

**Heatherglen Planned Development, TTM 17604, CUP 15-006**

**Draft Environmental Impact Report**

**Appendix C – Biological Report**



**REVISED**

ENVIRONMENTAL, INC.

REGULATORY SERVICES

BIOLOGICAL & CULTURAL INVESTIGATIONS & MONITORING

**BIOLOGICAL RESOURCES ASSESSMENT, UPDATED BURROWING OWL AND  
NESTING RAPTOR SURVEYS, AND UPDATED BOTANICAL SURVEYS  
FOR GREENSPOT PARTNERS TT 17604,  
CITY OF HIGHLAND, COUNTY OF SAN BERNARDINO, CA**

±58.7 Acre Property, ±58.7 Acres Surveyed

APNs 1210-211-18, -21, -23, 1210-281-01, -02, -03, and -04, TT 17604, City of Highland,  
Section 2, Township 1 South, Range 3 West, USGS Redlands 7.5' Topographic Quadrangle

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**Report Summary:**

The Project site is adjacent to the covered area for the Upper Santa Ana River Wash Habitat Conservation Plan (Wash Plan) and conservation lands. Vegetation on a portion of the site is Riversidean alluvial fan sage scrub (a sensitive vegetation community), and the remainder is agriculture and disturbed/ruderal/ornamental. No listed plant species were observed, but slender-horned spineflower and Santa Ana River woollystar have moderate potential to occur. One special status plant may be present (unconfirmed observation of chaparral sand verbena [*Abronia villosa* var. *aurita*]); others have potential to occur. Heritage trees are present and most will be removed. San Bernardino kangaroo rat is present, and site is within designated critical habitat. California gnatcatcher was not observed but potential for occurrence is low and focused surveys were not performed. White-tailed kite not observed but suitable habitat present. Several special status wildlife species present and several more have potential to occur. Potentially suitable habitat for burrowing owl present, but no owls or sign found. Habitat suitable for nesting birds (including raptors) present. Three historic ephemeral drainages are present on the site, but a jurisdictional delineation found that all have been cut off from upstream sources and no state or federal jurisdictional features are present. Scalebroom present on the site and eradication recommended. Impacts are analyzed and recommended mitigation measures are provided.

**Surveys Conducted By:** Guy Bruyey

**Surveys Conducted:** April – September 2019

**Report Date:** March 2020

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## TABLE OF CONTENTS

<b>MANAGEMENT SUMMARY .....</b>	<b>v</b>
<b>1.0) INTRODUCTION .....</b>	<b>9</b>
1.1) Location.....	9
1.2) Vegetation and Setting .....	9
Figure 1. Project Vicinity.....	11
Figure 2. Project Location.....	12
Figure 3. Aerial Photograph.....	13
1.3) Soils and Topography.....	14
Figure 4. Soils Map .....	15
<b>2.0) REGULATORY ENVIRONMENT.....</b>	<b>16</b>
2.1) Federal Endangered Species Act .....	16
2.2) Jurisdictional Waters and Wetlands.....	16
2.2.1) Federal Clean Water Act, Section 404 .....	17
2.2.2) Federal Clean Water Act, Section 401 .....	17
2.2.3) California Fish and Game Code, Section 1600 .....	17
2.3) California Environmental Quality Act .....	17
2.4) California Endangered Species Act .....	18
2.5) California Natural Diversity Database .....	18
2.6) California Rare Plant Rank .....	18
2.7) Migratory Bird Treaty Act.....	19
2.8) California Fish and Game Code, Sections 3503 and 3513 .....	19
2.9) California Public Resources Code Section 21083.4.....	20
2.10) San Bernardino County General Plan.....	20
2.10.1) Open Space Overlays .....	21
2.10.2) Plant Protection and Management .....	22
2.11) City of Highland General Plan .....	22
2.12) City of Highland Municipal Code.....	23
<b>3.0) METHODS AND PERSONNEL .....</b>	<b>25</b>
3.1) Literature Review .....	25
3.2) Biological Survey Methods .....	26
3.2.1) Burrowing Owl Survey Methods .....	26
Table 1. Burrowing Owl Survey Dates, Times, and Weather Conditions.....	26
3.2.2) Nesting Raptor Survey Methods .....	27
3.2.3) Botanical Survey Methods .....	27
Table 2. Botanical Survey Dates, Times, and Weather Conditions .....	28
<b>4.0) RESULTS.....</b>	<b>29</b>
4.1) Literature Review Results.....	29
4.1.1) San Bernardino County General Plan and Development Code .....	29
4.1.2) Upper Santa Ana River Wash Habitat Conservation Plan .....	29
4.1.3) Weaver Street Channel and Plunge Creek.....	31
4.1.4) Precipitation Data.....	32
4.1.5) Previous Biological Surveys.....	33
Figure 5. Project Relationship to the Wash Plan Area .....	34
Figure 6. Waterways in the Vicinity.....	35
Figure 7. Wash Plan and Conservation Lands with Project Location .....	36

Table 3. Previous Survey Results.....	37
4.2) Vegetation Communities .....	42
Table 4. Vegetation Communities Present.....	42
4.2.1) Riversidean Alluvial Fan Sage Scrub (RAFSS) .....	42
4.2.2) Agriculture (Jojoba Fields and Eucalyptus Groves) .....	44
4.2.3) Disturbed/Ruderal/Ornamental.....	44
Figure 8. Vegetation Communities and Critical Habitat.....	46
4.3) Plant Species .....	47
4.3.1) Listed Plant Species .....	47
Figure 9. Slender-horned Spineflower Occurrences in Wash Plan Area .....	50
Figure 10. Santa Ana River Woollystar Occurrences in Wash Plan Area.....	53
4.3.2) Listed and Special Status Plant Species .....	54
4.3.3) Heritage Trees .....	55
Table 5. Heritage Trees.....	56
Figure 11. Heritage Tree Locations .....	57
4.4) Wildlife Species.....	58
4.4.1) Listed and Fully Protected Wildlife Species.....	58
Table 6. SBKR Trapping Results Summary.....	65
Figure 12. Traplines and SBKR Captures.....	66
Figure 13. SBKR Occurrences and Habitat in the Wash Plan Area .....	67
Figure 14. California Gnatcatcher Occurrences and Habitat in the Wash Plan Area.....	70
4.4.2) Special Status Wildlife Species .....	71
Table 7. Special Status Small Mammals Trapping Results Summary.....	75
4.4.3) Other Wildlife Species.....	75
4.5) Wildlife Corridors .....	76
4.6) Waters and Wetlands .....	77
Figure 15. Historic Drainages .....	78
Figure 16a. Plunge Creek Inundation Mapping – Clear Flow .....	79
Figure 16b. Plunge Creek Inundation Mapping – Sediment Flow .....	80
<b>5.0) ANALYSIS OF POTENTIAL EFFECTS.....</b>	<b>81</b>
5.1) Listed, Fully Protected, and Special Status Species .....	82
5.1.1) Listed and Special Status Plants.....	82
5.1.2) Listed, Fully Protected, and Special Status Wildlife .....	85
5.2) Vegetation Communities .....	91
Table 8. Vegetation Communities Impacted .....	92
5.3) Waters and Wetlands .....	93
5.4) Wildlife Corridors .....	95
5.5) Local Ordinances .....	96
5.6) Habitat Conservation Plan.....	97
5.7) Cumulative Impacts.....	97
<b>6.0) MITIGATION MEASURES.....</b>	<b>103</b>
MM BIO-1. Disturbance Area Fencing .....	103
MM BIO-2. Biological Monitoring .....	103
MM BIO-3. WEAP Training.....	103
MM BIO-4. Preconstruction Clearance Surveys.....	104
MM BIO-5. Burrowing Owl .....	105
MM BIO-6. California Gnatcatcher.....	105
MM BIO-7. Nesting Birds .....	106
MM BIO-8. San Bernardino Kangaroo Rat.....	107
MM BIO-9. Wildlife Hazards .....	108



MM BIO-10. Riversidean Alluvial Fan Sage Scrub.....	109
MM BIO-11. Listed and Special Status Plants .....	109
MM BIO-12. Heritage Trees.....	110
MM BIO-13. Adjacent Habitat .....	111
MM BIO-14. Invasive Plants .....	112
<b>7.0) REFERENCES .....</b>	<b>113</b>
<b>APPENDIX A: PLANT AND WILDLIFE SPECIES OBSERVED.....</b>	<b>120</b>
<b>APPENDIX B: SPECIAL STATUS SPECIES OBSERVATIONS .....</b>	<b>130</b>
<b>APPENDIX C: SPECIAL STATUS SPECIES POTENTIALS FOR OCCURRENCE .....</b>	<b>132</b>
<b>APPENDIX D: PRECIPITATION DATA.....</b>	<b>160</b>
<b>APPENDIX E: TREE SURVEY DATA .....</b>	<b>163</b>
<b>APPENDIX F: SITE PHOTOGRAPHS.....</b>	<b>168</b>

## **MANAGEMENT SUMMARY**

L&L Environmental, Inc. (L&L) conducted biological surveys on a ±58.7-acre proposed development site in the City of Highland, San Bernardino County. Greenspot Partners, Inc. proposes to construct the Heatherglen Residential Community on the site. The Project consists of 203 residential lots. The Project site consists of Assessor's Parcel Numbers (APNs) 1210-211-18, -21, -23, 1210-281-01, -02, -03, and -04.

The purpose of this study was to update previous surveys and examine the subject property to determine presence/absence of biological resources on the property and potential for listed and special status species to occur. This report also analyzes potential impacts and provides recommended mitigation measures.

Previous surveys of the site include a general biological assessment in 2005, with updates in 2011, 2014, 2015, 2016, and 2018; botanical surveys in 2011, 2014, 2015, 2016, and 2017; a heritage tree survey in 2006 with an update in 2019; a focused survey for burrowing owl and nesting raptors in 2005; trapping studies for the San Bernardino kangaroo rat in 2005, 2011, 2016, and 2018; and a jurisdictional delineation in 2006 with updates in 2015 and 2017. Surveys in 2019 consist of focused surveys for burrowing owl, nesting raptors, and listed and special status plants.

The Project site is located on the northern edge of the Upper Santa Ana River Wash and just north of Plunge Creek. The south and east boundaries of the Project site are adjacent to the covered area for the Upper Santa Ana River Wash Habitat Conservation Plan (Wash Plan) and conservation lands.

Vegetation communities on the site are relatively undisturbed Riversidean alluvial fan sage scrub (RAFSS; ±38.6 acres) and agriculture (eucalyptus groves and jojoba fields) and disturbed/ruderal/ornamental (±20.1 acres). RAFSS is a sensitive vegetation community. The RAFSS habitat on the site has been degraded through loss of alluvial processes on the site due to offsite development, particularly the construction of the Seven Oaks Dam and Weaver Street Channel. The ±6.59 acres of RAFSS in the southeast corner of the site will be avoided and conserved. Recommended mitigation measures include offsite compensation for impacts to the remaining ±32.01 acres of RAFSS.

No listed plant species were observed during the current or previous botanical surveys or observed incidentally during other biological surveys. Two listed species have a moderate

potential to occur: slender-horned spineflower and Santa Ana River woollystar. Recommended mitigation measures include focused preconstruction surveys for slender-horned spineflower and Santa Ana River woollystar. If either species is found on the Project site, an incidental take permit from the California Department of Fish and Wildlife (CDFW) and consultation with the U.S. Fish and Wildlife Service (USFWS) will be required prior to any impacts.

One special status plant species may be present, chaparral sand verbena; however, there is some uncertainty regarding the identification of this species on the site. Four other special status plants have a moderate or low to moderate potential to occur: Parry's spineflower, Plummer's mariposa lily, peninsular spineflower, and Robinson's pepper-grass. Recommended mitigation measures include focused surveys for chaparral sand verbena and Parry's spineflower, collection of propagules from any individuals present in the disturbance area, and planting of the propagules in the avoidance area.

Heritage trees (as defined by the City of Highland Municipal Code) are present on the site (excluding the eucalyptus groves) and 84 of these trees are expected to be removed by development of the Project. The City requires replacement of heritage trees at a ratio of 2:1 and protection measures for any trees that will be retained.

San Bernardino kangaroo rat is present on the site. This species is federally listed as endangered and a state candidate for listing as endangered. A portion of the site is within designated critical habitat for this species. An incidental take permit will be required from USFWS and CDFW prior to impacts.

Coastal California gnatcatcher has not been incidentally detected on the site, but focused surveys have not been conducted. Based on habitat quality and lack of incidental detections, focused surveys were not recommended. California gnatcatcher is federally listed endangered and a CDFW Species of Special Concern. If present, consultation with USFWS will be required prior to impacts. Recommended mitigation measures include nesting bird surveys.

White-tailed kite, a CDFW Fully Protected species, has not been observed during surveys, but potentially suitable nesting and foraging habitat is present. Recommended mitigation measures include nesting bird surveys.

Several special status wildlife species have been detected on the site and several more have a low to moderate, moderate, or high potential to occur. Recommended mitigation measures include a preconstruction clearance survey, biological monitoring, and moving wildlife out of harm's way. Potentially suitable habitat for burrowing owl is present, but no burrowing owl or

sign has been found during surveys. If found to be present prior to construction, recommended mitigation measures include a preconstruction clearance survey, an avoidance buffer for active burrows during the nesting season, and passive relocation (with CDFW concurrence) outside of the nesting season.

Special status small mammals found on the site include Los Angeles pocket mouse, northwestern San Diego pocket mouse, San Diego desert woodrat, and Dulzura kangaroo rat. Recommended mitigation measures for San Bernardino kangaroo rat include preparation of a relocation plan to include exclusion fencing and trapping to remove individuals from the Project disturbance area. Recommended mitigation measures for other special status small mammals include development of a strategy for relocation of the animals incidentally caught during trapping for San Bernardino kangaroo rat.

Habitat suitable for nesting birds (including raptors) is present within and around the site. Recommended mitigation measures include scheduling initial vegetation removal and ground disturbance outside the nesting season if feasible, a preconstruction survey for nesting birds if this work must be done during the nesting season, and establishment of avoidance buffers around any active nests.

The Project site is immediately adjacent to conserved lands in the Santa Ana Wash. The Santa Ana River is a major drainage that extends from the San Bernardino Mountains to the Pacific Ocean and is considered a regional wildlife corridor with connections to multiple other open space areas in the County. Recommended mitigation includes measures to avoid and minimize impacts to adjacent habitat, plants, and wildlife from fugitive dust, lighting, toxic emissions, noise, runoff, erosion/sedimentation, human disturbance, domestic animals, and invasive plants.

Three (3) historic ephemeral drainages are present on the site. All have been cut off from their upstream sources by offsite flood control and road development and no longer convey water onto or across the site. These drainages appeared as blue line streams on previous USGS topographic quadrangle maps (2015 and earlier), but are no longer shown on the latest (2018) USGS map. Based on a jurisdictional delineation, there are no state or federal jurisdictional features within the Project site. A diversion channel (Weaver Street Channel) is located immediately east of the Project site and carries flows from Cram Creek south to Plunge Creek.

Scalebroom (*Lepidospartum squamatum*) is present on the site. This plant is a persistent species capable of lifting concrete improvements placed above graded areas containing remnants of the plant. L&L recommends both a focused survey to map the locations of the

plant on the property and eradication from any areas planned for development prior to soil disturbance. Eradication activities should be carefully designed to comply with all applicable mitigation measures, permit conditions, etc.

## **1.0) INTRODUCTION**

This report was prepared by L&L Environmental, Inc. (L&L) for Greenspot Partners, Inc. It describes the results of biological surveys conducted on a proposed development site located within the City of Highland. The Project site consists of APNs 1210-211-18, -21, -23, 1210-281-01, -02, -03, and -04 totaling  $\pm 58.7$  acres.

Greenspot Partners, Inc. proposes to construct the Heatherglenn Residential Community on the site. The Project consists of 203 residential lots.

Our assessment consisted of (1) a records search and literature review, conducted to determine the species of concern in the project area and proximity to closest documented special status species occurrences, (2) field surveys to identify plants and wildlife on the site and presence/absence of habitat for species of concern (burrowing owl, nesting raptors, and listed and special status plant species), and (3) focused protocol surveys for burrowing owl and focused surveys for listed and special status plants.

### **1.1) Location**

The Project site is generally located north of Interstate Highway 10 (I-10 freeway), east of Highway 210 (210 freeway), and south of Greenspot Road in the City of Highland (Figures 1 and 2). The site is located within Section 2 of Township 1 South, Range 3 West of the U.S. Geological Survey (USGS) Redlands 7.5' series topographic quadrangle map (USGS 1988).

Portions of the boundary of the site are defined by the presence of a barbed wire fence. The site is generally bounded as follows: to the west by disturbed vacant land and a mixture of low and high-density residential developments; to the east by a flood control channel and mostly undisturbed open space; to the north by Greenspot Road and high-density residential developments; and to the south by Abbey Way (a gated road, part paved and part dirt), a row of power lines, and the Santa Ana Wash (Figure 3).

### **1.2) Vegetation and Setting**

The Project site is located on the northern edge of the Upper Santa Ana River Wash and just north of Plunge Creek (Figure 6). Vegetation communities on the site are relatively undisturbed Riversidean alluvial fan sage scrub (RAFSS), agriculture (eucalyptus groves and jojoba fields), and disturbed/ruderal/ornamental. The agricultural and disturbed/ruderal/ornamental areas (approximately 20.1 acres or 34 percent of the property) are on the western portion of the

Project site, with RAFSS (approximately 38.6 acres or 66 percent of the property) on the eastern side (Figures 1 through 3 and 8). The eastern portion of the site is within U.S. Fish and Wildlife Service (USFWS) designated critical habitat for the San Bernardino kangaroo rat (*Dipodomys merriami parvus*, SBKR) (Figure 8). SBKR is federally listed endangered, a candidate for state listing as endangered, and a California Species of Special Concern.

Three (3) historic ephemeral drainages are present on the site, trending from the northeast to the southwest. All have been cut off from their upstream sources by offsite flood control and road development and no longer convey water onto or across the site (Figure 15).

Plunge Creek is located approximately 300 to 700 feet south of the Project site and the Santa Ana River is approximately 1.25 miles south of the Project site. A diversion channel (Weaver Street Channel) is located immediately east of the Project site and carries flows from Cram Creek south to Plunge Creek (Figure 6). The first  $\pm 500$  feet of the channel is grouted riprap and the remaining  $\pm 1,200$  feet is earthen.

Land use varies in the vicinity of the site and includes anthropogenic disturbances such as low and high-density residential areas, commercial strip malls, gravel pit mines, paved and unimproved roads, power lines, and off-road vehicle activity. The Redlands Municipal Airport is approximately 1.75 miles south of the property.

The Project site is immediately adjacent to the covered area for the Upper Santa Ana River Wash Habitat Conservation Plan (Wash Plan), a habitat conservation plan that has been in development for several years (Figure 5). The City of Highland Biological Mitigation Area (Highland BMA) and a portion of the Bureau of Land Management (BLM) Santa Ana River Area of Critical Environmental Concern (ACEC) are located immediately to the east of the Project site. A portion of the Santa Ana River Woollystar Preservation Area (WSPA) is located further to the east of the Project site, beyond the Highland BMA and ACEC (Figure 7).





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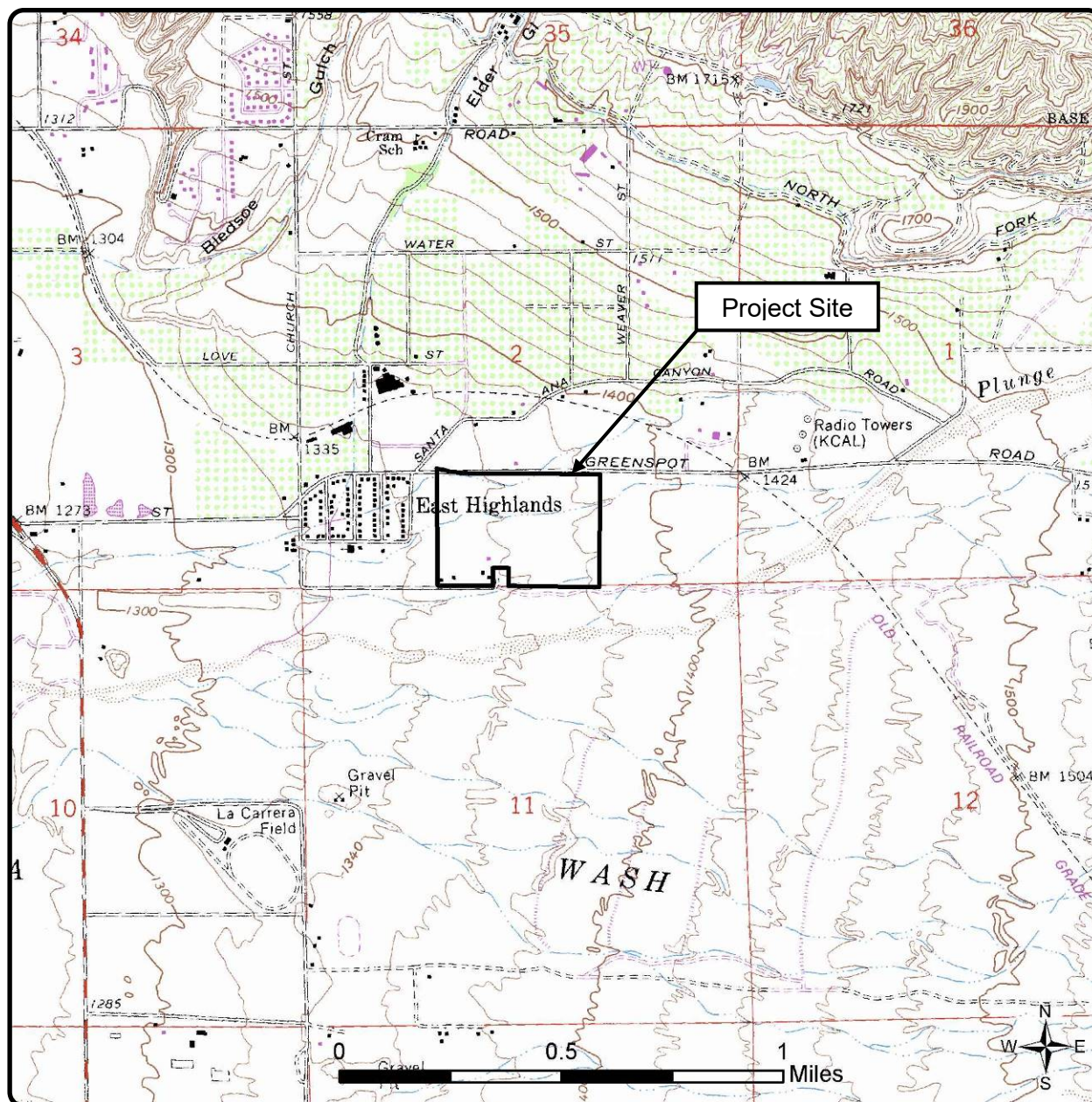
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## Figure 1

### Project Vicinity

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## Figure 2

### Project Location

(USGS Redlands [1988] quadrangle,  
Section 2, Township 1 South, Range 3 West)

Greenspot Partners, Inc.  
City of Highland, California





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## Figure 3

### Aerial Photograph

(Photo obtained from Google Earth, February 2018)

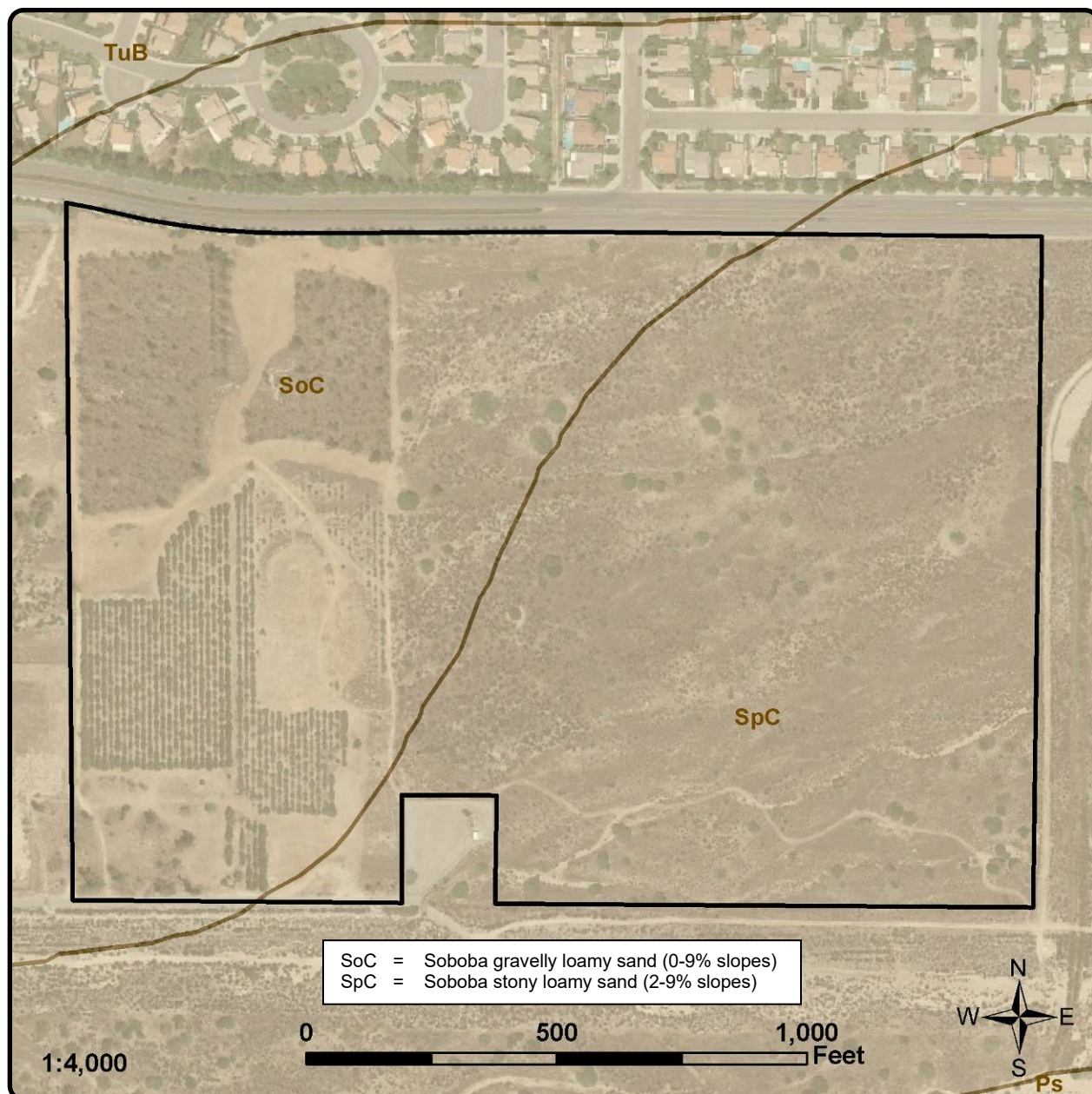
Greenspot Partners, Inc.  
City of Highland, California

### 1.3) Soils and Topography

Soils on the Project site (Figure 4) are mapped as Soboba gravelly loamy sand (SoC) and Soboba stony loamy sand (SpC) (NRCS 2017). Soils observed on the site are sandy-loamy to gravelly with and (mostly) without cryptobiotic crusts.

Topographically, the site is primarily flat and contains low-relief rolling hills, shallow depressions, and open disturbed lands with a combined maximum vertical relief of roughly 32 feet between highest and lowest points on the property. Elevation onsite ranges from approximately 1,347 to 1,379 feet (410 to 420 meters) above mean sea level.





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## Figure 4

### Soils Map

(Photo obtained from Google Earth, 4-27-2014,  
NRCS SSURGO Data)

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City of Highland, California

## **2.0) REGULATORY ENVIRONMENT**

### **2.1) Federal Endangered Species Act**

By law, it is a requirement of the federal Endangered Species Act (FESA), 1973 (as amended) at Section 7(a)(2) that federal agencies ensure that any action authorized, funded, or carried out by a federal agency is not likely to jeopardize the continued existence of any endangered species or threatened species, or result in the destruction or adverse modification of critical habitat. In order to comply with this requirement, the federal agency must conduct a Biological Assessment (BA), in which effects to listed species are analyzed and disclosed in the form of an “effects determination.”

Section 7 requires federal agencies to consult with the U. S. Fish and Wildlife Service (USFWS) should it be determined that their actions may affect federally listed threatened or endangered species. Section 9 of FESA prohibits “take” (e.g., harm, harassment, pursuit, injury, kill) of federally listed wildlife. “Harm” is further defined to include habitat modification or degradation where it kills or injures wildlife by impairing essential behavioral patterns such including breeding, feeding, or sheltering. Take that is incidental to otherwise lawful activities can be authorized under Section 7 of FESA.

Procedures for obtaining a permit for incidental take are identified under Section 7 of FESA for federal properties or where federal actions are involved and are identified under Section 10 of FESA for non-federal actions. During the Section 7 process, measures to avoid and minimize project effects to listed species and their habitat will be identified and incorporated into a Biological Opinion (prepared by the USFWS) that includes an incidental take by the federal agency and applicant.

### **2.2) Jurisdictional Waters and Wetlands**

Three agencies generally regulate activities within streams, wetlands, and riparian areas in California: (1) the U.S. Army Corps of Engineers (USACE) regulates activities under Section 404 of the federal Clean Water Act; (2) the Regional Water Quality Control Board (RWQCB) regulates activities under Section 401 of the federal Clean Water Act and the State Porter-Cologne Water Quality Control Act; and (3) the California Department of Fish and Wildlife (CDFW) regulates activities under California Fish and Game Code Sections 1600-1616.

### 2.2.1) Federal Clean Water Act, Section 404

Section 404 of the federal Clean Water Act applies to "Waters of the United States" (WoUS). Under the current administration, there have been recent changes to the definition of USACE jurisdictional waters.

Final determination and delineation of federal jurisdiction is made by the USACE and not by the project biologists. Therefore, fieldwork and documentation of the site conditions are done as a preliminary delineation until the USACE reviews and concurs with the results.

### 2.2.2) Federal Clean Water Act, Section 401

The RWQCB has jurisdiction over wetlands, WoUS, and Waters of the State under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act (Porter-Cologne) under the California Water Code (§ 13000, et seq.) Permitting is required for activities that will result in a discharge of soils, nutrients, chemicals, detrital materials, or other pollutants into WoUS, Waters of the State, or adjacent wetlands that will affect the water quality of those bodies and the watershed.

### 2.2.3) California Fish and Game Code, Section 1600

The CDFW, through provisions of the California Fish and Game Code (Sections 1600-1616), is empowered to issue agreements ("Lake and Streambed Alteration Agreements") for projects that will adversely affect wildlife habitat associated with any river, stream, or lake edges. The Lake and Streambed Alteration Agreement will typically include required measures to mitigate impacts.

### 2.3) California Environmental Quality Act

The California Environmental Quality Act (CEQA) and CEQA Guidelines (§ 15000 et seq.) require identification of environmental effects from discretionary projects. Significant effects are to be mitigated by avoidance, minimization, rectification, or compensation whenever possible.

Effects to all state and federal listed species are considered significant under CEQA. In addition to formally listed species, CEQA considers effects to species that are demonstrably endangered or rare as important or significant. These definitions can include state designated species of special concern, federal candidate and proposed species, California Natural Diversity Database (CNDDB) tracked species, and California Rare Plant Ranks (CRPR) list 1B and list 2 plants.

Appendix G of the CEQA Guidelines specifically addresses biological resources and encompasses a broad range of resources to be considered.

#### 2.4) California Endangered Species Act

California Endangered Species Act (CESA) definitions of endangered and threatened species parallel those defined in the FESA. The CESA defines an endangered species as “. . . a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes including loss of habitat, change in habitat, overexploitation, predation, competition or disease.” Endangered species are in serious danger of becoming extinct and threatened species are likely to become endangered species in the foreseeable future (according to Sections 2062 and 2067, respectively, of the California Fish and Game Code). Candidate species are those under formal review by the CDFW for listing as endangered or threatened (Section 2067). Prior to being considered for protected status, the CDFW designates a species as being of special concern. Species of Special Concern are wildlife species for which the CDFW has information indicating population decline. Plant species of concern are designated by California Rare Plant Ranks, described below.

#### 2.5) California Natural Diversity Database

The CNDDDB includes documented occurrences of special status species that have been reported to the CDFW. It also includes ranks of overall condition of sensitive species and vegetation communities on global (throughout its range) and state (within California) levels. State ranking is numerical, ranging from one to five (S1 to S5), with one indicating very few remaining individuals or little remaining habitat and five indicating a demonstrably secure population condition.

#### 2.6) California Rare Plant Rank

The California Native Plant Society (CNPS) Inventory of Rare and Endangered Species includes documented occurrences of special status plant species that are available through the Consortium of California Herbaria and other sources. The CNPS, in coordination with CDFW, has cataloged California's rare and endangered plants into lists according to population distributions and viability. These lists are numbered and indicate the following CRPR: (1A) presumed extinct in California; (1B) rare, threatened, or endangered throughout their range; (2A) presumed extirpated in California, but more common in other states; (2B) threatened or endangered in California, but more common in other states; (3) more information is needed to

establish rarity; and (4) plants of limited distribution in California (i.e., naturally rare in the wild), but whose populations do not appear to be susceptible to threat. A CRPR may also have an extension (e.g., 1B.x) that indicates current level of threat: seriously threatened (x.1), moderately threatened (x.2), or not very threatened (x.3).

## 2.7) Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711) is an international treaty that makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Executive Order 13186 ensures that environmental analyses of federal actions required by the National Environmental Policy Act (NEPA) or other established environmental review processes evaluate the effects of actions on migratory birds, with emphasis on species of concern. Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) or loss of habitat upon which the birds depend could be considered “take” and constitute a violation of the MBTA.

## 2.8) California Fish and Game Code, Sections 3503 and 3513

California Fish and Game Code Section 3503 prohibits take, possession, or needless destruction of bird nests or eggs except as otherwise provided by the Code; Section 3503.5 prohibits take or possession of birds of prey or their eggs except as otherwise provided by the Code; and Section 3513 provides for the adoption of the provisions of the federal Migratory Bird Treaty Act, described below.



## 2.9) California Public Resources Code Section 21083.4

Counties are required by California Public Resources Code Section 21083.4 to “determine whether a project within its jurisdiction may result in a conversion of oak woodlands that will have a significant effect on the environment.” This section applies to native oak trees that have a DBH of five (5) inches or more. Significant impacts require mitigation that may include restoration of oak woodlands, conservation of existing oak woodlands, planting and maintaining oaks for seven (7) years, a monetary contribution to the Oak Woodlands Conservation Fund for the purpose of purchasing oak woodlands conservation easements, or other mitigation measures developed by the county.

## 2.10) San Bernardino County General Plan

The County of San Bernardino General Plan Conservation Element and Open Space Element include relevant goals and policies that address biological resources:

**GOAL CO 1.** The County will maintain to the greatest extent possible natural resources that contribute to the quality of life within the County.

**GOAL CO 2.** The County will maintain and enhance biological diversity and healthy ecosystems throughout the County.

### Policies:

CO 2.3. In addition to conditions of approval that may be required for specific future development proposals, the County shall establish long-term comprehensive plans for the County’s role in the protection of native species because preservation and conservation of biological resources are statewide, Regional, and local issues that directly affect development rights. The conditions of approval of any land use application approved with the BR [biotic resources] overlay district shall incorporate the mitigation measures identified in the report required by Section 82.13.030 (Application Requirements), to protect and preserve the habitats of the identified plants and/or animals.

CO 2.4. All discretionary approvals requiring mitigation measures for impacts to biological resources will include the condition that the mitigation measures be monitored and modified, if necessary, unless a finding is made that such monitoring is not feasible.

**GOAL OS 6.** Improve and preserve open space corridors throughout the County.

Policies:

OS 6.1. Support and actively pursue an open space preservation and acquisition program which will create a linked system of both privately and publicly owned open space lands throughout the County.

OS 6.2 Use open space corridors to link natural areas.

**GOAL V/OS 1.** Preserve open space lands within the Valley Region to the greatest extent possible to enhance the quality of life for the residents.

**GOAL V/OS 2.** Improve and preserve open space corridors throughout the Valley Region.

Policies:

V/OS 2.1. Utilize the Open Space Overlay as a technique for identifying and preserving important open space corridors for multiple benefits including wildlife movement and compatible recreational uses in the Valley Region

2.10.1) Open Space Overlays

The San Bernardino County Development Code implements the goals and policies of the General Plan by regulating land uses within the unincorporated areas of the County. Overlay maps depict areas subject to various county policies. The Biotic Resources Overlay implements General Plan policies regarding the protection and conservation of beneficial rare and endangered plants and animal resources and their habitats.

The Open Space Element of the County of San Bernardino General Plan includes a plan to protect the major open space areas throughout the County. These areas are identified in a Plan of Open Space and Trails for the County of San Bernardino. This Plan was created to balance urban development with the protection of natural resources and other open space uses including recreation, agriculture, preserving health and safety, scenic resources, and trails. Wildlife corridors are also shown on the Open Space Overlay Map.

For projects within the Biotic Resources and Open Space Overlay areas, Chapter 82.11 and 82.19 of the Development Code require that for proposed new land uses, or increases of existing land use by more than 25 percent of disturbed area, the land use application shall

include a biological resources report, along with mitigation measures to reduce or eliminate impacts to the identified resources. The Development Code also states that the County's Conditions of Approval for the project shall incorporate the mitigation measures from the biological report.

#### 2.10.2) Plant Protection and Management

Chapter 88.01 of the Development Code regulates vegetation removal, including permitting, mitigation, and treatment of felled trees. A Tree or Plant Removal Permit is required for the removal of regulated trees and plants. In the Project vicinity, regulated trees and plants are living, native trees with a stem diameter of six inches or greater or stem circumference of 19 inches or greater, measured at 4.5 feet above natural grade level; three or more palm trees in linear plantings; riparian vegetation within 200 feet of the bank of a blue- or brown-line stream or river wash; and oak woodlands. Conditions of Approval may include replacement, restoration, or in-lieu mitigation for impacts.

#### 2.11) City of Highland General Plan

The City of Highland General Plan Conservation and Open Space Element includes the following goal and policies regarding biological resources.

**GOAL 5.7.** Maintain, protect and preserve biologically significant habitats, including riparian areas, woodlands and other areas of natural significance.

Policies:

- 2) Ensure that all development, including roads proposed adjacent to riparian and other biologically sensitive habitat, avoid significant impacts to such areas.
- 3) Require that new development proposed in such locations be designed to:
  - Minimize or eliminate the potential for unauthorized entry into the sensitive area;
  - Create buffer areas adjacent to the sensitive area, incorporating the most passive uses of the adjacent property;
  - Protect the visual seclusion of forage areas from road intrusion by providing vegetative buffering;
  - Provide wildlife movement linkages to water sources and other habitat areas;
  - Provide native vegetation that can be used by wildlife for cover along roadsides;
  - Protect wildlife crossings and corridors.

- 4) Design lighting systems so as to avoid intrusion of night lighting into the sensitive area.
- 5) As part of the environmental review process, require that projects determined to be located within a biologically sensitive area prepare documentation on the impacts of such development along with mitigation and mitigation monitoring programs.
- 6) Ensure that required biological assessments are conducted in cooperation with the California Department of Fish and Game and the U.S. Fish and Wildlife Service.
- 7) Within existing natural and naturalized areas, preserve existing mature trees and vegetation.
- 8) Within rural and hillside residential areas, permit only such natural vegetation to be removed as is necessary to locate home sites, construct access roads and ensure fire safety.
- 9) Enforce requirements that healthy, mature individual specimen trees be preserved in place, as per the City Municipal Code.
- 10) Require builders and developers to prune, treat and maintain existing trees and plant new ones within future rights-of-way, public lands, common areas and development projects.
- 11) Enforce the tree preservation ordinance as a means of managing the preservation of trees and their removal, where necessary.
- 12) Require replacement at a 2:1 ratio of all mature trees (those with 24-inch diameters or greater measured 4½ feet above the ground) that are removed.

## 2.12) City of Highland Municipal Code

Section 16.64.040 of the City of Highland Municipal Code deals with preservation of heritage trees and specifies required conditions and permits necessary for removal of heritage trees. To briefly summarize, a tree removal permit is required prior to removal of any heritage tree, a tree report must accompany the application for a tree removal permit and removed heritage trees must be replaced at a 2:1 ratio. The Code also requires protection measures for existing trees that will not be removed.

Section 16.06.080 defines heritage trees:

“Heritage tree” shall mean any live tree, shrub, or plant which meets at least one of the following criteria:

1. All woody plants in excess of 15 feet in height and having a single trunk circumference of 24 inches or more, as measured four and one-half feet above ground level; or
2. Multitrunked trees having a total circumference of 30 inches or more, as measured four and one-half feet from ground level; or
3. A stand of trees, the nature of which makes each dependent upon the others for survival; or
4. Any other tree as may be deemed historically or culturally significant by the community development director or designee because of size, condition, location, or aesthetic qualities.

### **3.0) METHODS AND PERSONNEL**

For the purposes of this report, the 'Project site' or 'site' refers to the entire ±58.7-acre property. No offsite impact areas are included. The 'western portion' of the site refers to the agricultural and disturbed/ruderal/ornamental areas (approximately 20.1 acres) and the 'eastern portion' of the site refers to the area with RAFSS (approximately 38.6 acres), as shown on Figure 8. Focused surveys include only the portions of the site with suitable habitat for the relevant species, plus any buffers required by protocol.

#### **3.1) Literature Review**

Certain plants and animals have been listed as threatened or endangered under state or federal Endangered Species Acts. Other species have not been formally listed, but declining populations or habitat availability are reasons for concern regarding their long-term viability. These species are included in lists compiled by resource management agencies or conservation organizations. In this report, the term "listed" refers to all species that are listed, or candidates for listing, as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Wildlife (CDFW). "Special status species" refers to all species included in one or more compendia of rare species, but not listed as threatened or endangered by USFWS or CDFW.

Pertinent literature was reviewed to identify local occurrences and habitat requirements of special status species and communities occurring in the region. Literature reviewed included compendia provided by resource agencies (CDFW 2019a, 2020a), a search of the California Natural Diversity Database (CNDDDB; CDFW 2020b) and California Native Plant Society Inventory of Rare and Endangered Plants (CNPS 2020) for the Project topographic quadrangle and adjacent quadrangles (Redlands, San Bernardino North, Harrison Mountain, Keller Peak, San Bernardino South, Yucaipa, Riverside East, Sunnymead, and El Casco), a search of USFWS Information for Planning and Consultation (IPAC; USFWS 2020a) for the Project site, and reports of previous surveys completed for the site (L&L 2005a-2019) and adjacent conservation lands (MBI 2016, 2017; ELMT 2018).

Potentials for occurrence of plant and wildlife species were evaluated and classified as either absent, not expected, low, moderate, high, or occurs. These classifications are based on the presence and quality of habitat, geographic and elevation range of species, proximity to a known occurrence of a species obtained from CNDDDB or other reliable data, and field

observations. Classifications for individual species may be modified based on biologists' experience and expert opinion.

