</i>	miniature lupine	X		
<i>Melilotus indica</i> *	sourclover	X		
<i>Parkinsonia florida</i> (= <i>Cercidium</i> f.)	blue palo verde	X		
<i>Vicia villosa</i> *	winter vetch	X		
FAGACEAE	OAK FAMILY			
<i>Quercus agrifolia</i>	coast live oak	X		X
<i>Quercus berberidifolia</i>	scrub oak	X	X	X
GERANIACEAE	GERANIUM FAMILY			
<i>Erodium cicutarium</i> *	red-stemmed filaree	X	X	
GROSSULARIACEAE	GOOSEBERRY FAMILY			
<i>Ribes aureum</i>	golden currant	X		
JUGLANDACEAE	WALNUT FAMILY			
<i>Juglans californica</i>	Southern California black walnut		X	
LAMIACEAE	MINT FAMILY			
<i>Marrubium vulgare</i> *	horehound			X
<i>Salvia apiana</i>	white sage	X		X
<i>Salvia columbariae</i>	chia	X	X	X
<i>Salvia mellifera</i>	black sage	X	X	X
LOASACEAE	LOASA FAMILY			
<i>Mentzelia laevicaulis</i>	smoothstem blazing star	X		
MALVACEAE	MALLOW FAMILY			
<i>Malacothamnus fasciculatus</i>	mesa bushmallow	X	X	

Scientific Name	Common Name	Zone 1	Zone 2	Zone 3
MYRSINACEAE	MYRSINE FAMILY			
<i>Anagallis arvensis</i> *	scarlet pimpernel	X		
MYRTACEAE	MYRTLE FAMILY			
<i>Eucalyptus sp.</i>	gum tree	X	X	X
ONAGRACEAE	EVENING PRIMROSE FAMILY			
<i>Camissoniopsis cheiranthifolia</i> (= <i>Camissonia c.</i>)	beach evening primrose	X		
<i>Eulobus californicus</i> (= <i>Camissonia californica</i>)	California evening primrose	X		
<i>Oenothera elata</i>	evening primrose		X	
PAPAVERACEAE	POPPY FAMILY			
<i>Argemone munita</i>	prickly poppy	X		
<i>Dendromecon rigida</i>	bush poppy	X		
<i>Eschscholzia californica</i>	California poppy	X		
PHRYMACEAE	LOPSEED FAMILY			
<i>Mimulus aurantiacus</i>	orange bush monkey-flower		X	X
PLANTAGINACEAE	PLANTAIN FAMILY			
<i>Penstemon spectabilis</i>	royal penstemon	X	X	
<i>Plantago psyllium</i> *	sand plantain	X		
PLATANACEAE	SYCAMORE FAMILY			
<i>Platanus racemosa</i>	western sycamore	X		X
POLYGONACEAE	BUCKWHEAT FAMILY			
<i>Eriogonum fasciculatum</i>	California buckwheat	X	X	X
<i>Eriogonum gracile</i>	slender woolly buckwheat		X	
<i>Rumex salicifolius</i>	willow dock		X	
RHAMNACEAE	BUCKTHORN FAMILY			
<i>Ceanothus sp.</i>	ceanothus	X	X	
ROSACEAE	ROSE FAMILY			
<i>Adenostoma fasciculatum</i>	chamise	X	X	X
<i>Cercocarpus betuloides</i>	birch-leaf mountain-mahogany	X		
<i>Heteromeles arbutifolia</i>	toyon			X
SALICACEAE	WILLOW FAMILY			
<i>Populus fremontii</i>	Fremont's cottonwood	X	X	X
<i>Salix exigua</i>	narrow-leaved willow		X	
<i>Salix gooddingii</i>	black willow		X	X
<i>Salix lasiolepis</i>	arroyo willow		X	X
SCROPHULARIACEAE	FIGWORT FAMILY			
<i>Verbascum thapsus</i> *	woolly mullein	X	X	
SIMAROUBACEAE	QUASSIA FAMILY			
<i>Ailanthus altissima</i> *	tree of heaven	X		
SOLANACEAE	NIGHTSHADE FAMILY			
<i>Datura wrightii</i>	jimson weed	X	X	X
<i>Nicotiana attenuata</i>	coyote tobacco			X
<i>Nicotiana glauca</i> *	tree tobacco	X	X	X
<i>Solanum americanum</i>	small-flowered nightshade	X		
TAMARICACEAE	TAMARISK FAMILY			
<i>Tamarix ramosissima</i> *	Mediterranean tamarisk	X	X	X
ANGIOSPERMS (MONOCOTYLEDONS)				
AGAVACEAE (or Liliaceae)	AGAVE FAMILY			
<i>Hesperoyucca whipplei</i> (= <i>Yucca w.</i>)	chaparral yucca	X	X	
CYPERACEAE	SEDGE FAMILY			
<i>Scirpus sp.</i>	bulrush		X	X
POACEAE	GRASS FAMILY			
<i>Arundo donax</i> *	giant reed	X		