Scientific names of plants follow Baldwin et al. (2012) with updates from the online Jepson eFlora (Jepson 2019). Scientific names of animals follow Stebbins (1985), Jameson and Peeters (1988), Cornell Laboratory of Ornithology (2020), and Arnett (2000), with updates from academic sources. Current conservation status of plant and wildlife species determined from CDFW (2019a, 2020a). Vegetation community classifications follow Sawyer et al. (2009) with updates from CDFW (2019b). State ranks (S ranks) for vegetation communities are from CDFW (2019b).

### 3.2) Biological Survey Methods

Biological surveys conducted in 2019 consisted of focused surveys for special status plants, protocol surveys for burrowing owl, and surveys for nesting raptors.

#### 3.2.1) Burrowing Owl Survey Methods

L&L biologist Guy Bruyey visited the Project site during April, May, and July of 2019 to conduct focused breeding season burrowing owl surveys (Table 1).

Table 1. Burrowing Owl Survey Dates, Times, and Weather Conditions

Date	Time	Sunrise*	Sunset*	Weather Start - End	Wind Speed (mph) Start - End
04.02.2019	0730-0930	0639	--	Sunny / Clear, 65-75°F	0-1
05.09.2019	0700-0900	0556	--	Cloudy, 59-65°F	2-7
05.27.2019	0630-0830	0544	--	Partly Cloudy, 54-61°F	0-2
07.01.2019	0630-0830	0545	--	Sunny / Clear, 67-74°F	1-2

\*sunrise/sunset times from [www.timeanddate.com](http://www.timeanddate.com)

A total of about 8 person-hours were spent onsite during burrowing owl surveys. The site was examined for suitable burrow sites and for signs of occupation by burrowing owl, including pellets, feathers, whitewash, prey remains, and eggshell fragments, as well as individual owls. A search for potentially suitable burrows within dirt, wood, and rock debris piles, artificially created berms, and other locations was conducted during the surveys.

The surveys were conducted in areas identified during previous surveys as potential burrowing owl habitat, including open areas onsite and areas where California ground squirrel (*Spermophilus beechyi*) activity was expected (i.e., potentially suitable burrows). An additional 150-meter (500-foot) buffer area surrounding the site was visually inspected, where possible, in

areas identified as potential burrowing owl habitat. Any developed areas were visually surveyed with binoculars due to trespassing concerns on private property.

Within the site, the survey focused on approximately 10 acres of potentially suitable habitat within the disturbed/ruderal/ornamental areas surrounding the eucalyptus groves and jojoba fields. These areas are largely flat and have been subject to previous clearing, disking, or other site alterations in association with the tree farm and agricultural usage. The native habitat on the site is generally not suitable for burrowing owl due to the thick understory of non-native grasses. An additional  $\pm 32$  acres of potentially suitable habitat was surveyed within the buffer area.

Transects were walked throughout the property where suitable habitat is present. Coupled with binocular surveys of any restricted offsite areas, this allowed for complete visual ground coverage of the survey area. Distance between transects was approximately 15 to 20 meters.

The surveys were conducted in accordance with the CDFW protocol for a breeding season survey (CDFG 2012). The protocol requires four (4) daylight surveys with at least one site visit between February 15 and April 15 and the three additional visits at least three weeks apart between April 15 and July 15, with at least one of these visits after June 15.

Daily timing of surveys varies according to the literature, latitude, and survey method. However, surveys between morning civil twilight and 10:00 AM and two hours before sunset until evening civil twilight provide the highest detection probabilities. The protocol specifies that surveys should be conducted during weather conditions that are conducive to detecting owls and owl sign. Surveys should avoid during rainy or windy conditions and dense fog. The current survey was conducted during the appropriate timeframe and suitable weather conditions, as summarized in Table 1.

### 3.2.2) Nesting Raptor Survey Methods

Concurrently with the botanical surveys, the site was examined to determine the possible presence/absence of nesting raptors on the property. This survey primarily focused on examining trees onsite and within 500 feet of the site for evidence of raptor nesting.

### 3.2.3) Botanical Survey Methods

A complete floristic survey of the Project site was conducted between April and September 2019 by L&L biologist Guy Bruyea (Table 2). Focused plant surveys were conducted throughout the



blooming season (early, mid, and late season). The plant surveys followed protocols recommended in USFWS (2000a), CDFW (2018), and CNPS (2001) guidelines for rare plant surveys.

Information on special status plant species in the Project vicinity was gathered from several sources including the California Native Plant Society Inventory of Rare and Endangered Plants of California (CNPS 2020), CNDDDB (CDFW 2020b), and IPaC (USFWS 2020a). In addition, L&L reviewed the 2016, 2017, and 2018 slender-horned spineflower survey results from the Wash Plan area (MBI 2016, 2017; ELMT 2018) as well as the Santa Ana River woollystar locations recorded in the Plunge Creek Conservation Project Initial Study (Jericho 2018).

All plants encountered were identified to a level necessary to ensure detection of special status species. Plants of uncertain identity were photographed or collected and subsequently identified from keys, descriptions, and illustrations in Abrams (1923, 1944, 1951), Abrams and Ferris (1960), Hickman (1993), Munz (1974), and Parker (1999).

Botanists visited reference sites and communicated with other biologists working in the region to determine if special status plants were flowering and identifiable.

Table 2. Botanical Survey Dates, Times, and Weather Conditions

Date	Time	Weather Start - End	Wind Speed (mph) Start - End
04.02.2019	0930-1130	Sunny / Clear, 65-75°F	0-1
04.17.2019	1000-1500	Sunny / Clear, 72-82°F	1-3
05.09.2019	0900-1100	Cloudy, 59-65°F	2-7
05.13.2019	0830-1300	Marine / Cloudy, 69-77°F	1-4
05.25.2019	0930-1230	Partly Cloudy, 67-74°F	0-2
06.15.2019	1400-1700	Sunny / Hazy, 79-87°F	3-8
07.18.2019	0800-1130	Sunny / Clear, 72-83°F	1-5
08.12.2019	0630-0930	Sunny / Clear, 68-80°F	1-3
09.09.2019	0800-1100	Sunny / Clear, 74-85°F	0-1

## **4.0) RESULTS**

### **4.1) Literature Review Results**

#### **4.1.1) San Bernardino County General Plan and Development Code**

The San Bernardino County General Plan (URS 2007) includes an Open Space Element with the intention of managing the protection and preservation of open space, recreation, and scenic areas, while accommodating future growth within the County. The purpose of the Development Code (County 2007) is to implement the General Plan by classifying and regulating land use.

The Project site is located just to the north of the designated Wildlife Corridor/Major Open Space Area – Santa Ana River. The Development Code defines this open space area as follows:

**#53. Santa Ana River** – “This includes the entire length of the Santa Ana River within San Bernardino County. The Santa Ana River, although urbanized along some portions of its length, is one of the most important habitat riparian areas [sic]. In its upper reaches, the river supports wild trout; in its lower reaches, where it passes through urban areas, it has the potential to serve as an important open space resources for human and wildlife use. Among the endangered species living on habitat in the river of the Santa Ana River woollystar, an endangered plant found nowhere else in the world. Many objectives have been developed in the Santa Ana river: maintaining the river as a natural open space area along its entire length; improving habitat values where possible; regulating sand and gravel operations within the river to prevent damage to the habitat constructing the Santa Ana River, regional trail; and cooperating with Riverside County, the U.S. Forest Service, adjacent cities to protect open space resources” (County, no date[a]).

The Development Code’s biotic overlay map shows potential habitat on the entire site for burrowing owl. The eastern portion of the site also has mapped potential habitat for San Bernardino kangaroo rat and coastal California gnatcatcher. Potential habitat for Santa Ana woollystar is also mapped to the south of the site in the Santa Ana Wash (County, no date[b]).

#### **4.1.2) Upper Santa Ana River Wash Habitat Conservation Plan**

The Project site is immediately adjacent to the covered area for the Upper Santa Ana River Wash Habitat Conservation Plan (Wash Plan). The south and east boundaries of the Project site abut the Wash Plan area. Greenspot Road on the north side of the Project site is also covered under the Wash Plan (Figures 5 and 7).

The Wash Plan is a habitat conservation plan that has been in development for several years. Most recently, a Draft Environmental Impact Statement/Supplemental Impact Report for the Wash Plan and Section 10 Permit was completed in December 2019 (RVA, ELMT, & MBI 2019). The Wash Plan is part of the incidental take permit application submitted to the USFWS by the San Bernardino Valley Water Conservation District (SBVWCD) on behalf of the participating entities.

Once issued, the permit would authorize incidental take of the following species for covered activities: San Bernardino kangaroo rat (*Dipodomys merriami parvus*; federally listed endangered, candidate for state listing as endangered, CDFW Species of Special Concern), Santa Ana River woollystar (*Eriastrum densifolium ssp. sanctorum*; federal and state listed endangered, California Rare Plant Rank [CRPR] 1B.1), slender-horned spineflower (*Dodecahema leptoceras*; federal and state listed endangered, CRPR 1B.1), and coastal California gnatcatcher (*Polioptila californica californica*; federally listed threatened, CDFW Species of Special Concern). Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*; CDFW Species of Special Concern, USFWS Bird of Conservation Concern) is also a covered species under the Wash Plan, but it is not state or federally listed.

The covered activities under the Wash Plan include mining, flood control and water management, transportation, trails, agriculture, and habitat enhancement. The covered activities do not include residential development (ICF 2019). Covered activities immediately adjacent to the Project site are City of Highland new trail designations for the Greenspot Road Trail (along the north side of the Project site), Pole Line Trail (along the south side), and Weaver Street Trail (along the east side).

Under the Wash Plan, the area to the south of the Project site would be included in the “HCP Preserve” and managed by the SBVWCD for the conservation and protection of the covered species listed above.

Implementation of the Wash Plan would result in permanent conservation and management of about 1,530 acres of native habitats that support slender-horned spineflower, Santa Ana River woollystar, cactus wren, California gnatcatcher, and San Bernardino kangaroo rat (ICF 2019).

The Wash Plan area includes existing conservation lands for the SBVWCD, City of Highland Biological Mitigation Area (Highland BMA), Santa Ana River Woollystar Preserve, and Bureau of Land Management (BLM) Santa Ana River Area of Critical Environmental Concern (ACEC) (Figure 7). A portion of the Highland BMA is adjacent to the eastern boundary of the Project site. The Highland BMA consists of two 10-acre mitigation parcels owned by the City of

Highland. These parcels are located on the south side of Greenspot Road, with one parcel adjacent to the eastern boundary of the Project site and the other parcel further to the east on the far side of the BLM property. The 2008 EIR for the Wash Plan (LSA 2008) stated that these 20 acres were set aside for the preservation of biological resources as part of the mitigation for an unnamed drainage channel project constructed by the City of Highland, but no further details were provided. The land was to be conveyed to the BLM and added to the ACEC. However, the 2019 Wash Plan (ICF 2019) states that these two 10-acre parcels are available for Highland to mitigate impacts not associated with covered activities under the Wash Plan.

A portion of the BLM ACEC is located to the east of the Project site, just beyond the western portion of the Highland BMA (Figure 7). About 760 acres within the Upper Santa Ana River Wash downstream from the Greenspot Bridge are federal lands administered by the BLM and designated as an ACEC to provide enhanced protection for sensitive habitats and populations of slender-horned spineflower and Santa Ana River woollystar. The ACEC is closed to motorized vehicles and unavailable for mining and livestock grazing (BLM 2004, USFWS 2010a).

The Santa Ana River Woollystar Preservation Area (WSPA) totals approximately 764 acres and is made up of three distinct parts. Two of the parts are well to the south of the Project site and generally follow the Santa Ana River. The third part of the WSPA surrounds Plunge Creek near Greenspot Road and is located further to the east of the Project site, beyond the Highland BMA and ACEC (Figure 7). The WSPA was established as mitigation for impacts on San Bernardino kangaroo rat, slender-horned spineflower, and Santa Ana River woollystar resulting from the construction and operation of the Seven Oaks Dam. The WSPA is managed by San Bernardino County Flood Control District (LSA 2008, ICF 2019).

SBVWCD conserved lands are adjacent to the Project site on the south. As described above, under the Wash Plan, these lands will be managed by the SBVWCD for conservation of the covered species.

#### 4.1.3) Weaver Street Channel and Plunge Creek

A diversion channel (Weaver Street Channel) is located immediately east of the Project site and directs flows from Cram Creek to the south, along the Project site's eastern boundary and into Plunge Creek and the Santa Ana Wash system. The first  $\pm 500$  feet of the channel is grouted riprap and the remaining  $\pm 1,200$  feet is earthen (Figure 6).

Based on historical aerial photos and Google Earth images, Weaver Street Channel was constructed sometime between 1995 and 2002 and areas to the north of the Project site were

developed between 1980 and 1995 (Google Earth 2020, NETR 2020). The Project proponent has worked with the City of Highland to locate the environmental documents associated with the CEQA analysis for the construction of Weaver Street Channel and the required mitigation for degradation of downstream habitat (including habitat on the Project site) due to loss of connectivity of blueline streams. These documents could not be found (pers. comm. Kim Stater, meeting with City of Highland 01.13.2020).

Along Plunge Creek, just downstream of Greenspot Road, there are two levees (north and south) that flank both sides of the creek and help protect the area (including the Project site) from flooding (Figure 6); however, these levees are not certified by the Federal Emergency Management Agency (FEMA) and were therefore not included in the hydraulic and floodplain analysis that was done for the Project. This analysis indicates that under existing conditions, in the absence of the north levee on Plunge Creek, a 100-year flood event would inundate the southeast corner of the Project site to a depth of generally one foot or less (WEST 2013). The analysis considered this a worst-case scenario for flooding and did not analyze the potential for inundation of the site with the north levee intact (Figure 16a).

The analysis of a 100-year flood event also found that sediment deposition is generally predicted to occur in the main channel of Plunge Creek with very little deposition on or near the Project site or in Cram Creek (Figure 16b). Most of the scour is also predicted within the main channel of Plunge Creek with very little scour in Cram Creek (WEST 2013).

#### 4.1.4) Precipitation Data

Precipitation data for the area was obtained from the Western Regional Climate Center (WRCC 2018, 2020) and the California Department of Water Resources (CIMIS 2020). The nearest Remote Automatic Weather Stations (RAWS) to the project site are Mill Creek (BDF) and Devore 2.

The Mill Creek RAWS is about 7.4 miles east-southeast of the Project site at an elevation of 2,950 feet. Data is available from this station from February 1998 through January 2020. The Devore 2 RAWS is about 13.4 miles northwest of the Project site at an elevation of 1,605 feet. Data is available from this station from November 2017 through January 2020.

The closest CIMIS station is Highland #251, located about a mile east-northeast of the Project site at an elevation of 1,275 feet. Data is available for the Highland #251 Station for October 2016 through January 2020.

The relevant time period for surveys on the site is October 2004 through September 2019 and only precipitation data from this time period is included in this report.

Precipitation data from the Mill Creek (BDF) and Devore 2 RAWs and Highland #215 CIMIS station are provided in Appendix D (WRCC 2020, CIMIS 2020). Average annual precipitation for the region (1981 to 2010) is 10 to 15 inches (WRCC 2018).

Comparing total precipitation to the average for the region shows that 2005, 2008, 2010, 2011, 2015, 2017, and 2019 had above-average rainfall; 2005 was well above average. The water years 2007, 2014, and 2018 had below-average rainfall, and 2006, 2009, 2012, 2013, and 2016 had about average rainfall.

#### 4.1.5) Previous Biological Surveys

L&L reviewed the results of previous biological surveys of the site conducted in 2005, 2006, 2011, 2014, 2015, 2016, 2017, and 2018 (L&L 2005a-b, 2006a-b, 2011, 2014a-b, 2015a-d, 2016, 2017, 2018a-c, 2019; NRAI 2005, 2011, 2016; Envira 2016). Surveys include a general biological assessment in 2005, with updates in 2011, 2014, 2015, 2016, and 2018; botanical surveys in 2011, 2014, 2015, 2016, and 2017; a heritage tree survey in 2006 with a desktop review to update the report with the current development plan in 2019; a focused survey for burrowing owl and nesting raptors in 2005; trapping studies for the San Bernardino kangaroo rat in 2005, 2011, 2016, and 2018; and a jurisdictional delineation in 2006 with updates in 2015 and 2017. The results of previous biological resource surveys are summarized in Table 3.

During review of previous reports, it was noted that an additional 10 acres on the east side of the Project was also surveyed during the general biological and botanical surveys in 2005 and 2011 (L&L 2005a, 2011). This appears to be due to an error in the list of parcels to include in the survey. This 10-acre area is not a part of the Project site and included a riparian area in Weaver Street Channel. As a result, riparian habitat (mulefat scrub) and several riparian and wetland plant species were incorrectly included in these reports and were not found on the Project site. The species are cocklebur (*Xanthium strumarium*), sweet alyssum (*Lobularia maritima*), water speedwell (*Veronica anagallis-aquatica*), tall umbrella sedge (*Cyperus eragrostis*), seep monkeyflower (*Erythranthe guttatus*), willow (*Salix* species), and cattail (*Typha* species). This was reviewed with the field biologist (Guy Bruyey) and removed from this report.



## L&L Environmental, Inc.

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INVESTIGATIONS AND MONITORING

GSPI-05-646  
March 2020

## Figure 5

### Project Relationship to the Wash Plan Area

Greenspot Partners, Inc.  
City of Highland, California





## L&L Environmental, Inc.

BIOLOGICAL AND CULTURAL  
INVESTIGATIONS AND MONITORING

GSPI-05-646  
March 2020

## Figure 6

### Waterways in the Vicinity

(Photo obtained from Google Earth, February 2018)

Greenspot Partners, Inc.  
City of Highland, California





Figure 1-2  
Plan Area Subcomponents  
Wash Plan HCP



Table 3. Previous Survey Results

Survey Dates (Reference)	Survey Area	Biologist(s)	Results
<b>General Biological Resources</b>			
June 2005 2 visits (L&L 2005a)	±70 acres (entire site plus 10-acre offsite parcel to the east)	Guy Bruyey	Site is a mix of agricultural and disturbed land and native habitat (alluvial fan sage scrub/juniper scrub). No special status plants observed. Special status wildlife detected (Cooper's hawk, Costa's hummingbird, western whiptail). Suitable habitat for nesting birds, including raptors. Suitable habitat for burrowing owl, but no owls or owl sign observed. (10-acre offsite parcel on the east side of the site, including Weaver Street Channel, was incorrectly included within the survey boundary).
June - September 2011 4 visits (L&L 2011)	±60 acres (entire site)	Guy Bruyey	Site is a mix of agricultural and disturbed land and native habitat (alluvial fan sage scrub/juniper scrub). No special status plants observed. Special status wildlife detected (San Diego black-tailed jackrabbit, loggerhead shrike, Lawrence's goldfinch, Costa's hummingbird). Suitable habitat for nesting birds, including raptors. Suitable habitat for burrowing owl, but no owls or owl sign observed.
April - August 2014 4 visits (L&L 2014a)	±21.5 acres (eastern portion)	Guy Bruyey	Eastern portion of site is relative undisturbed alluvial fan sage scrub/juniper scrub. No special status plants observed. Suitable habitat for burrowing owl, but no owls or owl sign observed. Special status wildlife detected (San Diego black-tailed jackrabbit, great blue heron, Lawrence's goldfinch). Suitable habitat for nesting birds, including raptors.
April - August 2014 4 visits (L&L 2014b)	±38.5 acres (western portion)	Guy Bruyey	About half of the western portion of the site is agricultural/disturbed land and about half is alluvial fan sage scrub/juniper scrub. No special status plants observed. Suitable habitat for burrowing owl, but no owls or owl sign observed. Special status wildlife detected (San Diego black-tailed jackrabbit). Suitable habitat for nesting birds, including raptors.
April - July 2015 5 visits (L&L 2015a)	±21 acres (eastern portion)	Guy Bruyey	Vegetation communities unchanged from previous surveys. No special status plants observed. Suitable habitat for burrowing owl, but no owls or owl sign observed. Special status wildlife detected (coastal whiptail, oak titmouse). Suitable habitat for nesting birds, including raptors.

Survey Dates (Reference)	Survey Area	Biologist(s)	Results
April - July 2015 5 visits (L&L 2015b)	±38.5 acres (western portion)	Guy Bruyey	Vegetation communities unchanged from previous surveys. No special status plants observed. Suitable habitat for burrowing owl, but no owls or owl sign observed. Special status wildlife detected (coastal whiptail). Suitable habitat for nesting birds, including raptors.
April - August 2016 3 visits (L&L 2016)	±38.5 acres (western portion)	Guy Bruyey	Vegetation communities unchanged from previous surveys. No special status plants observed. Suitable habitat for burrowing owl, but no owls or owl sign observed. Special status wildlife detected (San Diego black-tailed jackrabbit). Suitable habitat for nesting birds, including raptors.
May – June 2018 2 visits (L&L 2018a)	±60 acres (entire site)	Guy Bruyey	Vegetation communities unchanged from previous surveys. No special status plants observed. Suitable habitat for burrowing owl, but no owls or owl sign observed. No special status wildlife detected. Suitable habitat for nesting birds, including raptors. Raptor nest offsite near southwest corner of site.
<b>Special Status Plants</b>			
June-September 2011 4 visits (L&L 2011)	±60 acres (entire site)	Guy Bruyey	No special status plants observed. (Water year 2011 had above-average rainfall.)
April - August 2014 4 visits (L&L 2014a)	±21.5 acres (eastern portion)	Guy Bruyey	No special status plants observed. (Water year 2014 had below-average rainfall.)
April - August 2014 4 visits (L&L 2014b)	±38.5 acres (western portion)	Guy Bruyey	No special status plants observed. (Water year 2014 had below-average rainfall.)
April - July 2015 5 visits (L&L 2015a)	±21 acres (eastern portion)	Guy Bruyey	No special status plants observed. (Water year 2015 had above-average rainfall.)
April - July 2015 5 visits (L&L 2015b)	±38.5 acres (western portion)	Guy Bruyey	No special status plants observed. (Water year 2015 had above-average rainfall.)
April – August 2016 3 visits (L&L 2016)	±38.5 acres (western portion)	Guy Bruyey	No special status plants observed. (Water year 2016 had about average rainfall.)

Survey Dates (Reference)	Survey Area	Biologist(s)	Results
April-August 2017 6 visits (L&L 2018b)	±60 acres (entire site)	Guy Bruyey	Vegetation communities unchanged from previous surveys. No special status plants observed. Special status wildlife observed (San Diego black-tailed jackrabbit). (Water year 2017 had above-average rainfall.)
<b>Heritage Tree Count and Survey</b>			
March 2006 2 visits (L&L 2006b)	±60 acres (entire site)	Guy Bruyey	Survey found 114 trees meeting the City of Highland “heritage tree” criteria, excluding an estimated 3,300 non-native eucalyptus trees in the northwest corner of the site. All but three of the heritage trees were identified as being in good health.
January 2019 Desktop review (L&L 2019)	±60 acres (entire site)	--	Report updated to reflect current development plan. Of the 114 trees on the site meeting the City of Highland “heritage tree” criteria, 84 will be impacted and 30 will be avoided under the current development plan. The avoided trees are in the southeast corner of the site. This does not include the approximately 3,300 non-native eucalyptus trees that were estimated to be present on the site in 2006.
<b>Burrowing Owl and Raptor Nest Survey</b>			
July 2005 6 visits (L&L 2005b)	Suitable habitat within entire site plus 150m buffer	Guy Bruyey, John Dicus, Melanie Dicus	Potentially suitable burrowing owl habitat and small mammal burrows present. No burrowing owl, owl sign, or occupied burrows found. Several potential raptor nest sites (inactive) in eucalyptus groves. No special status plants observed. Special status wildlife observed (coastal whiptail).
<b>San Bernardino Kangaroo Rat Protocol Trapping Surveys</b>			
August 2005 6 trapping nights (NRAI 2005)	±60 acres (entire site)	Philippe Vergne	Potentially suitable habitat present. Habitat quality is low due to the density of vegetation cover. 5 SBKR* trapped. Occupied habitat confined to southeastern portion of the property within remnant drainages. Northwestern San Diego pocket mouse (7*) and <i>Dulzura kangaroo rat</i> (30*) also trapped.
April 2011 6 trapping nights (NRAI 2011)	±60 acres (entire site)	Philippe Vergne	Potentially suitable habitat present. Habitat quality is low due to the density of vegetation cover. 8 SBKR* trapped. Occupied habitat mainly in eastern and southeastern portion of the property within and adjacent to remnant drainages. Los Angeles pocket mouse (3*), northwestern San Diego pocket mouse (12*), and <i>Dulzura kangaroo rat</i> (28*) also trapped.

Survey Dates (Reference)	Survey Area	Biologist(s)	Results
August 2016 6 trapping nights (Envira 2016)	±21 acres (eastern portion)	Philippe Vergne	Potentially suitable habitat present. Habitat quality is low due to the density of vegetation cover. 4 SBKR* trapped. Occupied habitat mainly in southeastern areas (of the eastern portion) of the property within and adjacent to remnant drainages. Northwestern San Diego pocket mouse (58*) and Dulzura kangaroo rat (7*) also trapped.
March 2016 6 trapping nights (NRAI 2016)	±38 acres (western portion)	Philippe Vergne	Potentially suitable habitat present. Habitat quality is low due to the density of vegetation cover. 3 SBKR* were trapped (2 adult males, 1 adult female). Occupied habitat mainly in eastern and southeastern areas (of the western portion) of the property within and adjacent to remnant drainages. Northwestern San Diego pocket mouse (85*) and Dulzura kangaroo rat (7*) also trapped.
July - August 2018 Four 5-night trapping sessions (L&L 2018c)	±60 acres (entire site)	Philippe Vergne	11 individual SBKR** trapped (5 adult males, 3 adult females, 1 sub-adult males, 2 sub-adult females). Northwestern San Diego pocket mouse (83*), Dulzura kangaroo rat (136*), Los Angeles pocket mouse (2*), and San Diego desert woodrat (1*) were also trapped.
* number is total trapped; animals were not marked and individuals may have been trapped more than once. ** number is distinct individuals; animals were marked and repeat trappings are not included in the total.			

Survey Dates (Reference)	Survey Area	Surveyor(s)	Results
<b>Jurisdictional Delineation</b>			
May 1, 2006 1 visit (L&L 2006a)	±60 acres (entire site)	Jeff Sonnentag	One drainage present; it collects water from a dirt access road and flows into an ephemeral blueline stream west of the site; consists of 408 square feet of state streambed and waters of the U.S. All three mapped ephemeral blueline drainages that cross the site have been cut off from their upstream sources by offsite flood control projects and road development.
March 2015 1 visit (L&L 2015c)	±21 acres (eastern portion)	Leslie Irish	No jurisdictional drainages present. All three mapped ephemeral blueline drainages have been cut off from their upstream sources by offsite flood control projects and road development.
March 2015 1 visit (L&L 2015d)	±38 acres (western portion)	Leslie Irish	Site reevaluated and no jurisdictional drainages designated. All three mapped ephemeral blueline drainages have been cut off from their upstream sources by offsite flood control projects and road development.

Survey Dates (Reference)	Survey Area	Surveyor(s)	Results
May 2017 Desktop review (L&L 2017)	±60 acres (entire site)	Leslie Irish	Site reevaluated and no jurisdictional drainages designated. All three mapped ephemeral blueline drainages have been cut off from their upstream sources by offsite flood control projects and road development.

## 4.2) Vegetation Communities

Vegetation communities on the site are relatively undisturbed Riversidean alluvial fan sage scrub (RAFSS), agriculture (eucalyptus groves and jojoba fields), and disturbed/ruderal/ornamental (Figure 8). The agricultural and disturbed/ruderal/ornamental areas (approximately 20.1 acres or 34 percent of the property) are on the western portion of the Project site, with RAFSS (approximately 38.6 acres or 66 percent of the property) on the eastern side (Table 4). The RAFSS on the eastern side is within Unit 1 of USFWS designated critical habitat for SBKR.

Acreages of each vegetation community on the site are provided in Table 4. Representative photos are included in Appendix F.

Table 4. Vegetation Communities Present

Vegetation Community	Acres
Agriculture - Jojoba	5.1
Agriculture - Eucalyptus Groves	5.6
Disturbed/Ruderal/Ornamental	9.4
<b>Agriculture/Disturbed Subtotal</b>	<b>20.1</b>
Riversidean Alluvial Fan Sage Scrub	38.6
<b>Total</b>	<b>58.7</b>

### 4.2.1) Riversidean Alluvial Fan Sage Scrub (RAFSS)

RAFSS is present throughout the eastern two-thirds of the site. The RAFSS vegetation community on the Project site can be characterized as *Eriogonum fasciculatum*–(*Lepidospartum squamatum*) Alluvial Fan Association of California buckwheat scrub (*Eriogonum fasciculatum* Shrubland Alliance) and *Artemisia californica*—*Lepidospartum squamatum* Association of California sagebrush scrub (*Artemisia californica* Shrubland Alliance) (Sawyer et al. 2009). Both associations are ranked as S3 (vulnerable to extirpation) by CDFW (2019b) and are considered sensitive.

RAFSS grows on sandy, rocky alluvium laid down during infrequent, severe flooding events (Hanes et al. 1989). Terraces above wash channels are vegetated by three different phases of alluvial scrub vegetation. The phases are generally related to the time since the most recent flood event and are referred to as pioneer, intermediate, and mature. Pioneer phase RAFSS is



found in active streambeds and has sparse, low-growing vegetation with low species diversity. The substrate is generally composed of boulders and cobbles without topsoil. Intermediate phase RAFSS is composed primarily of subshrubs and vegetation is fairly dense. The substrate is coarse and fine sand with cobbles. Mature RAFSS includes subshrubs and woody shrubs with a substrate of fine silty soil with few cobbles.

The site has intermediate to mature RAFSS in a mosaic of native RAFSS vegetation, non-native annual grasses, and patches of bare ground. Within the RAFSS vegetation community, scalebroom (*Lepidospartum squamatum*) is present (uncommonly) in association with other large plants, including California buckwheat (*Eriogonum fasciculatum* var. *foliolosum*), California sagebrush (*Artemisia californica*), yerba santa (*Eriodictyon* species), and chaparral yucca (*Hesperoyucca whipplei*). Larger shrubs less commonly observed include chamise (*Adenostoma fasciculatum*), spiny redberry (*Rhamnus crocea*), hollyleaf cherry (*Prunus ilicifolia*), blue elderberry (*Sambucus nigra* ssp. *cerulea* [S. *mexicana*]), and sugar bush (*Rhus ovata*).

California juniper (*Juniperus californica*) shrubs are present within the RAFSS community in low-density patches. These patches can be characterized as *Juniperus californica*—*Eriogonum fasciculatum*—*Artemisia californica* Association of California juniper woodland (*Juniperus californica* Woodland Alliance) (Sawyer et al. 2009) but are too small and scattered to be mapped as a separate vegetation community. This is not considered a sensitive vegetation community (CDFW 2019b).

Other species present include white sage (*Salvia apiana*), brittlebush (*Encelia farinosa*), sweetbush (*Bebbia juncea*), cholla (*Cylindropuntia* species), interior bush lupine (*Lupinus excubitus* var. *hallii*), sand-wash butterweed (*Senecio flaccidus*), Thurber's wild buckwheat (*Eriogonum thurberi*), jimsonweed (*Datura wrightii*), chia (*Salvia columbariae*), California croton (*Croton californicus*), and telegraph weed (*Heterotheca grandiflora*). Small patches of tamarisk (*Tamarix* species) and scattered western sycamore trees (*Platanus racemosa*) were observed on portions of the site within historic drainage areas.

Native plants commonly found within this community on the subject property include (but are not limited to) deerweed (*Acmispon glaber*), phacelia (*Phacelia* species), morning-glory (*Calystegia macrostegia*), lance-leaved dudleya (*Dudleya lanceolata*), wild hyacinth (*Dichelostemma capitatum*), and horseweed (*Erigeron* [Conyza] *canadensis*). Less disturbed areas (especially areas with a cryptobiotic surface crust and/or areas without dense non-native grass cover) were inhabited with California plantain (*Plantago erecta*), sun cups (*Camissoniopsis* [Camissonia])



species), four-spot clarkia (*Clarkia purpurea*), cryptantha (*Cryptantha* species), popcornflower (*Plagiobothrys* species), chaparral nightshade (*Solanum xanti*), yellow pincushion (*Chaenactis glabruiscula*), sapphire woollystar (*Eriastrum sapphirinum*), silverpuffs (*Uropappus lindleyi*), and other low-growing herbs. Fiddleneck (*Amsinckia intermedia*) was observed sporadically throughout disturbed and undisturbed portions of the site. Non-native grasses inhabit much of the understory, including wild oat (*Avena* species), ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis ssp. rubens*), and cheatgrass (*Bromus tectorum*).

#### 4.2.2) Agriculture (Jojoba Fields and Eucalyptus Groves)

Agricultural areas on the Project site are composed of jojoba fields and eucalyptus groves. Eucalyptus trees (*Eucalyptus* species), native to Australia, are commonly found in southern California and have been widely planted in the area since the 1850s. Two (2) separate eucalyptus groves are present within the northwestern corner of the site. The understory consists of weedy low-growing annuals and grasses.

Based on review of aerial images, the eucalyptus groves appear to have been planted sometime between 1980 and 1995 (NETR 2020). In 2005, surveys found that the trees were being watered by drip irrigation and appeared healthy. Since 2006, the trees are no longer irrigated and are declining in health. By 2015, trees appeared to be water stressed. In 2019, many trees had lost most of their foliage and some appeared to be dead. Large eucalyptus trees are present and, although not native, these trees provide potential nesting locations for raptors and other birds.

Eucalyptus groves can be characterized as *Eucalyptus* Semi-Natural Woodland Stands (Sawyer et al. 2009). CDFW does not assign an S rank to non-native vegetation communities and they are not considered sensitive (CDFW 2019b).

Rows of cultivated jojoba (*Simmondsia chinensis*) are present within the southwestern portion of the site, south of the eucalyptus groves, and appear to be abandoned. Examination of historic aerial images shows that the area currently occupied by the jojoba fields has been under cultivation since before 1938 (NETR 2020). Sawyer et al. (2009) does not provide a classification for agricultural areas.

#### 4.2.3) Disturbed/Ruderal/Ornamental

Disturbed areas within the western portion of the site that are not vegetated with eucalyptus, jojoba, or other ornamental plants are largely ruderal. Weedy species, mainly non-natives,

dominate these areas, including short-pod mustard (*Hirschfeldia incana*), redstem filaree (*Erodium cicutarium*), long-beak filaree (*Erodium botrys*), tumbling pigweed (*Amaranthus albus*), prickly lettuce (*Lactuca serriola*), and Russian thistle (*Salsola tragus*). Very dense non-native grasses, including red brome, ripgut brome, cheatgrass, fescue (*Festuca* [*Vulpia*] species), and wild oat, were observed in disturbed areas. Ruderal areas can be characterized as *Bromus rubens* and *Bromus rubens*—*Avena* species Semi-Natural Herbaceous Stands (Sawyer et al. 2009).

Other plant species less commonly observed within disturbed areas include calabazilla (*Cucurbita foetidissima*), tocalote (*Centaurea melitensis*), annual bur-sage (*Ambrosia acanthicarpa*), puncture vine (*Tribulus terrestris*), vinegar weed (*Trichostema lanceolatum*), and cheeseweed (*Malva parviflora*).

Non-native ornamental landscaping plants are present near the remnant structures on the site. Trees observed include eucalyptus, pine (*Pinus* species), Peruvian pepper tree (*Schinus molle*), and Russian olive (*Olea europaea*). A single Fremont cottonwood (*Populus fremontii*) is also present.

Sawyer et al. (2009) does not provide a classification for disturbed or ornamental areas. CDFW does not assign an S rank to non-native vegetation communities and they are not considered sensitive (CDFW 2019b).



**L&L Environmental, Inc.**

BIOLOGICAL AND CULTURAL  
INVESTIGATIONS AND MONITORING

GSPI-05-646  
March 2020

**Figure 8**

**Vegetation Communities and  
Critical Habitat**

(Photo obtained from Google Earth, February 2018)

Greenspot Partners, Inc.  
City of Highland, California



#### 4.3) Plant Species

A total of 161 plant species have been observed onsite during surveys conducted from 2005 through 2019. A list of all plant species observed during surveys is included in Appendix A. No listed or special status plant species were observed on the site during surveys, with the exception of a possible observation of the special status species chaparral sand verbena (*Abronia villosa* var. *aurita*).

City of Highland 'heritage trees' are present, as described below. Potential for occurrence of listed and special status plants is provided in Appendix C.

Scalebroom (*Lepidospartum squamatum*) is present within the Project site. This plant is persistent and capable of lifting concrete improvements placed above graded areas containing remnants of the plant. L&L recommends a focused survey to map locations of the plant on the property and eradication of the plant from any areas planned for development prior to soil disturbance (conducted in compliance with required mitigation measures, permit conditions, etc.).

##### 4.3.1) Listed Plant Species

No listed plant species were observed during the current or previous botanical surveys or observed incidentally during other biological surveys. Two listed species have a moderate potential to occur: slender-horned spineflower and Santa Ana River woollystar. No listed species have a high potential to occur.

##### Slender-horned Spineflower

Slender-horned spineflower (*Dodecahema leptoceras*) is an annual herb in the Polygonaceae (Buckwheat) family. It flowers from April through June and is found on sandy soils in chaparral, cismontane woodland, and alluvial fan scrub at elevations from about 650 to 2,500 feet. It is found in coastal southern California (CNPS 2020). Slender-horned spineflower is generally dependent on mature alluvial scrub that is maintained by periodic flooding and sediment transport (Dudek 2003). It is usually found in drought prone alluvial benches that experience only rare flood events but are subject to sheet or overland flow (USFWS 2010a).

Individual spineflower plants can be difficult to detect because they are small and occur in relatively small, isolated patches. Plant densities may be low during drought conditions (USFWS 2010a).

The species is state and federally listed as endangered and has a CRPR of 1B.1 (rare, threatened, or endangered in California and elsewhere; seriously threatened in California). The USFWS has not designated critical habitat and has not developed a recovery plan for this species.

Slender-horned spineflower occurs in the immediate vicinity of the Project within the Wash Plan area (Figure 9) but has not been observed on the Project site during multiple surveys from 2005 through 2019. Slender-horned spineflower may be confused with related taxa; however, no spineflower species, rare or common, have been identified on the site during multiple surveys.

L&L consulting botanist Melanie Dicus identified slender-horned spineflower blooming at a reference site in the region on May 9, 2019 (see photos in Appendix F). The reference site is in the Cleveland National Forest about 30 miles southwest of the Project site at an elevation of approximately 1,600 feet. Botanical surveys were conducted on the Project site on May 9 and May 13, as well as before and after these dates (see Table 2). If slender-horned spineflower was present on the site in 2019, it likely would have been flowering and recognizable during the survey. Based on local precipitation data, there was substantial rainfall in the Project area from December 2018 through March 2019 and above average rainfall for the 2019 water year (Section 4.1.4 and Appendix D).

Surveys conducted on SBVWCD conservation lands in 2012 identified slender-horned spineflower in the Santa Ana Wash and within the Plunge Creek floodplain to the east of the Project site. There were three populations of slender-horned spineflower in this area in 2012, supporting 33 individuals (range of 3 to 24 individuals per population). Vegetation in this area was described as predominately nonnative grasses with scattered elements of a mature RAFSS plant community with chamise, yerba santa (*Eriodictyon trichocalyx*), California buckwheat, and California sagebrush. No slender-horned spineflower plants were found in this area during repeat surveys in 2016, 2017, or 2018. These three populations are all located in close proximity to each other and within approximately 800 feet of the Project site (MBI 2016, 2017; ELMT 2018).

Multiple additional slender-horned spineflower plants were found in the Santa Ana Wash within about two (2) miles of the Project site in 2012, 2016, 2017, and 2018. In 2012, these additional

plants consisted of seven (7) populations and a total of 185 plants; in 2016 there were four (4) populations with 50 total plants; in 2017 there were 10 populations and 148 total plants, and in 2018 there were six (6) populations with 108 total plants (MBI 2016, 2017; ELMT 2018).

Alteration of natural water flows is considered a threat to all of the occurrences associated with the Santa Ana River since the construction of the Seven Oaks dam in 2000. All occurrences within the Santa Ana River Wash are removed from the active floodplain, and with the construction of this dam, this occupied habitat is not likely to experience any fluvial regeneration in the future (USFWS 2010a).

Most occurrences of slender-horned spineflower could be considered threatened by altered hydrology because of their lack of or interrupted association with long term natural flood regimes. None of the extant occurrences, even those that are otherwise conserved, are protected from the threat from altered hydrology (USFWS 2010a).

Potential habitat for slender-horned spineflower on the Project site has been further degraded by the loss of alluvial processes due to offsite development. The drainages across the Project site no longer receive the flows needed to scour and maintain RAFSS due to the construction of Weaver Street Channel, the levees along Plunge Creek, Greenspot Road, and residential developments to the north.

Under the Wash Plan, 20 extant patches and 36 historic (pre-2005) occurrences of slender-horned spineflower will be conserved along with adjacent habitat in the Wash Plan area. Habitat enhancement is also planned through control of invasive plants (ICF 2019).



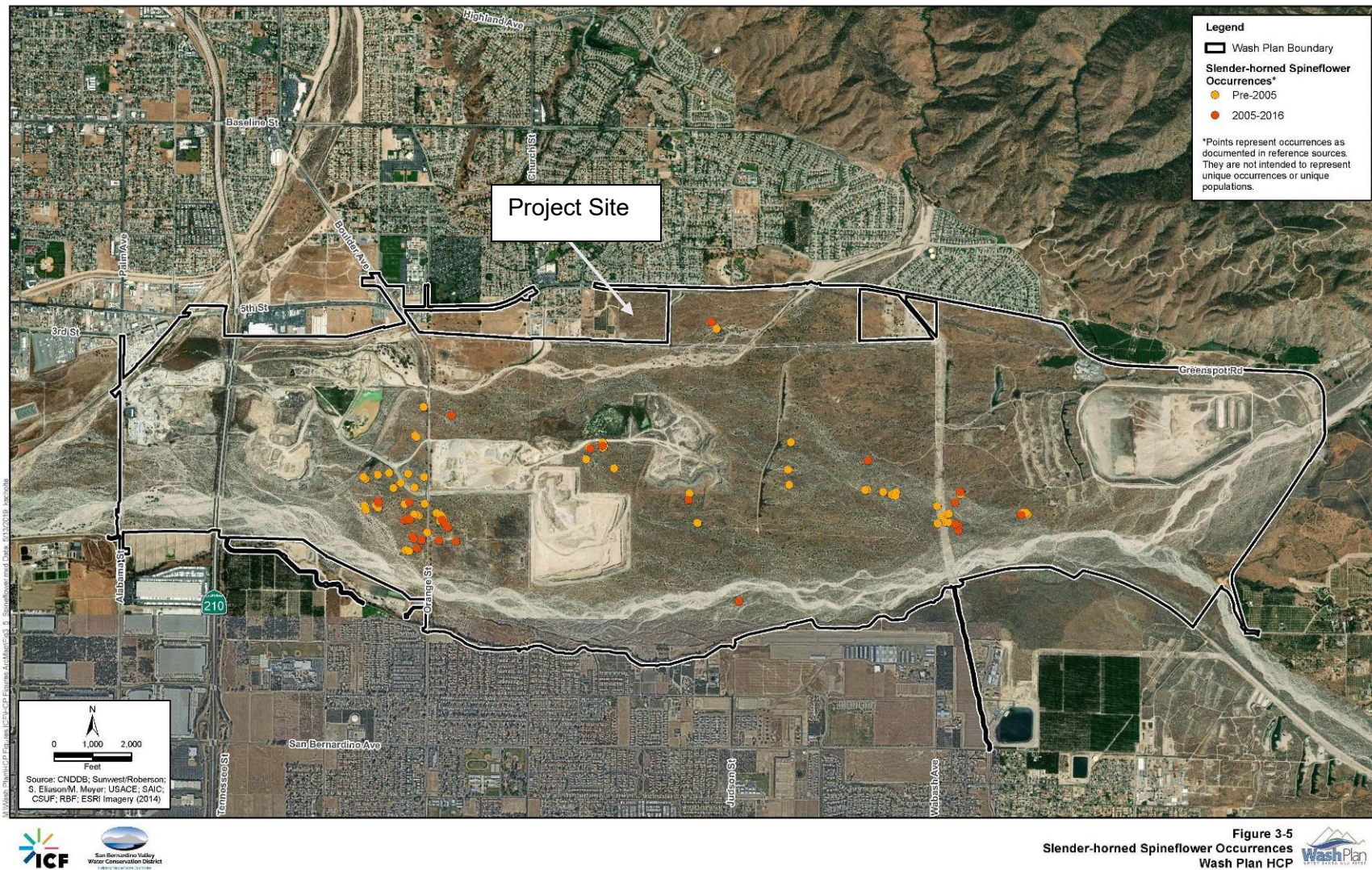


Figure 9. Slender-horned Spineflower Occurrences in Wash Plan Area (ICF 2019).

### Santa Ana River Woollystar

Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*) is a short-lived perennial subshrub in the Polemoniaceae (Phlox) family. It flowers from April through September, generally most heavily in June, and is found on sandy or gravelly soils in chaparral or coastal scrub on alluvial fans at elevations from about 300 to 2,000 feet elevation. It is found in Riverside and San Bernardino Counties and presumed extirpated in Orange County (CNPS 2020, USFWS 2010b). Santa Ana River woollystar prefers open areas of sandy alluvial terraces where annual and perennial cover is relatively low. It is a pioneer species that colonizes sand deposits created by sporadic stream flows. These deposits are typically found as terraces above the high water mark (USFWS 2010b).

The species is state and federally listed as endangered and has a CRPR of 1B.1 (rare, threatened, or endangered in California and elsewhere; seriously threatened in California). The USFWS has not designated critical habitat and has not developed a recovery plan for this species.

Santa Ana River woollystar occurs in the immediate vicinity of the Project within the Wash Plan area (Figure 10) but has not been observed on the Project site during multiple surveys from 2005 through 2019. The CNDDB documents Santa Ana River woollystar throughout the area to the south and east of the Project site. This occurrence (EO #5) is a huge area of scattered subpopulations, but does not include more specific location information. The Draft Final Wash Plan (ICF 2019) shows occurrences of the species throughout much of the Wash Plan area, including many occurrences within about three (3) miles of the Project site. The closest of these are located within about 400 feet to the south and 900 feet to the east.

A common species, sapphire woollystar (*Eriastrum sapphirinum*) was observed on the site during several surveys. The possibility of hybridization between Santa Ana River woollystar and sapphire woollystar has been raised (Andy Sanders pers. comm. with Guy Bruyey 09.19.2019). Although Brunell and Whitkus (1999) found that crosses between these two species were largely unsuccessful.

Santa Ana River woollystar habitat is maintained by periodic flooding, scouring, and sediment deposition and alteration of hydrology is a major threat to this species. In the absence of flood scouring, RAFSS communities tend to mature and become more dense, thereby eliminating the early and intermediate seral stages favored by Santa Ana River woollystar (USFWS 2010b).



The historic water flow in the area has been significantly affected by the construction of the Seven Oaks Dam.

Flooding and scouring over the site have also been significantly altered by the construction of Weaver Street Channel and the levees along Plunge Creek, as well as the construction of Greenspot Road and residential developments to the north. The site now receives water only from rainfall or potentially from extremely rare severe flooding events. The alteration of hydrology on the site substantially reduces the suitability of the habitat for Santa Ana River woollystar.

Under the Wash Plan, 204.3 grid areas occupied by Santa Ana River woollystar will be conserved within the Wash Plan area (grid areas are 25 by 25 meters). Habitat enhancement is also planned through control of invasive plants (ICF 2019).

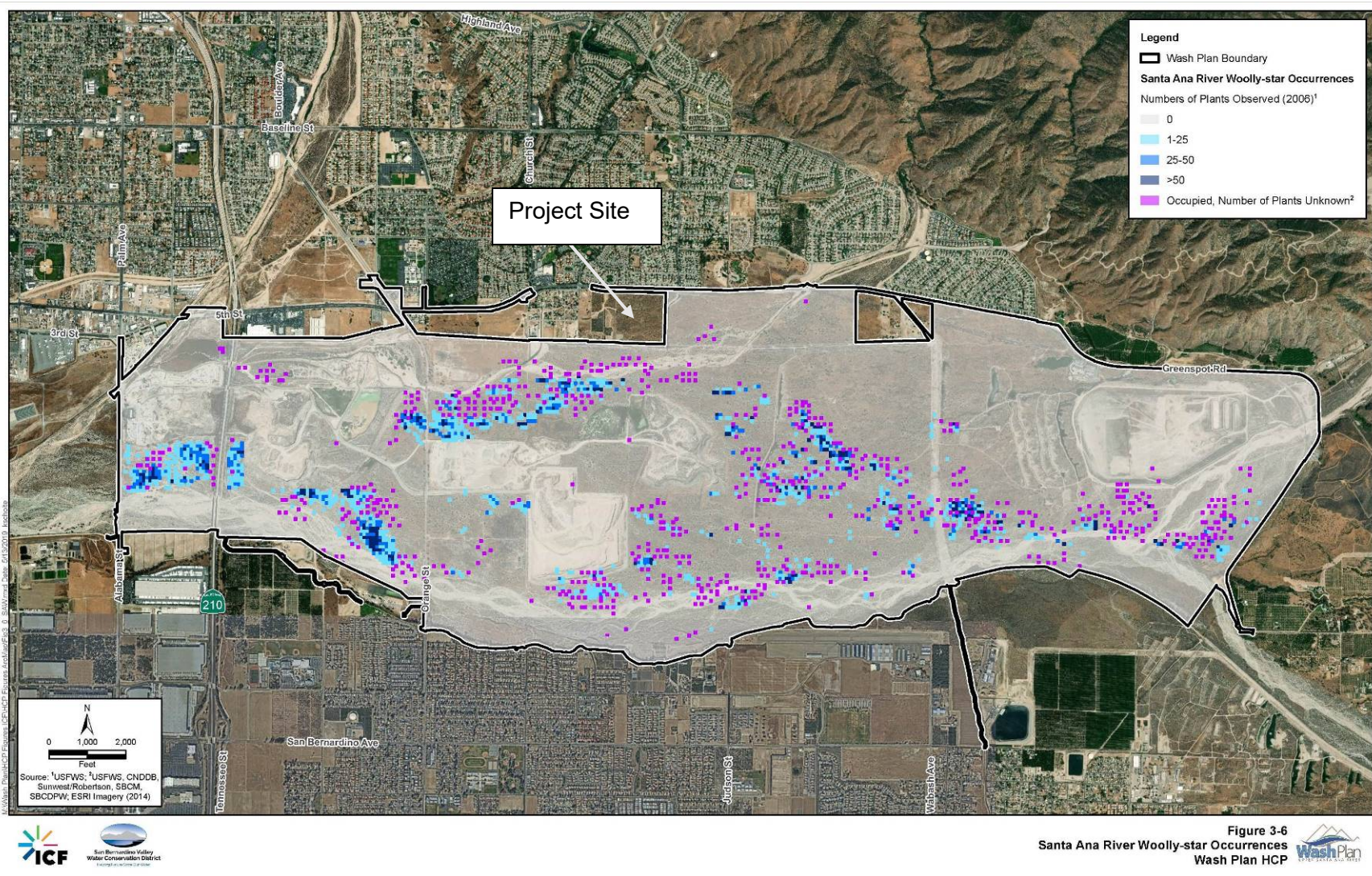


Figure 10. Santa Ana River Woollystar Occurrences in Wash Plan Area (ICF 2019).

#### 4.3.2) Special Status Plant Species

No special status plants were observed during the current or previous botanical surveys. One special status plant was reported onsite during small mammal trapping surveys (NRAI 2005). This plant was reported as *Abronia villosa* with no variety given. Based on the current known range of *A. villosa*, the taxon in the Project area would likely be the special status species chaparral sand verbenas (*Abronia villosa* var. *aurita*), CRPR 1B.1 (rare, threatened, or endangered in California and elsewhere; seriously threatened in California).

Chaparral sand verbenas are an annual herb in the Nyctaginaceae (Four O'clock) family. It flowers from January or March to September and is found in sandy soils in chaparral, coastal scrub, and desert dunes at elevations of 250 to 5,250 feet. There is potentially suitable habitat on the site for this species, but no documented occurrences within 5 miles in the CNDDB (CDFW 2020b). This taxon was not identified during any of the botanical surveys or other biological surveys and may have been confused with a common species with similar flowers, wishbone bush (*Mirabilis laevis* var. *crassifolia*).

The following four (4) special status plants have a moderate or low to moderate potential to occur on the Project site (Appendix C).

Parry's spineflower (*Chorizanthe parryi* var. *parryi*) is an annual herb in the Polygonaceae (Buckwheat) family. It flowers from April through June and is found on sandy or rocky soils in openings in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland at elevations of 900 to 4,000 feet. It has a CRPR of 1B.1 (rare, threatened, or endangered in California and elsewhere; seriously threatened in California).

Plummer's mariposa lily (*Calochortus plummerae*) is a perennial bulb-forming herb in the Liliaceae (Lily) family. It flowers from May through July and is found on granitic, rocky soils in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland at elevations of 330 to 5,575 feet. It has a CRPR of 4.2 (Plants of limited distribution; fairly threatened in California).

Peninsular spineflower (*Chorizanthe leptotheca*) is an annual herb in the Polygonaceae (Buckwheat) family. It flowers from May through August and is found on granitic soils or alluvial fans in chaparral, coastal scrub, and lower montane coniferous forest at elevations of 985 to 6,235 feet. It has a CRPR of 4.2 (Plants of limited distribution; fairly threatened in California).



Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*) is an annual herb in the Brassicaceae (Mustard) family. It flowers from January through July and is found in chaparral and coastal scrub from sea level to 2,900 feet elevation. It has a CRPR of 4.3 (Plants of limited distribution; not very threatened in California).

#### 4.3.3) Heritage Trees

Excluding the non-native eucalyptus trees found within two groves at the northwest corner of the site, 114 trees (and large shrubs) are present that meet the City of Highland heritage tree criteria based on size (Table 5, Figure 11). Details are provided in Appendix E. Native trees consist primarily of California juniper (*Juniperus californica*) and western sycamore (*Platanus racemosa*), with a few Fremont cottonwood (*Populus fremontii*).

The development plans for the Project (Webb 07.21.2016) indicate that approximately 30 of the 114 heritage trees would be avoided (Tree ID# 3 through 24, 60 through 67; see Appendix E) and the remaining 84 trees would be impacted (Table 5). The avoided trees are mainly California juniper within the area proposed for permanent conservation in the southeast corner of the site.

#### Eucalyptus Groves

Two eucalyptus groves are present within the northwestern corner of the site. Based on review of aerial images, the groves appear to have been planted sometime between 1980 and 1995 (NETR 2020). During a tree survey conducted in 2006, most eucalyptus trees in both groves averaged approximately 20 to 30 feet in height with a single trunk. A few larger eucalyptus trees were present, some attaining heights of approximately 50 to 60 feet. Since 2006, surveys have observed that the trees are no longer irrigated and are declining in health; some appear to be dead.

Because a majority of trees found within both groves would not individually meet the City of Highland heritage tree criteria due to size, both groves were measured as a stand of trees (see Section 2.12) and statistics for individual trees were estimated by random sampling of approximately 40 to 50 trees within each grove. Appendix E includes information on the average circumference, height, overall health, and estimated number of trees observed within each of the groves.

There were an estimated 1,100 trees in the east grove and 2,200 trees in the west grove at the time of the survey in 2006. The number of trees in each grove was estimated by counting the



number of trees in a few rows to generate an average per row and multiplying by the number of rows. As noted above, some of these trees are now dead.

All of the trees in the two eucalyptus groves are in the development area and will be impacted. It is estimated that approximately 5 to 10 percent of the eucalyptus trees in the east grove and 10 to 20 percent of the trees in the west grove would qualify as heritage trees based on size.

Table 5. Heritage Trees

Species	Total Trees (and large shrubs)		
	Total Present	In Impact Area	In Avoidance Area
<b>Natives</b>			
California juniper ( <i>Juniperus californica</i> )	72	44	28
Western sycamore ( <i>Platanus racemosa</i> )	20	20	0
Fremont cottonwood ( <i>Populus fremontii</i> )	3	3	0
Hollyleaf cherry ( <i>Prunus ilicifolia</i> )	3	1	2
Blue elderberry ( <i>Sambucus nigra</i> ssp. <i>cerulea</i> )	2	2	0
Sugar bush ( <i>Rhus ovata</i> )	2	2	0
Unidentified	1	1	0
<b>Total Natives</b>	<b>103</b>	<b>73</b>	<b>30</b>
<b>Non-natives</b>			
Tamarisk ( <i>Tamarix species</i> )	5	5	0
Peruvian pepper tree ( <i>Schinus molle</i> )	2	2	0
Russian olive ( <i>Olea europaea</i> )	1	1	0
Ornamental pine ( <i>Pinus species</i> )	1	1	0
Tree tobacco ( <i>Nicotiana glauca</i> )	1	1	0
Eucalyptus ( <i>Eucalyptus species</i> ) – not within grove	1	1	0
<b>Total Non-natives</b>	<b>11</b>	<b>11</b>	<b>0</b>
<b>Grand Total</b>	<b>114</b>	<b>84</b>	<b>30</b>



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BIOLOGICAL AND CULTURAL  
INVESTIGATIONS AND MONITORING

GSPI-05-646  
March 2020

## Figure 11

**Heritage Tree Locations**  
(see Appendix E for associated data)  
(Aerial obtained from Google Earth, February 2018)

Greenspot Partners, Inc.  
City of Highland, California

#### 4.4) Wildlife Species

A total of 70 vertebrate animal species have been detected onsite during surveys conducted from 2005 to 2019. Detections of federal or state-listed and special status species are described below. A list of all wildlife species detected is included in Appendix A and details regarding observations of listed or special status species is included in Appendix B. Potentials for occurrence of listed and special status species are provided in Appendix C.

##### 4.4.1) Listed and Fully Protected Wildlife Species

One listed species occurs on the Project site: San Bernardino kangaroo rat. One additional species, coastal California gnatcatcher, has not been detected on the site and has a low potential for occurrence. White-tailed kite, a fully protected species, has a low to moderate potential for occurrence.

##### San Bernardino Kangaroo Rat

San Bernardino kangaroo rat (*Dipodomys merriami parvus*; SBKR) is one of 19 recognized subspecies of Merriam's kangaroo rat (*Dipodomys merriami*), which is a widespread species distributed throughout the arid regions of the western United States and northwestern Mexico.

**Conservation status.** SBKR was emergency listed as endangered by the USFWS on January 27, 1998. Upon expiration of the emergency rule, the species was listed as endangered by the USFWS on September 24, 1998 (USFWS 1998, pp. 3835-3843). Initial proposed and final critical habitat rules were published in the *Federal Register* on December 8, 2000, and April 23, 2002, respectively (USFWS 2000b, pp. 77178-77208; USFWS 2002, pp. 19812-19845). A revised final critical habitat rule was published on October 17, 2008 (USFWS 2008, pp. 61936-62002). SBKR is a CDFW Species of Special Concern and became a candidate for state listing on August 13, 2019 (CFGF 2019). There is no approved draft or final recovery plan for SBKR.

**Critical habitat.** Critical habitat for SBKR totals 7,779 acres in Riverside and San Bernardino counties, including 3,258 acres in the Santa Ana River wash (USFWS 2008). Critical habitat is comprised of five (5) units: Santa Ana River Wash, Lytle/Cajon Creek Wash, San Jacinto River Wash, Cable Creek Wash, and Bautista Creek. The eastern portion of the Project site (38.6 acres of RAFSS) is within Unit 1, Santa Ana River Wash (Figure 8).

A critical habitat designation does not necessarily restrict further development, but it does require federal agencies to ensure that actions they plan to undertake, fund, or authorize do not destroy or adversely modify critical habitat. Only activities that involve a federal permit, license, or funding, and that may affect the area of critical habitat will be affected. If this is the case, the USFWS will work with the federal agency and, where appropriate, private landowners to amend their project to allow it to proceed without adversely affecting the critical habitat (USFWS 2020b). Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species

**Habitat.** SBKR is found primarily on sandy and loamy sand substrates, where it can readily excavate simple, shallow burrows. SBKR has a strong preference for, and is more abundant on, soils deposited by alluvial processes (USFWS 2008). This is typically associated with the RAFSS vegetation community, a relatively uncommon desert-influenced plant community in southern California that develops on alluvial fans and floodplains subjected to scouring and deposition.

SBKR is found in RAFSS, alluvial fans, floodplains, and along washes. Intermediate phase RAFSS is considered the highest quality habitat because it includes open sandy areas favored by SBKR. Pioneer phase RAFSS is generally less suitable for SBKR because it lacks the appropriate substrate for establishing burrow systems. Mature RAFSS is also less suitable for SBKR because it has few sandy openings, but may serve as an important refugium during flood events (Dudek 2007).

The SBKR appears to reach its highest densities in areas with low to moderate (30 to 50 percent) perennial vegetative cover and greater than 40 percent bare ground, although this species can occur within areas supporting higher or lower shrub cover. Areas with mature, dense vegetation are generally occupied at low densities by SBKR, with animals found in scattered pockets of more-open shrub cover and loose, sandy soils. Areas with a dense cover (greater than 60 percent) of non-native annual plants and/or litter are typically either unoccupied by SBKR or occupied at low densities (USFWS 2004, Dudek 2007).

Because the distribution of this animal appears to be driven by soil type rather than any other habitat conditions, the hydrologic regime in the alluvial fans supporting the SBKR is of critical importance to the recovery of this subspecies. Sites with larger proportions of the pioneer and intermediate phases of alluvial fan sage scrub had higher relative abundance of the SBKR than did sites in which fluvial actions were suspended either through time since natural flooding or

artificial changes to the hydrologic regime. In these areas of low relative abundance, mature alluvial fan sage scrub or non-native annual grasses comprised a higher proportion of the vegetation cover (USFWS 2009).

Flood control structures have significantly altered the natural hydrology of all alluvial areas occupied by the SBKR by decreasing the magnitude and distribution of flooding, scouring, and sand transport and deposition. In the absence of flood scouring, sediments and organic matter accumulate over time and contribute to the maturation of Riversidean alluvial fan sage scrub, increased vegetation cover, and shrub density. These conditions do not provide the open environment favored by the SBKR and reduce the suitability of the habitat for this species (USFWS 2004).

SBKR populations are subjected to flooding events that may kill most animals in flooded areas. Persistence of the species depends upon the presence of surviving animals in unflooded, adjacent habitat (refugia) from which to recolonize recently flooded habitat. However, as RAFSS vegetation ages, suitability of this habitat for SBKR declines (USFWS 2009).

**Historic range.** Based on the most recent 5-year review of the species (USFWS 2009), SBKR historically ranged from the San Bernardino Valley in San Bernardino County, southwest to Perris, Bautista Canyon, and Murrieta Hot Springs in Riverside County, with at least 25 separate localities identified. Currently, populations of SBKR are limited to seven widely separated locations in San Bernardino and Riverside Counties, four of which (City Creek, Etiwanda, Reche Canyon, and South Bloomington) support only small, remnant populations. The Santa Ana River, San Jacinto River, and Lytle and Cajon washes support the largest extant concentrations of SBKR and the largest areas of suitable habitat for this species (approximately 3,200 acres total).

**Current range.** The current range of the species encompasses at least 10,696 acres. Currently, populations of SBKR are limited to seven widely separated locations in San Bernardino and Riverside Counties, four of which (City Creek, Etiwanda, Reche Canyon, and South Bloomington) support only small, remnant populations. SBKR has likely been extirpated from South Bloomington and Reche Canyon and within the Etiwanda alluvial fan. The Santa Ana River, San Jacinto River and Bautista Creek, and Lytle and Cajon washes support the largest extant concentrations of SBKR and the largest areas of suitable habitat for this species (approximately 3,200 acres total) (USFWS 2009).

Within the vicinity of the Project site, SBKR occurs within the upper reaches of the Santa Ana River from the confluence of Plunge Creek and the Santa Ana River to the vicinity of Tippecanoe Avenue (USFWS 2009). Occupied habitat within the Santa Ana River floodplain includes developed areas that do not normally support the animal (i.e. roads, flood control facilities, and aggregate mining areas) and undeveloped, disturbed habitat areas that support the species in limited numbers. Specifically, these undeveloped, disturbed habitats consist of airports (e.g., Redlands Municipal Airport and San Bernardino International Airport), sand and aggregate mining operations, and citrus groves. While there is still high-quality habitat in Plunge Creek, it is fragmented and mostly isolated from other known occupied areas. However, these areas are anticipated to be conserved and managed through the Wash Plan (ICF 2019).

**Ecology.** SBKR are primarily nocturnal and active throughout the year. SBKR reside in burrows where they spend about three quarters of their lives. Burrows consist of one or two chambers about six (6) inches deep. Each burrow appears to be occupied by a single adult or female with young. The burrow systems of adults are often clustered in a given area. Outlying areas of the home ranges of neighboring kangaroo rats may overlap, but adults actively defend small core areas near their burrows (USFWS 2008, 2009).

Individuals typically emerge from their burrows after sunset and may be active at any time during the night. Seeds tend to be their primary food source; however, green vegetation and insects are also important seasonal foods and water sources. Kangaroo rat populations typically exhibit large fluctuations in density in response to temporal variability in plant productivity (USFWS 2008, 2009).

Reproductive activities peak in June and July, although the SBKR appears to have a prolonged breeding season. Predators include owls, snakes, fox, coyote, badger, weasel, bobcat, and domestic cat (USFWS 2009).

**Primary constituent elements.** Primary constituent elements (PCEs) are those habitat components that are essential for the primary biological needs of foraging, reproducing, rearing of young, intraspecific communication, dispersal, genetic exchange, or sheltering. In 2000, the USFWS defined six PCEs of SKBR habitat (USFWS 2000b). These PCEs are:

1. Dynamic geomorphological and hydrological processes typical of fluvial systems within the historical range of the animal, i.e., areas that are within active and historical flood regimes including river, creek, stream, and wash channels; alluvial fans; flood plains;



flood-control berms and lands adjacent to them; flood plain benches and terraces; and historic braided channels.

2. Historical and current alluvial processes within the historical range of the animal.
3. Alluvial sage scrub and associated vegetation, such as coastal sage scrub and chamise chaparral. Common plant species include: scalebroom, California buckwheat, yerba santa, chaparral yucca, sugar bush, lemonadeberry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), California juniper (*Juniperus californicus*), mulefat (*Baccharis salicifolia*), showy penstemon (*Penstemon spectabilis*), golden aster (*Heterotheca villosa*), tall buckwheat (*Eriogonum elongatum*), prickly pear and cholla (*Opuntia* species), chamise, popcorn flower (*Plagiobothrys* species), and native and nonnative grasses.
4. Sand, loam, or sandy loam soils within the historical range of the animal.
5. Upland areas that may provide refugia from environmental or demographic stochastic and catastrophic events.
6. Moderate to low degree of human disturbance to habitat within the species' historical range, i.e., lands within or immediately adjacent to flood plain terraces that have suitable habitat for the species and areas within 50 m (150 ft) of currently suitable San Bernardino kangaroo rat habitat, such as agricultural lands that are not disked annually, out-of-production vineyards, margins of orchards, areas of active or inactive industrial or resource extraction activities, and urban/ wildland interfaces.

In the revised critical habitat rule published in 2008, the USFWS defined three PCEs of SBKR habitat (USFWS 2008):

1. Alluvial fans, washes, and associated floodplain areas containing soils consisting predominately of sand, loamy sand, sandy loam, and loam, which provide burrowing habitat necessary for sheltering and rearing offspring, storing food in surface caches, and movement between occupied patches;
2. Upland areas adjacent to alluvial fans, washes, and associated floodplain areas containing alluvial sage scrub habitat and associated vegetation, such as coastal sage scrub and chamise chaparral, with up to approximately 50 percent canopy cover

providing protection from predators, while leaving bare ground and open areas necessary for foraging and movement of this subspecies; and

3. Upland areas adjacent to alluvial fans, washes, and associated floodplain areas, which may include marginal habitat such as alluvial sage scrub with greater than 50 percent canopy cover with patches of suitable soils (PCE 1) that support individuals for repopulation of wash areas following flood events. These areas may include agricultural lands, areas of inactive aggregate mining activities, and urban/ wildland interfaces.

**Conservation.** Six conservation areas have been established within the Santa Ana River watershed for the benefit of SBKR, including the WSPA and conservation banks within the Lytle and Cajon Creek areas (USFWS 2019).

Under the Wash Plan, 1,622.5 acres of SBKR habitat will be conserved within the Plan area (291.8 acres of high suitability habitat, 227.6 acres of medium suitability, 317.9 acres of low suitability, 559.2 acres of very low suitability, and 226.0 acres of ecological process area [i.e., areas supporting hydrologic flood and scour processes that maintain SBKR habitat suitability]). Habitat enhancement is also planned through control of invasive plants and thinning of shrub cover (ICF 2019). Conservation lands within the Wash Plan boundary are shown on Figure 7.

**Occurrence on the Project site.** The eastern portion of the Project site (38.6 acres of RAFSS) is within Critical Habitat Unit 1, Santa Ana River Wash (Figure 8).

Live-trapping for SBKR on the Project site was conducted by Natural Resources Assessment, Inc. (NRAI) and Envira in 2005, 2011, 2016, and 2018 (NRAI 2005, 2011, 2016; Envira 2016; L&L 2018c). The trapping was conducted in accordance with accepted species trapping protocol. Traps were placed along lines that were distributed on the property (Figure 12). Trapline locations were based on habitat, topography, and soils. Trapping surveys in 2005, 2011, and 2016 did not involve marking the SBKR.

In 2005, four SBKR were trapped in RAFSS habitat in the southeast corner of the site and one was trapped near the western limits by the joboba field. Eight SBKR were trapped on the Project site in 2011 and seven in 2016. One was trapped in the disturbed/agricultural areas and the remainder in RAFSS habitat. Most of the SBKR were trapped in sparse sage scrub and grassland habitats. Few were found in drainages, bare ground, or jojoba fields and there was a single capture in dense sage scrub. Most SBKR trapped were found in the eastern portion of

the property. None were trapped in the eucalyptus groves in the northwestern portion of the site (Table 6, Figure 12).

Trapping surveys conducted in 2018 included passive marking to identify recaptured animals and determine actual number of SBKR captured. Eleven individual SBKR (excluding recaptures) were trapped during the 2018 surveys (including two lactating females [average four pups per den] and one pregnant female [estimated four unborn pups]) (Table 6, Figure 12). Nine of these were in the RAFSS habitat and two were in or adjacent to the agricultural and disturbed areas on the west side of the site. Results indicate that occupied habitat is generally confined to the RAFSS habitat in the eastern portion of the site within and adjacent to the remnant drainages (Figure 12). Trapping results indicate that population density in the occupied areas of the site is trace to low (less than two SBKR per acre).

Although four SBKR have been captured in or adjacent to the jojoba field and disturbed areas on the western portion of the property, these areas do not include native habitat. The jojoba field may mimic the structure of open scrub, but likely does not provide a food source for SBKR since Merriam's kangaroo rat has been shown to refuse jojoba seed diets (Sherbrooke 1976). In the absence of adjacent native habitat, it is unlikely that the jojoba field or disturbed areas could support or sustain SBKR.

Based on occupied habitat of 38.6 acres, we estimate that approximately 58 SBKR inhabit the site. This estimate was calculated as follows: 38.6 acres of occupied habitat with trace density (average of 0.5 animals per acre) yields a total of 19 animals (38.6 acres x 0.5 animals/acre). For 38.6 acres of low density (average of 2.5 animals per acre), the calculation yields a total of 97 animals (38.6 acres x 2.5 animals/acre). Assuming an even mix of trace and low densities within the occupied habitat, we estimate a total of 58 SBKR on the site (the mean of 19 and 97).

SBKR habitat assessment results for the Wash Plan indicate that habitat immediately adjacent and similar to habitat on the Project site is rated as low or very low suitability for SBKR (ICF 2019). Relatively few SBKR occurrences were documented in the Wash Plan area in the vicinity of the Project site as compared to areas further south near the Santa Ana River (Figure 13).

The Project site no longer includes PCE 1 (from USFWS 2000b), since the small drainages that once flowed across the Project site no longer receive the flows needed to scour and maintain the RAFSS habitat due to the construction of Weaver Street Channel, which diverts flows from Cram Creek, and the construction of levees along Plunge Creek, which protect the site from

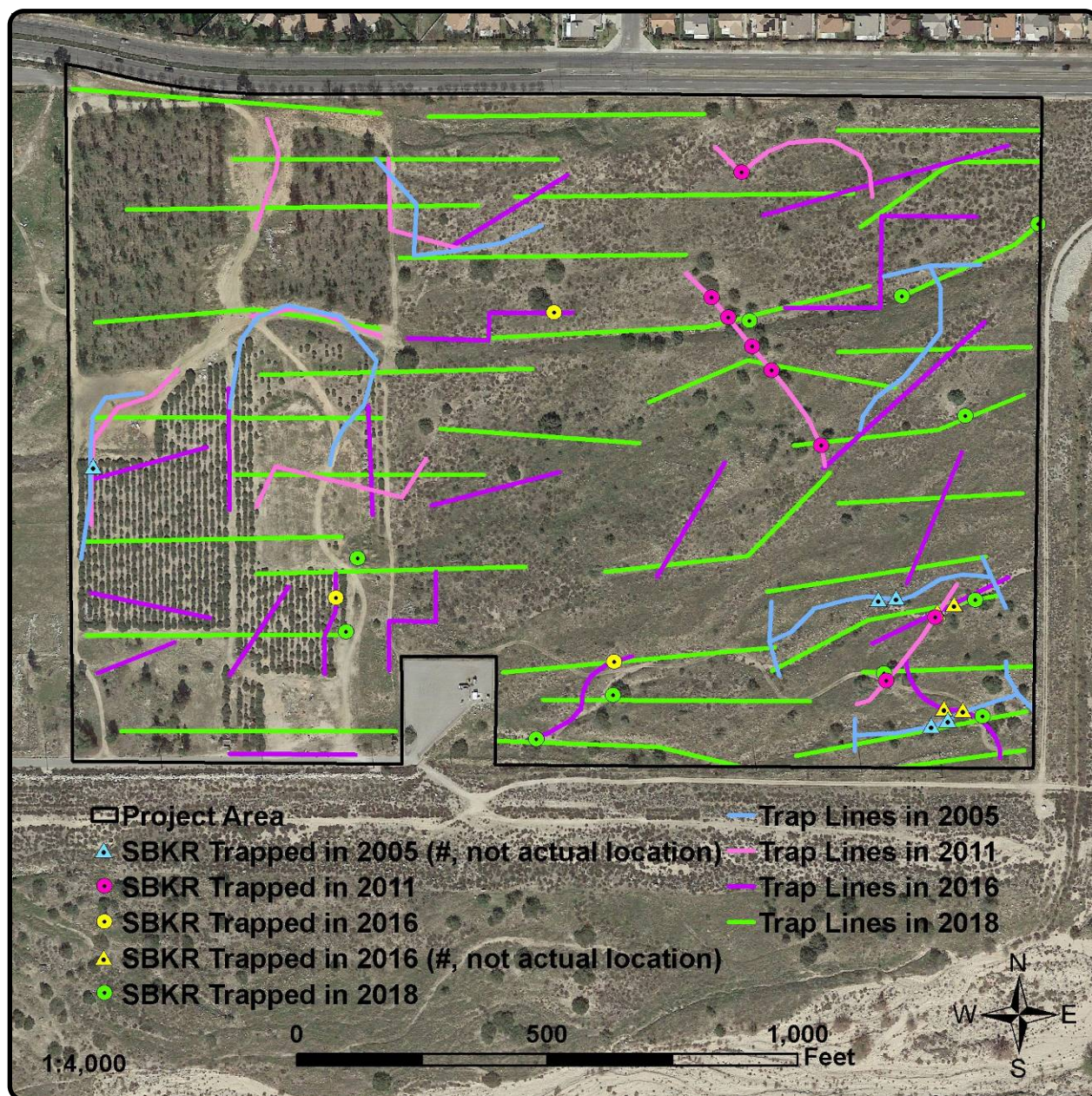
flooding. PCE 1 in the overall area has also been compromised by construction of the Seven Oaks dam. Similarly, PCE 2 has been compromised because the site no longer has functional alluvial processes. PCEs 3 through 6 are present on the site.

Table 6. SBKR Trapping Results Summary

Trapping Dates	# Trap Lines	# Trap Nights	# SBKR Trapped
August 9 to 14, 2005	6	420	5
April 19 to 24, 2011	8	960	8
March 1 to 6, 2016 (west side of property)	14	1,400	3
August 8 to 13, 2016 (east side of property)	6	590	4
July 12-17, 22-27, 27-31, August 1-6, 2018	32	3,850	11*
<b>Total</b>	<b>66</b>	<b>7,220</b>	<b>31</b>

\*Individuals captured, excluding recaptures.





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INVESTIGATIONS AND MONITORING

GSPI-05-646  
March 2020

## Figure 12

### Traplines and SBKR Captures (2005, 2011, 2016, and 2018)

(Photo obtained from Google Earth, February 2018)

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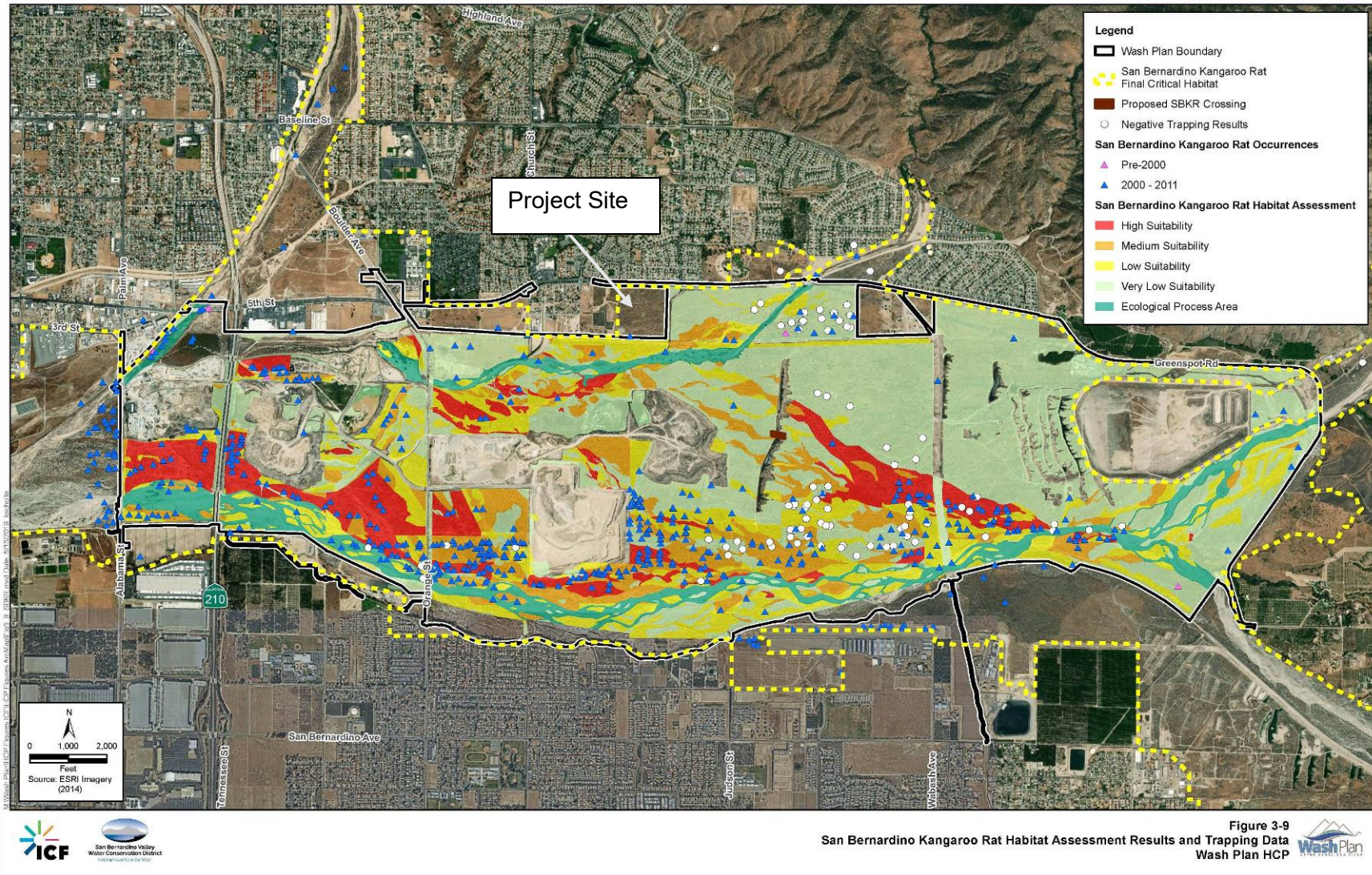


Figure 13. San Bernardino Kangaroo Rat Occurrences and Habitat in the Wash Plan Area (ICF 2019).



### Coastal California Gnatcatcher

**Status and distribution.** The coastal California gnatcatcher (*Polioptila californica californica*; gnatcatcher) was federally listed as endangered in 1993. It is a CDFW Species of Special Concern. Critical habitat was designated in 2000 and re-designated in 2008. There is no approved draft or final recovery plan for this species. Based on the most recent 5-year review (USFWS 2010c), the range of this species is coastal southern California (Ventura, Los Angeles, San Bernardino, Orange, Riverside, and San Diego counties) and northwestern Baja California.

**Habitat characteristics and use.** The range and distribution of the gnatcatcher is closely aligned with coastal scrub vegetation, including Venturan, Diegan, and Riversidean coastal sage scrub communities, and Martirian and Vizcainan coastal succulent scrub communities. The species may also occur in other nearby plant communities, especially during the non-breeding season, but the gnatcatcher is closely tied to coastal scrub for reproduction (USFWS 2010c). Most records of California gnatcatcher are found below 1,640 feet elevation (USFWS 2007).

**Conservation.** Most of the range of the gnatcatcher within Orange, Riverside, and San Diego Counties is covered by large-scale, multi-species, regional Habitat Conservation Plans (HCPs) that regulate and mitigate incidental take of the gnatcatcher. Approximately 59 percent of the suitable (modeled) gnatcatcher habitat within these three counties is expected to be conserved through implementation of these HCPs (USFWS 2010c).

For much of the range of the gnatcatcher in California, the HCP process has established preserved areas in a core-and-linkage configuration. The core areas are large, unfragmented areas, while linkage areas are intended to provide continuous or “stepping stone” corridors for gnatcatcher movement and dispersal (USFWS 2010c).

Under the Wash Plan, 1,292.2 acres of gnatcatcher habitat will be conserved within the Wash Plan area (70.5 acres of high quality habitat, 190.2 acres of medium quality habitat, and 1,031.5 acres of low quality habitat) (ICF 2019).

**Occurrence in the Project area.** The Wash Plan documents several occurrences of coastal California gnatcatcher within about 3 miles of the Project site. The closest is about 700 feet to the south. Gnatcatcher habitat in the Wash Plan area adjacent to the Project site is mapped as mainly low quality (potential foraging and dispersal habitat) or unsuitable, with some medium quality (potential wintering habitat) adjacent to the site to the south and southwest (Figure 14).

High quality (potential nesting and wintering habitat) is mapped about 1.5 to three (3) miles southeast and east of the Project site (ICF 2019). The Project site is not within designated critical habitat for California gnatcatcher (USFWS 2020a).

There are three (3) documented occurrences of coastal California gnatcatcher within 5 miles of the Project site in the CNDDDB (CDFW 2020b). These occurrences are all within the Santa Ana wash. A juvenile bird was observed in sage scrub habitat in 1995 (CNDDDB EO #494). This occurrence is centered about 0.8 mile south-southwest of the Project site but mapped with a one-mile margin of error that overlaps the site. Two other occurrences (EO #916 and #917) are about 2.2 and 1.7 mi. southeast of the site, respectively. EO #916 is from 2008, two adults in alluvial fan sage scrub, and EO #917 is from 2006, four birds in sage scrub. There are also multiple eBird observations in Santa Ana wash about two (2) to three (3) miles southeast of the site (eBird 2020). eBird observations are recorded by “citizen scientists” and should be interpreted with caution. CDFW (2019c) indicates that occurrences have been documented recently immediately adjacent to the Project site, but no details have been provided regarding these occurrences and they do not appear in the CNDDDB.

Biological surveys were conducted on the Project site by a gnatcatcher-permitted biologist from 2005 to 2019 (L&L 2005a, 2005b, 2006b, 2011, 2014a, 2014b, 2015a, 2015b, 2016, 2018a, and 2018b). No gnatcatchers were incidentally detected on the Project site during these surveys. Focused surveys for gnatcatcher were not conducted. Potentially suitable habitat is present on portions of the site, but it is primarily low quality and potential for occurrence of gnatcatcher is considered to be low.