Scientific Name	Common Name	Zone 1	Zone 2	Zone 3
<i>Avena fatua</i> *	wild oat	X	X	
<i>Bromus diandrus</i> *	ripgut grass	X	X	
<i>Bromus madritensis ssp. rubens</i> *	foxtail chess	X	X	
<i>Bromus tectorum</i> *	cheat grass	X		
<i>Festuca myuros</i> * (= <i>Vulpia m.</i>)	fescue	X	X	
<i>Pennisetum setaceum</i> *	fountain grass	X		X
<i>Piptatherum miliaceum</i> *	smilo grass	X		
<i>Polypogon monspeliensis</i> *	annual beard grass		X	
<i>Schismus barbatus</i> *	Mediterranean schismus	X	X	
TYPHACEAE	CATTAIL FAMILY			
<i>Typha</i> sp.	cattail		X	X
* non-native species				

Scientific Name	Common Name	Zone 1	Zone 2	Zone 3
ANIMALS				
AVES (BIRDS)				
ANATIDAE	DUCKS AND GEESE			
<i>Anas platyrhynchos</i>	mallard			X
ODONTOPHORIDAE	NEW WORLD QUAIL			
<i>Callipepla californica</i>	California quail	X		X
ACCIPITRIDAE	HAWKS, KITES, AND ALLIES			
<i>Accipiter cooperii</i>	Cooper's hawk		X	
<i>Buteo jamaicensis</i>	red-tailed hawk	X		X
CHARADRIIDAE	PLOVERS AND LAPWINGS			
<i>Charadrius vociferus</i>	killdeer	X	X	
COLUMBIDAE	PIGEONS AND DOVES			
<i>Streptopelia decaocto</i>	Eurasian collared-dove	X		
<i>Zenaida macroura</i>	mourning dove	X	X	X
PSITTACIDAE	PARROTS AND ALLIES			
<i>Amazona sp.</i>	Amazon parrot			X
CUCULIDAE	CUCKOOS AND ROADRUNNERS			
<i>Geococcyx californianus</i>	greater roadrunner		X	
TROCHILIDAE	HUMMINGBIRDS			
<i>Calypte anna</i>	Anna's hummingbird	X	X	X
<i>Selasphorus sasin</i>	Allen's hummingbird	X		
PICIDAE	WOODPECKERS			
<i>Colaptes auratus</i>	northern flicker	X		
FALCONIDAE	FALCONS			
<i>Falco sparverius</i>	American kestrel	X	X	
TYRANNIDAE	TYRANT FLYCATCHERS			
<i>Sayornis nigricans</i>	black phoebe		X	
<i>Sayornis saya</i>	Say's phoebe	X		X
<i>Tyrannus verticalis</i>	western kingbird	X	X	X
CORVIDAE	JAYS AND CROWS			
<i>Aphelocoma californica</i>	western scrub-jay	X		
<i>Corvus brachyrhynchos</i>	American crow		X	X
<i>Corvus corax</i>	common raven	X		X
HIRUNDINIDAE	SWALLOWS			
<i>Hirundo rustica</i>	barn swallow	X	X	X
<i>Petrochelidon pyrrhonota</i>	cliff swallow		X	
AEGITHALIDAE	BUSHTITS			
<i>Psaltriparus minimus</i>	bushtit	X	X	
TROGLODYTIDAE	WRENS			
<i>Salpinctes obsoletus</i>	rock wren	X		
TURDIDAE	THRUSHES			
<i>Turdus migratorius</i>	American robin	X		
MIMIDAE	MOCKINGBIRDS AND THRASHERS			
<i>Mimus polyglottos</i>	northern mockingbird	X	X	X

Scientific Name	Common Name	Zone 1	Zone 2	Zone 3
STURNIDAE	STARLINGS AND ALLIES			
<i>Sturnus vulgaris</i>	European starling		X	X
PTILOGONATIDAE	SILKY FLYCATCHERS			
<i>Phainopepla nitens</i>	Phainopepla	X	X	X
EMBERIZIDAE	TOWHEES AND SPARROWS			
<i>Chondestes grammacus</i>	lark sparrow		X	
<i>Pipilo crissalis</i>	California towhee	X	X	X
<i>Pipilo maculatus</i>	spotted towhee	X	X	X
CARDINALIDAE	CARDINALS AND ALLIES			
<i>Passerina caerulea</i>	blue grosbeak		X	
ICTERIDAE	BLACKBIRDS AND ALLIES			
<i>Agelaius phoeniceus</i>	red-winged blackbird		X	X
<i>Icterus bullockii</i>	Bullock's oriole		X	
<i>Icterus cucullatus</i>	hooded oriole	X	X	X
FRINGILLIDAE	FINCHES AND ALLIES			
<i>Haemorhous mexicanus</i>	house finch	X		
<i>Spinus psaltria</i>	lesser goldfinch		X	X
PASSERIDAE	OLD WORLD SPARROWS			
<i>Passer domesticus</i>	house sparrow		X	
MAMMALIA (MAMMALS)				
LEPORIDAE	RABBITS AND HARES			
<i>Lepus californicus</i>	black-tailed jackrabbit		X	
<i>Sylvilagus audubonii</i>	desert cottontail	X		X
SCIURIDAE	SQUIRRELS			
<i>Spermophilus beecheyii</i>	California ground squirrel	X	X	X
CERVIDAE	ELK, MOOSE, CARIBOU, DEER			
<i>Odocoileus hemionus fuliginata</i>	mule deer	X		
CANIDAE	DOGS			
<i>Canis latrans</i>	coyote	X	X	X