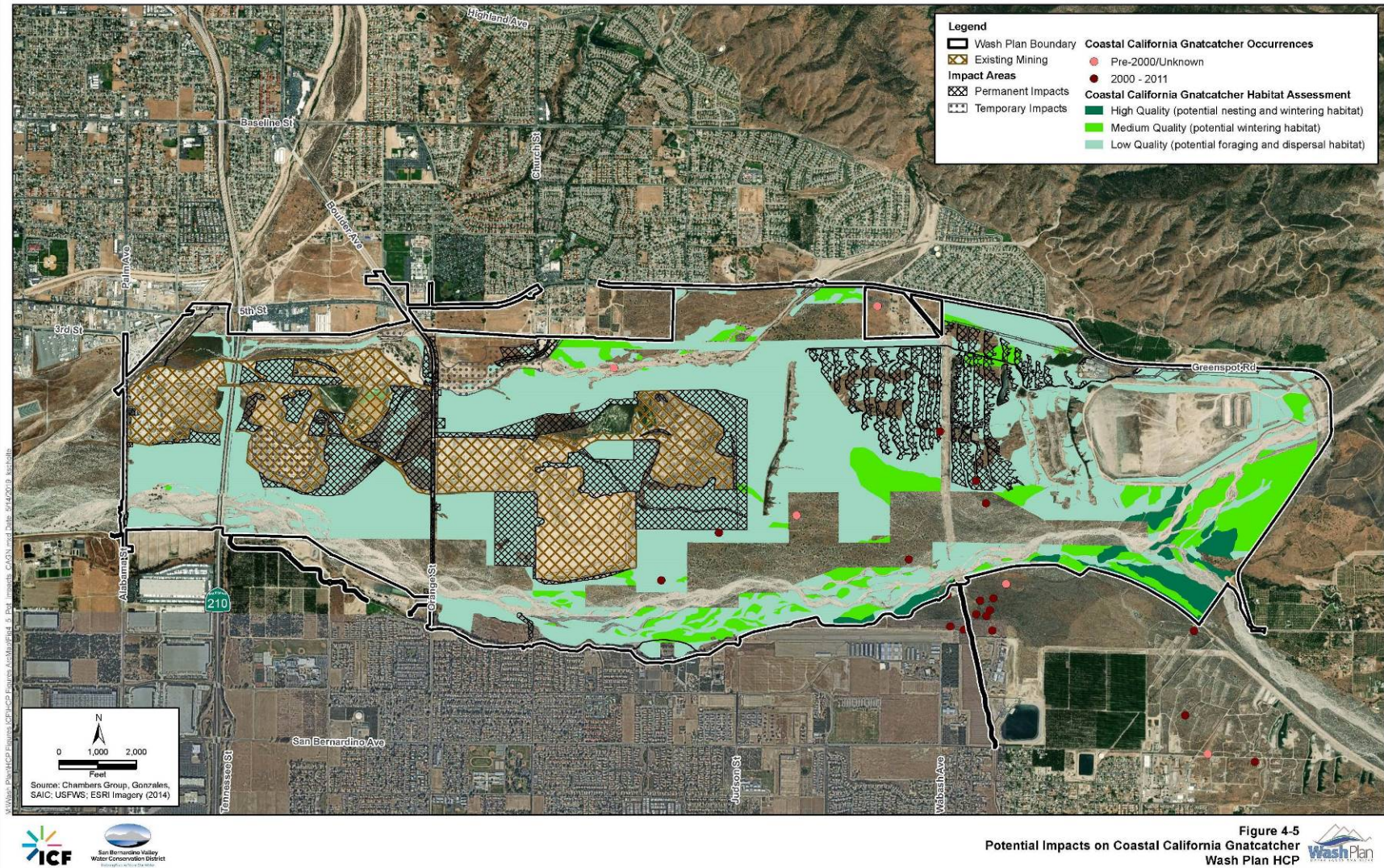


Figure 14. Coastal California Gnatcatcher Occurrences and Habitat in the Wash Plan Area (ICF 2019).

### White-tailed Kite

White-tailed kite (*Elanus leucurus*) is a CDFW Fully Protected species. The classification of Fully Protected was California's initial effort to identify and protect rare wildlife species. With a few exceptions, Fully Protected species have subsequently been listed under the California and/or Federal Endangered Species Acts. One of the exceptions is white-tailed kite, which is not state or federally listed, but retains its Fully Protected status.

White-tailed kite forages in open grasslands, farmlands, meadows, and wetlands. Nests are located near foraging areas in substantial groves of dense, broad-leafed trees. Nests are built near the top of oaks, willows, or other trees, usually between 20 to 100 feet above the ground. The nest is composed of loosely piled sticks, lined with grass, straw, or rootlets. White-tailed kite breeds from February to October, with a peak from May to August (Zeiner et al. 1990).

There is potentially suitable foraging habitat on the site and suitable nesting habitat in the eucalyptus groves and other large trees. There are no documented occurrences of nesting within 10 miles of the site in the CNDDDB (CDFW 2020b). There are multiple eBird observations of white-tailed kite in the Santa Ana wash in the vicinity of the Project site.

White-tailed kite has not been observed on or near the site during biological surveys. Although potentially suitable habitat is present, there is no evidence that white-tailed kite is using the site for nesting. White-tailed kite has a low to moderate potential for foraging or nesting on the site.

#### 4.4.2) Special Status Wildlife Species

Several special status wildlife species were observed by L&L biologists while conducting surveys of the site from 2005 through 2019. Details of observations are provided in Appendix B. These species and their current conservation status are:

- Coastal (western) whiptail (*Aspidoscelis tigris stejnegeri*; CDFW Species of Special Concern)
- Cooper's hawk (*Accipiter cooperi*; CDFW Watch List species),
- Great blue heron (fly over) (*Ardea herodias*; CDFW Special Animal),
- Oak titmouse (*Baeolophus inornatus*; CDFW Special Animal, USFWS Bird of Conservation Concern),



- Costa's hummingbird (*Calypte costae*; CDFW Special Animal, USFWS Bird of Conservation Concern),
- Nuttall's woodpecker (*Picoides nuttallii*; USFWS Bird of Conservation Concern),
- Loggerhead shrike (*Lanius ludovicianus*; CDFW Species of Special Concern, USFWS Bird of Conservation Concern),
- Lawrence's goldfinch (*Spinus lawrencei*; CDFW Special Animal, USFWS Bird of Conservation Concern),
- Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*; CDFW Species of Special Concern),
- Dulzura kangaroo rat (*Dipodomys simulans*; CDFW Special Animal),
- Los Angeles pocket mouse (*Perognathus longimembris brevinasus*; CDFW Species of Special Concern),
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*; CDFW Species of Special Concern), and
- San Diego desert woodrat (*Neotoma lepida intermedia*; CDFW Species of Special Concern).

Other special status species with a low to moderate, moderate, or high potential to occur on the site are:

- Crotch bumblebee (*Bombus crotchii*; candidate for state listing),
- Southern California legless lizard (*Anniella stebbinsi*; CDFW Species of Special Concern),
- California glossy snake (*Arizona elegans occidentalis*; CDFW Species of Special Concern),
- Orange-throated whiptail (*Aspidoscelis hyperythra*; CDFW Watch List Species),
- Red-diamond rattlesnake (*Crotalus ruber*; CDFW Species of Special Concern),
- Coast horned lizard (*Phrynosoma blainvillii*; CDFW Species of Special Concern),
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*; CDFW Species of Special Concern),
- Two-striped gartersnake (*Thamnophis hammondi*; CDFW Species of Special Concern),
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*; CDFW Watch List species),

- Bell's sage sparrow (*Artemisiospiza belli belli*; USFWS Bird of Conservation Concern, CDFW Watch List species),
- Burrowing owl (*Athene cunicularia*; USFWS Bird of Conservation Concern, CDFW Species of Special Concern),
- Ferruginous hawk (*Buteo regalis*; USFWS Bird of Conservation Concern, CDFW Watch List species),
- Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*; USFWS Bird of Conservation Concern, CDFW Species of Special Concern),
- Wrentit (*Chamaea fasciata*; USFWS Bird of Conservation Concern),
- California horned lark (*Eremophila alpestris actia*; CDFW Watch List species),
- Merlin (*Falco columbarius*; CDFW Watch List species),
- Rufous hummingbird (*Selasphorus rufus*; USFWS Bird of Conservation Concern, CDFW Special Animal),
- Allen's hummingbird (*Selasphorus sasin*; USFWS Bird of Conservation Concern),
- Pallid bat (*Antrozous pallidus*; CDFW Species of Special Concern),
- Western mastiff bat (*Eumops perotis californicus*; CDFW Species of Special Concern),
- Western yellow bat (*Lasiurus xanthinus*; CDFW Species of Special Concern), and
- Southern grasshopper mouse (*Onychomys torridus ramona*; CDFW Species of Special Concern).

### Burrowing Owl

Burrowing owl (*Athene cunicularia*) is protected under the federal Migratory Bird Treaty Act and California Fish and Game Code and is a CDFW Species of Special Concern. It is a small, ground-dwelling owl found in open dry grassland, desert, or shrubland areas and in uncultivated agricultural areas, rangelands, and other open areas with low-growing vegetation.

Burrows are an essential element of burrowing owl habitat. Although burrowing owl is capable of excavating its own burrows in soft soils, it typically modifies and inhabits abandoned burrows of small burrowing mammals, such as ground squirrels and pocket gophers. Burrowing owl has also been known to use man-made structures such as cement culverts, debris piles, and other artificial burrows.

Occupancy of burrowing owl habitat can be verified at a site by observation of at least one (1) owl or owl sign (molted feathers, cast pellets, prey remains, eggshell fragments, or excrement)



at or near a burrow entrance. A site is considered occupied if at least one (1) owl has been identified onsite in the past three (3) years, because (if undisturbed) burrowing owls exhibit high site fidelity (CDFW 2012, CBOC 1993).

The CNDDDB (CDFW 2020b) includes two (2) documented occurrences of burrowing owl near the San Bernardino Airport, about 3.5 mi. west of site. There are also multiple eBird observations of burrowing owl near the airport (eBird 2020). Based on the available information, the potential for burrowing owl to occur on the site is low to moderate.

Burrowing owl habitat assessments and focused surveys were conducted by L&L in 2005 and 2019. Potentially suitable habitat is present, mainly in the disturbed areas on the west side of the site, but surveys did not identify any burrowing owl, occupied burrows, or burrowing owl sign. No owls or owl sign were incidentally observed during other biological resources surveys from 2005 through 2018.

#### Nesting Birds

Habitat suitable for nesting birds (including raptors) protected by the Migratory Bird Treaty Act and California Fish and Game Code is present within and around the site. Birds may nest in trees, shrubs, and other vegetation, in tree cavities, bluffs and cliffs, in burrows (e.g., burrowing owl), on open ground, or on structures, equipment, and materials.

Several potential (inactive) raptor nests were observed in the eucalyptus groves during surveys in 2005. No evidence of raptor nesting was observed in 2019, but red-tailed hawk (*Buteo jamaicensis*) was observed within the groves. No active songbird nests were incidentally observed on the site during surveys in 2019.

#### Special Status Small Mammals

Trapping surveys for San Bernardino kangaroo rat incidentally trapped other special status small mammals as shown in Table 7. Los Angeles pocket mouse, northwestern San Diego pocket mouse, and San Diego desert woodrat are CDFW Species of Special Concern. Dulzura kangaroo rat is a CDFW Special Animal.

Table 7. Special Status Small Mammals Trapping Results Summary

Trapping Dates	# Trap Lines	# Trap Nights	Number Trapped*			
			LAPM	SDPM	DKR	SDDW
August 9 to 14, 2005	6	420	0	7	30	0
April 19 to 24, 2011	8	960	3	12	28	0
March 1 to 6, 2016 (west side of property)	14	1,400	0	85	7	0
August 8 to 13, 2016 (east side of property)	6	590	0	58	7	0
July 12-17, 22-27, 27-31, August 1-6, 2018	32	3,850	2	83	136	1
<b>Total</b>	<b>66</b>	<b>7,220</b>	<b>5</b>	<b>245</b>	<b>208</b>	<b>1</b>

\*Individuals were not marked and may have been captured more than once. LAPM=Los Angeles pocket mouse, SDPM=northwestern San Diego pocket mouse, DKR=Dulzura kangaroo rat, SDDW=San Diego desert woodrat.

#### 4.4.3) Other Wildlife Species

A total of 70 vertebrate animal species have been detected during biological surveys of the site by L&L from 2005 through 2019. A list of all wildlife species identified onsite is provided in Appendix A.

##### Invertebrates

The surveys did not include a compilation of common invertebrate species. The potential for occurrence of listed or special status invertebrates is addressed in Appendix C.

No vernal pools or other ponding areas that could support fairy shrimp species were observed and soils that could support ponding are not mapped on the site.

##### Fish

No perennial water is present on the site and there is no aquatic habitat to support fish species.

##### Amphibians and Reptiles

No amphibians were detected onsite. Six (6) reptile species were observed onsite during current and previous surveys, including one (1) special status reptile species, coastal (western) whiptail (CDFW Species of Special Concern). A list of all reptile species identified onsite is provided in Appendix A.

##### Birds

A total of 48 bird species were detected onsite during current and previous surveys, including seven (7) special status birds and potential raptor nests (see Section 4.4.2). No burrowing owl

or owl sign was observed during surveys. A list of all bird species detected onsite is provided in Appendix A.

### Mammals

A total of 16 mammal species were identified during the current and previous surveys (including domestic dog). One listed mammal (SBKR) and five (5) special status mammals were found on the site (see Section 4.4.2). A list of all mammal species is provided in in Appendix A.

#### 4.5) Wildlife Corridors

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated “islands” of wildlife habitat. Various studies have concluded that in the absence of corridors and larger habitat linkages that allow movement to adjoining open space areas, some wildlife species (especially the larger and more mobile mammals) will not likely persist over time. Such fragmented or isolated habitat areas hinder the transfer of new individuals and genetic information.

Corridors mitigate the effects of this fragmentation by:

- Allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange;
- Providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (fire, disease, etc.) will result in population or local species extinction; and
- Serving as travel routes for individual animals as they move in their home ranges in search of food, water, mates, and other necessary resources.

Wildlife movement activities usually fall into one of three movement categories: dispersal (e.g., juvenile animals from natal areas or individuals extending range distributions), seasonal migration, and movements related to home range activities (e.g., foraging for food or water, defending territories, or searching for mates, breeding areas, or cover).

The Project site is immediately adjacent to conserved lands in the Santa Ana Wash. The Santa Ana River is a major drainage that extends from the San Bernardino Mountains to the Pacific Ocean and is considered a regional wildlife corridor. San Bernardino County has identified the Santa Ana River as a wildlife corridor/open space area with connections to multiple other open space areas in the County. The Development Code identifies objectives to maintain the river as natural open space and improve habitat values where possible (see Section 4.1.1).

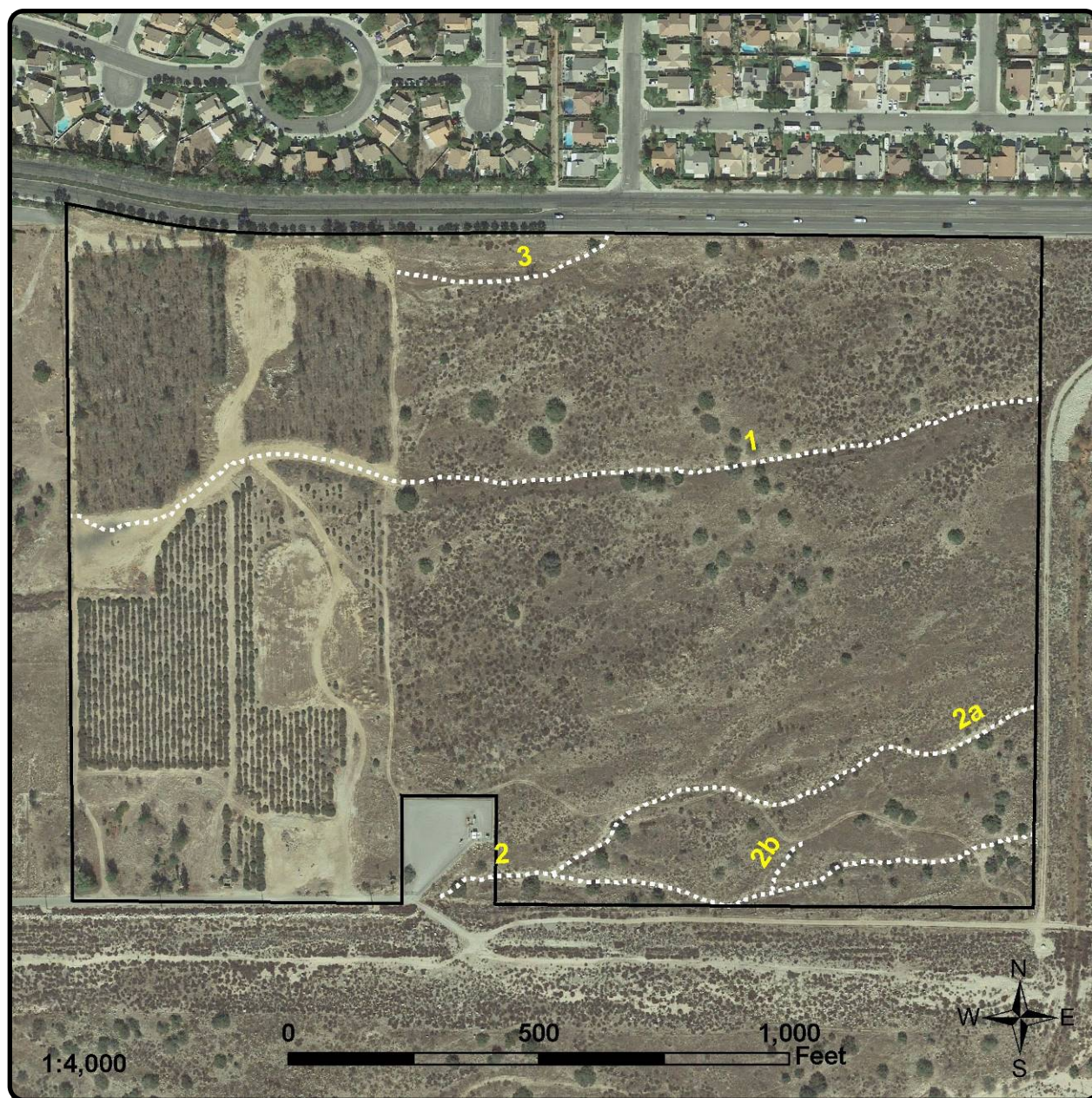
Historically, the Santa Ana River was likely to have supported substantial regional wildlife movement. However, loss of habitat due to development on the floodplain and surrounding areas, as well as construction of Seven Oaks Dam, are likely to have greatly reduced the amount of regional wildlife movement through the corridor (SBVWCD 2015).

#### 4.6) Waters and Wetlands

Three (3) historic ephemeral drainages are present on the site, trending from east to west (Features 1, 2, and 3; Figure 15). These drainages appeared as blue-line streams on previous USGS topographic quadrangle maps (2015 and earlier), but are not shown on the latest (2018) USGS map. No evidence of water flow was observed within these mapped features during recent surveys. All three (3) features have been cut off from their upstream sources by previous offsite flood control projects and road development and no longer convey water onto or across the site (L&L 2006b, 2015a, 2017). The construction of Weaver Street Channel to the east of the site has cut off the flows within Features 1, 2, and 2a. Construction of Greenspot Road and residential developments north of the site have cut off the flows within Feature 3.

The historic ephemeral drainages are vegetated with common alluvial sage scrub perennials, including California buckwheat, California sagebrush, chaparral yucca, and yerba santa, and various low-growing native and non-native annuals. Scattered western sycamore trees are also present.

There are no riparian or wetland plant communities present on the site. Soils mapped on the site are not suitable to support ponding and no naturally occurring vernal pool depressions or areas of standing water were observed on the site during surveys. Based on a jurisdictional delineation conducted in 2006 and updated in 2015 and 2017, there are no state or federal jurisdictional features within the Project site.



## L&L Environmental, Inc.

BIOLOGICAL AND CULTURAL  
INVESTIGATIONS AND MONITORING

GSPI-05-646  
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## Figure 15

### Historic Drainages

(Photo obtained from Google Earth, October 2016)

Greenspot Partners, Inc.  
City of Highland, California



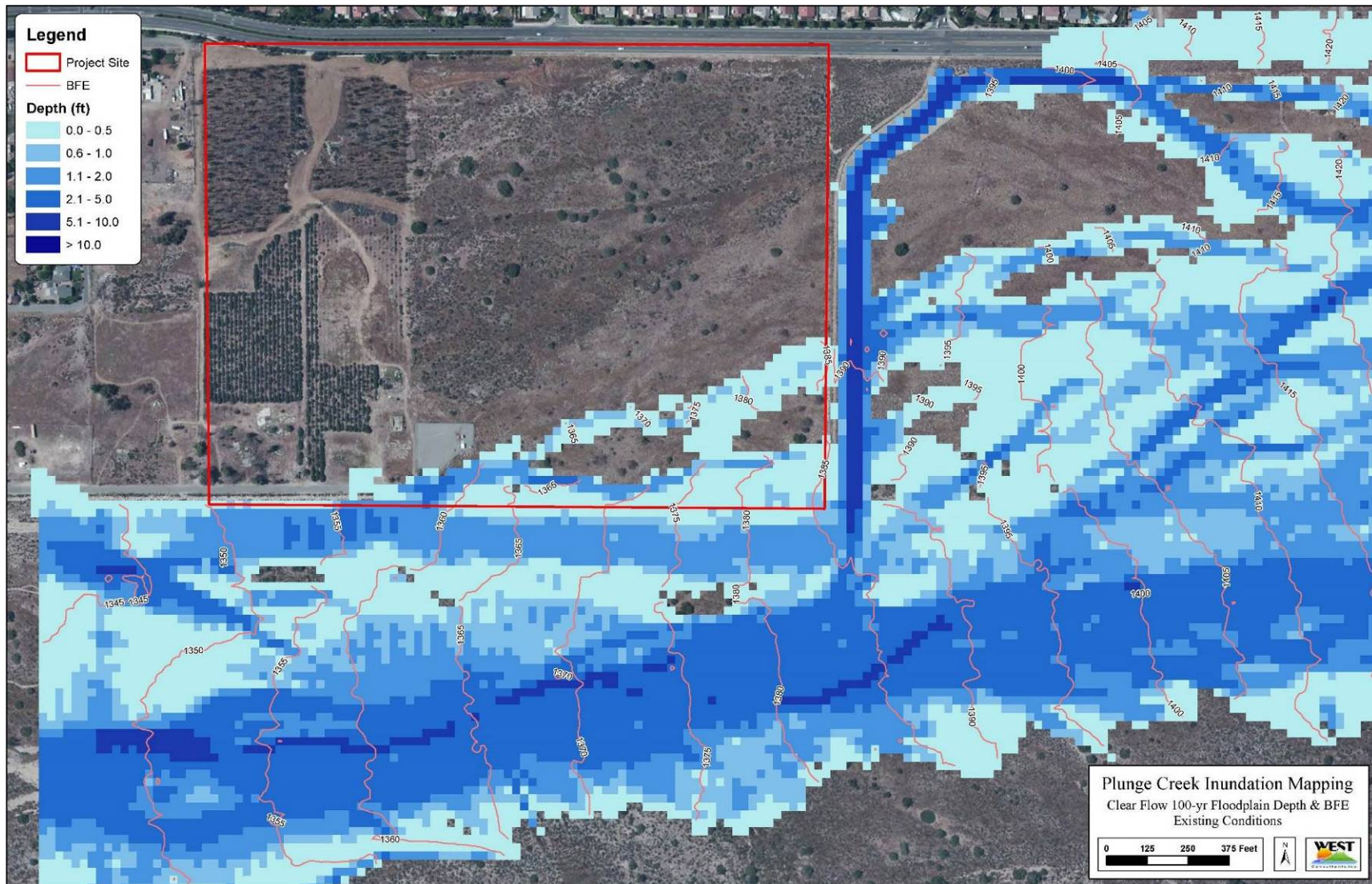


Figure 16a. Plunge Creek Inundation Mapping – Clear Flow (West 2013).



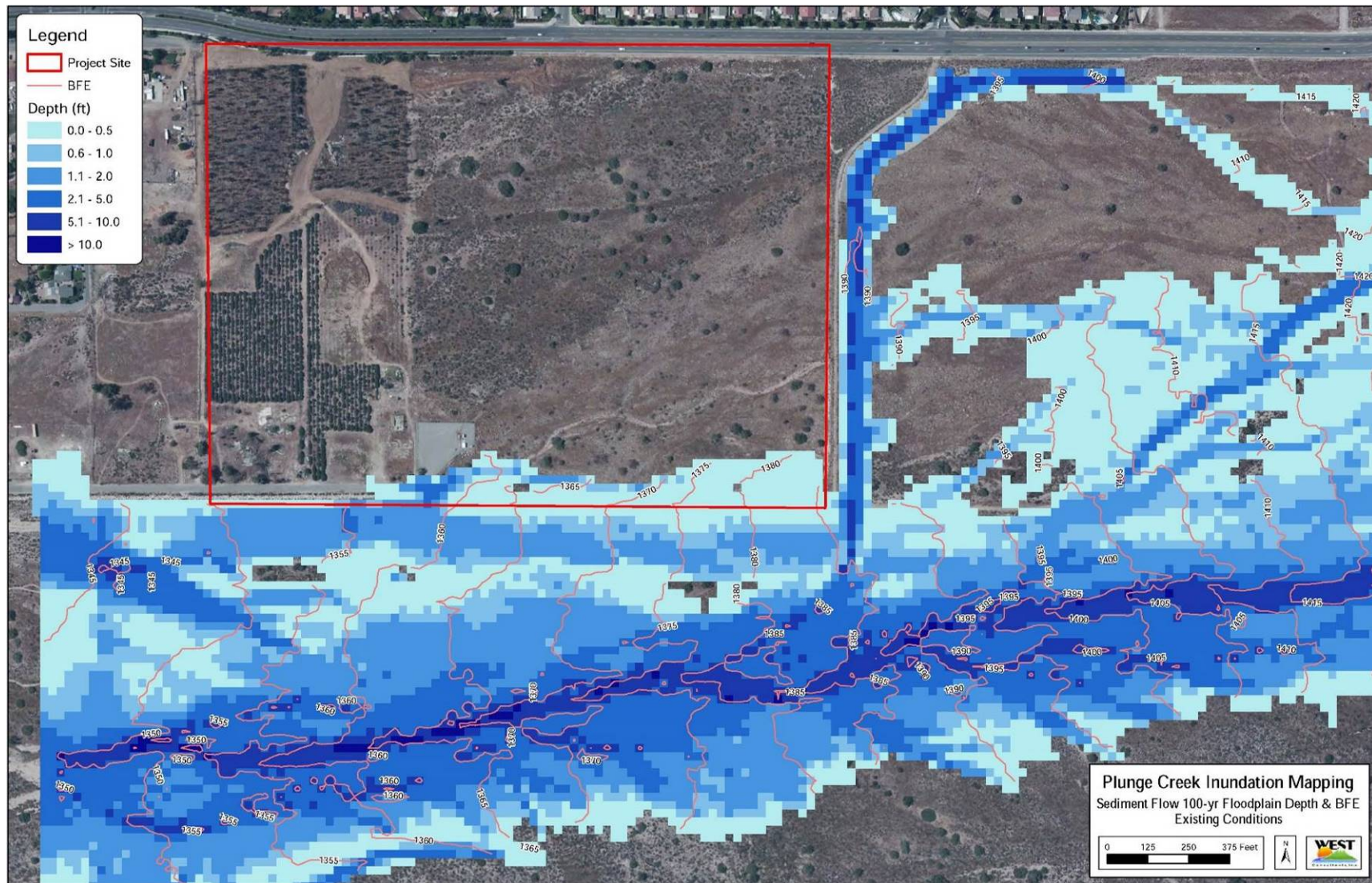


Figure 16b. Plunge Creek Inundation Mapping – Sediment Flow (West 2013).

## **5.0) ANALYSIS OF POTENTIAL EFFECTS**

The following discussion examines potential impacts to biological resources that may occur as a result of implementation of the proposed Project. Impacts can be direct, indirect, or cumulative. Direct impacts are those that are caused by a project and occur at the same time and place. Indirect effects are reasonably foreseeable and caused by a project, but occur at a different time or place. Cumulative impacts are two or more individual effects which, when considered together, compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor, but collectively significant projects taking place over a period of time.

Direct impacts include the loss, modification, or disturbance of vegetation communities, which in turn, directly affect plant and wildlife species dependent on those habitats, as well as the destruction of individual plants or wildlife. Direct impacts also include any effects that result from vegetation or ground disturbing activities during construction, including associated dust, noise and vibration, etc.

Indirect impacts are the result of such things as introduction of invasive plants and animals; predator subsidies (i.e., food, water, perch sites, etc.) that lead to increased predation on wildlife; and harassment or predation by domestic animals. These impacts may change the behavioral patterns of wildlife and reduce native plant and wildlife diversity and abundance in habitats adjacent to project sites.

Under the CEQA Guidelines (2018 revision), project impacts on biological resources are potentially significant if one or more of the following conditions would result from implementation of the proposed Project:

- a) 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 the CDFW or USFWS.
- b) A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS.
- c) A substantial adverse effect on state or federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) direct removal, filling, hydrological interruption, or other means.

- d) 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.
- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

#### 5.1) Listed, Fully Protected, and Special Status Species

This section describes the Project's expected direct and indirect impacts to listed and special status plants and wildlife. Recommended mitigation measures to avoid, minimize, and compensate for those impacts are included in Section 6.0.

##### 5.1.1) Listed and Special Status Plants

***Impact: Development of the Project could result in loss or degradation of habitat for listed and special status plants and loss of or harm to individuals or populations.***

No federal or state listed plants were observed on the site during surveys, but two (2) have a moderate potential for occurrence, slender-horned spineflower and Santa Ana River woollystar. No critical habitat has been designated for either of these species and the Project is not located within designated or proposed critical habitat for any listed plant species. There is potentially suitable habitat for these species on the Project site, although neither has been observed there during multiple botanical surveys. Onsite habitat for these species has been degraded by the loss of alluvial processes on the site due to offsite development and thick growth of non-native grasses.

One special status plant species, chaparral sand verbena, may have been observed on the site although there is some uncertainty regarding this observation. Chaparral sand verbena has a CRPR of 1B.1. Four other special status plants have a moderate or low to moderate potential to occur on the Project site (see Section 4.3.2 and Appendix C). Parry's spineflower has a CRPR of 1B.1 and the other three plant species have CRPRs of 4.2 or 4.3.

If slender-horned spineflower, Santa Ana River woollystar, or special status plants are present on or adjacent to the Project site, implementation of the construction phase of the Project could impact these plants through loss of habitat and loss of individuals within the disturbance area and degradation of habitat and loss or harm to individuals in the avoidance area or adjacent

offsite areas due to human disturbance, dust, toxic emissions, or introduction and spread of invasive plants.

During the operation phase of the Project, impacts to slender-horned spineflower, Santa Ana River woollystar, and special status plants in the avoidance area (if present) and in adjacent areas could occur due to human disturbance, dust, toxic emissions, or introduction and spread of invasive plants. These impacts potentially include degradation of habitat and loss of or harm to individuals or populations.

The killing or possession of California rare, threatened or endangered plant species is prohibited by California law, however CDFW may issue permits authorizing the "take"<sup>1</sup> of these species if the take is incidental to otherwise lawful activities and certain conditions are met (CDFW 2020c). Under the federal Endangered Species Act, there are no prohibitions for the take of listed plants on non-federal lands, unless the taking is in violation of state law. However, if there is a federal nexus (federal funding, permitting, or ownership), consultation with the USFWS is required (USFWS 2013).

Mitigation Measure BIO-11 (Listed and Special Status Plants) requires a focused survey for slender-horned spineflower and Santa Ana woollystar (including visits to known reference sites) and special status plants, including chaparral sand verbena and Parry's spineflower, prior to the start of construction.

If slender-horned spineflower or Santa Ana woollystar is found on the Project site, an incidental take permit from CDFW will be required prior to any impacts. If there is a federal nexus for the Project, consultation with USFWS will also be required. Federal take authorization will be required for San Bernardino kangaroo rat through either Section 7 of the federal Endangered Species Act (if there is a federal nexus) or through Section 10 (if there is no federal nexus). If slender-horned spineflower and/or Santa Ana woollystar is present, these species would be included in the USFWS consultation.

If chaparral sand verbena or Parry's spineflower are present in the disturbance area (or other CRPR 1B.x species), propagules will be collected and planted in the avoidance area. CRPR 4.x species are generally not regulated and no mitigation is proposed for 4.x species, if present.

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<sup>1</sup> Under the California Fish and Game Code, "take" means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.



Mitigation Measure BIO-11 includes offsite compensation for loss of slender-horned spineflower or Santa Ana woollystar occupied habitat. Due to the habitat degradation from offsite development unrelated to the Project and previous mitigation associated with that development, a ratio of no less than 0.5:1 is proposed. However, the incidental take permit will specify conditions that may include a higher ratio and other avoidance and minimization measures. No mitigation is proposed for loss of occupied habitat for chaparral sand verbena and Parry's spineflower or other special status plants.

In addition, Mitigation Measure BIO-4 (Preconstruction Clearance Surveys) requires clearance surveys for listed and special status plant and wildlife resources within or adjacent to the Project disturbance area within three (3) days prior to initial vegetation clearing and ground disturbance. Mitigation Measure BIO-2 (Biological Monitoring) requires biological monitoring of construction activities and Mitigation Measure BIO-3 (WEAP Training) requires Workers Environmental Awareness Program (WEAP) training for onsite personnel.

With implementation of Mitigation Measures BIO-11, BIO-2, BIO-3, and BIO-4, impacts to slender-horned spineflower and Santa Ana woollystar and special status plants due to loss of occupied habitat and loss of individuals on the Project site is expected to be less than significant.

Potential impacts to listed and special status plants outside of the Project site could occur if construction activities exceed the Project boundary, or if dust, toxic emissions, runoff, or sediment enter offsite habitat. Mitigation Measure BIO-1 (Disturbance Area Fencing) requires the Project disturbance area to be clearly marked to prevent any construction-related disturbance outside of the Project boundary. Mitigation Measure BIO-13 (Adjacent Habitat) requires implementation of appropriate best management practices (BMPs) during Project construction to control dust, toxic emissions, runoff, and sediment to avoid and minimize impacts to adjacent offsite habitat.

Mitigation Measure BIO-4 requires preconstruction surveys, Mitigation Measure BIO-2 requires biological monitoring, and BIO-3 requires WEAP training. With implementation of Mitigation Measures BIO-1 through BIO-4 and BIO-13, construction-related impacts to listed plants outside the Project boundary are expected to be less than significant.

Listed and special status plant species present in adjacent areas could be adversely affected by the introduction and/or spread of invasive plants. Invasive plant species could be introduced or spread during construction or planted as part of landscaping during operation of the Project.

Many invasive species are already present on the site, but Mitigation Measure BIO-11 (Invasive Plants) would avoid and minimize the potential for introduction of additional non-native plant species during construction. Mitigation Measure BIO-11 would also avoid and minimize the potential for introduction of non-native plants in landscaping. With implementation of Mitigation Measure BIO-11, Project-related impacts due to invasive plants are expected to be less than significant.

Potential indirect impacts to listed and special status plants outside of the Project site could occur as a result of on-going human disturbance during operation of the Project. A trail system is proposed in the Wash Plan and the Project includes a community trail along the western boundary. Mitigation Measure BIO-13 requires the Project proponent to provide educational material to homeowners regarding the plants and animals present in the adjacent habitat and their conservation value. This measure also requires the Project proponent to work with San Bernardino Valley Water Conservation District (SBVWCD) to develop appropriate signage for the community trail and integrate it into existing or proposed trails in the Wash Plan area.

It should be noted that the Wash Plan includes development and maintenance of trails for non-motorized public use, including trails along the northern, eastern, and southern boundaries of the Project. The construction, operation, and maintenance of local trails is covered by the Wash Plan and is considered a conditionally compatible use, meaning trails in the Wash Plan area are permissible following preparation of a Trail Management Plan (Trail Plan) and its approval by the Wildlife Agencies. The Trail Plan prepared for the Wash Plan area will detail how covered species and habitats will be protected and trail-related impacts will be avoided, minimized, monitored, and managed (ICF 2019).

With implementation of Mitigation Measure BIO-13, Project-related impacts to listed plant species and habitat in adjacent offsite areas are expected to be less than significant.

#### 5.1.2) Listed, Fully Protected, and Special Status Wildlife

***Impact: Development of the Project would cause loss of habitat for listed and special status wildlife, loss of designated critical habitat for San Bernardino kangaroo rat, and potential injury and mortality of individuals. Listed, fully protected, and special status wildlife in adjacent areas, including conservation lands, could be affected by Project-related introduction and spread of invasive plants, dust, toxic emissions, and other anthropogenic disturbances.***

### San Bernardino Kangaroo Rat

Direct and indirect impacts to SBKR will occur during construction of the Project and during subsequent occupation of the housing development. Potential impacts of the proposed Project on SBKR include loss of habitat on the Project site; degradation of habitat in adjacent areas due to fugitive dust, toxic emissions, runoff, erosion/sedimentation, and invasive plants; displacement of individuals; potential injury and mortality of individuals; destruction of burrows with possible entombment of adults and young; potential entrapment in Project materials or excavations and resulting injury or mortality; physiological harm and behavioral disturbance from noise, lighting, dust, toxic emissions, fire ignition, and human disturbance; physical harm from toxic chemicals; and increased predation pressure resulting from predator subsidies (e.g., food and water sources) for coyotes and other native predators and introduction of domestic predators (cats) into the area.

The Project will also result in loss of 32.01 acres of designated critical habitat. There are 3,258 acres of designated critical habitat for SBKR within the Santa Ana wash. The area of critical habitat on the Project site represents 0.98 percent of the total in the Santa Ana wash.

SBKR is a federally listed species and federal take authorization will be required prior to any Project-related impacts. It is also a candidate for state listing and if it is listed by the state or remains a candidate for listing at the time the Project will proceed, state take authorization will also be required.

The SBKR habitat on the site (including critical habitat) has been degraded through loss of alluvial processes on the site due to offsite development, particularly the construction of the Seven Oaks Dam and Weaver Street Channel. Mitigation for the Seven Oaks Dam included conservation of 764 acres of habitat in the WSPA. The environmental documents regarding the Weaver Street Channel project could not be found; however, mitigation for the impacts to downstream habitat, including habitat on the Heatherglen Project site, should have been implemented to compensate for the lost habitat functions and values.

Mitigation Measure BIO-8 (San Bernardino Kangaroo Rat) requires offsite compensation for loss of occupied habitat. Due to the habitat degradation from offsite development unrelated to the Project and previous mitigation associated with that development, a ratio of no less than 0.5:1 is proposed. The federal and/or state take authorization may require additional mitigation.

BIO-8 also requires avoidance and conservation in perpetuity of ±6.59 acres of occupied habitat in the southeastern corner of the site as well as development and implementation of a Habitat Enhancement Plan for this land. This measure also requires development and implementation of an SBKR Relocation Plan (subject to CDFW and USFWS approval). CDFW (2019c) has noted that the success of SBKR relocation has yet to be proven effective and low population size in the remaining SBKR populations.

BIO-8 also prohibits the use of rodenticides or other chemicals that could harm SBKR on the site during construction. Mitigation Measure BIO-9 (Wildlife Hazards) requires actions to prevent injury or entrapment of wildlife. Mitigation Measure BIO-1 (Disturbance Area Fencing) requires the Project impact area to be clearly marked to prevent any disturbance outside of the Project boundary. Mitigation Measure BIO-10 requires offsite compensation for loss of native RAFSS habitat. Mitigation Measure BIO-13 (Adjacent Habitat) requires measures to avoid and minimize Project-related impacts to the adjacent habitat.

With implementation of these mitigation measures, Project-related impacts to SBKR will be avoided and minimized to the extent feasible. However, the loss of occupied critical habitat, potential impacts in adjacent habitat (including predation by domestic cats), and uncertainty regarding the likely success of SBKR relocation efforts indicate that Project-related impacts to SBKR are unavoidable, adverse, and potentially significant.

#### Coastal California Gnatcatcher

Coastal California gnatcatcher has not been incidentally observed on the site during multiple biological surveys from 2005 through 2019, habitat quality is low, and potential for occurrence is low. If present, potential Project-related impacts to California gnatcatcher include harm to individuals and loss of nesting and foraging habitat. Adult birds will typically avoid or flee from construction activities and other disturbance and the potential for physical harm would be limited to nests, eggs, and dependent juveniles.

Potential impacts to California gnatcatcher nesting or foraging outside of the Project site could occur if construction activities exceed the Project boundary. California gnatcatcher in adjacent habitat could also be impacted by fugitive dust, toxic emissions, noise, lighting, fire ignition, predator subsidies, domestic predators, and human disturbance.

Mitigation Measure BIO-6 (California Gnatcatcher) requires a protocol survey prior to the start of construction. California gnatcatcher is a federally listed species. If the survey finds California gnatcatcher within the Project disturbance area, federal take authorization would be required.

Mitigation Measure BIO-6 also includes avoidance buffers and nest monitoring if nesting gnatcatchers are present on the site and offsite compensation for loss of habitat. The incidental take permit may require additional mitigation.

Mitigation Measure BIO-1 (Disturbance Area Fencing) requires the Project impact area to be clearly marked to prevent any disturbance outside of the Project boundary. Mitigation Measure BIO-2 (Biological Monitoring) requires biological monitoring of site clearing activities and BIO-4 (Preconstruction Clearance Surveys) requires preconstruction clearance surveys and sweeps. Mitigation Measure BIO-13 (Adjacent Habitat) requires measures to avoid and minimize Project-related impacts to the adjacent habitat.

With implementation of these mitigation measures, Project-related impacts to California gnatcatcher are expected to be less than significant.

#### White-tailed Kite

White-tailed kite has not been observed foraging or nesting on the Project site during surveys, but suitable habitat is present. White-tailed kite has a low to moderate potential for foraging or nesting on the site. If present, potential Project-related impacts to white-tailed kite include harm to individuals and loss of nesting and foraging habitat. Adult birds will typically avoid or flee from construction activities and other disturbance and the potential for physical harm would be limited to nests, eggs, and dependent juveniles.

Potential impacts to white-tailed kite nesting or foraging outside of the Project site could occur if construction activities exceed the Project boundary. White-tailed kite in adjacent habitat could also be impacted by fugitive dust, toxic emissions, noise, lighting, fire ignition, predator subsidies, domestic predators, and human disturbance.

Mitigation Measure BIO-7 (Nesting Birds) requires initial site disturbance to occur outside of the nesting season, if feasible. If this work cannot be scheduled outside of the nesting season, preconstruction surveys are required. An avoidance buffer will be established for any active nests to avoid and minimize any potential impacts to nesting birds. Mitigation Measure BIO-12 (Heritage Trees) requires 2:1 replacement of removed trees on the site and Mitigation Measure BIO-10 requires offsite compensation for loss of native RAFSS habitat. Mitigation Measure



BIO-13 (Adjacent Habitat) requires measures to avoid and minimize Project-related impacts to the adjacent habitat.

Mitigation Measure BIO-1 (Disturbance Area Fencing) requires the Project impact area to be clearly marked to prevent any disturbance outside of the Project boundary. Mitigation Measure BIO-2 (Biological Monitoring) requires biological monitoring of site clearing activities and BIO-4 (Preconstruction Clearance Surveys) requires preconstruction clearance surveys and sweeps.

With implementation of these mitigation measures, Project-related impacts to white-tailed kite are expected to be less than significant.

### Burrowing Owl

Burrowing owl has not been detected on the site during surveys, although potentially suitable habitat is present. Because burrowing owls will tend to shelter in their burrows rather than flee from disturbance, adults as well as juveniles or eggs could be harmed by Project activities. Potential impacts include loss or degradation of habitat; displacement of individuals; injury or mortality of individuals; potential entrapment in Project materials or excavations and resulting injury or mortality; physiological harm and behavioral disturbance from noise, lighting, dust, toxic emissions, fire ignition, and human disturbance; and physical harm from toxic chemicals.

Mitigation Measure BIO-5 (Burrowing Owl) requires preconstruction surveys for burrowing owl and avoidance buffers if any owls are on the site during nesting season. Outside of nesting season, burrowing owls may be passively relocated with approval from CDFW.

Mitigation Measure BIO-1 (Disturbance Area Fencing) requires the Project impact area to be clearly marked to prevent any disturbance outside of the Project boundary. Mitigation Measure BIO-2 (Biological Monitoring) requires biological monitoring of site clearing activities and BIO-4 (Preconstruction Clearance Surveys) requires preconstruction clearance surveys and sweeps. Mitigation Measure BIO-13 (Adjacent Habitat) requires measures to avoid and minimize Project-related impacts to the adjacent habitat.

With implementation of these mitigation measures, Project-related impacts to burrowing owl are expected to be less than significant. Loss of the unoccupied habitat on the Project would be a less-than-significant impact and no mitigation is proposed.

### Nesting Birds

There is potential habitat for nesting birds, including raptors, on and adjacent to the site. Adult birds will typically avoid or flee from construction activities and other disturbance and the potential for physical harm would be limited to nests, eggs, and dependent juveniles. The Project would also result in loss of trees and other habitat for nesting birds.

Potential impacts to nesting birds outside of the Project site could occur if construction activities exceed the Project boundary. Nesting birds in adjacent habitat could also be impacted by fugitive dust, toxic emissions, noise, lighting, fire ignition, predator subsidies, domestic predators, and human disturbance.

Mitigation Measure BIO-7 (Nesting Birds) requires initial site disturbance to occur outside of the nesting season, if feasible. If this work cannot be scheduled outside of the nesting season, preconstruction surveys are required. An avoidance buffer will be established for any active nests to avoid and minimize any potential impacts to nesting birds. Mitigation Measure BIO-12 (Heritage Trees) requires 2:1 replacement of removed trees on the site and Mitigation Measure BIO-10 requires offsite compensation for loss of native RAFSS habitat. Mitigation Measure BIO-13 (Adjacent Habitat) requires measures to avoid and minimize Project-related impacts to the adjacent habitat.

Mitigation Measure BIO-1 (Disturbance Area Fencing) requires the Project impact area to be clearly marked to prevent any disturbance outside of the Project boundary. Mitigation Measure BIO-2 (Biological Monitoring) requires biological monitoring of site clearing activities and BIO-4 (Preconstruction Clearance Surveys) requires preconstruction clearance surveys and sweeps.

With implementation of these mitigation measures, Project-related impacts to nesting birds are expected to be less than significant.

### Other Special Status Species

Several special status wildlife species were detected on the site during surveys and several others have a low to moderate, moderate, or high potential to occur (see Section 4.4.2). Potential impacts include loss or degradation of habitat; displacement of individuals; injury or mortality of individuals; potential entrapment in Project materials or excavations and resulting injury or mortality; physiological harm and behavioral disturbance from noise, lighting, dust, toxic emissions, fire ignition, and human disturbance; and physical harm from toxic chemicals.

Potential impacts to special status wildlife species outside of the Project site could occur if construction activities exceed the Project boundary. Special status species in adjacent habitat could also be impacted by fugitive dust, toxic emissions, noise, lighting, fire ignition, predator subsidies, domestic predators, and human disturbance.

Mitigation Measure BIO-2 (Biological Monitoring) requires biological monitoring of site clearing activities and BIO-4 (Preconstruction Clearance Surveys) requires preconstruction clearance surveys and sweeps. Wildlife found on the site will be moved or encouraged to move out of harm's way. Mitigation Measure BIO-9 (Wildlife Hazards) requires actions to prevent injury or entrapment of wildlife.

Mitigation Measure BIO-1 (Disturbance Area Fencing) requires the Project impact area to be clearly marked to prevent any disturbance outside of the Project boundary. Mitigation Measure BIO-10 requires offsite compensation for loss of native RAFSS habitat. Mitigation Measure BIO-13 (Adjacent Habitat) requires measures to avoid and minimize Project-related impacts to the adjacent habitat.

Several special status small mammal species were found on the site during trapping for SBKR. Mitigation Measure BIO-8 (San Bernardino Kangaroo Rat) requires development and implementation of a Relocation Plan for SBKR to include a strategy for the relocation of other special status small mammals that are incidentally caught during SBKR trapping.

With implementation of these mitigation measures, Project-related impacts to special status wildlife are expected to be less than significant.

## 5.2) Vegetation Communities

This section describes the Project's expected direct and indirect impacts to a sensitive vegetation community, Riversidean alluvial fan sage scrub (RAFSS). Recommended mitigation measures to avoid, minimize, and compensate for those impacts are included in Section 6.0.

***Impact: Development of the Project would result in loss of a sensitive vegetation community on the site.***

Implementation of the Project will result in the direct permanent loss of ±52.11 acres of vegetation communities on the Project. The entire ±20.1 acres of agriculture and disturbed/ruderal/ornamental vegetation on the western portion of the site will be permanently removed. On the eastern portion, ±32.01 acres of RAFSS will be permanently removed. An

area of RAFSS in the southeast corner, totaling  $\pm 6.59$  acres, will be avoided and conserved (Table 8).

Table 8. Vegetation Communities Impacted

Vegetation Community	Area (Acres)		
	Total Present	Impacted by Project	Avoided and Conserved
Agriculture - Jojoba	5.1	5.1	--
Agriculture - Eucalyptus Groves	5.6	5.6	--
Disturbed/Ruderal/Ornamental	9.4	9.4	--
<b>Agriculture/Disturbed Subtotal</b>	<b>20.1</b>	<b>20.1</b>	<b>--</b>
Riversidean Alluvial Fan Sage Scrub	38.6	32.01	6.59
<b>Total</b>	<b>58.7</b>	<b>52.11</b>	<b>6.59</b>

Agricultural and disturbed/ruderal/ornamental areas are not native vegetation communities and the loss of these areas would have no impact on the extent of native vegetation communities in the region. No mitigation is proposed for impacts to agricultural and disturbed/ruderal/ornamental areas.

RAFSS is a sensitive vegetation community (CDFW 2019b). The RAFSS habitat on the site has been degraded through loss of alluvial processes on the site due to offsite development, particularly the construction of the Seven Oaks Dam and Weaver Street Channel. Mitigation for the Seven Oaks Dam included conservation of 764 acres of habitat in the WSPA. The environmental documents regarding the Weaver Street Channel project could not be found; however, mitigation for the impacts to downstream habitat, including habitat on the Heatherglen Project site, should have been implemented to compensate for the lost habitat functions and values.

Mitigation Measure BIO-10 (Riversidean Alluvial Fan Sage Scrub) would require offsite compensation for loss of the  $\pm 32.01$  acres of degraded RAFSS habitat on the site via purchase of mitigation credits at an agency-approved mitigation bank or equivalent mitigation. Due to the habitat degradation from offsite development unrelated to the Project and previous mitigation associated with that development, a ratio of no less than 0.5:1 is proposed. This measure also requires the  $\pm 6.59$  acres of RAFSS in the southeast corner of the site to be avoided and conserved in perpetuity.

Impacts to sensitive vegetation communities outside of the Project site could occur if construction activities exceed the Project boundary. Mitigation Measure BIO-1 (Disturbance

Area Fencing) requires the Project impact area to be clearly marked to prevent any disturbance outside of the Project boundary. Mitigation Measure BIO-2 (Biological Monitoring and Surveys) requires biological monitoring of site clearing activities. With implementation of Mitigation Measures BIO-1 and BIO-2, no impacts to sensitive vegetation communities outside the Project boundary are expected to occur.

***Impact: Sensitive vegetation communities in adjacent areas, including conservation lands, could be affected by Project-related introduction and spread of invasive plants, dust, toxic emissions, and other anthropogenic disturbances.***

The Project is immediately adjacent to sensitive vegetation communities and conservation lands. Potential Project impacts include damage to sensitive vegetation communities outside of the Project boundaries through direct loss or harm, fugitive dust, toxic emissions, runoff, erosion/sedimentation, fire ignition, introduction and spread of invasive plants, and human disturbance.

Mitigation Measure BIO-1 (Disturbance Area Fencing) requires fencing of Project disturbance areas to prevent incursion into offsite habitat. Mitigation Measure BIO-2 (Biological Monitoring) requires biological monitoring to ensure compliance with mitigation measures. Mitigation Measure BIO-3 (WEAP Training) requires training to inform construction personnel of applicable mitigation measures and permit conditions and requirements for compliance. Mitigation Measure BIO-13 (Adjacent Habitat) requires measures to avoid and minimize Project-related impacts to the adjacent conservation lands and BIO-14 (Invasive Plants) requires measures to avoid and minimize the introduction and spread of invasive plants.

With implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-13, and BIO-14, Project-related impacts to sensitive vegetation communities in adjacent areas is expected to be less than significant.

### 5.3) Waters and Wetlands

This section describes the Project's expected direct and indirect impacts to state and federal jurisdictional waters and wetlands. Recommended mitigation measures to avoid, minimize, and compensate for those impacts are included in Section 6.0.



***Impact: Implementation of the Project could affect state and federal jurisdictional waters and wetlands.***

The three (3) historic ephemeral drainages that cross the site have been cut off from their upstream sources by previous offsite flood control projects and road development and no longer convey water onto or across the site. A jurisdictional delineation found that there are no state or federal jurisdictional waters or wetlands present on the site. Therefore, no Project-related impacts to state or federal jurisdictional waters or wetlands on the Project site would occur and no mitigation is proposed.

The site is located within the Santa Ana wash; Weaver Channel is adjacent to the site on the east and Plunge Creek is located just to the south. Weaver Street Channel directs flows from Cram Creek into Plunge Creek and the Santa Ana Wash system. L&L did not perform a jurisdictional delineation on offsite areas, but Plunge Creek is identified as state and federal jurisdictional waters in the Initial Study for the Plunge Creek Conservation Project (Jericho 2018).

Weaver Street Channel was inadvertently included in L&L surveys in 2005 and 2011. The channel was noted to have water flow and a riparian plant association at that time. Weaver Street Channel is likely to have state and possibly federal jurisdictional waters and wetlands.

The Project will not encroach on either Plunge Creek or Weaver Street Channel. However, impacts such as dust, sedimentation, release of toxic chemicals, human disturbance, and invasive plants could affect these areas during construction and operation of the Project.

Mitigation Measure BIO-13 (Adjacent Habitat) requires measures to avoid and minimize Project-related impacts to the adjacent habitat, including jurisdictional waters and wetlands, and BIO-14 (Invasive Plants) requires measures to avoid and minimize the introduction and spread of invasive plants. Mitigation Measure BIO-13 addresses fugitive dust, toxic emissions, runoff, erosion/sedimentation, fire ignition, and human disturbance.

With implementation of Mitigation Measures BIO-13 and BIO-14, Project-related impacts to offsite jurisdictional waters and wetlands are expected to be less than significant.

#### 5.4) Wildlife Corridors

This section describes the Project's expected direct and indirect impacts to the Santa Ana River wildlife corridor. Recommended mitigation measures to avoid, minimize, and compensate for those impacts are included in Section 6.0.

***Impact: The functions and values of wildlife corridors, including the Santa Ana River wash, could be affected by Project-related introduction and spread of invasive plants, dust, noise and vibration, lighting, domestic predators, and other anthropogenic disturbances.***

Implementation of the Wash Plan will help preserve, enhance, and manage the habitats along the Santa Ana River corridor that supports wildlife movement through the Plan area (RVA, ELMT, and MBI 2019).

The Project is immediately adjacent to the covered area for the Wash Plan and associated conservation lands. Any Project-related impacts to offsite adjacent habitat could conflict with the conservation goals for the Wash Plan, including wildlife movement through the Plan area.

Potential impacts include damage to habitat, plants, and wildlife outside of the Project boundaries through direct loss or harm, fugitive dust, toxic emissions, noise, runoff, erosion/sedimentation, lighting, noise, fire ignition, introduction and spread of invasive plants, predator subsidies, domestic predators, and human disturbance.

Mitigation Measure BIO-1 (Disturbance Area Fencing) requires fencing of Project disturbance areas to prevent incursion into offsite habitat. Mitigation Measure BIO-2 (Biological Monitoring) requires biological monitoring to ensure compliance with mitigation measures. Mitigation Measure BIO-3 (WEAP Training) requires training to inform construction personnel of applicable mitigation measures and permit conditions and requirements for compliance. Mitigation Measure BIO-13 (Adjacent Habitat) requires measures to avoid and minimize Project-related impacts to the adjacent conservation lands and BIO-14 (Invasive Plants) requires measures to avoid and minimize the introduction and spread of invasive plants.

Within implementation of Mitigation Measure BIO-1, BIO-2, BIO-3, BIO-13, and BIO-14, Project-related impacts to wildlife corridors are expected to be less than significant.

## 5.5) Local Ordinances

This section describes the Project's potential conflicts with local ordinances that protect biological resources. Recommended mitigation measures to avoid, minimize, and compensate for those impacts are included in Section 6.0.

***Impact: The Project could conflict with local ordinances that protect biological resources.***

A review of the San Bernardino County and City of Highland General Plans found several policies that protect biological resources (see Sections 2.10 through 2.12). These policies include preservation of habitat and wildlife corridors, preservation of biologically sensitive habitats, conservation of rare plants and animals, and protection or replacement of heritage trees.

These issues are addressed through Mitigation Measure BIO-1 (Disturbance Area Fencing) to avoid and minimize impact to habitat adjacent to the Project site; Mitigation Measure BIO-2 (Biological Monitoring) to ensure that Project construction is in compliance with mitigation measures; Mitigation Measure BIO-3 (WEAP Training) to inform onsite personnel of the sensitive resources that may be present and the restrictions that must be observed; Mitigation Measures BIO-4 (Preconstruction Clearance Surveys), BIO-5 (Burrowing Owl), BIO-6 (California Gnatcatcher), BIO-7 (Nesting Birds), BIO-8 (San Bernardino Kangaroo Rat), BIO-9 (Wildlife Hazards), BIO-11 (Listed and Special Status Plants) to avoid, minimize, and compensate for impacts to special status plants and animals on the Project site; BIO-10 (Riversidean Alluvial Fan Sage Scrub) to compensate for impacts to a sensitive vegetation community on the Project site; BIO-13 (Adjacent Habitat) and BIO-14 (Invasive Plants) to avoid and minimize impact to adjacent native habitat including conservation lands and a wildlife corridor; and BIO-12 (Heritage Trees) to replace heritage trees that will be removed by the Project and protect remaining trees from construction-related impacts.

With implementation of these mitigation measures, the Project is not expected to conflict with any local policies or ordinances protecting biological resources and impacts would be less than significant.

## 5.6) Habitat Conservation Plan

This section describes the Project's potential conflicts with the Upper Santa Ana River Wash Habitat Conservation Plan (Wash Plan). Recommended mitigation measures to avoid, minimize, and compensate for those impacts are included in Section 6.0.

### ***Impact: The Project could conflict with the Wash Plan.***

The Project is immediately adjacent to the covered area for the Wash Plan and associated conservation lands. Any Project-related impacts to offsite adjacent habitat could conflict with the conservation goals for the Wash Plan.

Potential Project impacts include damage to habitat, plants, and wildlife outside of the Project boundaries through direct loss or harm, fugitive dust, toxic emissions, noise, runoff, erosion/sedimentation, lighting, noise, fire ignition, introduction and spread of invasive plants, predator subsidies, domestic predators, and human disturbance.

Mitigation Measure BIO-1 (Disturbance Area Fencing) requires fencing of Project disturbance areas to prevent incursion into offsite habitat. Mitigation Measure BIO-2 (Biological Monitoring) requires biological monitoring to ensure compliance with mitigation measures. Mitigation Measure BIO-3 (WEAP Training) requires training to inform construction personnel of applicable mitigation measures and permit conditions and requirements for compliance. Mitigation Measure BIO-13 (Adjacent Habitat) requires measures to avoid and minimize Project-related impacts to the adjacent conservation lands and BIO-14 (Invasive Plants) requires measures to avoid and minimize the introduction and spread of invasive plants.

Within implementation of Mitigation Measure BIO-1, BIO-2, BIO-3, BIO-13, and BIO-14, the Project is not expected to conflict with the Wash Plan and impacts would be less than significant.

## 5.7) Cumulative Impacts

Cumulative impacts refer to the combined effect of Project-related impacts with the impacts of other past, present, and reasonably foreseeable future projects. A project may have a significant effect on the environment if the potential effects are individually limited but cumulatively considerable.

The cumulative impacts analysis was based on a list of current projects provided by the City of Highland (Table 9). The geographic extent of this cumulative impacts analysis includes projects that are located within the City of Highland and adjacent to or likely to impact biological resources within the Santa Ana River wash. Present and future actions within the cumulative analysis area will be required to CEQA analysis (unless exempt) and, therefore, will incorporate mitigation measures that are likely to be similar to the proposed Project. However, even with mitigation incorporated these actions are likely to have incremental effects and these effects are evaluated cumulatively in the following analysis.

Existing cumulative conditions are defined by past and present development along and within the Santa Ana River wash, as well as conservation efforts. Review of historic aerial images shows substantial residential development in the Project vicinity, mainly north of Greenspot Road. Within the wash, gravel and rock mining operations have impacted habitat. Construction of the Seven Oaks Dam has affected alluvial processes and the vegetation communities, plants, and animals that are dependent on those processes. Mitigation for the Dam and implementation of the Wash Plan, as well as other efforts, have placed large areas of the wash under conservation.

Reasonably foreseeable future projects within the Project vicinity are expected to be characteristic of past and ongoing projects. Ongoing development (Table 9) is dominated by residential and retail projects on the north and south sides of Greenspot Road, outside of the area covered by the Wash Plan. Within the Wash Plan area, covered activities include ongoing and expanded gravel and rock mining, groundwater recharge and other water management, transportation facilities, flood control, recreational trails, existing agriculture, and habitat enhancement and monitoring.



Table 9. Projects Considered in the Cumulative Impacts Analysis

Project Name and Location*	Type	Size
Projects covered under Wash Plan (ICF 2019)	Various	--
Blossom Trails – south of Greenspot Road and west of Church Street	Residential condominium	137 units
Highland Crossroads -- south of Greenspot Road and west of 210 Freeway	Retail	47,840 square feet
7-11 – Boulder Avenue and Greenspot Road (City of Highland 2018)	Gas station & convenience store	1.41-acre site 3,100 square feet
Greenspot Village & Marketplace – north of Greenspot Road west of Boulder Avenue (RVA 2019)	Residential / Retail	83 to 104 acres 769,600 square feet of retail; up to 800 residential units
Mediterra Specific Plan – north of Greenspot Road, east of Santa Paula (Dodson 2015)	Residential	178-acre site 306 units

\*Three residential projects with a total of 18 units were included on the list provided by the City, but could not be included in this evaluation due to lack of location information.

#### Listed and Special Status Plants

No federal or state listed plants were observed on the site during surveys, but two (2) have a moderate potential for occurrence, slender-horned spineflower and Santa Ana River woollystar. One special status plant species, chaparral sand verbena, may have been observed on the site and four other special status plants have a moderate or low to moderate potential to occur.

Potential impacts include loss or degradation of habitat and loss or harm to individuals on the Project site or adjacent areas in the Santa Ana River wash. Degradation of habitat on the site is largely due to the loss of alluvial processes as a result of previous flood control and development projects. Other projects in the vicinity (Table 9) may contribute incrementally to cumulative impacts to listed and special status plants in the area. The Wash Plan will conserve about 1,530 acres of native habitat that supports slender-horned spineflower, Santa Ana River woollystar, and other rare plants.

With implementation of mitigation measures, potential Project-related direct and indirect impacts to listed and special status plant species would be less than significant. While there has been a cumulative degradation of habitat for listed and special status plants in the wash, the Project's contribution would not be considerable.

### Listed, Fully Protected, and Special Status Wildlife

One listed species occurs on the Project site: SBKR. Direct and indirect impacts to SBKR will occur during construction of the Project and during subsequent occupation of the housing development and include loss and degradation of habitat, loss of 32.01 acres of designated critical habitat, and loss or harm to individuals. Degradation of habitat on the site is largely due to the loss of alluvial processes as a result of previous flood control and development projects. Other projects in the vicinity (Table 9) may contribute incrementally to cumulative impacts to SBKR in the area. The Wash Plan will conserve about 1,530 acres of native habitats that support SBKR and other species.

The Santa Ana River, San Jacinto River, and Lytle and Cajon washes support the largest extant concentrations of SBKR and the largest areas of suitable habitat for this species (approximately 3,200 acres total) (USFWS 2009). The Project would add to loss of SBKR habitat in the region and other projects in the vicinity (Table 9) may contribute incrementally to cumulative impacts.

With implementation of mitigation measures, Project-related impacts to SBKR will be avoided and minimized to the extent feasible. However, the loss of occupied critical habitat, potential impacts in adjacent habitat (including predation by domestic cats), and uncertainty regarding the likely success of SBKR relocation efforts indicate that Project-related impacts to SBKR are unavoidable, adverse, and potentially significant. There has been a cumulative degradation of habitat for SBKR in the wash and Project-related impacts would be cumulatively adverse and potentially considerable.

With implementation of mitigation measures, impacts to other listed and special status wildlife species would be less than significant. These species include coastal California gnatcatcher, white-tailed kite, burrowing owl, nesting birds, and others (see Section 4.4.2). Although there has been a cumulative degradation of habitat in the wash and other projects in the vicinity may contribute incrementally, Project-related impacts are not expected to be cumulatively considerable.

### Vegetation Communities

Implementation of the Project will result in the direct permanent loss of ±32.01 acres of degraded RAFSS habitat on the site and potential impacts to RAFSS in adjacent areas. Degradation of the RAFSS on the site is largely due to the loss of alluvial processes as a result of previous flood control and development projects. Other projects in the vicinity may contribute

incrementally to the degradation or loss of RAFSS habitat. The Wash Plan will conserve about 1,530 acres of RAFSS.

With implementation of mitigation measures, Project-related impacts to RAFSS is expected to be less than significant. While there has been a cumulative degradation and loss of RAFSS in the wash, the Project's contribution would not be considerable.

#### Waters and Wetlands

As a result of past development and flood control projects, there are no state or federal jurisdictional waters or wetlands present on the site and therefore no Project-related impacts. With implementation of mitigation measures, any potential Project-related impacts to waters or wetlands in adjacent areas would be less than significant. While there has been a cumulative loss of jurisdictional waters, the Project's contribution would not be considerable.

#### Wildlife Corridors

The Project is immediately adjacent to the covered area for the Wash Plan and associated conservation lands. Any Project-related impacts to offsite adjacent habitat could conflict with the conservation goals for the Wash Plan, including wildlife movement through the Plan area. With implementation of mitigation measures, any potential impacts to wildlife movement are expected to be less than significant. Although other projects in the vicinity may contribute incrementally, Project-related impacts are not expected to be cumulatively considerable.

#### Local Ordinances

The San Bernardino County and City of Highland General Plans include several policies that protect biological resources (see Sections 2.10 through 2.12). These policies include preservation of habitat and wildlife corridors, preservation of biologically sensitive habitats, conservation of rare plants and animals, and protection or replacement of heritage trees.

With implementation of these mitigation measures, the Project is not expected to conflict with any local policies or ordinances protecting biological resources. Project-related impacts would be less than significant and not cumulatively considerable.

#### Habitat Conservation Plan

The Project is immediately adjacent to the covered area for the Wash Plan and associated conservation lands. Any Project-related impacts to offsite adjacent habitat could conflict with the conservation goals for the Wash Plan. Within implementation of mitigation measures, the

Project is not expected to conflict with the Wash Plan and impacts would be less than significant and not cumulatively considerable.

## **6.0) MITIGATION MEASURES**

The following measures are recommended to avoid, minimize, and compensate for Project-related impacts on biological resources.

### **MM BIO-1. Disturbance Area Fencing**

The Project disturbance areas shall be clearly fenced prior to vegetation clearing or grading to prevent incursion into the avoidance area or offsite habitat. No construction activities, equipment, materials, debris, or spoils shall be allowed in the avoidance area or offsite native habitat. Personnel shall be instructed to restrict activities to the disturbance area. Fencing shall remain in place and shall be maintained until replaced by permanent fencing/walls or until Project construction is complete.

### **MM BIO-2. Biological Monitoring**

One or more qualified biological monitors shall be assigned to the Project to monitor construction activities. At least 15 calendar days prior to initiating Project activities, the resumes of biological monitors shall be submitted to CDFW and USFWS for review.

A biological monitor shall be present during all initial site clearing activities (vegetation clearing and ground disturbance) and any other construction activities (fence installation, scalebroom eradication) that could result in take of listed or special status species and at least once per week throughout the duration of construction to ensure compliance with mitigation measures and incidental take permit conditions.

Monitors shall be responsible for ensuring that impacts to special status species, native vegetation, wildlife habitat, and sensitive biological resources are avoided to the extent possible. The biological monitor shall have the authority to halt/suspend all activities until appropriate corrective measures have been implemented.

### **MM BIO-3. WEAP Training**

Biological monitors shall conduct Workers Environmental Awareness Program (WEAP) training to inform construction personnel of applicable mitigation measures and permit conditions and requirements for compliance. All onsite personnel must attend WEAP training. Attendance at training will be documented and workers provided with a hardhat sticker.



Training will include information about listed and special status species and sensitive habitat on the Project site and adjacent areas, responsibilities of the biological monitor, mitigation measures and permit conditions, restrictions on activities, and contact information for the biological monitor. Supporting materials will be provided to all personnel during the training program. Informal or formal refresher training shall be conducted as needed to maintain compliance.

#### **MM BIO-4. Preconstruction Clearance Surveys**

A qualified biologist shall conduct clearance surveys for listed and special status plant and wildlife resources within or adjacent to the Project disturbance area within three (3) calendar days prior to initial vegetation clearing and ground disturbance, including fence installation and scalebroom removal. The biologist shall inspect debris piles, pipes, burrows, vegetation, and other potential refugia prior to initiation of clearing, grubbing, grading, or any other project activity that may injure listed or special status wildlife species. The biologist shall also survey any trees, structures, rock piles, etc. that may provide roosting habitat for bats. The survey will be done on the area(s) scheduled for work within the next (3) calendar days and repeated as needed until initial vegetation clearing and ground disturbance has been completed on the entire Project disturbance area.

Prior to construction each day, biological monitors shall conduct a 'clearance sweep' of all areas scheduled for construction to confirm that listed and special status species are not present.

If any listed or special status plants or wildlife are found, the biological monitor shall take appropriate action as defined in mitigation measures, permit conditions, and regulations. Federal, state, and local agencies will be consulted as needed and appropriate. If needed, an appropriate avoidance buffer with a radius of no less than 100 feet will be established to protect the resource until required actions have been completed.

If any common wildlife species are present in work areas, the biological monitor shall move the animal to nearby suitable habitat or encourage it to move out of harm's way, if safe and feasible to do so.

Monitoring and survey activities shall be documented through daily monitoring reports, survey reports, and monthly summary reports. A final compliance report will be prepared at the conclusion of Project construction activities. All reports will be submitted to the lead agency, CDFW, and USFWS.

## **MM BIO-5. Burrowing Owl**

A preconstruction clearance survey for burrowing owl shall be conducted by a qualified biologist within no more than 30 calendar days prior to any site disturbance, including vegetation removal or mowing, ground disturbance, fence installation, etc. The survey will be conducted as close to the actual initiation of site disturbance as possible. The survey is valid for 30 calendar days. If work does not commence within the 30 days, the survey shall be repeated. If work starts and is suspended for 30 or more calendar days, the survey shall be repeated.

If burrowing owls are found on the site during their nesting season (February 1 to August 31), an avoidance buffer shall be established in coordination with CDFW. The buffer shall be no less than 300 feet, or as required by CDFW. If burrowing owls are found on the site outside of nesting season, passive relocation efforts shall be conducted in coordination with CDFW. With approval from CDFW, passive relocation shall include installation of one-way doors in burrow openings. Burrows shall be closed or collapsed following verification that burrows are empty through monitoring and scoping.

## **MM BIO-6. California Gnatcatcher**

Prior to the start of construction, a survey for California gnatcatcher shall be conducted by a qualified biologist holding a valid USFWS 10(a)(1)(A) permit for gnatcatcher. The survey shall be conducted in accordance with USFWS protocol and may be conducted during either the breeding season (March 15 through June 30) or the non-breeding season (July 1 through March 14). Survey results shall be provided to CDFW and USFWS.

If the survey finds California gnatcatcher within the Project disturbance area, California gnatcatcher shall be included in the application for federal take authorization along with San Bernardino kangaroo rat. No impacts shall occur on the Project site until federal incidental take authorization is obtained.

For purposes of mitigation, acreage of occupied habitat shall be calculated to include all areas of the Project site utilized by California gnatcatcher (as observed during protocol surveys) and a 500-foot buffer (within the boundaries of the Project site). Offsite mitigation credits shall be purchased to replace the occupied habitat at no less than a 0.5:1 ratio from the Lytle Creek Conservation Bank, Cajon Creek Conservation Bank, or equivalent mitigation as approved by CDFW and USFWS (or as required by the incidental take permit). This mitigation may be

nested<sup>2</sup> with offsite compensation for San Bernardino kangaroo rat if it also includes suitable habitat for California gnatcatcher.

Nesting bird surveys shall be conducted as specified in Mitigation Measure BIO-6. If nesting gnatcatchers are present and federal incidental take authorization has been obtained, an avoidance buffer of no less than 500 feet shall be established around the nest (or as required by the incidental take permit) and immediately reported to CDFW and USFWS. The nest shall be monitored at least once per week by the permitted biologist to determine if the buffer is sufficient to prevent construction-related disturbance to the nesting gnatcatchers. If the buffer is insufficient, additional measures shall be implemented and may include a larger buffer, suspending or redirecting construction activities, or other appropriate measures as determined by the biologist (or as required by the incidental take permit). The buffer and any other measures employed shall remain in place until the permitted biologist has determined that juvenile birds have fledged and are no longer dependent on the nest or the nest has otherwise become inactive. Nest monitoring reports shall be provided to CDFW and USFWS, including nest outcomes.

If nesting gnatcatchers are present and federal incidental take authorization has not been obtained, an avoidance buffer of no less than 500 feet shall be established around the nest and USFWS and CDFW shall be immediately contacted for guidance.

### **MM BIO-7. Nesting Birds**

Initial site disturbance (vegetation and ground disturbance, tree removal, fence installation, scalebroom eradication) shall be scheduled outside of the nesting season, if feasible. The nesting season is January 15 to August 31. If initial site disturbance cannot be scheduled outside the nesting season, a preconstruction survey for nesting birds shall be conducted by a qualified biologist or biological monitor within three (3) days prior to any site disturbance during the nesting season.

If active nest(s) are present, an avoidance buffer of 500 feet for raptors and special status birds and 300 feet for all other birds (or as recommended by the Project biologist) shall be established and maintained until a qualified biologist or biological monitor has determined that the juvenile birds have fledged and are no longer dependent on the nest or the nest has otherwise become

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<sup>2</sup> Nested mitigation means that land or credits purchased for mitigation of impacts to one species may also be used concurrently for mitigation for other species or vegetation communities that would benefit.

inactive. An active nest is defined as a nest with eggs, chicks, or dependent juveniles, or a nest actively being constructed or utilized for reproduction.

The size of the buffer shall be determined by a qualified biologist based on the nature of proposed Project activities, the birds' tolerance to disturbance (if known), conservation status of the affected species, and any applicable agency recommendations or requirements. The boundary of the buffer shall be clearly flagged or marked, and construction crews informed of the restrictions.

#### **MM BIO-8. San Bernardino Kangaroo Rat**

The Project proponent shall obtain federal incidental take authorization for San Bernardino kangaroo rat (SBKR) through Section 7 of the federal Endangered Species Act (if there is a federal nexus) or through Section 10 of the ESA (if there is no federal nexus). If SBKR is a state listed or candidate species at the time the Project is scheduled to proceed, state incidental take authorization shall also be obtained through either an Incidental Take Permit (2081 permit) or a Consistency Determination. The Project shall be responsible to provide any required surveys, reports, and documentation to support the permitting process. The Project proponent shall comply with all terms and conditions of the incidental take authorization(s), including required mitigation and monitoring.

Project-related impacts to occupied SBKR habitat shall be mitigated through offsite compensation at a ratio of no less than 0.5:1 for the ±32.01 acres of critical habitat that will be impacted on the site (or as required by the incidental take permit).

The Project shall avoid impacts to the ±6.59 acres of occupied habitat in the southeastern corner of the site. The Project proponent shall conserve the avoidance area through a conservation easement and provide an endowment sufficient to fund management in perpetuity by an agency-approved conservation entity. Alternatively, the land may be transferred in fee title to San Bernardino Valley Water Conservation District or other conservation entity acceptable to CDFW and USFWS. The Project proponent shall prepare a Habitat Enhancement Plan for the ±6.59 acres for SBKR, in coordination with the conservation entity and subject to review and approval by CDFW and USFWS, and provide funding to fully implement the Habitat Enhancement Plan in conjunction with the conservation entity.

Prior to the start of Project activities, the Project proponent shall prepare a San Bernardino Kangaroo Rat Relocation Plan. The Plan will be submitted to the USFWS and CDFW for review

and approval prior to the start of construction. Once approved by these agencies, the Project proponent shall be responsible for implementation of the Plan. The Plan shall include, but shall not be limited to the following topics:

- Exclusion fencing – type, location, installation methods, monitoring and protection or excavation of burrows during installation, inspection and maintenance
- Trapping and removal of SBKR from the Project disturbance area prior to construction – timing, duration, methodology, marking animals, qualifications of trapper
- Temporary holding of trapped animals – housing, feed, duration
- Relocation site selection – parameters for selection of suitable areas, alternatives, coordination with landowner/manager, data collection
- Relocation site preparation – artificial burrows, habitat restoration/enhancement, predator exclusion
- Relocation of SBKR – timing, methods, reporting
- Post-relocation monitoring and reporting – methods, duration and timetable, report contents

The Plan shall also include a strategy for the relocation of other special status small mammals that are incidentally caught during SBKR trapping. Once approved by USFWS and CDFW, the Project proponent shall be responsible for implementation of the Plan.

If a dead, injured, or entrapped SBKR is found during construction of the Project, workers will immediately notify the biological monitor. The monitor will notify USFWS and CDFW immediately (via phone, email, or text) with written follow-up report within two working days. Agency guidance shall be immediately sought for appropriate actions to release entrapped SBKR.

Rodenticides, herbicides, insecticides, or other chemicals that could potentially harm SBKR shall not be used on the Project site during the construction phase.

#### **MM BIO-9. Wildlife Hazards**

All potential wildlife pitfalls (trenches, bores, and other excavations) shall be backfilled or securely covered at the end of each workday. If backfilling or covering is not feasible, wildlife escape ramps shall be installed, in consultation with the biological monitor, with a minimum 3:1 slope and sufficient to allow trapped wildlife to escape. Project workers or the biological monitor will inspect all excavations for trapped wildlife daily.

All construction pipes, culverts, or other hollow materials shall be securely covered or capped while stored on the Project site to prevent wildlife access. All such materials shall be inspected for wildlife before being moved, buried, or capped.

If wildlife become trapped, the biological monitor shall remove the animal (if feasible and safe to do so) and place it in nearby suitable habitat outside of the impact area. If the biological monitor is unable to remove the animal, CDFW or other wildlife authority will be immediately contacted for guidance and/or assistance. Any wildlife encountered on the Project site shall be allowed to leave the area unharmed or moved (or gently encouraged to move) out of harm's way by the biological monitor, if safe and feasible to do so.

Project personnel shall not bring firearms or pets onto the Project site. Firearms carried by authorized security personnel are exempt.

Trash brought onsite by workers, especially food items or packaging that could attract wild or domestic predators, will be kept inside vehicles or in securely closed containers and removed from work areas daily.

#### **MM BIO-10. Riversidean Alluvial Fan Sage Scrub**

Project-related impacts to the Riversidean Alluvial Fan Sage Scrub (RAFSS) shall be mitigated through offsite compensation at a ratio of no less than 0.5:1 for the ±32.01 acres of RAFSS that will be impacted on the site. The Project proponent shall purchase mitigation credits at an agency-approved mitigation bank or equivalent mitigation at a ratio of no less than 0.5:1. This mitigation may be nested with offsite compensation for San Bernardino kangaroo rat if it also includes RAFSS.

The Project shall avoid impacts to the ±6.59 acres of RAFSS in the southeastern corner of the site. The Project proponent shall conserve the avoidance area through a conservation easement and provide an endowment sufficient to fund management in perpetuity. Alternatively, the land may be transferred in fee title to San Bernardino Valley Water Conservation District or other entity acceptable to CDFW and USFWS.

#### **MM BIO-11. Listed and Special Status Plants**

Prior to the start of construction, a focused survey for slender-horned spineflower and Santa Ana woollystar shall be conducted by a qualified botanist. The survey shall be conducted in accordance with CDFW protocols and include all potentially suitable habitat on the Project site.



The survey shall be conducted during the appropriate blooming season, as verified by visits to known reference sites, and during a year with average or above-average precipitation. The botanist shall also verify the identification of sapphire woollystar present on the site and examine plants for any evidence of hybridization with Santa Ana River woollystar. A survey report shall be prepared and submitted to the lead agency, CDFW, and USFWS.

If the survey finds slender-horned spineflower or Santa Ana woollystar within the Project disturbance area, the occupied habitat area(s) shall be mapped using GPS and an avoidance buffer of 100-foot radius established. An incidental take permit application shall be prepared and submitted to CDFW and slender-horned spineflower and/or Santa Ana woollystar shall be included in the application for federal take authorization prepared for San Bernardino kangaroo rat. No impacts within the avoidance buffer shall occur until state and federal incidental take authorization is obtained. CDFW and USFWS shall be sought for the appropriate treatment of sapphire woollystar-Santa Ana River woollystar hybrids, if any appear to be present.

For purposes of mitigation, acreage of occupied habitat shall be calculated to include all areas occupied by slender-horned spineflower and/or Santa Ana woollystar plants plus a 100-foot radius area around each occurrence. Offsite mitigation credits shall be purchased to replace the occupied habitat at no less than a 0.5:1 ratio from the Lytle Creek Conservation Bank, Cajon Creek Conservation Bank, or equivalent mitigation as approved by CDFW and USFWS. This mitigation may be nested with offsite compensation for San Bernardino kangaroo rat if it also includes suitable habitat for slender-horned spineflower or Santa Ana woollystar.

The focused surveys shall also include special status plants. If chaparral sand verbena, Parry's spineflower, or other special status plants with a CRPR of 1B.x are present in the disturbance area, propagules will be collected prior to the start of construction and planted in the avoidance area.

#### **MM BIO-12. Heritage Trees**

All heritage trees (as defined by City of Highland Municipal Code), excluding the eucalyptus groves, shall be replaced at a 2:1 ratio or as required by the City of Highland.

Trees that will not be removed shall be protected from damage or disturbance during construction in compliance with the City of Highland Municipal Code.

### **MM BIO-13. Adjacent Habitat**

The Project shall incorporate measures to ensure that runoff is not altered in an adverse way as compared to existing conditions, which includes landscape irrigation. Stormwater systems shall be designed to prevent the release of sediments, toxins, chemicals, petroleum products, exotic plant materials, or other elements that might degrade or harm biological resources or ecosystem processes in adjacent habitat.

Appropriate best management practices (BMPs) shall be employed during Project construction to control fugitive dust, toxic emissions, noise, runoff, and erosion/sedimentation to ensure that adjacent offsite habitat and waterways are not impacted.

Any permanent lighting shall be directed away from adjacent habitat. Construction activities shall be limited to daylight hours.

Construction activities that generate noise in excess of 60 dBA Leq hourly, as measured at the nearest boundary of the Project site with adjacent habitat, shall incorporate noise-reducing features, as appropriate, to minimize the effects of noise on the adjacent habitat.

A permanent block wall shall be installed between the Project and the avoidance area and adjacent native habitat to limit access by residents and domestic animals. The Project proponent shall provide educational materials to homeowners regarding the plants and animals present in the adjacent habitat and their conservation value.

In coordination with the San Bernardino Valley Water Conservation District (SBVWCD), the Project proponent shall place educational signage at any access point(s) to the adjacent native habitat to explain the value and sensitivity of the habitat and encourage stewardship. The Project proponent shall also work with SBVWCD to develop appropriate signage for the community trail and integrate it into existing or proposed trails in the Wash Plan area. The community trail shall be restricted to non-motorized use. Appropriate fencing or barriers will be installed to prevent access by motorized vehicles, as needed.

Adequate fire suppression capability shall be maintained in active construction areas, including having a water tender on site during periods of high fire danger. Appropriate fire prevention measures shall be employed during grinding, welding, and other spark-inducing activities near vegetated areas.

Dust control measures shall be employed to control fugitive dust and minimize impacts on adjacent vegetation. If watering is used to control dust, pooling of water will be minimized to the extent feasible to avoid attracting predators. Vehicles moving within the Project site shall be limited to a speed of 15 miles per hour.

Equipment and material storage, fueling, and staging areas shall be located within the Project disturbance area at least 100 feet from adjacent habitat and necessary precautions shall be taken to prevent any runoff from entering adjacent habitat. Project-related spills of hazardous materials shall be cleaned up immediately and contaminated soils removed from the site for proper disposal.

#### **MM BIO-14. Invasive Plants**

To prevent the spread of invasive plants, all heavy equipment used onsite shall be washed at a commercial truck wash or other appropriate offsite location prior to bringing it onto the Project site. All soil and debris that may contain seeds or propagules of invasive plants shall be removed from the equipment. Particular attention shall be paid to removing soil and debris from the wheels, undercarriage, outriggers, and other parts that come in contact with vegetation or soil.

Any straw, mulch, or similar products used on the Project site shall be certified weed-free. Any erosion control planting or seeding shall consist of appropriate native species, native seed mix, or other ecologically appropriate, non-invasive plants. Imported fill material shall be obtained from weed-free sources.

Invasive plant species on the California Invasive Plant Council Inventory (<https://www.cal-ipc.org/plants/inventory/>) shall not be installed in landscaping. The Project proponent shall prepare educational materials for homeowners regarding invasive plants and the CC&Rs for the development shall include restrictions on planting of invasives.

## 7.0) REFERENCES

- Abrams, L. 1923, 1944, 1951. *Illustrated Flora of the Pacific States*, Volumes I-III. Stanford University Press, Stanford, California.
- Abrams, L. and R. Ferris. 1960. *Illustrated Flora of the Pacific States*, Volume IV. Stanford University Press, Stanford, California.
- Arnett, Ross H. Jr. 2000. *American Insects: A Handbook of the Insects of America North of Mexico*. CRC Press, New York, New York. 1003 pp.
- Baldwin, B.G., D.H. Goldman, D.J., Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. *The Jepson Manual: Vascular Plants of California*, Second Edition. University of California Press, Berkeley.
- BLM (U.S. Department of the Interior Bureau of Land Management). 2004. Environmental Assessment EA Number CA-660-04-22. Recreation and Public Purposes Lease Renewal. Inland Fish and Game Conservation Association. June 9.
- BNA (Birds of North America Online). 2020. Cornell Laboratory of Ornithology, Ithaca, NY. <https://birdsna.org/Species-Account/bna/home>
- Brunell, M.S. and Whitkus, R. 1999. Analysis of cross-compatibility in *Eriastrum densifolium* (*Polemoniaceae*). *Plant Systematics and Evolution* 215:241-254.
- Cal-IPC (California Invasive Plant Council Inventory). 2020. California Invasive Plant Inventory. <https://www.cal-ipc.org/plants/inventory/>
- CBOC (California Burrowing Owl Consortium). 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. April.
- CDFG (California Department of Wildlife, formerly the California Department of Fish and Game). 2012. Staff Report on Burrowing Owl Mitigation. March 7.
- CDFW (California Department of Fish and Wildlife). 2012. Staff Report on Burrowing Owl Mitigation. March 7.
- \_\_\_\_\_. 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. March 20.
- \_\_\_\_\_. 2019a. Special Animals List. Periodic publication. August.
- \_\_\_\_\_. 2019b. California Natural Community List. November 8. <https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities>
- \_\_\_\_\_. 2019c. Comment letter from Scott Wilson, Environmental Program Manager for Inland Deserts Region, to Kim Stater, Assistant Community Development Director for the City of Highland. Subject: Mitigated Negative Declaration Heatherglen Planned Development, Tentative Tract No. 17606, State Clearinghouse No. 2019079098. August 26.

- \_\_\_\_\_. 2020a. Special Vascular Plants, Bryophytes, and Lichens List. Quarterly publication. January.
- \_\_\_\_\_. 2020b. Natural Diversity Database. Rare Find 5.
- \_\_\_\_\_. 2020c. Permits for Threatened and Endangered Plant Species. Accessed February 17, 2020. <https://wildlife.ca.gov/Conservation/Plants/Permits>
- CFGC (California Fish and Game Commission). 2019. Notice of Findings: San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*). August 13.
- CIMIS (California Department of Water Resources California Irrigation Management Information System). 2020. CIMIS Monthly Report for the Highland Station #251. <https://cimis.water.ca.gov>
- City of Highland. 2018. Revised Initial Study for 7-Eleven Convenience Store & Fuel Station, Conditional Use Permit, and Design Review and Revised Notice of Intent to Adopt a Mitigated Negative Declaration. June 29. <http://www.ci.highland.ca.us/Downloads/Files/7Eleven/Revised%207-Eleven%20Initial%20Study%20-%207-Eleven%20on%20Greenspot.pdf>
- CNPS (California Native Plant Society). 2001. CNPS Botanical Survey Guidelines. [http://www.cnps.org/cnps/rareplants/pdf/cnps\\_survey\\_guidelines.pdf](http://www.cnps.org/cnps/rareplants/pdf/cnps_survey_guidelines.pdf)
- \_\_\_\_\_. 2020. Inventory of Rare and Endangered Plants of California. <http://www.rareplants.cnps.org/simple.html>.
- Cornell Laboratory of Ornithology. 2020. Birds of North America Online. Accessed February 2020. <https://birdsna.org/Species-Account/bna/home>
- County (County of San Bernardino). 2007. County of San Bernardino 2007 Development Code. Adopted March 13, 2007; Effective April 12, 2007; Amended May 2, 2019. <http://www.sbcounty.gov/Uploads/lus/DevelopmentCode/DCWebsite.pdf>
- \_\_\_\_\_. No date(a). Open Space: A Plan of Open Space and Trails for the County of San Bernardino. Open Space Map Information Sheet (link) from <http://cms.sbcounty.gov/lus/Planning/ZoningOverlayMaps.aspx>
- \_\_\_\_\_. No date(b). San Bernardino County Biotic Resources. Countywide – All Biotic Resources (link) from <http://cms.sbcounty.gov/lus/Planning/ZoningOverlayMaps.aspx>
- Dodson (Tom Dodson & Associates). 2015. Initial Study for Mediterra Project, Tentative Tract Map No. 18893 (TTM-14-002)(PUD-13-001). October. <http://www.ci.highland.ca.us/Downloads/Files/Mediterra/Mediterra%20Initial%20Study.pdf>
- Dudek (Dudek & Associates, Inc.) 2003. Western Riverside County MSHCP. Vol. I. The Plan and Vol. II-A through E. The MSHCP Reference Document.

- \_\_\_\_\_. 2007. Draft Existing Biological Conditions Report for the Upper Santa Ana River Habitat Conservation Plan. Prepared for the San Bernardino Valley Water Conservation District. February.
- eBird (Cornell Laboratory of Ornithology and National Audubon Society). 2020. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Accessed February 2020. <http://www.ebird.org>
- ELMT (ELMT Consulting). 2018. 2018 Slender-horned Spineflower Survey Results. Report prepared for the San Bernardino Valley Water Conservation District. July 26.
- Envira. 2016. San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*) Presence/Absence Trapping Studies North American Residential Communities, Highland, California. (East) Report prepared for L&L Environmental, Inc.
- Google Earth. 2020. Google Earth Pro 7.3.2.5776. Aerial images from October 1995 through March 2019 and street view images from March 2018.
- Hanes, T. L., R. D. Friesen, and K. Keane. 1989. Alluvial scrub vegetation in coastal southern California. 187–193. *in* Abell (technical coordinator), D. L., editor. Proceedings of the California riparian systems conference: Protection, management, and restoration for the 1990's, September 22–24, 1988, Davis, CA. Gen. Tech. Rep. PSW-110 Berkeley, CA Pacific Southwest Forest and Range Experiment Station, Forest Service, U.S.
- Hickman, J. (editor). 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley, California.
- ICF. 2019. Draft Final: Upper Santa Ana River Wash Habitat Conservation Plan. Prepared for the San Bernardino Valley Water Conservation District. May.
- Jameson, E. W. and H. J. Peeters. 1988. *California Mammals*. Univ. of California Press, Berkeley.
- Jepson eFlora. 2020. Jepson Flora Project. <http://ucjeps.berkeley.edu/eflora/>
- Jericho (Jericho Systems, Inc.). 2018. Initial Study: Plunge Creek Conservation Project, San Bernardino County, California. Prepared for San Bernardino Valley Water Conservation District. January.
- L&L (L&L Environmental, Inc.). 2005a. Field notes: Reconnaissance Survey for Heatherglen/Greenspot Project.
- \_\_\_\_\_. 2005b. Focused Nesting Season Burrowing Owl and Raptor Nest Survey Report for the Heather Glen Project, San Bernardino County, California. Report prepared for North American Residential Communities, Inc.
- \_\_\_\_\_. 2006a. Jurisdictional Delineation for the Heather Glen Site, City of Highland, County of San Bernardino, California. Draft report prepared for North American Residential Communities, Inc.



- \_\_\_\_\_. 2006b. Heritage Tree Count and Survey for the Heather Glen Site, City of Highland, County of San Bernardino, California. Report prepared for North American Residential Communities, Inc.
- \_\_\_\_\_. 2011. General Biological and Spring Botanical Surveys for the Greenspot Partners Site, City of Highland, County of San Bernardino, California. Draft report prepared for Greenspot Partners.
- \_\_\_\_\_. 2014a (Rev. 2015). Updated General Biological and Spring Botanical Surveys for the Greenspot Partners Site East, City of Highland, County of San Bernardino, California. Report prepared for Greenspot Partners.
- \_\_\_\_\_. 2014b (Rev. 2015). Updated General Biological and Spring Botanical Surveys for the Greenspot Partners Site West, City of Highland, County of San Bernardino, California. Report prepared for Greenspot Partners.
- \_\_\_\_\_. 2015a. 2015 Updated General Biological and Spring Botanical Surveys for the Greenspot Partners Site East, City of Highland, County of San Bernardino, California. Draft report prepared for Greenspot Partners.
- \_\_\_\_\_. 2015b. 2015 Updated General Biological and Spring Botanical Surveys for the Greenspot Partners Site West, City of Highland, County of San Bernardino, California. Report prepared for Greenspot Partners.
- \_\_\_\_\_. 2015c. Updated Jurisdictional Delineation for APNs 1210-281-01, -02, -03, & -04, (Greenspot Partner's Site East) City of Highland, County of San Bernardino, California. Report prepared for Greenspot Partners.
- \_\_\_\_\_. 2015d. Updated Jurisdictional Delineation for Greenspot Project Site (West), City of Highland, County of San Bernardino, California. Report prepared for Greenspot Partners.
- \_\_\_\_\_. 2016. 2016 Updated General Biological and Spring Botanical Surveys for the Greenspot Partners Site West, City of Highland, County of San Bernardino, California. Report prepared for Greenspot Partners.
- \_\_\_\_\_. 2017. Updated Jurisdictional Delineation for Greenspot Project Site, City of Highland, County of San Bernardino, California. Report prepared for Greenspot Partners.
- \_\_\_\_\_. 2018a. Field notes: Habitat Evaluation for Heatherglen/Greenspot Project.
- \_\_\_\_\_. 2018b. 2017 Updated Spring Botanical Survey for Greenspot Partners TT 17604, City of Highland, County of San Bernardino, California. Report prepared for Greenspot Partners.
- \_\_\_\_\_. 2018c. 2018 San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*) Population and Distribution Trapping Studies Heatherglen Residential Development, Greenspot Partners, TT 17604, City of Highland, County of San Bernardino, California. Report prepared by Natural Resources Assessment, Inc., Envira, and L&L Environmental, Inc.

- \_\_\_\_\_. 2019. Updated Heritage Tree Count and Survey for the Heather Glen Site, City of Highland, County of San Bernardino, California. Report prepared for Greenspot Partners, Inc.
- LSA. 2008. Final Environmental Impact Report. Upper Santa Ana River Wash Land Management and Habitat Conservation Plan. State Clearinghouse No. 2004051023. Prepared for the San Bernardino Valley Water Conservation District, San Bernardino County, California. November.
- MBI (Michael Baker International). 2016. 2016 Slender-horned Spineflower Survey Results. Report prepared for the San Bernardino Valley Water Conservation District. September 16.
- \_\_\_\_\_. 2017. 2017 Slender-horned Spineflower Survey Results. Report prepared for the San Bernardino Valley Water Conservation District. June 28.
- Munz, P. A. 1974. *A Flora of Southern California*. University of California Press, Berkeley, California.
- NETR (Nationwide Environmental Title Research, LLC). 2020. Online Historic Aerials.
- NRAI (Natural Resources Assessment, Inc.). 2005. San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*) Presence/Absence Trapping Studies. North American Residential Communities, Highland, California. Report prepared for L&L Environmental, Inc.
- \_\_\_\_\_. 2011. San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*) Presence/Absence Trapping Studies North American Residential Communities, Highland, California. Report prepared for L&L Environmental, Inc.
- \_\_\_\_\_. 2016. San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*) Presence/Absence Trapping Studies Greenspot Residential Development (West), Highland, California. Report prepared for L&L Environmental, Inc.
- NRCS (Natural Resources Conservation Service). 2017. U.S. Department of Agriculture. Web Soil Survey. <https://websoilsurvey.nrcs.usda.gov/>
- Parker, R. et al. 1999. *Weeds of the West*. The Western Society of Weed Science. Newark, California. 630 pp.
- RVA (Ruth Villalobos & Associates, Inc.), ELMT (ELMT Consulting), and MBI (Michael Baker International). 2019. Draft Environmental Impact Statement/Supplemental Environmental Impact Report Proposed Habitat Conservation Plan and Section 10 Permit for the Upper Santa Ana River Wash Plan DOI-USFWS DEIS, SBVWCD SCH No. 2015031022 SEIR. Prepared for the San Bernardino Valley Water Conservation District. December.
- RVA (Ruth Villalobos & Associates, Inc.). 2019. Greenspot Village and Marketplace Specific Plan Supplemental Draft Environmental Impact Report. April. <http://www.ci.highland.ca.us/Downloads/Files/Greenspot%20VMP/Greenspot%20-%20Supplemental%20Draft%20EIR.pdf>

- Sawyer, J. O., Keeler-Wolf, T., and Evens, J. M. 2009. A Manual of California Vegetation, 2<sup>nd</sup> Edition. California Native Plant Society, Sacramento, California. 1,300 pp.
- SBVWCD (San Bernardino Valley Water Conservation District). 2015. Upper Santa Ana River Watershed Integrated Regional Water Management Plan. <https://www.sbvwd.org/docman-projects/upper-santa-ana-integrated-regional-water-management-plan.html>
- Sherbrooke, W. C. J. 1976. Differential acceptance of toxic jojoba seed (*Simmondsia chinensis*) by four Sonoran Desert heteromyid rodents. Ecology 57: 596-602.
- Stebbins, R. C. 1985. *Western Reptiles and Amphibians*. Houghton Mifflin Company, Boston Mass.
- URS (URS Corporation). County of San Bernardino 2007 General Plan. Prepared for County of San Bernardino. Adopted March 13, 2007; Effective April 12, 2007; Amended April 24, 2014. <http://cms.sbcounty.gov/lus/planning/generalplan.aspx>
- USFWS (U. S. Fish and Wildlife Service). 1998. Endangered and threatened wildlife and plants: Emergency rule to list the San Bernardino kangaroo rat as endangered. (63 FR 3835).
- \_\_\_\_\_. 2000a. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants. January.
- \_\_\_\_\_. 2000b. Endangered and Threatened Wildlife and Plants: Proposed Designation of Critical Habitat for the San Bernardino Kangaroo Rat. Federal Register 65(237):77178-77208. December 8, 2000.
- \_\_\_\_\_. 2004. San Bernardino kangaroo rat (*Dipodomys merriami parvus*): Status of the Species. Intra-service Formal Section 7 Consultation/Conference for Issuance of an Endangered Species Act Section 10(a)(1)(B) Permit (TE-088609-0) for the Western Riverside Multiple Species Habitat Conservation Plan, Riverside County, California. FWS-WRIV-870.19. Pp. 288-299.
- \_\_\_\_\_. 2007. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the Coastal California gnatcatcher (*Polioptila californica californica*); Final Rule. Federal Register 72(243):72010-72213.
- \_\_\_\_\_. 2008. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the San Bernardino Kangaroo Rat (*Dipodomys merriami parvus*). Federal Register 73(202):61936-62002.
- \_\_\_\_\_. 2009. San Bernardino kangaroo rat (*Dipodomys merriami parvus*). 5-Year Review: Summary and Evaluation. Carlsbad Fish and Wildlife Office. Carlsbad, California. August 14.
- \_\_\_\_\_. 2010a. *Dodecahema leptoceras* (slender-horned spineflower). 5-year Review: Summary and Evaluation. Carlsbad Fish and Wildlife Office. October 1.

- \_\_\_\_\_. 2010b. *Eriastrum densifolium* subsp. *sanctorum* (Santa Ana River woolly-star). 5-year Review: Summary and Evaluation. Carlsbad Fish and Wildlife Office. October 29.
- \_\_\_\_\_. 2010c. Coastal California gnatcatcher (*Polioptila californica californica*). 5-year Review: Summary and Evaluation. Carlsbad Fish and Wildlife Office. September 29.
- \_\_\_\_\_. 2013. Endangered Plants – Federal Rules and Regulations. <https://www.fws.gov/pacificislands/Endangered%20Plants%20-%20Federal%20Rules%20and%20Regulations%20fact%20sheet%20FINAL%20020513.pdf>
- \_\_\_\_\_. 2019. Biological Opinion for Highland-Redlands Regional Connector Project, San Bernardino County, California. October 29.
- \_\_\_\_\_. 2020a. Information for Planning and Consultation (IPaC). <https://ecos.fws.gov/ipac/>
- \_\_\_\_\_. 2020b. Listing and Critical Habitat. Accessed February 2020. <https://www.fws.gov/endangered/what-we-do/critical-habitats.html>
- USGS (U. S. Geological Survey). 1988. Redlands, California 7.5-Minute topographic map. USGS, Denver, Colorado.
- WEST (WEST Consultants, Inc.) 2013. TRACT 17604 Hydraulic and Floodplain Analysis on Plunge Creek. Prepared for Greenspot Partners, Inc. August.
- WRCC (Western Regional Climate Center). 2018. Precipitation Maps: PRISM Precipitation Maps 1981-2010. [https://wrcc.dri.edu/Climate/prism\\_precip\\_maps.php](https://wrcc.dri.edu/Climate/prism_precip_maps.php)
- \_\_\_\_\_. 2020. Monthly Summary Time Series Precipitation Data for the Mill Creek (BDF) RAWS and Devore 2 RAWS. <https://wrcc.dri.edu/>
- Zeiner, D.C., Laudenslayer, Jr., W.F., Mayer, K.E., and White, M. 1990. California's Wildlife, Volume II. Birds. California Statewide Wildlife Habitat Relationships System. State of California Resources Agency, Department of Fish and Game. Sacramento, California. November.

## APPENDIX A: PLANT AND WILDLIFE SPECIES OBSERVED

Plant and wildlife species identified on the site during surveys from 2005 to 2019. One asterisk (\*) indicates a non-native species; two asterisks (\*\*) indicates a special status species; a question mark (?) indicates uncertainty regarding identification or native status. Invertebrates are not included.

### Scientific Name

### Common Name

#### VASCULAR PLANTS DICOTYLEDONS

#### Lycophytes

##### SELAGINELLACEAE

*Selaginella bigelovii*

##### SPIKE-MOSS FAMILY

Bigelow spike moss

#### Gymnosperms

##### CUPRESSACEAE

*Juniperus californica*

##### CYPRESS FAMILY

California juniper

##### PINACEAE

\* *Pinus species*

##### PINE FAMILY

Unid. ornamental pine

#### Angiosperms

##### ADOXACEAE

*Sambucus nigra ssp. cerulea*  
(*S. mexicana*)

##### MUSKROOT FAMILY

Mexican elderberry, blue elderberry

##### AMARANTHACEAE

\* *Amaranthus albus*

##### AMARANTH FAMILY

Tumbleweed, tumbling pigweed

##### ANACARDIACEAE

*Rhus aromatica* (*R. trilobata*)  
*Rhus ovata*

##### SUMAC or CASHEW FAMILY

Skunk bush, basketbush  
Sugar bush

\* *Schinus molle*

Peruvian pepper tree

\* *Schinus terebinthifolius*

Brazilian pepper tree

##### APOCYNACEAE

*Funastrum cynanchoides*  
*ssp. hartwegii*  
(*Sarcostemma c. ssp. h*)

##### DOGBANE FAMILY

Climbing milkweed

##### ASTERACEAE

*Ambrosia acanthicarpa*  
*Ambrosia psilostachya*  
*Artemisia californica*  
*Baccharis salicifolia* (*B. glutinosa*)  
*Bebbia juncea*

##### ASTER FAMILY

Annual bur-sage, annual sandbur  
Western ragweed  
California sagebrush  
Mulefat  
Sweetbush

**Scientific Name**

**Common Name**

* <i>Carduus pycnocephalus</i>	Italian thistle
* <i>Centaurea melitensis</i>	Tocalote
<i>Chaenactis artemisiifolia</i>	White pincushion, wormwood pincushion
<i>Chaenactis glabriuscula</i>	Yellow pincushion
? <i>Cirsium species</i>	Unid. thistle
<i>Deinandra fasciculata</i> ( <i>Hemizonia fasciculata</i> )	Fascicled tarplant, slender tarweed
<i>Encelia farinosa</i>	Brittlebush
<i>Ericameria species</i>	Unid. goldenbush
<i>Erigeron bonariensis</i>	
* ( <i>Conyza bonariensis</i> )	Flax-leaved horseweed
<i>Erigeron canadensis</i> ( <i>Conyza canadensis</i> )	Horseweed, mare's tail
<i>Erigeron foliosus</i>	Leafy fleabane, leafy daisy
* <i>Gazania species</i>	Unid. ornamental gazania
<i>Gutierrezia species</i>	Matchweed
<i>Helianthus annuus</i>	Western sunflower
<i>Heterotheca grandiflora</i>	Telegraph weed
* <i>Hypochaeris glabra</i>	Smooth cat's-ear
* <i>Lactuca serriola</i>	Prickly lettuce
<i>Lasthenia californica</i> ( <i>L. chrysostoma</i> )	California goldfields
<i>Lepidospartum squamatum</i>	Scalebroom
<i>Logfia filaginoides</i> ( <i>Filago californica</i> )	California filago
<i>Matricaria discoidea</i> ( <i>Chamomilla suaveolens</i> , <i>M. matricarioides</i> )	
* <i>Pseudognaphalium luteoalbum</i> ( <i>Gnaphalium luteoalbum</i> )	Pineapple weed
* <i>Senecio flaccidus</i> ( <i>S. douglasii</i> )	Pearly everlasting
* <i>Senecio vulgaris</i>	Threadleaf ragwort, sand-wash butterweed
* <i>Sonchus asper</i>	Common groundsel
* <i>Sonchus oleraceus</i>	Prickly sow thistle
<i>Stephanomeria virgata</i>	Common sow thistle
* <i>Taraxacum officinale</i>	Wreath plant
<i>Uropappus lindleyi</i> ( <i>Microseris lindleyi</i> , <i>M. linearifolia</i> )	Common dandelion
	Silverpuffs

**BORAGINACEAE**

**BORAGE OR WATERLEAF FAMILY**

<i>Amsinckia intermedia</i> ( <i>A. menziesii</i> var. <i>intermedia</i> )	Large flower rancher's fiddleneck
<i>Cryptantha species</i>	Unid. annual cryptantha
<i>Cryptantha intermedia</i>	Common cryptantha
<i>Eriodictyon trichocalyx</i>	Yerba santa
<i>Heliotropium curassavicum</i>	Wild heliotrope
<i>Pectocarya linearis</i>	Slender pectocarya
<i>Phacelia species</i>	Unid. phacelia



Scientific Name	Common Name
<i>Phacelia distans</i>	Common phacelia
<i>Phacelia ramosissima</i>	Branching phacelia
<i>Plagiobothrys species</i>	Popcornflower
BRASSICACEAE	MUSTARD FAMILY
* <i>Brassica nigra</i>	Black mustard
* <i>Hirschfeldia incana</i> ( <i>Brassica geniculata</i> )	Shortpod mustard
<i>Lepidium species</i>	Unid. peppergrass
* <i>Raphanus sativus</i>	Wild radish
* <i>Sisymbrium altissimum</i>	Tumble mustard
* <i>Sisymbrium irio</i>	London rocket
CACTACEAE	CACTUS FAMILY
<i>Cylindropuntia californica</i> var. <i>parkeri</i> ( <i>Opuntia parryi</i> )	Valley cholla
<i>Opuntia species</i> (1)	Unid. beavertail cactus
<i>Opuntia species</i> (2)	Unid. beavertail cactus
<i>Opuntia littoralis</i> (includes <i>O. occidentalis</i> )	Coast prickly pear
CHENOPODIACEAE	GOOSEFOOT FAMILY
* <i>Chenopodium album</i>	Lamb's quarters, common goosefoot
* <i>Salsola tragus</i>	Russian thistle
CONVOLVULACEAE	MORNING-GLORY FAMILY
<i>Calystegia macrostegia</i>	Morning-glory
CRASSULACEAE	STONECROP FAMILY
<i>Crassula connata</i> ( <i>C. erecta</i> )	Pygmy-weed, pygmy stonecrop
<i>Dudleya lanceolata</i>	Lance-leaved dudleya
CUCURBITACEAE	GOURD FAMILY, CUCUMBER FAMILY
<i>Cucurbita foetidissima</i>	Calabazilla
<i>Cucurbita palmata</i>	Coyote melon
<i>Marah macrocarpa</i>	Chilicothe, wild cucumber
EUPHORBIACEAE	SPURGE FAMILY
<i>Croton californicus</i>	California croton
<i>Croton setiger</i> ( <i>C. setigerus</i> , <i>Eremocarpus setiger</i> , <i>E.</i> <i>setigerus</i> )	Turkey-mullein, doveweed
* <i>Euphorbia species</i>	Ground spurge
<i>Euphorbia albomarginata</i> ( <i>Chamaesyce albomarginata</i> )	Rattlesnake sandmat, rattlesnake weed
* <i>Euphorbia nutans</i>	Eyebane spurge
* <i>Ricinus communis</i>	Castor bean

Scientific Name	Common Name
<b>FABACEAE</b>	<b>LEGUME FAMILY, PEA FAMILY</b>
<i>Acmispon glaber</i> ( <i>Lotus scoparius</i> )	Deerweed
<i>Acmispon strigosus</i> ( <i>Lotus strigosus</i> )	Strigose lotus
* <i>Albizia lophantha</i>	Plume acacia
<i>Lotus/Acmispon species</i>	Unid. lotus
<i>Lupinus bicolor</i>	Miniature lupine, dove lupine
<i>Lupinus excubitus</i> var. <i>hallii</i>	Guard lupine
* <i>Medicago polymorpha</i>	California burclover
* <i>Melilotus albus</i>	White sweetclover
* <i>Melilotus indicus</i>	Sourclover, India sweetclover
<b>FAGACEAE</b>	<b>OAK FAMILY</b>
<i>Quercus agrifolia</i>	Coast live oak
<b>GERANIACEAE</b>	<b>GERANIUM FAMILY</b>
* <i>Erodium botrys</i>	Long-beak filaree
* <i>Erodium cicutarium</i>	Redstem filaree
<b>LAMIACEAE</b>	<b>MINT FAMILY</b>
* <i>Marrubium vulgare</i>	Horehound
<i>Salvia apiana</i>	White sage
<i>Salvia columbariae</i>	Chia
<i>Salvia mellifera</i>	Black sage
<i>Trichostema lanceolatum</i>	Vinegar weed
<b>LYTHRACEAE</b>	<b>LOOSESTRIFE FAMILY</b>
* <i>Lagerstroemia species</i>	Crepe myrtle
<b>MALVACEAE</b>	<b>MALLOW FAMILY</b>
<i>Malacothamnus fasciculatus</i>	Chaparral bush-mallow
* <i>Malva parviflora</i>	Cheeseweed
<b>MYRSINACEAE</b>	<b>MYRSINE FAMILY</b>
* <i>Lysimachia (Anagallis) arvensis</i>	Scarlet pimpernel
<b>MYRTACEAE</b>	<b>MYRTLE FAMILY, EUCALYPTUS FAMILY</b>
* <i>Eucalyptus species</i>	Ornamental eucalyptus, gumtree
* <i>Eucalyptus globulus</i>	Blue gum
<b>NYCTAGINACEAE</b>	<b>FOUR O'CLOCK FAMILY</b>
<i>Abronia villosa</i> ? (not identified to var.)	Sand verbena
<i>Mirabilis laevis</i> var. <i>crassifolia</i> ( <i>M. californica</i> )	Wishbone bush
<b>OLEACEAE</b>	<b>OLIVE FAMILY</b>
* <i>Fraxinus species</i>	Ash
* <i>Olea europaea</i>	Russian olive

Scientific Name	Common Name
<b>ONAGRACEAE</b>	<b>EVENING-PRIMROSE FAMILY</b>
<i>Camissoniopsis species 1</i>	Unid. evening-primrose
<i>Camissoniopsis species 2</i>	Unid. evening-primrose
<i>Clarkia purpurea ssp. quadrivulnera</i>	Four-spot clarkia
<i>Epilobium ciliatum</i>	Willow-herb
<i>Eulobus californica</i> ( <i>Camissonia californica</i> )	California false mustard, mustard evening primrose
<i>Oenothera elata ssp. hirsutissima</i> ( <i>O. hookeri</i> )	Great marsh evening primrose
<b>OXALIDACEAE</b>	<b>OXALIS FAMILY</b>
* <i>Oxalis corniculata</i>	Yellow sorrel
<b>PAPAVERACEAE</b>	<b>POPPY FAMILY</b>
<i>Eschscholzia species (caespitosa?)</i>	Foothill poppy (?)
<b>PLANTAGINACEAE</b>	<b>PLANTAIN FAMILY</b>
<i>Plantago erecta</i>	California plantain
<b>PLATANACEAE</b>	<b>PLANE-TREE or SYCAMORE FAMILY</b>
<i>Platanus racemosa</i>	Western sycamore
<b>POLEMONIACEAE</b>	<b>PHLOX FAMILY</b>
<i>Eriastrum sapphirinum</i>	Sapphire woollystar
<b>POLYGONACEAE</b>	<b>BUCKWHEAT FAMILY</b>
<i>Eriogonum species</i>	Unid. buckwheat
<i>Eriogonum fasciculatum</i> var. <i>foliolosum</i>	Leafy California wild buckwheat, interior California buckwheat
<i>Eriogonum gracile</i>	Slender wild buckwheat
<i>Eriogonum thurberi</i>	Thurber's wild buckwheat
* <i>Polygonum aviculare</i> ( <i>P. arenastrum</i> )	Common knotweed
* <i>Rumex crispus</i>	Curly dock
<b>PORTULACACEAE</b>	<b>PURSLANE FAMILY</b>
* <i>Portulaca oleracea</i>	Common purslane
<b>RANUNCULACEAE</b>	<b>BUTTERCUP FAMILY</b>
<i>Delphinium species (parryi?)</i>	Blue larkspur
<b>RHAMNACEAE</b>	<b>BUCKTHORN FAMILY</b>
<i>Ceanothus species</i>	California lilac
<i>Ceanothus crassifolius</i>	Hoaryleaf ceanothus, thick-leaf ceanothus
<i>Rhamnus crocea</i>	Spiny redberry
<b>ROSACEAE</b>	<b>ROSE FAMILY</b>
<i>Adenostoma fasciculatum</i>	Chamise
<i>Heteromeles arbutifolia</i>	Toyon, Christmas berry
<i>Prunus ilicifolia</i>	Hollyleaf cherry

Scientific Name	Common Name
RUBIACEAE <i>Galium angustifolium</i>	MADDER FAMILY, COFFEE FAMILY Narrowly leaved bedstraw
SALICACEAE <i>Populus fremontii</i> ssp. <i>fremontii</i>	WILLOW FAMILY Fremont cottonwood
SIMAROUBACEAE * <i>Ailanthus altissima</i>	QUASSIA or SIMAROUBA FAMILY Tree of heaven
SIMMONDSIACEAE <i>Simmondsia chinensis</i>	JOJOBA FAMILY Jojoba, goat-nut
SOLANACEAE <i>Datura wrightii</i> ( <i>D. meteloides</i> ) * <i>Nicotiana glauca</i> <i>Nicotiana quadrivalvis</i> ( <i>N. bigelovii</i> ) <i>Solanum xanti</i>	NIGHTSHADE FAMILY Jimsonweed, tolguacha Tree tobacco  Wallace tobacco, Indian tobacco Chaparral nightshade
TAMARICACEAE * <i>Tamarix species</i>	TAMARISK FAMILY Unid. tamarisk
URTICACEAE * <i>Urtica urens</i>	NETTLE FAMILY Dwarf nettle
VISCACEAE <i>Phoradendron species 1</i> <i>Phoradendron species 2</i>	MISTLETOE FAMILY Mistletoe (on juniper) Mistletoe (on sycamore)
ZYGOPHYLLACEAE * <i>Tribulus terrestris</i>	CALTROP FAMILY Puncture vine
<b>MONOCOTYLEDONS</b>	
AGAVACEAE <i>Hesperoyucca whipplei</i> ( <i>Yucca whipplei</i> )	CENTURY PLANT FAMILY, AGAVE FAMILY Chaparral yucca
ARECACEAE * <i>Washingtonia robusta</i>	PALM FAMILY Mexican fan palm, ornamental fan palm
POACEAE * <i>Avena species</i> * <i>Avena barbata</i> * <i>Bromus diandrus</i> ( <i>B. rigidus</i> ) * <i>Bromus hordeaceus</i> ( <i>B. mollis</i> ) * <i>Bromus madritensis</i> ssp. <i>rubens</i> ( <i>B. rubens</i> )	GRASS FAMILY Unid. wild oat Slender wild oat Ripgut brome Soft chess Red brome

**Scientific Name**

**Common Name**

* <i>Bromus tectorum</i>	Cheatgrass
* <i>Cynodon dactylon</i>	Bermuda grass
* <i>Digitaria sanguinalis</i>	Hairy crabgrass
* <i>Festuca species (Vulpia species)</i>	Annue fescue
* <i>Hordeum murinum</i>	Wall barley, hare barley
* <i>Lamarckia aurea</i>	Goldentop grass
<i>Leptochloa fusca ssp. uninervia</i>	
* ( <i>L. uninervia</i> )	Mexican sprangletop
* <i>Poa annua</i>	Annual blue grass
* <i>Polypogon monspeliensis</i>	Rabbitfoot grass
* <i>Schismus barbatus</i>	Mediterranean grass

**THEMIDACEAE**

**BRODIAEA FAMILY**

<i>Dichelostemma capitatum</i>	Blue dicks, wild hyacinth
( <i>D. pulchella</i> , <i>Brodiaea pulchella</i> )	

**Scientific Name**

**Common Name**

**VERTEBRATES**

**Reptiles**

**Colubridae**

**Colubrid Snakes**

<i>Masticophis (Coluber) flagellum</i>	Coachwhip
<i>Pituophis catenifer annectens</i>	San Diego gopher snake

**Iguanidae**

**Iguanid Lizards**

<i>Sceloporus occidentalis</i>	Western fence lizard
<i>Sceloporus orcutti</i>	Granite spiny lizard
<i>Uta stansburiana</i>	Side-blotched lizard

**Teiidae**

**Teiid Lizards**

** <i>Aspidoscelis tigris stejnegeri</i>	Coastal (western) whiptail
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**Birds**

**Accipitridae**

**Hawks, Eagles, and Harriers**

** <i>Accipiter cooperii</i>	Cooper's hawk
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Buteo lineatus</i>	Red-shouldered hawk

**Aegithalidae**

**Long-tailed Tits**

<i>Psaltirparus minimus</i>	Bushtit
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**Apodidae**

**Swifts**

<i>Aeronautes saxatalis</i>	White-throated swift
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**Ardeidae**

**Hérons**

** <i>Ardea herodias</i>	Great blue heron (fly over)
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Scientific Name	Common Name
Bombycillidae <i>Phainopepla nitens</i>	Waxwings Phainopepla
Cardinalidae <i>Phœucticus melanocephalus</i>	Cardinals Black-headed grosbeak
Cathartidae <i>Cathartes aura</i>	Vultures Turkey vulture
Charadriidae <i>Charadrius vociferus</i>	Plovers Killdeer
Columbidae * <i>Columba livia</i> <i>Patagioenas (Columba) fasciata</i> <i>Zenaida macroura</i>	Pigeons and Doves Rock dove, common pigeon Band-tailed pigeon Mourning dove
Corvidae <i>Aphelocoma californica</i> <i>Corvus brachyrhynchos</i> <i>Corvus corax</i>	Crows and Jays California scrub jay American crow Common raven
Cuculidae <i>Geococcyx californianus</i>	Cuckoos Greater roadrunner
Falconidae <i>Falco sparverius</i>	Falcons American kestrel
Fringillidae ** <i>Spinus (Carduelis) lawrencei</i> <i>Spinus (Carduelis) psaltria</i> <i>Haemorhous (Carpodacus) mexicanus</i>	Finches Lawrence's goldfinch Lesser goldfinch House finch
Icteridae <i>Euphagus cyanocephalus</i> <i>Icterus bullockii</i>	Blackbirds Brewer's blackbird Bullock's oriole
Laniidae ** <i>Lanius ludovicianus</i>	Shrikes Loggerhead shrike
Mimidae <i>Mimus polyglottos polyglottos</i> <i>Toxostoma redivivum</i>	Mockingbirds Northern mockingbird California thrasher
Odontophoridae <i>Callipepla californica californica</i>	Quail California quail
Paridae	Chickadees and Titmice



**Scientific Name**

**Common Name**

\*\* *Baeolophus inornatus*

Oak titmouse

Parulidae

Wood Warblers

*Setophaga coronata*

Yellow-rumped warbler

Passerellidae

New World Sparrows

*Melospiza melodia*

Song sparrow

*Melospiza crissalis*

California towhee

*Pipilo maculatus*

Spotted towhee

*Zonotrichia leucophrys*

White-crowned sparrow

Passeridae

Old World Sparrows

\* *Passer domesticus*

House sparrow

Picidae

Woodpeckers

*Colaptes auratus*

Northern flicker

\*\* *Dryobates (Picoides) nuttallii*

Nuttall's woodpecker

*Melanerpes formicivorus*

Acorn woodpecker

Sturnidae

Starlings

\* *Sturnus vulgaris*

European starling

Trochilidae

Hummingbirds

*Calypte anna*

Anna's hummingbird

\*\* *Calypte costae*

Costa's hummingbird

Troglodytidae

Wrens

*Thryomanes bewickii*

Bewick's wren

*Troglodytes aedon*

House wren

Turdidae

Thrushes

*Sialia currucoides*

Mountain bluebird

*Sialia mexicana*

Western bluebird

Tyrannidae

Tyrant Flycatchers

*Myiarchus cinerascens*

Ash-throated flycatcher

*Sayornis nigricans*

Black phoebe

*Sayornis saya*

Say's phoebe

*Tyrannus verticalis*

Western kingbird

**Mammals**

Canidae

Dogs, Foxes, and Coyotes

*Canis domesticus*

Domestic dog

*Canis latrans*

Coyote

Cricetidae

New World Mice and Rats

*Reithrodontomys megalotus*

Western harvest mouse

**Scientific Name**

**Common Name**

Geomyidae

Pocket Gophers

*Thomomys bottae*

Botta's pocket gopher (sign)

Heteromyidae

Pocket Mice

\*\* *Chaetodipus fallax fallax*

Northwestern San Diego pocket mouse

\*\* *Dipodomys simulans*

Dulzura kangaroo rat

\*\* *Dipodomys merriami parvus*

San Bernardino kangaroo rat

\*\* *Perognathus longimembris brevinasus*

Los Angeles pocket mouse

Leporidae

Rabbits

\*\* *Lepus californicus bennettii*

San Diego black-tailed jackrabbit

*Sylvilagus audubonii*

Audubon's cottontail

Muridae

Woodrats

\*\* *Neotoma lepida intermedia*

San Diego desert woodrat

*Peromyscus californicus*

California mouse

*Peromyscus eremicus*

Cactus mouse

*Peromyscus maniculatus*

Deer mouse

Pryocyonidae

Raccoons, Ringtails, and Coatis

*Procyon lotor*

Raccoon

Sciuridae

Squirrels

*Spermophilus beecheyi*

California ground squirrel

## APPENDIX B: SPECIAL STATUS SPECIES OBSERVATIONS

Species	Date	GPS Coordinates or Location on Site	Elevation (feet)	Observation
Coastal (western) whiptail <i>Aspidoscelis tigris stejnegeri</i>	05.13.2015	N 34.106402 W 117.164833	1362	1 individual
	06.09.2015	N 34.106387 W 117.162361	1378	1 individual
Potential raptor nest	07.19.2005	N 34.108617 W 117.167717	~1388	In eucalyptus tree
		N 34.108283 W 117.167767	~1388	In eucalyptus tree
		N 34.108350 W 117.168200	~1388	In eucalyptus tree
		N 34.109250 W 117.167733	~1388	In eucalyptus tree
		N 34.108317 W 117.168083	~1388	In eucalyptus tree
		N 34.108900 W 117.166767	~1388	In eucalyptus tree
		N 34.109467 W 117.165633	~1388	Cavity in sycamore suitable for nesting
Cooper's hawk <i>Accipiter cooperi</i>	06.2005	N 34.109427 W 117.166382	1368	1 individual
Loggerhead shrike <i>Lanius ludovicianus</i>	07.15.2011	N 34.10780 W 117.16442	1370	1 individual
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	08.11.2011	N 34.10612 W 117.16109	1391	1 individual
	09.16.2011	N 34.10712 W 117.16592	1364	1 individual
	05.13.2014	N 34.10844 W 117.16383	1385	1 individual
	06.18.2014	N 34.10697 W 117.16275	1393	1 individual
	04.20.2016	N 34.106733 W 117.167173	1355	1 individual
	2017	N 34.106921 W 117.168205	1349	1 individual
	2017	N 34.106413 W 117.162218	1381	1 individual
San Bernardino kangaroo rat <i>Dipodomys merriami parvus</i>	08.09.2005 – 08.14.2005	Traplins SE and W boundary		5 trapped*
	04.19.2011 – 04.24.2011	Traplins SE, NE		8 trapped*
	03.01.2016 – 03.06.2016	Traplins NE, SE, & SW of west portion (S central, N central, & SW of entire site)		3 trapped* 2 adult males, 1 adult female
	08.08.2016 – 08.13.2016	Traplins SE of east portion		4 trapped*
	07.12.2018 - 08.06.2018	Traplins NE, SE, SW		11 individuals**
Dulzura kangaroo rat <i>Dipodomys simulans</i>	08.09.2005 – 08.14.2005	Traplins NW, NE, SE		30 trapped*
	04.19.2011 - 04.24.2011	Traplins NW, NE, SE		28 trapped*
	03.01.2016 – 03.06.2016	Traplins NE, SE of west portion (S central, N central of entire site)		7 trapped*
	08.08.2016 – 08.13.2016	Traplins NE of east portion		7 trapped*
	07.12.2018 - 08.06.2018	Traplins NE, NW, SE, SW		136 trapped*

Species	Date	GPS Coordinates or Location on Site	Elevation (feet)	Observation
Northwestern San Diego pocket mouse <i>Chaetodipus fallax fallax</i>	08.09.2005 – 08.14.2005	Traplines NW, NE, SE		7 trapped*
	04.19.2011 – 04.24.2011	Traplines NE, NW		12 trapped*
	03.01.2016 - 03.06.2016*	Traplines NE, NW, & SW of west portion (S central, N central, & SW of entire site)		85 trapped*
	08.08.2016 – 08.13.2016	Traplines NE, SE of east portion		58 trapped*
	07.12.2018 - 08.06.2018	Traplines NE, NW, SE, SW		83 trapped*
Los Angeles pocket mouse <i>Perognathus longimembris brevinasus</i>	04.19.2011 – 04.24.2011	Traplines NE, NW		3 trapped*
	07.12.2018 - 08.06.2018	Trapline S central		2 trapped*

Other species observed during previous surveys are western whiptail (2005), great blue heron, Costa's hummingbird, Nuttall's woodpecker, Lawrence's goldfinch, oak titmouse; details of these observations are not available.

\* number is total trapped; animals were not marked and individuals may have been trapped more than once.

\*\* number is distinct individuals; animals were marked and repeat trappings are not included in the total.

## APPENDIX C: SPECIAL STATUS SPECIES POTENTIALS FOR OCCURRENCE

Documented occurrences are those found in the CNDDDB (CDFW 2020b) unless otherwise noted. EBird (2020) records of bird observations are noted but should be interpreted with caution. CCH = California Consortium of Herbaria records.

Species	Growth Form, Habitat and Distribution	Flowering Season	Conservation Status	Potential for Occurrence
<b>Plants</b>				
<i>Abronia villosa</i> var. <i>aurita</i> Chaparral sand-verbena	Annual herb. Sandy soils in chaparral, coastal scrub, desert dunes at 75-1600m elevation. Southern CA, Arizona, Baja.	(Jan)Mar-Sep	Fed: None Calif: S2 CRPR: 1B.1	<b>Moderate(?)</b> . Potentially suitable habitat, no documented occurrences within 5 mi. <i>Abronia villosa</i> observed during trapping surveys, but not identified to var. Based on current range, plants in this area would be <i>A.v.aurita</i> . Not observed during botanical surveys and may be misidentified.
<i>Acanthoscyphus parishii</i> var. <i>parishii</i> Parish's oxytheca	Annual herb. Sandy or gravelly soils in chaparral, lower montane coniferous forest at 1220-2600m elevation. LA, San Bernardino, Ventura Cos.	Jun-Sep	Fed: None Calif: S3S4 CRPR: 4.2	Low. Potentially suitable habitat but below elevation range. Not observed during surveys.
<i>Allium howellii</i> var. <i>clokeyi</i> Mt. Pinos onion	Perennial bulbiferous herb. Great Basin scrub, edges of meadows and seeps, pinyon and juniper woodland at 1300-1850m elevation. Kern, LA, Santa Barbara, San Bernardino, Ventura Cos., may be extirpated in LA Co.	Apr-Jun	Fed: None Calif: S2 CRPR: 1B.3	Not expected. No suitable habitat and below elevation range. No documented occurrences within 5 mi. Not observed during surveys.
<i>Allium marvinii</i> Yucaipa onion	Perennial bulbiferous herb. Clay soils in openings in chaparral at 760-1065m. Riverside and San Bernardino Cos.	Apr-May	Fed: None Calif: S1 CRPR: 1B.2	Not expected. No or limited suitable soils, below elevation range. No documented occurrences within 5 mi. Not observed during surveys.
<i>Ambrosia pumila</i> San Diego ambrosia	Perennial rhizomatous herb. Sandy loam or clay soils, often in disturbed areas, sometimes alkaline. Chaparral, coastal scrub, valley and foothill grassland, and vernal pools at 20-487m elevation. Riverside, San Diego Co., Baja.	Apr-Oct	Fed: END Calif: S1 CRPR: 1B.1	Low. Potentially suitable habitat. No documented occurrences within 5 mi. Not observed during surveys. The site is not within critical habitat.
<i>Androsace elongata</i> ssp. <i>acuta</i> California androsace	Annual herb. Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon juniper woodland, valley and foothill grassland at 150-1305m elevation. Northern, Central, and Southern CA, Oregon, Baja.	Mar-Jun	Fed: None Calif: S3S4 CRPR: 4.2	Low. Potentially suitable habitat. Not observed during surveys.

Species	Growth Form, Habitat and Distribution	Flowering Season	Conservation Status	Potential for Occurrence
<i>Arenaria paludicola</i> Marsh sandwort	Perennial stoloniferous herb. Sandy soils and openings in freshwater or brackish marshes and swamps at 3-170m elevation. LA, San Bernardino, Santa Cruz, San Francisco, San Luis Obispo Co. and Sonora Mexico, Washington state.	May-Aug	Fed: END Calif: END, S1 CRPR: 1B.1	Not expected. No suitable habitat, above elevation range. One documented occurrence within 5 mi. Not observed during surveys.
<i>Artemisia palmeri</i> San Diego sagewort	Perennial deciduous shrub. Sandy, mesic areas in chaparral, coastal scrub, riparian scrub/woodland/forest at 15-915m elevation. San Diego, Riverside, San Bernardino Cos., Baja.	(Feb)May-Sep	Fed: None Calif: S3? CRPR: 4.2	Not expected. No documented occurrences within 5 mi. No or limited suitable habitat. Not observed during surveys.
<i>Asplenium vespertinum</i> Western spleenwort	Perennial rhizomatous fern. Rocky soils and moist, shady areas in chaparral, cismontane woodland, coastal scrub at 180-1000m elevation. Southern CA and Baja.	Feb-Jun	Fed: None Calif: S4 CRPR: 4.2	Not expected. No or minimal suitable habitat. Not observed during surveys.
<i>Astragalus hornii</i> var. <i>hornii</i> Horn's milk-vetch	Annual herb. Alkaline soils along lake margins, meadows and seeps and playas at 60-850m elevation. San Bernardino, Inyo, Kern, Tulare(?) Co and Nevada. San Joaquin Valley, South Coast, Western Transverse Ranges, W edge of the Mojave Desert.	May-Oct	Fed: None Calif: S1 CRPR: 1B.1	Not expected. No suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Atriplex coronata</i> var. <i>notatior</i> San Jacinto Valley crownscale	Annual herb. Alkaline soils in playas, mesic areas of valley and foothill grassland, vernal pools at 139-500m elevation. Western Riverside Co., Kern Co.	Apr-Aug	Fed: END Calif: S1 CRPR: 1B.1	Not expected. No suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Atriplex serenana</i> var. <i>davidsonii</i> Davidson's saltscale	Annual herb. Alkaline soils in coastal bluff scrub, coastal scrub, floodplains with alkali scrub, alkali playas, vernal pools, and alkali grasslands; Channel Islands, coastal and cismontane southern California; 10-200m elevation.	Apr - Oct	Fed: None Calif: S1 CRPR: 1B.2	Not expected. No or limited suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Berberis nevini</i> Nevin's barberry	Perennial evergreen shrub. Sandy or gravelly soils in chaparral, coastal scrub, cismontane woodland, riparian scrub at 70-825m elevation. Scattered localities in LA, San Bernardino, Riverside, & San Diego Co.	Mar-Jun can ID all year	Fed: END Calif: END, S1 CRPR: 1B.1	Low. Potentially suitable habitat. No documented occurrences within 5 mi. Conspicuous plant not observed during surveys. Site is not within critical habitat.



Species	Growth Form, Habitat and Distribution	Flowering Season	Conservation Status	Potential for Occurrence
<i>Brodiaea filifolia</i> Thread-leaved brodiaea	Perennial bulbiferous herb. Often on clay soils in chaparral openings, cismontane woodland, coastal scrub, playas, valley and foothill grassland, and vernal pools at 25-1120m elevation. LA, Orange, Riverside, San Bernardino, and San Diego Co; scattered in Southern CA foothills & valleys.	Mar-Jun	Fed: THR Calif: END, S2 CRPR: 1B.1	Not expected. No or limited suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Calochortus catalinae</i> Catalina mariposa-lily	Perennial bulbiferous herb. Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland at 15-700m elevation. LA, Orange, Santa Barbara, San Bernardino, San Diego, Ventura Co, some Channel Islands.	(Feb)Mar-Jun	Fed: None Calif: S3S4 CRPR: 4.2	Low. Potentially suitable habitat. Not observed during surveys.
<i>Calochortus palmeri</i> var. <i>palmeri</i> Palmer's mariposa-lily	Perennial bulbiferous herb. Mesic soils in chaparral, lower montane coniferous forest, meadows and seeps at 710-2390m elevation. Kern, LA, Riverside, Santa Barbara, San Bernardino, San Luis Obispo, Ventura Co.	Apr-Jul	Fed: None Calif: S2 CRPR: 1B.2 BLM: S	Not expected. No suitable habitat, below elevation range. No documented occurrences within 5 mi. Not observed during surveys.
<i>Calochortus plummerae</i> Plummer's mariposa lily	Perennial bulbiferous herb. Granitic rocky soils in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland at 100-1700m elevation. LA, Orange, Riverside, San Bernardino, Ventura Co.	May-Jul	Fed: None Calif: S4 CRPR: 4.2	<b>Moderate.</b> Potentially suitable habitat. Five documented occurrences within 5 mi., including just to the southeast in the Santa Ana River wash. Not observed during surveys.
<i>Carex comosa</i> Bristly sedge	Perennial rhizomatous herb. Coastal prairie, marshes and swamps (lake margins), valley and foothill grassland at 0-625m elevation.	May-Sep	Fed: None Calif: S2 CRPR: 2B.1	Not expected. No suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Castilleja cinerea</i> Ash-gray paintbrush	Hemiparasitic perennial herb. Mojavean desert scrub, meadows and seeps, pebble plain, pinyon and juniper woodland, clay openings in upper montane coniferous forest at 1800-2960m elevation. San Bernardino Mts.	Jun-Aug	Fed: THR Calif: S1S2 CRPR: 1B.2	Not expected. No suitable habitat, below elevation range. No documented occurrences within 5 mi. Not observed during surveys.

Species	Growth Form, Habitat and Distribution	Flowering Season	Conservation Status	Potential for Occurrence
<i>Castilleja lasiorhyncha</i> San Bernardino Mountain's owl's-clover	Hemiparasitic annual herb. Mesic areas in chaparral, montane meadows, pebble plains, riparian woodland, upper montane coniferous forest at 1300-2390m elevation. Moist edges of springs/seeps on clay soil, wet meadows, openings in coniferous forest. Riverside, San Diego, San Bernardino Co.; San Bernardino Mts, San Jacinto Mts.	May-Aug	Fed: None Calif: S2? CRPR: 1B.2	Not expected. No suitable habitat, below elevation range. No documented occurrences within 5 mi. Not observed during surveys.
<i>Castilleja montigena</i> Heckard's paintbrush	Hemiparasitic perennial herb. Pinyon and juniper woodland, upper and lower montane coniferous forest at 1950-2800m elevation. San Bernardino Mts.	May-Aug	Fed: None Calif: S3 CRPR: 4.3	Not expected. No suitable habitat, below elevation range. Not observed during surveys.
<i>Caulanthus simulans</i> Payson's jewelflower	Annual herb. Chaparral, coastal scrub, pinyon-juniper woodland at 90-2200m elevation. North-facing slopes and ridgelines on sandy-granitic soils, frequently on steep rocky slopes, in burned areas, or disturbed sites such as streambeds. Western Riverside Co., San Diego Co.	(Feb)Mar-May(Jun)	Fed: None Calif: S4 CRPR: 4.2	Low. Potentially marginal habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Centromadia pungens</i> ssp. <i>laevis</i> Smooth tarplant	Annual herb. Alkaline soils in chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland at 0-640m elevation. Also fallow fields, drainage ditches; primarily in SW Riverside Co. but a few sites in interior valleys of LA, San Bernardino, San Diego Co.	Apr-Sep	Fed: None Calif: S2 CRPR: 1B.1	Low. No or marginal suitable habitat. One documented occurrence within 5 mi., from 1992, exact location unknown but mapped by CNDDB in City Creek Wash in north Highland. Not observed during surveys.
<i>Chloropyron maritimum</i> ssp. <i>maritimum</i> Salt marsh bird's-beak	Hemiparasitic annual herb. Coastal salt marsh and swamp and coastal dunes. Limited to the higher zones of the salt marsh habitat. 0-30m elevation. Central and Southern CA, Baja.	May-Oct(Nov)	Fed: END Calif: END, S1 CRPR: 1B.2	Not expected. No suitable habitat. One documented occurrence within 5 mi., from 1888, exact location unknown but mapped by CNDDB in San Bernardino Valley. Not observed during surveys.
<i>Chorizanthe leptotheca</i> Peninsular spineflower	Annual herb. Granitic soils and alluvial fans in chaparral, coastal scrub, lower montane coniferous forest at 300-1900m elevation. Riverside, San Bernardino, San Diego Co., Baja.	May-Aug	Fed: None Calif: S3 CRPR: 4.2	<b>Low-moderate.</b> Potentially suitable habitat. One documented occurrence in CCH near Loma Linda in 1926. Not observed during surveys.
<i>Chorizanthe parryi</i> var. <i>parryi</i> Parry's spineflower	Annual herb. Sandy or rocky soils and openings in chaparral, cismontane woodland, coastal scrub, valley and foothill grassland at 275-1220m elev. LA, Riverside, San Bernardino Co.	Apr-Jun	Fed: None Calif: S2 CRPR: 1B.1 BLM: S	<b>Moderate.</b> Potentially suitable habitat. Multiple documented occurrences within 5 mi., most in Santa Ana River wash or Mill Creek. Closest is about 0.5 mi. south of project site. Not observed during surveys.

Species	Growth Form, Habitat and Distribution	Flowering Season	Conservation Status	Potential for Occurrence
<i>Chorizanthe xanti</i> var. <i>leucotheca</i> White-bracted spineflower	Annual herb. Sandy or gravelly soil in coastal scrub (alluvial fans), Mojavean desert scrub, pinyon and juniper woodlands at 300-1200m elevation. LA, Riverside, San Bernardino, San Diego Co.	Apr-Jun	Fed: None Calif: S3 CRPR: 1B.2	Low. Potentially suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Convolvulus simulans</i> Small-flowered morning-glory	Annual herb. Chaparral openings, coastal scrub, valley and foothill grassland at 30-740m elevation.	Mar-Jul	Fed: None Calif: S4 CRPR: 4.2	Low. Potentially suitable habitat. Not observed during surveys.
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i> Peruvian dodder	Annual parasitic vine. Freshwater marshes & swamps at 15-280m elevation. Scattered locations in No, Central, and Southern CA, various US states and Baja. Presumed extirpated from San Bernardino Co.	Jul-Oct	Fed: None Calif: SH CRPR: 2B.2	Not expected. No suitable habitat. One documented occurrence within 5 mi. from 1890 along Warm Creek and now extirpated by urbanization. Not observed during surveys.
<i>Cylindropuntia californica</i> var. <i>californica</i> Snake cholla	Perennial stem succulent (cactus). Chaparral, coastal scrub at 30-150m elevation. San Diego, Riverside Co., Baja.	Apr-May	Fed: None Calif: S1 CRPR: 1B.1	Low. Potentially suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Deinandra (Hemizonia) paniculata</i> Paniculate tarplant	Annual herb. Usually vernal mesic areas, sometimes sandy. Coastal scrub, valley and foothill grassland, vernal pools at 25-940m elevation. Orange, Riverside, Santa Barbara, San Bernardino, San Diego, San Luis Obispo Co., Baja.	(Mar) Apr-Nov	Fed: None Calif: S4 CRPR: 4.2	Low. Potentially suitable habitat. Not observed during surveys.
<i>Dodecahema leptoceras</i> Slender-horned spineflower	Annual herb. Open, sandy alluvial benches in valleys & canyons. Chaparral, coastal scrub, alluvial scrub, cismontane woodland at 200-760m elevation. LA, Riverside, San Bernardino Co. San Fernando Valley, Santa Ana River Valley, W Riverside Co.	Apr-Jun	Fed: END Calif: END, S1 CRPR: 1B.1	<b>Moderate.</b> Potentially suitable habitat. Six CNDDB documented occurrences within 5 mi. All within Santa Ana River wash. Closest in CNDDB is less than 0.5 mi. south of project site in sand mining area. Over 1,100 plants observed in 1992. Wash Plan surveys found 3 populations (33 plants total) about 800 feet east of Project site in 2012 and multiple other populations within 2 mi. of Project site. Not observed during surveys. No critical habitat has been designated for this species.
<i>Drymocallis cuneifolia</i> var. <i>cuneifolia</i> Wedgeleaf woodbeauty	Perennial herb. Sometimes on carbonate soils, riparian scrub, upper montane coniferous forest at 1800-2415m elevation. San Bernardino Mts.	Jun-Aug	Fed: None Calif: S1 CRPR: 1B.1	Not expected. No suitable habitat, well below elevation range. No documented occurrences within 5 mi. Not observed during surveys.

Species	Growth Form, Habitat and Distribution	Flowering Season	Conservation Status	Potential for Occurrence
<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i> Santa Ana River woollystar	Perennial herb. Sandy or gravelly soils in chaparral, coastal scrub (alluvial fans and plains) at 91-610m elevation. Orange, Riverside, San Bernardino Co., endemic to Santa Ana River watershed.	Apr-Sep	Fed: END Calif: END, S1 CRPR: 1B.1	<b>Moderate.</b> Potentially suitable habitat. Eight documented occurrences within 5 mi. Most within Santa Ana River wash. Closest is immediately adjacent to project site but is mapped as a huge area of scattered subpopulations (CNDDDB EO #5). Over 1,050 plants observed in 2018. CNDDDB notes that various portions of this occurrence have been extirpated. Not observed during surveys. Wash Plan shows occurrences within 400 feet of site. No critical habitat has been designated for this species.
<i>Eriophyllum lanatum</i> var. <i>obovatum</i> Southern Sierra woolly sunflower	Perennial herb. Sandy loam soils in upper and lower montane coniferous forest at 1114-2500m elevation. San Bernardino Mts., Fresno, Kern, Tulare Cos.	Jun-Jul	Fed: None CA: S4 CRPR: 4.3	Not expected. No suitable habitat, below elevation range. Not observed during surveys.
<i>Fimbristylis thermalis</i> Hot springs fimbristylis	Perennial rhizomatous herb. Found in meadows & seeps (alkaline, near hot springs) at 110-1340m elevation. Inyo, Kern, LA, Mono, San Bernardino Co.	Jul-Sep	Fed: None Calif: S1S2 CRPR: 2B.2	Not expected. No suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Frasera neglecta</i> Pine green-gentian	Perennial herb. Lower montane coniferous forest, pinyon and juniper woodland, upper montane coniferous forest at 1400-2500m elevation. Kern, LA, Santa Barbara, San Bernardino, Ventura Co.	May-Jul	Fed: None Calif: S4 CRPR: 4.3	Not expected. No suitable habitat, well below elevation range. Not observed during surveys.
<i>Galium californicum</i> ssp. <i>primum</i> Alvin meadow bedstraw	Perennial herb. Granitic, sandy soil in chaparral, lower montane coniferous forest at 1350-1700m elevation. Riverside, San Bernardino Co.	May-Jul	Fed: None Calif: S2 CRPR: 1B.2	Not expected. No or marginal suitable habitat, below elevation range. No documented occurrences within 5 mi. Not observed during surveys.
<i>Helianthus nuttallii</i> ssp. <i>parishii</i> Los Angeles sunflower	Perennial rhizomatous herb. Coastal salt and freshwater marshes and swamps at 10-1525m elevation. LA, Orange, San Bernardino Co. Last seen in 1937, presumed extinct.	Aug-Oct	Fed: None Calif: SH CRPR: 1A	Not expected. No suitable habitat. No documented occurrences within 5 mi. Not observed during surveys. Presumed extinct.
<i>Heuchera caespitosa</i> Urn-flowered alumroot	Perennial rhizomatous herb. Rocky soils in cismontane woodland, lower montane coniferous forest, montane riparian forest, upper montane coniferous forest at 1155-2650m elevation. Kern, LA, San Bernardino, Ventura Co.	May-Aug	Fed: None Calif: S3 CRPR: 4.3	Not expected. No suitable habitat, below elevation range. Not observed during surveys.

Species	Growth Form, Habitat and Distribution	Flowering Season	Conservation Status	Potential for Occurrence
<i>Heuchera parishii</i> Parish's alumroot	Perennial rhizomatous herb. Rocky, sometimes carbonate soils in alpine boulder and rock field, subalpine and montane coniferous forest at 1500-3800m elevation. Riverside and San Bernardino Cos.	Jun-Aug	Fed: None Calif: S3 CRPR: 1B.3	Not expected. No suitable habitat, below elevation range. No documented occurrences within 5 mi. Not observed during surveys.
<i>Hordeum intercedens</i> Vernal barley	Annual grass. Saline flats and depressions in valley and foothill grassland, vernal pools at 5-1000m elevation. Southern, Central CA, Channel Islands.	Mar-Jun	Fed: None Calif: S3S4 CRPR: 3.2	Not expected. No suitable habitat. Not observed during surveys.
<i>Horkelia cuneata</i> ssp. <i>puberula</i> Mesa horkelia	Perennial herb. Sandy or gravelly soils in maritime chaparral, cismontane woodland, coastal scrub at 70-810m elevation. LA, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, San Luis Obispo, Ventura Co.	Feb-Jul(Sep)	Fed: None Calif: S1 CRPR: 1B.1	Low. Potentially suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Hulsea vestita</i> ssp. <i>parryi</i> Parry's sunflower	Perennial herb. Granitic or carbonate soils, rocky areas, openings in pinyon and juniper woodlands, upper and lower montane coniferous forest at 1370-2895m elevation. Kern, LA, Mono, San Bernardino, Ventura Cos.	Apr-Aug	Fed: None Calif: S4 CRPR: 4.3	Not expected. No suitable habitat, well below elevation range. Not observed during surveys.
<i>Imperata brevifolia</i> California satintail	Perennial rhizomatous herb. Mesic areas in chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps (often alkali), riparian scrub at 0-1215m elevation. Scattered location throughout CA, SW US, Baja.	Sep-May	Fed: None Calif: S3 CRPR: 2B.1	Low. No or marginal suitable habitat. Two documented occurrences within 5 mi. First is from 1891 with vague location near Mentone and second is from 2010, about 2.3 mi. from site in urbanized area near City Creek. Not observed during surveys.
<i>Ivesia argyrocoma</i> var. <i>argyrocoma</i> Silver-haired ivesia	Perennial herb. Alkaline meadows and seeps, pebble plain, upper montane coniferous forest at 1463-2960m elevation. San Bernardino Mts.	(May)Jun-Aug	Fed: None Calif: S2 CRPR: 1B.1	Not expected. No suitable habitat, well below elevation range. No documented occurrences within 5 mi. Not observed during surveys.
<i>Juglans californica</i> Southern California black walnut	Perennial deciduous tree. Alluvial soils in chaparral, cismontane woodland, coastal scrub, riparian woodland at 50-900m elevation. LA, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, Ventura Co.	Mar-Aug	Fed: None Calif: S4 CRPR: 4.2	Low. Potentially suitable habitat. Conspicuous plant not observed during surveys.
<i>Juncus duranii</i> Duran's rush	Perennial rhizomatous herb. Mesic areas in lower montane coniferous forest, meadows and seeps, upper montane coniferous forest at 1769-2804m elevation. LA, Riverside, San Bernardino Co.	Jul-Aug	Fed: None Calif: S3 CRPR: 4.3	Not expected. No suitable habitat, well below elevation range. Not observed during surveys.

Species	Growth Form, Habitat and Distribution	Flowering Season	Conservation Status	Potential for Occurrence
<i>Lasthenia glabrata</i> spp. <i>coulteri</i> Coulter's goldfields	Annual herb. Coastal salt marshes and swamps, playas, vernal pools at 1-1220m elevation. Scattered locations in CA, Baja.	Feb-Jun	Fed: None Calif: S2 CRPR: 1B.1 BLM: S	Not expected. No suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Lepidium virginicum</i> var. <i>robinsonii</i> Robinson's pepper-grass	Annual herb. Chaparral, coastal scrub at 1-885m elevation. LA, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, Ventura Co., Santa Cruz Island.	Jan-Jul	Fed: None Calif: S3 CRPR: 4.3	<b>Low-moderate.</b> Potentially suitable habitat. One documented occurrence within 5 mi. Observation from 1987 and mapped by CNDDDB as best guess about 2.2 mi. east-southeast of project site. Not observed during surveys.
<i>Lilium humboldtii</i> ssp. <i>ocellatum</i> Ocellated Humboldt lily	Perennial bulbiferous herb. Openings in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland at 30-1800m elevation. LA, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, Ventura Co, some Channel Islands. Lower stream benches in riparian corridors in lower montane coniferous forest and coastal chaparral or shaded, dry slopes beneath a dense oak or conifer canopy.	Mar-Jul(Aug)	Fed: None Calif: S4? CRPR: 4.2	Low. No or marginal suitable habitat. Not observed during surveys.
<i>Lilium parryi</i> Lemon lily	Perennial bulbiferous herb. Mesic soils in upper and lower montane coniferous forest, riparian forest, meadows and seeps at 1220-2745m elevation. LA, Riverside, San Bernardino, San Diego Co, Arizona, Sonora Mex.	Jul-Aug	Fed: None Calif: S3 CRPR: 1B.2	Not expected. No suitable habitat, below elevation range. No documented occurrences within 5 mi. Not observed during surveys.
<i>Lycium parishii</i> Parish's desert-thorn	Perennial shrub. Arid slopes & sand flats in coastal scrub and Sonoran desert scrub at 135-1000m elevation. Imperial, Riverside, San Bernardino, San Diego Co., Arizona, Sonora Mexico. Presumed extirpated in San Bernardino Co.	Mar-Apr	Fed: None Calif: S1 CRPR: 2B.3	Low. No or marginal suitable habitat. No documented occurrences within 5 mi. Conspicuous plant not observed during surveys.
<i>Malacothamnus parishii</i> Parish's bush-mallow	Perennial deciduous shrub. Chaparral, coastal scrub at 305-455m elevation. San Bernardino Co. Presumed extirpated.	Jun-Jul	Fed: None Calif: SX CRPR: 1A	Not expected. Potentially suitable habitat. One documented occurrence within 5 mi. from 1895, exact location unknown, mapped by CNDDDB in general vicinity of San Bernardino. Possibly extirpated by urbanization. Not observed during surveys.

Species	Growth Form, Habitat and Distribution	Flowering Season	Conservation Status	Potential for Occurrence
<i>Monardella macrantha</i> ssp. <i>hallii</i> Hall's monardella	Perennial rhizomatous herb. Broadleaf upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland at 730-2195m elevation. LA, Orange, Riverside, San Bernardino, San Diego Co.	Jun-Oct	Fed: None Calif: S3 CRPR: 1B.3	Not expected. No or marginal suitable habitat, below elevation range. No documented occurrences within 5 mi. Not observed during surveys.
<i>Monardella pringlei</i> Pringle's monardella	Annual herb. Sandy soil in coastal scrub at 300-400m elevation. Riverside, San Bernardino Co. Presumed extirpated.	May-Jun	Fed: None Calif: SX CRPR: 1A	Not expected. Potentially suitable habitat. No documented occurrences within 5 mi. Presumed extirpated. Not observed during surveys.
<i>Muhlenbergia californica</i> California muhly	Perennial rhizomatous herb. Mesic areas, seeps, and streambanks in chaparral, coastal scrub, lower montane coniferous forest at 100-2000m elevation. LA, Riverside, San Bernardino Co.	Jun-Sep	Fed: None Calif: S4 CRPR: 4.3	Not expected. No or marginal suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Muilla coronata</i> Crowned muilla	Perennial bulbiferous herb. Chenopod scrub, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland at 670-1960m elevation. Inyo, Kern, LA, San Bernardino, Tulare Cos., Nevada.	Mar-Apr(May)	Fed: None Calif: S3 CRPR: 4.2	Not expected. No suitable habitat, below elevation range. Not observed during surveys.
<i>Myosurus minimus</i> ssp. <i>apus</i> Little mouseltail	Annual herb. Valley and foothill grasslands, alkaline vernal pools at 20-640m elevation. Locations in northern, central, and southern CA, Oregon, Baja.	Mar-Jun	Fed: None Calif: S2 CRPR: 3.1	Not expected. No suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Nama stenocarpa</i> Mud nama	Annual/perennial herb. Found in marshy habitat on lake margins and riverbanks at 5-500m elevation. S CA, San Clemente Island, central CA, AZ, TX, Baja, Sonora.	Mar-Oct	Fed: None Calif: S1S2 CRPR: 2B.2	Not expected. No suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Nasturtium (Rorippa) gambelii</i> Gambel's water cress	Perennial rhizomatous herb. Freshwater or brackish marshes and swamps at 5-330m elevation. LA, Orange, Santa Barbara, San Bernardino, San Diego, San Luis Obispo Co. Presumed extirpated in San Bernardino Co.	Apr-Oct	Fed: END Calif: THR, S1 CRPR: 1B.1	Not expected. No suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Packera bernardina</i> San Bernardino ragwort	Perennial herb. Mesic, sometimes alkaline, meadows and seeps, pebble plain, upper montane coniferous forest at 1800-2300m elevation. LA, San Bernardino Cos. San Bernardino Mts., San Gabriel Mts.	May-Jul	Fed: None Calif: S2 CRPR: 1B.2	Not expected. No suitable habitat, well below elevation range. No documented occurrences within 5 mi. Not observed during surveys.



Species	Growth Form, Habitat and Distribution	Flowering Season	Conservation Status	Potential for Occurrence
<i>Perideridia parishii</i> ssp. <i>parishii</i> Parish's yampah	Perennial herb. Meadows and seeps, upper and lower montane coniferous forest at 1465-3000m elevation. San Bernardino Mts., SW US.	Jun-Aug	Fed: None Calif: S2 CRPR: 2B.2	Not expected. No suitable habitat, well below elevation range. No documented occurrences within 5 mi. Not observed during surveys.
<i>Phacelia mohavensis</i> Mojave phacelia	Annual herb. Sandy or gravelly soil in cismontane woodland, lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland at 1400-2500m elevation. LA, San Bernardino, Tulare, Ventura Co.	Apr-Aug	Fed: None Calif: S4 CRPR: 4.3	Not expected. No suitable habitat, well below elevation range. Not observed during surveys.
<i>Pickeringia montana</i> var. <i>tomentosa</i> Woolly chaparral-pea	Evergreen shrub. Gabbroic, granitic, or clay soils in chaparral at 0-1700m elevation. LA, Riverside, Orange, San Bernardino, San Diego Co.	May-Aug	Fed: None Calif: S3S4 CRPR: 4.3	Not expected. No suitable habitat. Not observed during surveys.
<i>Piperia leptopetala</i> Narrow-petaled rein orchid	Perennial herb. Cismontane woodland, upper and lower montane coniferous forest at 380-2225m elevation.	May-Jul	Fed: None Calif: S4 CRPR: 4.3	Not expected. No suitable habitat. Not observed during surveys.
<i>Ribes divaricatum</i> var. <i>parishii</i> Parish's gooseberry	Perennial deciduous shrub. Riparian woodland at 65-300m elevation. LA, San Bernardino Co. Extirpated in CA.	Feb-Apr	Fed: None Calif: SX CRPR: 1A	Not expected. No suitable habitat. One documented occurrence within 5 mi. along Warm Creek, from 1917 and likely extirpated by urbanization. Not observed during surveys.
<i>Romneya coulteri</i> Coulter's matilija	Large perennial rhizomatous herb. Often in burn areas in chaparral, coastal scrub at 20-1200m elevation. LA, Orange, Riverside, San Diego Co.	Mar-Jul(Aug)	Fed: None Calif: S4 CRPR: 4.2	Low. Potentially suitable habitat. Conspicuous plant not observed during surveys.
<i>Rupertia rigida</i> Parish's rupertia	Perennial herb. Chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, pebble plain, valley and foothill grassland at 700-2500m elevation. LA, Riverside, San Bernardino, San Diego Cos., Baja.	Jun-Aug	Fed: None Calif: S4 CRPR: 4.3	Not expected. No suitable habitat, below elevation range. Not observed during surveys.
<i>Schoenus nigricans</i> Black bog-rush	Perennial herb. Marshes and swamps, often alkaline, at 150-2000m elevation. San Bernardino, Inyo Co, Florida, Nevada, Texas, South America.	Aug-Sep	Fed: None Calif: S2 CRPR: 2B.2	Not expected. No suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Senecio aphanactis</i> Chaparral ragwort	Annual herb. Alkaline soils (sometimes) in chaparral, cismontane woodland, coastal scrub at 15-800m elevation. Locations in northern, central, southern CA.	Jan-Apr(May)	Fed: None Calif: S2 CRPR: 2B.2	Low. Potentially suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.

Species	Growth Form, Habitat and Distribution	Flowering Season	Conservation Status	Potential for Occurrence
<i>Senecio astephanus</i> San Gabriel ragwort	Perennial herb. Rocky slopes in coastal bluff scrub, chaparral at 400-1500m elevation. Kern, LA, Monterey, Santa Barbara, San Bernardino, San Diego, San Luis Obispo Co.	May-Jul	Fed: None Calif: S3 CRPR: 4.3	Not expected. No suitable habitat. Not observed during surveys.
<i>Sidalcea hickmanii</i> ssp. <i>parishii</i> Parish's checkerbloom	Perennial herb. Chaparral, cismontane woodland, lower montane coniferous forest at 1000-2499m elevation. Kern, Santa Barbara, San Bernardino, San Luis Obispo Cos. San Bernardino Mts.	(May)Jun-Aug	Fed: None Calif: Rare, S1 CRPR: 1B.2 BLM: S	Not expected. No suitable habitat, below elevation range. No documented occurrences within 5 mi. Not observed during surveys.
<i>Sidalcea malviflora</i> ssp. <i>dolosa</i> Bear Valley checkerbloom	Perennial herb. Meadows and seeps, riparian woodland, meadows and seeps in upper and lower montane coniferous forest at 1495-2685m elevation. San Bernardino Mts.	May-Aug	Fed: None Calif: S2 CRPR: 1B.2	Not expected. No suitable habitat, well below elevation range. One documented occurrence within 5 mi. from 1926 with vague location. Mapped by CNDDB along City Creek. Not observed during surveys.
<i>Sidalcea neomexicana</i> Salt Spring checkerbloom	Perennial herb. Alkaline, mesic soils in chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas at 15-1530m elevation. Kern, LA, Orange, Riverside, San Bernardino, San Diego, Ventura Co, western US, Sonora Mex.	Mar-Jun	Fed: None Calif: S2 CRPR: 2B.2	Low. No or marginal suitable habitat. Two documented occurrences within 5 mi. First is a 1906 record in Sand Canyon, exact location unknown. The second is a 2011 photo taken along Mill Creek, exact location unknown. Not observed during surveys.
<i>Sidalcea pedata</i> Bird-foot checkerbloom	Perennial herb. Mesic meadows and seeps, pebble plain at 1600-2500m elevation. San Bernardino Mts.	May-Aug	Fed: END Calif: END, S1 CRPR: 1B.1	Not expected. No suitable habitat, below elevation range. No documented occurrences within 5 mi. Not observed during surveys.
<i>Sidothea caryophylloides</i> Chickweed oxytheca	Annual herb. Sandy soils in lower montane coniferous forest at 1114-2600m elevation. LA, Riverside, San Bernardino, Tulare, Ventura Co.	Jul-Sep(Oct)	Fed: None Calif: S4 CRPR: 4.3	Not expected. No suitable habitat, below elevation range. Not observed during surveys.
<i>Sphenopholis obtusata</i> Prairie wedge grass	Perennial herb. Mesic areas in cismontane woodland, meadows and seeps at 300-2000m elevation. Locations in northern, central, southern California, throughout US, Baja and Sonora Mex.	Apr-Jul	Fed: None Calif: S2 CRPR: 2B.2	Not expected. No suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Streptanthus bernardinus</i> Laguna Mountains jewelflower	Perennial herb. Chaparral, lower montane coniferous forest at 670-2500m elevation. Riverside, San Bernardino, San Diego Co.	May-Aug	Fed: None Calif: S3S4 CRPR: 4.3	Not expected. No suitable habitat, somewhat below elevation range. No documented occurrences within 5 mi. Not observed during surveys.
<i>Streptanthus campestris</i> Southern jewelflower	Perennial herb. Rocky soils in chaparral, lower montane coniferous forest, pinyon and juniper woodland at 900-2300m elevation. Imperial, Santa Barbara, Ventura, San Bernardino, Riverside, San Diego Co, Baja.	(Apr)May-Jul	Fed: None Calif: S3 CRPR: 1B.3	Not expected. No suitable habitat, below elevation range. No documented occurrences within 5 mi. Not observed during surveys.

Species	Growth Form, Habitat and Distribution	Flowering Season	Conservation Status	Potential for Occurrence
<i>Symphyotrichum defoliatum</i> San Bernardino aster	Perennial rhizomatous herb. Near ditches, streams, springs in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grasslands (vernally mesic) at 2-2040m elevation. Southern and Central California.	Jul-Nov	Fed: None Calif: S2 CRPR: 1B.2 BLM: S	Not expected. No suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Thelypteris puberula</i> var. <i>sonorensis</i> Sonoran maiden fern	Perennial rhizomatous herb. Meadows, seeps/streambanks at 50-610m elevation; Coast Ranges, coastal foothills of the Santa Monica, San Gabriel, San Bernardino Mountains, desert foothills of San Jacinto Mountains; to Arizona, Baja, Sonora.	Jan-Sep	Fed: None Calif: S2 CRPR: 2B.2	Not expected. No suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
<i>Trichocoronis wrightii</i> var. <i>wrightii</i> Wright's trichocoronis	Annual herb. Alkaline soils in meadows and seeps, marshes and swamps, riparian forest, vernal pools at 5-435m elevation. Riverside Co., Central Valley, Texas, Baja.	May-Sep	Fed: None Calif: S1 CRPR: 2B.1	Not expected. No suitable habitat. No documented occurrences within 5 mi. Not observed during surveys.
References: CDFW (2020a, 2020b), CNPS (2020), USFWS (2020a).				

Species	Habitat and Distribution	Conservation Status	Potential for Occurrence
<b>Invertebrates</b>			
<i>Bombus crotchii</i> Crotch bumble bee	Coastal CA E to Sierra-Cascade crest & S into Mexico. Open grassland and scrub habitats. Food plant genera include <i>Antirrhinum</i> , <i>Asclepias</i> , <i>Chaenactis</i> , <i>Lupinus</i> , <i>Medicago</i> , <i>Salvia</i> , <i>Phacelia</i> , <i>Clarkia</i> , <i>Dendromecon</i> , <i>Eschscholzia</i> , and <i>Eriogonum</i> . Lives in colonies that may be underground in rodent holes or above ground in rock piles, tree cavities, etc.	Fed: None Calif: CanE, S1S2	<b>Moderate.</b> Potentially suitable habitat. Many food plant species present. No documented occurrences within 5 mi. but many scattered occurrences throughout region.
<i>Bombus morrisoni</i> Morrison bumble bee	From the Sierra-Cascade ranges eastward across the intermountain west. Food plant genera include <i>Cirsium</i> , <i>Cleome</i> , <i>Helianthus</i> , <i>Lupinus</i> , <i>Chrysothamnus</i> , and <i>Mellilotus</i> . Nests primarily underground and in structures and grass hummocks.	Fed: None Calif: SA, S1S2	Low. No documented occurrences within 5 mi. Occurrences in region are in San Bernardino and San Gabriel Mts.
<i>Carolella busckana</i> Busck's gallmoth	Beaches, salt marshes, sand dunes, and coastal scrub dunes, presumed extirpated.	Fed: None Calif: SA, SH	Not expected. No suitable habitat. No documented occurrences within 5 mi. Presumed extirpated.
<i>Ceratochrysis longimala</i> Desert cuckoo wasp	Chaparral, scrub habitats, juniper. LA, Riv, Ventura cos. Possibly extirpated.	Fed: None Calif: SA, S1	Not expected. Potentially suitable habitat. No documented occurrences within 5 mi. Possibly extirpated.
<i>Euchloe hyantis andrewsi</i> Andrew's marble butterfly	Rocky canyons, cliffs, moraines, & gravelly flats. Larvae host plants – native mustards, especially <i>Streptanthus</i> sp. S Oregon S through CA W of Sierra Nevada crest to N Baja California.	Fed: None Calif: SA, S1	Not expected. No suitable habitat. No documented occurrences within 5 mi.
<i>Euphydryas editha quino</i> Quino checkerspot butterfly	Coastal scrub, open chaparral, juniper woodland, native grassland. Western Riverside Co., southern San Diego Co., Baja. Flight season from mid-Jan to late May. Host plants are dwarf plantain ( <i>Plantago erecta</i> ), purple owl's clover ( <i>Castilleja exserta</i> ), white snapdragon ( <i>Antirrhinum coulterianum</i> ), wooly plantain ( <i>Plantago patagonica</i> ), thread-leaved bird's beak ( <i>Cordylanthus rigidus</i> ). USFWS considers species extirpated in San Bernardino Co.	Fed: END Calif: SA, S1S2	Not expected. Potentially suitable habitat and one host plant species ( <i>Plantago erecta</i> ) present on the project site. No documented occurrences within 5 mi. Considered extirpated in San Bernardino County.
<i>Rhaphiomidas terminatus abdominalis</i> Delhi sands flower-loving fly	Delhi fine sands, often with unconsolidated dunes present. SW San Bernardino Co. & NW Riverside Co.	Fed: END Calif: SA, S1	Not expected. No Delhi soils mapped on the site. Multiple documented occurrences within 5 mi., all to the west.

Species	Habitat and Distribution	Conservation Status	Potential for Occurrence
<i>Streptocephalus woottoni</i> Riverside fairy shrimp	Endemic to Western Riverside, Orange, and San Diego counties in areas of tectonic swales/earth slump basins in grassland and coastal sage scrub. Coastal scrub, valley & foothill grassland, vernal pool, wetland. Inhabit seasonally astatic pools filled by winter/spring rains. Hatch in warm water later in the season. Generally restricted to pools greater than 12 inches deep.	Fed: END Calif: SA, S1S2	Not expected. No suitable habitat. No documented occurrences within 5 mi.
<b>Fish</b>			
<i>Catostomus santaanae</i> Santa Ana sucker	Small to medium permanent streams. LA & San Gabriel drainage, lower Santa Ana River.	Fed: THR Calif: SA, S1	Absent. No suitable perennial stream habitat present. The site is not within critical habitat.
<i>Gila orcuttii</i> Arroyo chub	Slow-moving or backwater sections of warm/ cool streams with mud or sand substrates. LA, San Gabriel, San Luis Rey, Santa Ana & Santa Margarita Riv & Malibu & San Juan creeks.	Fed: None Calif: SSC, S2	Absent. No suitable perennial stream habitat present.
<i>Oncorhynchus mykiss irideus</i> pop. 10 Steelhead – southern California DPS	South coast flowing waters. Fed listing refers to pops from Santa Maria River south to southern extent of range (San Mateo Creek in San Diego Co.)	Fed: END Calif: SA, S1	Absent. No suitable perennial stream habitat present.
<i>Rhinichthys osculus</i> “subspecies 3” Santa Ana speckled dace	Endemic to Santa Ana & San Gabriel River watersheds, historic in Big Tujunga Cyn. Santa Ana River populations in lower San Bernardino Mtn. foothills & washes.	Fed: None Calif: SSC, S1	Absent. No suitable perennial stream habitat present.
<b>Amphibians</b>			
<i>Batrachoseps gabrieli</i> San Gabriel slender salamander	Lives & lays eggs in moist places on land. Found under large rocks, logs, & bark. A relict species, found only in a few locations in San Gabriel Mts. & W end of San Bern. Mts. 2800-7800 ft. elev. Inhabits forested talus slopes, & shaded areas near a stream.	Fed: None Calif: SA, S2S3	Not expected. No suitable habitat, well below elevation range.
<i>Coleonyx variegatus abbotti</i> San Diego banded gecko	Coastal and cismontane southern California. Found in granite or rocky outcrops in coastal scrub and chaparral.	Fed: None Calif: SSC, S1S2	Low. No or limited suitable habitat. No documented occurrences within 5 mi. Not observed during surveys but is secretive.

Species	Habitat and Distribution	Conservation Status	Potential for Occurrence
<i>Rana draytonii</i> California red-legged frog	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	Fed: THR Calif: SSC, S2S3	Absent. No suitable aquatic habitat.
<i>Rana muscosa</i> Southern mountain yellow-legged frog	Always encountered within a few feet of water. Tadpoles may require up to 2 years to complete development.	Fed: END Calif: END, WL, S1	Absent. No suitable aquatic habitat.
<i>Spea hammondi</i> Western spadefoot toad	Cismontane woodland, coastal scrub, valley & foothill grassland, vernal pool. Breeds in quiet streams & vernal pools, burrows beneath sand during dry season. W CA, Central Valley to Baja California. From near sea level up to 4,500 ft elev.	Fed: None Calif: SSC, S3	Not expected. No suitable aquatic breeding habitat on the site. Three documented occurrences within 5 mi. From 2017 at Santa Ana River percolation basins, about 2 mi. east of project site. From 2014 east of these percolation basins, about 3.2 mi east of site. From 2017 at flood control basin about 4.2 mi. southeast of site.
<b>Reptiles</b>			
<i>Anniella stebbinsi</i> ( <i>Anniella pulchra pulchra</i> ) Southern California legless lizard	Various habitats, mainly shrublands, <6500 ft. elev. Coast Ranges from Bay area to N Baja CA, SW Sierra Nevada, parts of the Central Valley, Transverse & Peninsular Ranges.	Fed: None Calif: SSC, S3	<b>High.</b> Potentially suitable habitat. Seven documented occurrences within 5 mi. including one just to the west of the site. Not observed during surveys but is fossorial/secretive.
<i>Arizona elegans occidentalis</i> California glossy snake	Arid scrub, rocky washes, grasslands, chaparral, often with loose or sandy soils. Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular Ranges, south to Baja California. Sea level to 7200' elev.	Fed: None Calif: SSC, S2	<b>High.</b> Potentially suitable habitat. Three documented occurrences within 5 mi. including one from 2015 immediately east of the project site. Not observed during surveys.
<i>Aspidoscelis hyperythra</i> Orange-throated whiptail	Low-elevation coastal scrub, chaparral, valley-foothill hardwood, sea level to 1040m. Sandy areas, patches of rock. S CA, west of desert to tip of Baja CA.	Fed: None Calif: WL, S2S3	<b>Low-moderate.</b> Potentially suitable habitat. One documented occurrence within 5 mi. from 1991, about 4.2 mi. southeast of site in Crafton Hills. Not observed during surveys.
<i>Aspidoscelis tigris stejnegeri</i> Coastal whiptail	Primarily hot, dry open areas with sparse foliage, chaparral, woodland, riparian; coastal So CA, mostly west of Peninsular Ranges and south of Transverse Ranges, north into Ventura County, below $\pm 7000'$ elev. and into Baja.	Fed: None Calif: SSC, S3	<b>Occurs.</b> Observed onsite during multiple surveys.

Species	Habitat and Distribution	Conservation Status	Potential for Occurrence
<i>Charina umbratica</i> Southern rubber boa	Found in a few locales in San Bernardino & San Jacinto Mtn. ranges. Woodland & coniferous forest. Usually found within several hundred meters of water. 5000-9150 ft. elev.	Fed: None Calif: THR, S2S3	Not expected. No suitable habitat, well below elevation range.
<i>Crotalus ruber</i> Red-diamond rattlesnake	Desert scrub, thorn scrub, chaparral below 4,000ft. San Bernardino County S through most of Baja California, Mexico.	Fed: None Calif: SSC, S3	<b>High.</b> Potentially suitable habitat. Two documented occurrences within 5 mi., from 2015 and 2017, both in Santa Ana River wash area and both within about a mile of the project site in areas with similar habitat.
<i>Diadophis punctatus modestus</i> San Bernardino ringneck snake	Open relatively rocky areas within valley-foothill locales, mixed chaparral/annual grasslands. Prefers moist habitats. W San Diego & Riv. Cos., SW San Bern., Vent. & LA Cos., NW Baja CA.	Fed: None Calif: SA, S2?	Low. Potentially marginal habitat. No documented occurrences within 5 mi. Not observed during surveys, but is secretive and nocturnal.
<i>Emys marmorata</i> Western pond turtle	Perennial ponds, streams, marshes, irrigation ditches. Coastal S & cent. CA, NW Baja CA, below about 4800 ft. elev. (few higher elev. pops.)	Fed: None Calif: SSC, S3	Absent. No aquatic habitat.
<i>Phrynosoma blainvillii</i> Coast horned lizard	Coastal sage scrub, low elevation chaparral, annual grassland, oak & riparian woodlands, coniferous forest. SW California to NW Baja California, Mexico.	Fed: None Calif: SSC, S3S4	<b>High.</b> Potentially suitable habitat. Four documented occurrences within 5 mi., including one less than a mile from the site in similar habitat. Not observed during surveys.
<i>Salvadora hexalepis virgulata</i> Coast patch-nosed snake	Shrublands, washes, sandy flats, rocky areas; Santa Barbara county through southwest Calif., to northwest Baja Calif.	Fed: None Calif: SSC, S2S3	<b>Moderate.</b> Potentially suitable habitat. No documented occurrences within 5 mi. One occurrence from 2014 along Mill Creek about 6.3 mi. east-southeast of the site. Not observed during surveys.
<i>Thamnophis hammondi</i> Two-striped gartersnake	Usually in or near perennial fresh water & adjacent riparian habitat, pools in streams. SW CA & NW Baja California.	Fed: None Calif: SSC, S3S4	<b>High.</b> No suitable aquatic habitat, but CNDDDB record on the site. Five documented occurrences within 5 mi. One from 2014 along Greenspot Road on north-central edge of site. Record indicates that nearest water was a storm drain 0.2 mi. away. Second record about 0.4 mi. east of site in similar habitat. Not observed during surveys.



Species	Habitat and Distribution	Conservation Status	Potential for Occurrence
<b>Birds</b>			
<i>Accipiter cooperii</i> Cooper's hawk	Cismontane woodland, riparian forest, riparian woodland, upper montane coniferous forest. Forages in open areas over scrublands; California, Mexico, Central America. Nests in trees, often in dense woods. Year-round resident in most of southern California range.	Fed: None Calif: WL, S4	<b>Occurs (foraging); high (nesting).</b> Observed on site during surveys. Suitable nesting habitat present, particularly in eucalyptus groves.
<i>Agelaius tricolor</i> Tricolored blackbird	Breeds colonially in freshwater marshes, nomadic among marshes and fields in winter; almost completely endemic to Calif. Year-round resident in southern California range.	Fed: BCC Calif: THR, SSC, S1S2 BLM: S	Not expected. No suitable foraging or breeding habitat. No documented occurrences (nesting colony) or eBird observations within 5 mi. Not observed during surveys.
<i>Aimophila ruficeps canescens</i> Southern California rufous-crowned sparrow	Sparse, mixed chaparral, scrub, rocky, brushy slopes. Central California to Baja California. Year-round resident in southern California range.	Fed: None Calif: WL, S3	<b>Moderate (foraging and nesting).</b> No or marginal suitable habitat. No documented occurrences within 5 mi. Three eBird observations in Santa Ana wash within 2-3 mi. southeast of site. Not observed during surveys.
<i>Aquila chrysaetos</i> Golden eagle	Found in a variety of habitats from sea level to 11,500 feet, rugged open habitats preferred. Large platform nests constructed on secluded cliffs, large trees, and occasionally structures (i.e., electrical transmission towers).	Fed: BGEPA, BCC Calif: FP, WL, S3	Low (foraging); not expected (nesting). Potential foraging habitat, but site is likely avoided due to adjacent urbanization. No suitable nesting habitat. No documented occurrences (nesting and wintering) within 5 mi. Multiple eBird observation in region. Not observed during surveys.
<i>Ardea herodias</i> Great blue heron	Brackish and freshwater marshes, estuary, riparian forest, wetland. Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Fed: none Calif: SA, S4	Not expected (foraging and nesting). No suitable habitat. Observed flying over the site during surveys but unlikely to utilize the site.
<i>Artemisiospiza belli belli</i> Bell's sage sparrow	Sage scrub and chaparral communities. Nests mainly in shrubs, also in grass, and occasionally on ground under shrub. Found in coastal sage scrub in south of range. Central Washington southward to Baja California, Mexico. Year-round resident in southern CA.	Fed: BCC Calif: WL, S3	<b>Moderate (foraging and nesting).</b> Potentially suitable habitat. No documented occurrences within 5 mi. Two eBird observations in Santa Ana wash within 2-3 mi. southeast of site. Not observed during surveys.
<i>Athene cunicularia</i> Burrowing owl	Nests in rodent burrows, usually in grasslands. Forages in open habitat; increasingly uncomm. in S CA. Occurs through W US/Mex. Sparse in desert scrub but common around irrigated lands.	Fed: BCC Calif: SSC, S3 BLM: S	<b>Low-moderate.</b> Potentially suitable habitat present. Two documented occurrences and multiple eBird observations near San Bernardino Airport about 3.5 mi. west of site. No owls or owl sign observed during multiple surveys.

Species	Habitat and Distribution	Conservation Status	Potential for Occurrence
<i>Baeolophus inornatus</i> Oak titmouse	Open pine or mixed oak-pine forest, juniper woodland, pinyon or juniper mixed with Joshua trees. Not migratory.	Fed: BCC Calif: SA, S4	<b>Occurs (foraging); high (nesting).</b> Observed during surveys.
<i>Buteo regalis</i> Ferruginous hawk	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Great Basin grassland and scrub, pinyon and juniper woodlands, valley and foothill grassland. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles. Does not breed in southern CA.	Fed: BCC Calif: WL, S3S4	<b>High (foraging);</b> absent (nesting). No documented occurrences (wintering) within 5 mi., but several eBird observations in Santa Ana wash, closest is 0.3 mi. west. Not observed during surveys.
<i>Buteo swainsoni</i> Swainson's hawk	Grassland/agricultural, large trees for nesting, desert scrub with Joshua tree & Fremont cottonwood overstory, near streams & open fields. Breeds overwhelmingly in Great Basin & Central Valley of California. Seen in migration in southern California. CNDDDB only tracks nesting.	Fed: BCC Calif: THR, S3	Low (foraging); absent (nesting); may be seen in migration. No documented occurrences (nesting) within 5 mi. Two eBird observation in Santa Ana wash. Not observed during surveys.
<i>Calypte costae</i> Costa's hummingbird	Desert and coastal scrub and chaparral in desert, semi-desert and mountain foothills and seasonally in mountains, adjacent open meadows and gardens. Found in NV, UT, AZ, CA and Mexico. Year-round resident in southern CA. CNDDDB only tracks nesting.	Fed: BCC Calif: SA, S4	<b>Occurs (foraging); high (nesting).</b> Observed during surveys.
<i>Campylorhynchus brunneicapillus</i> <i>sandiegensis</i> Coastal cactus wren	Desert scrub and coastal sage scrub with cactus patches; Southern CA and northwestern Baja. Non-migratory. Pairs defend territories throughout the year. CNDDDB only tracks this species in San Diego and Orange Cos.	Fed: BCC Calif: SSC, S3	<b>Low to moderate (foraging);</b> low (nesting). No suitable cactus patches for nesting. Several eBird observations in Santa Ana Wash. Several occurrences noted in Wash Plan south of Project site and within 0.5 mi., nearest is about 500 ft. and suitable cactus patches mapped just south of Project site. Not observed during surveys.
<i>Chamaea fasciata</i> Wrentit	Chaparral, oak woodland, shrublands, western CA, northwestern Baja, western Oregon. Year-round resident in southern CA range. CNDDDB does not track this species.	Fed: BCC Calif: None	<b>Moderate.</b> Potentially suitable habitat. Multiple eBird observations in and near Santa Ana wash.

Species	Habitat and Distribution	Conservation Status	Potential for Occurrence
<i>Coccyzus americanus occidentalis</i> Western yellow-billed cuckoo	Valley foothill and desert riparian. Inhabits extensive deciduous riparian thickets or forests with dense, low-level or understory foliage, and which abut on slow-moving watercourses, backwaters, or seeps. Willow almost always a dominant component of the vegetation. Most of the United States (excluding the NW states) & into Baja California & northern Mexico.	Fed: THR, BCC Calif: END, S1	Not expected. No suitable habitat. One documented occurrence (nesting) within 5 mi. along Santa Ana River about 3.6 mi. west-southwest of the site. No eBird observations in vicinity. Not observed during surveys.
<i>Dryobates (Picoides) nuttallii</i> Nuttall's woodpecker	Found in low elevation riparian and oak woodlands; rarely in conifers. Central Valley, Transverse and Peninsular Ranges, Coast Ranges north to Sonoma Co., lower portions of the Cascade Range and Sierra Nevada. Year-round resident throughout coastal mountains of CA. Not tracked in CNDDDB.	Fed: BCC Calif: None	<b>Occurs (foraging); high (nesting).</b> Observed during surveys. Suitable nesting habitat present.
<i>Elanus leucurus</i> White-tailed kite	Breeds in woodlands and riparian forests, forages over open terrain; Pacific Coast (Calif, northern Baja, Oregon), other scattered localities. Year-round resident in southern CA range. CNDDDB only tracks nesting.	Fed: None Calif: FP, S3S4 BLM: S	<b>Low-moderate.</b> Potentially suitable foraging habitat. Potentially suitable nest trees present. No documented occurrences (nesting) within 5 mi. Multiple eBird observations in Santa Ana wash. Not observed during surveys.
<i>Empidonax traillii extimus</i> Southwestern willow flycatcher	Dense riparian forests, wet mountain meadow systems with standing water for at least part of the breeding season (May to July) & with ample numbers of willow & other associated trees & shrubs. Rare & local is S CA. SW US & N Baja California. CNDDDB only tracks nesting.	Fed: END Calif: END, S1	Not expected. No suitable habitat. No documented occurrences (nesting) within 5 mi. eBird observations in region. Not observed during surveys.
<i>Eremophila alpestris actia</i> California horned lark	Variety of open habitats with low growing vegetation or bare ground, grasslands, rangelands, "bald" hills, mtn. meadows, open coastal plains, fallow fields, alkali flats. Within coastal Sonoma Co. to San Diego Co., San Joaquin Valley & E to foothills.	Fed: None Calif: WL, S4	<b>Moderate.</b> Potentially suitable habitat. One documented occurrence within 5 mi. from 2001 in an agricultural field (now developed) about 4.2 mi. southwest of site. Not observed during surveys.
<i>Falco columbarius</i> Merlin	Woodlands, grasslands, agricultural fields, and areas around livestock feed lots. Dense tree stands close to bodies of water are needed for cover. Uses a wide variety of habitats. Winter migratory bird to southern California.	Fed: None Calif: WL, S3S4	<b>Moderate (foraging); absent (nesting).</b> Potentially suitable foraging habitat. No documented occurrences (wintering) within 5 mi. One eBird observation in Santa Ana wash; multiple observations in region. Not observed during surveys.

Species	Habitat and Distribution	Conservation Status	Potential for Occurrence
<i>Haliaeetus leucocephalus</i> Bald eagle	Breed in large trees, usually near major rivers or lakes. Winters more widely. Wide but scattered distribution in N America, esp. coastal regions.	Fed: Delisted, BGEPA, BCC Calif: END, FP, S3 BLM: S	Not expected. No suitable foraging or nesting habitat. No documented occurrences (nesting and wintering) within 5 mi. or eBird observations in vicinity. Not observed during surveys.
<i>Icteria virens</i> Yellow-breasted chat	Summer resident, inhabits riparian thickets of willow near watercourses, low dense riparian willow. Migrant and summer resident in CA, northern CA, central coast, eastern Central Valley, coastal southern CA, Colorado River, western US, Canada, Mexico, Central America. CNDDDB only tracks nesting.	Fed: None Calif: SSC, S3	Not expected. No suitable habitat. No documented occurrences (nesting) within 5 mi. or eBird observations in vicinity. Not observed during surveys.
<i>Lanius ludovicianus</i> Loggerhead shrike	Open areas where small trees, shrubs, and fences can provide suitable perches. Nests in small trees and large shrubs. Throughout much of North America. CNDDDB only tracks nesting.	Fed: BCC Calif: SSC, S4	<b>Occurs (foraging); high (nesting).</b> Observed during surveys. Potentially suitable nesting habitat present.
<i>Laterallus jamaicensis coturniculus</i> California black rail	Saline, brackish, and freshwater emergent wetlands. San Francisco Bay area, Sacramento-San Joaquin Delta, scattered locations on coastal southern CA, Salton Sea, lower Colorado River, scattered locations in US, Mex, Central America.	Fed: BCC Calif: THR, FP, S1 BLM: S	Not expected. No suitable habitat. No documented occurrences within 5 mi. or eBird observations in vicinity. CNDDDB occurrence in area is from 1919, bird in migration. Not observed during surveys.
<i>Plegadis chihi</i> White-faced ibis	Freshwater wetlands, shallow lakes, wet meadows, flooded pastures and croplands. Nests in dense, fresh emergent wetland. Salton Sea, local winter visitor along coast, uncommon elsewhere in southern CA and Central Valley. CNDDDB only tracks nesting colonies.	Fed: None Calif: WL, S3S4	Not expected, fly overs possible. No suitable habitat. No documented occurrences (nesting colony) within 5 mi. One eBird observation in Santa Ana wash at percolation basins (50 birds).

Species	Habitat and Distribution	Conservation Status	Potential for Occurrence
<i>Polioptila californica californica</i> Coastal California gnatcatcher	Sage scrub, also chaparral, grasslands, riparian adjacent to or mixed with sage scrub. S Ventura Co. to LA, Orange, Riv., San Bern., San D. Cos into Baja CA, Mexico.	Fed: THR Calif: SSC, S2	Low. Suitable foraging and nesting habitat present. Three documented occurrences within 5 mi. in Santa Ana wash. One from 1995 (CNDDB EO #494), a juvenile in sage scrub habitat, occurrence is about 0.8 mi. south-southwest of project site but mapped with a one-mile buffer that overlaps the site. Two other occurrences (EO #916 and #917) are about 2.2 and 1.7 mi. southeast of the site, respectively. #916 is from 2008, two adults in alluvial fan sage scrub and #917 is from 2006, four birds in sage scrub. Multiple eBird observations in Santa Ana wash about 2-3 mi. southeast of the site. CDFW (2019c) indicates that occurrences have been documented recently immediately adjacent to the project site. Not incidentally detected during multiple surveys over 15 years by a CAGN-permitted biologist, but focused surveys not done.
<i>Selasphorus rufus</i> Rufous hummingbird	Breeds in open or shrubby areas, forest openings, yards and parks. Sometimes forests, thickets, swamps, meadows. Elev. range 0-6000 ft. Migrating birds can be up to 12,600 ft. Wintering birds in oak, pine, and juniper woodlands. Found in Western US and Canada. Generally migrates through southern CA during pre-breeding migratory season (mid-Feb to mid-May).	Fed: BCC Calif: SA, S1S2	<b>Low-moderate (migration).</b> No documented occurrences (nesting) within 5 mi. Multiple eBird observations in region, most > 5 mi. away (can be confused with Allen's hummingbird). Closest is about 1.3 mi. east-northeast of site at mouth of Plunge Creek Canyon. Not observed during surveys.
<i>Selasphorus sasin</i> Allen's hummingbird	Breeds in moist coastal areas, scrub, chaparral, and forests. Winters in forest edge and scrub clearings with flowers. Breeds in and migrates through CA.	Fed: BCC Calif: None	<b>Moderate (foraging and nesting).</b> Potentially suitable habitat. Two eBird observations in park just east of site (can be confused with rufous hummingbird). Not observed during surveys.
<i>Setophaga petechia</i> Yellow warbler	Migrant and summer resident in southern CA. Riparian, including willow, cottonwood, sycamore, alder, aspen for nesting & foraging, also conifer forest. CNDDB only tracks nesting.	Fed: BCC Calif: SSC, S3S4	Low. No suitable habitat. No documented occurrences (nesting) within 5 mi. Nearby eBird observations at a park with water features.

Species	Habitat and Distribution	Conservation Status	Potential for Occurrence
<i>Spinus lawrencei</i> Lawrence's goldfinch	Summer breeder, may overwinter. Coastal side of southern and central CA, western edge of southern deserts, east side of Central Valley into northern CA, Colorado River, SW US and northern Mex. Valley foothill hardwood and hardwood-conifer, desert riparian, pinyon juniper, palm oasis, lower montane. CNDDDB only tracks nesting.	Fed: BCC Calif: SA, S3S4	<b>Occurs (foraging); nesting (moderate-high).</b> Observed onsite during surveys.
<i>Vireo bellii pusillus</i> Least Bell's vireo	Riparian woodlands, bottomlands. N Mex. & Baja CA into S CA & the S mid-western US. CNDDDB only tracks nesting.	Fed: END Calif: END, S2	Not expected. No suitable habitat. No documented occurrences (nesting) within 5 mi. Two eBird observations about 1.3 mi. east-northeast of the site in riparian habitat along Plunge Creek. The site is not within critical habitat for this species. Not observed during surveys.
<b>Mammals</b>			
<i>Antrozous pallidus</i> Pallid bat	Rock outcrops of shrublands, ≤ 6000' elevation; southwest North America to interior Oregon and Washington; hibernates in winter. Locally common at low elevations in grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Forages over open ground. Roosts in caves, crevices, mines, hollow trees, buildings. Very sensitive to disturbance of roosting sites.	Fed: None Calif: SSC, S3	<b>Moderate (foraging);</b> low (roosting). Potentially suitable foraging habitat. Potential roosting sites limited. One documented occurrence within 5 mi. from 1929, exact location unknown.
<i>Bassariscus astutus</i> Ringtail or ring-tailed cat	Nocturnal, widely distributed; various riparian habitats and brush stands of most forest and shrub habitats at low to middle elevations, usually not more than 0.6 mi. from permanent water; primarily carnivorous; rocky habitats preferred, avoids urbanized areas. Not tracked in the CNDDDB.	Fed: None Calif: FP	Low. Marginal habitat.
<i>Chaetodipus (Perognathus) fallax fallax</i> Northwestern San Diego pocket mouse	Sandy herbaceous areas, usually in association with rocks or coarse gravel, chaparral, coastal scrub, grasslands. SW CA & NW Baja California (inland to San Bernardino Valley).	Fed: None Calif: SSC, S3S4	<b>Occurs.</b> Found onsite during trapping surveys.
<i>Dipodomys merriami parvus</i> San Bernardino kangaroo rat	Alluvial floodplains and adjacent upland habitats within the San Bernardino, Menifee, and San Jacinto valleys, Riversidean alluvial fan sage scrub.	Fed: END Calif: CanE, SSC, S1	<b>Occurs.</b> Found onsite during trapping surveys. A portion of the site is within <b>critical habitat</b> .

Species	Habitat and Distribution	Conservation Status	Potential for Occurrence
<i>Dipodomys simulans</i> Dulzura kangaroo rat	Grassland, coastal scrub, and chaparral. In scrub or chaparral, found in areas with sparse shrub cover or less mature habitats associated with early succession. Los Angeles, Riverside, Orange, San Diego, San Bernardino Cos. Generally occurs below 2,400 feet elevation. Not tracked in the CNDDDB.	Fed: None Calif: SA, S3	<b>Occurs.</b> Found onsite during trapping surveys.
<i>Dipodomys stephensi</i> Stephens' kangaroo rat	Sparse, gently sloping grassland, sometimes at margins of cultivated or disturbed lands; prefers grassland dominated by forbs rather than annual grasses, prefers sparse perennial vegetation; firm soil for burrowing (not too hard or too sandy); may use abandoned gopher burrows; W Riverside Co. and adjacent San Diego Co. San Bernardino County occurrences extirpated.	Fed: END Calif: THR, S2	Not expected. No suitable habitat. No documented occurrences within 5 mi. Not found during trapping surveys. No critical habitat has been designated for this species.
<i>Eumops perotis californicus</i> Western mastiff bat	Lowlands (with rare exceptions), many open, semi-arid to arid habitats, conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Central & S CA, S AZ, NM, SW TX. Roosts in deep rock crevices, high buildings, trees, and tunnels; forages over wide area.	Fed: None Calif: SSC, S3S4	<b>Moderate (foraging and roosting).</b> Potentially suitable foraging habitat and roost trees. Four documented occurrences within 5 mi. including one from 1991 in Santa Ana wash about 3.2 mi. east-southeast of the project site.
<i>Glaucomys oregonensis</i> ( <i>sabrinus</i> ) <i>californicus</i> San Bernardino flying squirrel	Mature mixed conifer forest (white fir, Jeffrey pine, & black oak) with large trees & snags, closed canopy, downed woody debris, & riparian areas. 4000-8500 ft. elev. San Bernardino & San Jacinto Mt. Ranges (may be extirpated in the San Jacinto Mts.).	Fed: None Calif: SSC, S1S2	Absent. No suitable habitat, well below elevation range. No documented occurrences within 5 mi.
<i>Lasiurus xanthinus</i> Western yellow bat	Valley foothill riparian, desert riparian, desert wash, palm oasis. Roosts in trees, particularly palms. Forages over water and among trees. Desert regions of the SW US. Distributed in S CA, AZ, NM, & TX, into Mexico.	Fed: None Calif: SSC, S3	<b>Moderate (foraging and roosting).</b> Potentially suitable foraging habitat and roost trees. Two documented occurrences within 5 mi. Both from 1998, in general vicinities of Highland and Redlands.
<i>Leptonycteris (curasoae)</i> <i>yerbabuenae</i> Lesser long-nosed bat	Nectar, pollen, fruit eating bat; primarily feeding on agaves, saguaro, organ pipe cactus. Mojavean and Sonoran desert scrub, Upper Sonoran scrub. Caves, mines used as day roosts. Caves, mines, rock crevices, trees and shrubs, abandoned buildings used as night roosts. No maternity roosts known from CA.	Fed: Delisted Calif: SSC, S1	Not expected. No suitable habitat or food plants. No documented occurrences within 5 mi.



Species	Habitat and Distribution	Conservation Status	Potential for Occurrence
<i>Lepus californicus bennettii</i> San Diego black-tailed jackrabbit	Chaparral, coastal, or Riversidean sage scrub with adjacent open grassland. Los Angeles Co. S to San Quintin, Baja California, Mexico.	Fed: None Calif: SSC, S3S4	<b>Occurs.</b> Observed onsite during surveys.
<i>Neotamias speciosus speciosus</i> Lodgepole chipmunk	Summits of isolated Piute, San Bernardino, & San Jacinto mountains. Usually found in open-canopy forests. Habitat is usually lodgepole pine forests in the San Bernardino Mts & chinquapin slopes in the San Jacinto Mts.	Fed: None Calif: SA, S2S3	Absent. No suitable habitat, well below elevation range. No documented occurrences within 5 mi.
<i>Neotoma lepida intermedia</i> San Diego desert woodrat	Arid shrublands, rocky outcrops, & crevices. Cismontane CA., San Luis Obispo to San Diego Co. & NW Baja California. 0-7000 ft. elev. Variety of shrub and desert habitats, primarily associated with rock outcroppings, boulders, cacti, or areas of dense undergrowth. Constructs elaborate middens of sticks and other materials.	Fed: None Calif: SSC, S3S4	<b>Occurs.</b> Found onsite during trapping surveys.
<i>Nyctinomops femorosaccus</i> Pocketed free-tailed bat	Deserts & arid lowlands, pinyon juniper woodlands, desert scrub, riparian scrub, Joshua tree woodland, rocky areas with high cliffs. E Riverside & San Diego Cos. and Imperial Co., through SW US, Baja California, mainland Mexico. Roost mainly in crevices of high cliffs. Few records in So CA. Prefers rocky desert areas with high cliffs or rock outcrops. Feeds over ponds, streams, and arid desert.	Fed: None Calif: SSC, S3	Low (foraging); not expected (roosting). No or marginal suitable habitat. One documented occurrence within 5 mi. from 1985 in general vicinity of San Bernardino.
<i>Onychomys torridus ramona</i> Southern grasshopper mouse	Nocturnal, active year-round. Desert scrub, coastal scrub, mixed chaparral, sagebrush, especially scrub habitats with friable soil, prefers low to moderate shrub cover. LA through San Diego counties and northwest Baja.	Fed: None Calif: SSC, S3	<b>Low-moderate.</b> Potentially suitable habitat. No documented occurrences within 5 mi. Not found during trapping surveys, but primarily carnivorous and not attracted to seed bait in traps.
<i>Perognathus alticola alticola</i> White-eared pocket mouse	Lower montane coniferous forest, Mojavean desert scrub, pinyon & juniper woodlands. Ponderosa and Jeffrey pine habitats; also in mixed chaparral and sagebrush habitats in the San Bernardino Mountains. Burrows are constructed in loose soil.	Fed: None Calif: SSC, SH	Not expected. No suitable habitat. No documented occurrences within 5 mi. Outside known range. Not found during trapping surveys.

Species	Habitat and Distribution	Conservation Status	Potential for Occurrence
<i>Perognathus longimembris brevinasus</i> Los Angeles pocket mouse	Nocturnal, active Apr-Aug. Annual grassland, sage scrub, alluvial sage scrub. S California from Rancho Cucamonga (W boundary), San Geronio (E), Aguanga & Oak Grove, San Diego (S). Open ground with fine, sandy soils.	Fed: None Calif: SSC, S1S2	<b>Occurs.</b> Found onsite during trapping surveys.
<i>Taxidea taxus</i> American badger	Mountains, deserts, interior valleys where burrowing animals are available as prey & soil permits digging. Throughout Central & W North America.	Fed: None Calif: SSC, S3	Low. Potentially suitable habitat. No documented occurrences within 5 mi. No badger holes or diggings observed during surveys.
<i>Xerospermophilus tereticaudus chlorus</i> Palm Springs round-tailed ground squirrel	Restricted to the Coachella Valley. Prefers desert succulent scrub, desert wash, desert scrub, alkali scrub, and levees. Prefers open, flat, grassy areas in fine-textured, sandy soil. Density correlated with winter rainfall. Chenopod scrub, Sonoran desert scrub	Fed: None Calif: SSC, S2 BLM: S	Not expected. No documented occurrences within 5 mi. Outside known range. Not observed during surveys.
References: BNA (2020), CDFW (2019a, 2020b), eBird (2020), USFWS (2020a).			

**Federal designations:** (Federal Endangered Species Act, U. S. Fish and Wildlife Service):

END:	Federally listed, endangered; an animal or plant in danger of extinction within the foreseeable future throughout all or a significant portion of its range.
THR:	Federally listed, threatened; an animal or plant which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range.
Cand	Candidate for federal listing as threatened or endangered; species that has been studied by the U.S. Fish and Wildlife Service, and the Service has concluded that it should be proposed for addition to the Federal Endangered and Threatened species list.
Prop	Proposed for federal listing as Endangered or Threatened under Section 4 of the Endangered Species Act.
Delisted:	Previously federally listed as endangered or threatened, but is no longer listed (e.g., due to recovery).
None:	The species has no federal conservation status.
BGEPA:	Federal Bald and Golden Eagle Protection Act; protects bald and golden eagles.
BCC:	USFWS Bird of Conservation Concern; migratory and non-migratory bird species (beyond those already designated as Federally threatened or endangered) that represent USFWS highest conservation priorities.

**State designations:** (California Endangered Species Act, California Dept. of Fish and Wildlife)

END:	State listed, endangered; a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.
CanE:	Candidate Endangered; a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed as being under review by the Department of Fish and Wildlife for addition to the list of endangered species, or a species for which the commission has published a notice of proposed regulation to add the species to the list of endangered species.
CanF:	Candidate Threatened; a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed as being under review by the Department of Fish and Wildlife for addition to the list of threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to the list of threatened species.
THR:	State listed, threatened; a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.
RARE:	State listed as rare: a native plant species, subspecies, or variety when, although not presently threatened with extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens (Native Plant Protection Act of 1977).
SSC:	CDFW Species of Special Concern; vertebrate species of concern due to declining population levels, limited ranges, and/or continuing threats that have made them vulnerable to extinction.
FP:	Fully Protected; California Fish and Game Code states that Fully Protected species "...may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected" species, although take may be authorized for necessary scientific research.
Delisted:	Previously state listed as threatened or endangered, but no longer listed (e.g., due to recovery).
SA:	CDFW Special Animal; wildlife of state conservation concern.
SH:	All California sites are historical.
None:	The species has no state conservation status.

**State Rank (S Rank):** A reflection of the condition and imperilment of an element (plant, animal, vegetation community) throughout its range within the state. The S ranks are determined through a combination of rarity, threat, and trend factors, weighted more heavily on the rarity factors. Where correct category is uncertain, the S rank includes two

categories or a question mark. Older ranks, which need to be updated, may still contain a decimal "threat" rank of .1, .2, or .3, where .1 indicates very threatened status, .2 indicates moderate threat, and .3 indicates few or no current known threats.

- S1: Critically imperiled; imperiled in the state because of extreme rarity or some factor(s) making it especially vulnerable to extirpation from the state.
- S2: Imperiled; imperiled in the state because of rarity due to very restricted range, very few populations, steep declines, or other factors making it very vulnerable to extirpation from the state or nation.
- S3: Vulnerable; vulnerable in the state due to a restricted range, relatively few populations, recent and widespread declines, or other factors making it vulnerable to extirpation. S4: Apparently secure; uncommon but not rare, some cause for long-term concern due to declines or other factors.
- S5: Secure; common, widespread, and abundant in the state.
- SH: Possibly extirpated; species or community occurred historically in the state, and there is some possibility that it may be rediscovered. The element has not been seen for at least 20 years, but suitable habitat still exists.
- SX: Presumed extirpated; species or community is believed to be extirpated from the state.

**California Rare Plant Rank (CRPR):** The *California Rare Plant Ranks* are a ranking system originally developed by the California Native Plant Society (CNPS) to better define and categorize rarity in California's plants. These ranks were previously known as the CNPS lists but were renamed to the *California Rare Plant Ranks* to better reflect the joint effort among the CNPS, the CDFW, and a wide range of botanical experts, who work together to assign a rarity ranking.

- 1A: Plants presumed extinct in California and rare/extinct elsewhere.
- 1B: Plants rare, threatened, or endangered in California and elsewhere.
- 2A: Plants presumed extirpated in California, but more common elsewhere.
- 2B: Plants rare, threatened, or endangered in California but more common elsewhere.
- 3: Plants about which we need more information.
- 4: Plants of limited distribution.
- X.1: Extension to CRPR (e.g., 1B.1); seriously threatened in California.
- X.2: Extension to CRPR (e.g., 1B.2); fairly threatened in California.
- X.3: Extension to CRPR (e.g., 1B.3); not very threatened in California.
- CBR: Considered but rejected.

**Bureau of Land Management (BLM) designation:**

- S: Sensitive; plant and animal species requiring special management consideration to promote their conservation and reduce the likelihood for future listing under the Federal Endangered Species Act. Includes species designated as sensitive by the BLM State Director and all Federal Candidate species and Federal delisted species in the 5 years following delisting. Sensitive species are managed as special status species.

**Definitions of occurrence probability:**

These definitions provide general guidance. Classifications for individual species may be modified based on biologists' experience and expert opinion.

- Occurs:* Species was detected during surveys or previously documented on the Project site or adjacent areas.
- High:* Species documented in the vicinity (i.e., within 5 miles) of the Project site and suitable habitat is present, but species not detected during surveys.
- Moderate:* Species documented in the vicinity of the Project site or suitable habitat present and site is within geographic and elevational range of the species.
- Low:* Species not documented in the vicinity of the Project site or suitable habitat is marginal.
- Not Expected:* Species not documented in the vicinity of the Project site and suitable habitat marginal or absent, or site is not within geographic and elevational range of the species.

*Absent:* No potential for the species to occur due to lack of habitat, geographic or elevation range, species life history, etc.

*Unknown:* No focused surveys have been performed in the region, and the species' distribution and habitat are poorly known.

Documented occurrences refers to species occurrences in the California Natural Diversity Database (CNDDDB) unless otherwise noted. For plant species that are not tracked in the CNDDDB, records from the Consortium of California Herbaria (CCH) may be used.

## APPENDIX D: PRECIPITATION DATA

Precipitation data from the Highland #215 CIMIS Station for October 2016 through September 2019, by water year (October 1 through September 30) (CIMIS 2020).

Water Year	Precipitation (inches)												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
2017	0.51*	1.46	0.52	3.48	1.99	0.23	0.25	0.84*	0.76	2.46	2.48	1.53	16.51*
2018	1.54	0.31	0.04	2.69	0.71	2.12	1.16	0	0	0	0	0	8.57
2019	0	1.06	1.34	3.96	6.11	1.74	0.28	2.22	0.81	0.49	0.18	0.15	18.34

\*missing or suspect data

Precipitation data from the Devore 2 Remote Automatic Weather Station (RAWS) for November 2017 through September 2019, by water year (October 1 through September 30) (WRCC 2020).

Water Year	Precipitation (inches)												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
2018	--	0.06*	0.01	3.12	0.59	5.43	0	0.92	0	0.18	0	0	10.31*
2019	0.77	2.44	1.93	8.38	9.74	3.48	0.04	2.15	0	0	0	0.01	28.94

\*missing data

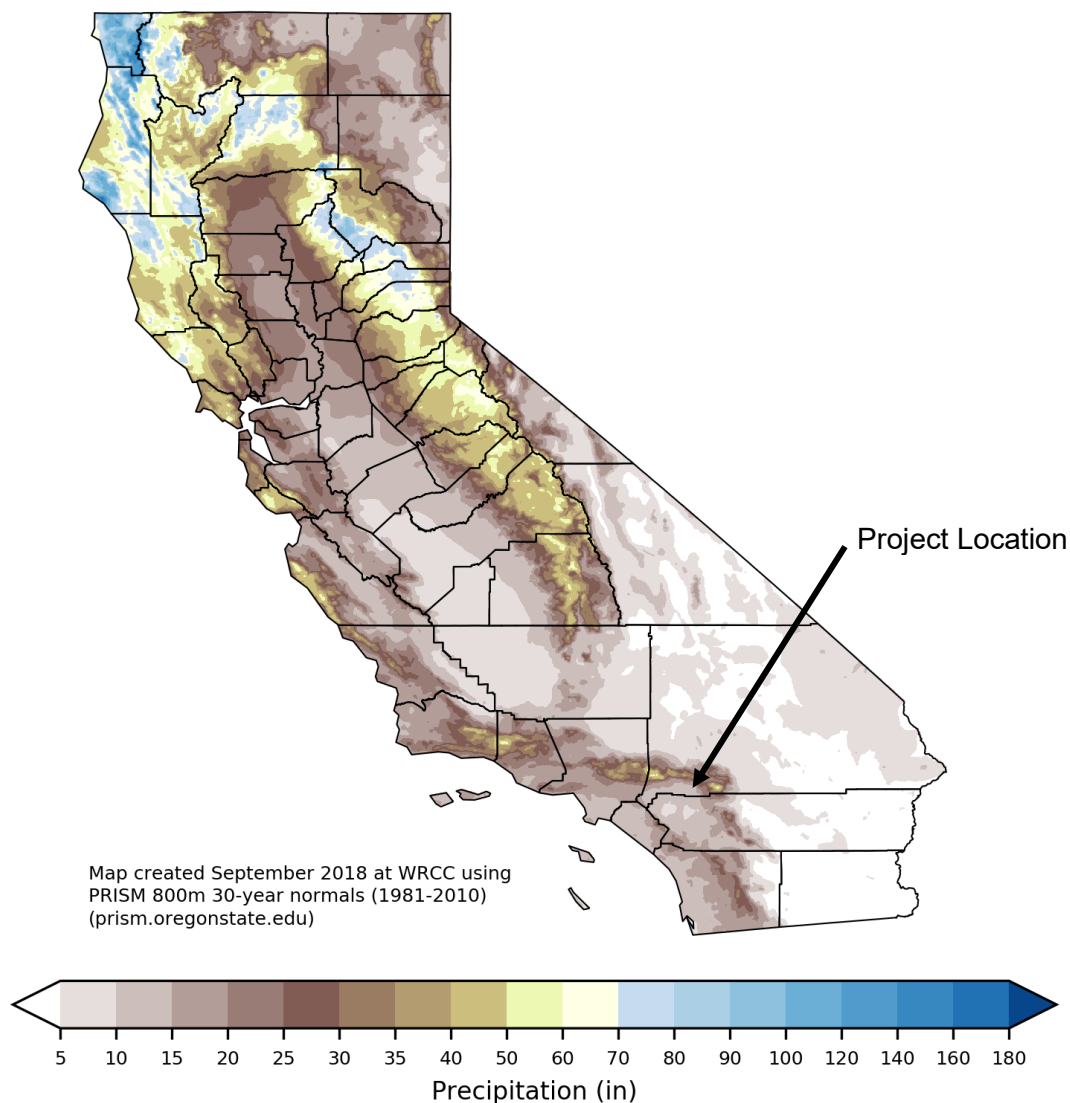
Precipitation data from the Mill Creek (BDF) Remote Automatic Weather Station (RAWS) for October 2004 through September 2019, by water year (October 1 through September 30) (WRCC 2020).

Water Year	Precipitation (inches)												
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
2005	7.22	2.07	3.09	10.52	7.97	2.35	0.95	0.66	0.02	0.57	0	0.26	35.68
2006	1.59	0.01	0.32	1.12	3.16	4.15	3.94	0.20	0.01	0.12	0	0.01	14.63
2007	0.28	0.10	1.33	0.91	2.03	0.80	1.09	0.02	0	0	0.01	0.74	7.31
2008	0.01	2.53	3.62	6.31	3.38	0.31	0.03	0.92	0.01	0.16	0	0	17.28
2009	0.02	1.56	4.57	0.26	5.58	0.30	0.60	0	0.09	0	0	0.01	12.99
2010	0.02	0.38*	0.25*	8.01	5.15	1.17	2.44	0.17	0.01	0	0	0.01	17.61*
2011	1.30	1.88	14.00	1.10	4.55	2.54	0.97	0.84	0	0.27	0	0	27.45
2012	1.08	1.96	0.32	0.69	1.50	6.21	1.68	0.20	0.02	0.54	0.59	0	14.79
2013	0.06	1.27	2.40	1.38	2.01	1.36	0.30	0.61	0	0.39	0.16	0.09	10.03
2014	0.68	1.12	0.33	0.11	2.74	0.61	1.34	0.02	0	0.05	0.31	0.92	8.23
2015	0	0.81	10.71	1.3	1.74	0.33	0.75	1.36	0.02	2.58	0	1.30	20.90
2016	0.72	0.44	1.76	4.76	0.23*	1.82	1.80	0.72	0	0	0	0.13	12.38*
2017	0.60	1.51	2.49	7.06	3.14	0.65	0.01	0.48	0.01	0.01	0.07	0.07	16.10
2018	0.12	0	0	2.96	0.74	3.17	0	0.98	0	0.10	0.05	0	8.12
2019	1.28	0	1.93	5.45	9.70	2.47	0.42	3.02	0.07	0	0	0.14	24.48

\*missing data



## Average Annual Precipitation California



Average annual precipitation in California (1981-2010) (WRCC 2018). Project is within the area mapped as average annual precipitation of 10 to 15 inches.

## APPENDIX E: TREE SURVEY DATA

Heritage tree trees observed on the Project site in March 2006. Larger shrubs were also included (per City of Highland Municipal Code). All measurements are approximate. Circumference<sup>3</sup> was estimated at about 4.5 feet above ground level. Trees with multiple trunks are noted. Health is based on a scale of good (G), moderate (M), and low (L). GPS coordinates were generally taken on the north side of the tree. Shading indicates trees that are expected to be impacted by the Project. Information on trees in the eucalyptus groves is provided in the tables below.

ID#	Scientific Name	Height (feet)	Circumference (inches)	Multiple Trunks?	Health	GPS
1	<i>Juniperus californica</i>	15	>30	Y	G	34° 06.480 N 117°09.747'W
2	<i>Schinus molle</i>	20	>24	N	G	.447' N .744' W
3	<i>Prunus ilicifolia</i>	10	>30	Y	G	.418' N .727' W
4	<i>Juniperus californica</i>	13	>30	Y	G	.415' N .727' W
5	<i>Juniperus californica</i>	13	>30	Y	G	.414' N .738' W
6	<i>Prunus ilicifolia</i>	13	>30	Y	G	.406' N .735' W
7	<i>Juniperus californica</i>	15	>30	Y	G	.402' N .734' W
8	<i>Juniperus californica</i>	12	>30	Y	G	.399' N .748' W
9	<i>Juniperus californica</i>	12	>30	Y	G	.401' N .742' W
10	<i>Juniperus californica</i>	11	>30	Y	G	.399' N .743' W
11	<i>Juniperus californica</i>	12	>30	Y	G	.400' N .730' W
12	<i>Juniperus californica</i>	15	>30	Y	G	.387' N .737' W
13	<i>Juniperus californica</i>	18	>30	Y	G	.382' N .731' W
14	<i>Juniperus californica</i>	20	>30	Y	G	.378' N .728' W
15	<i>Juniperus californica</i>	15	>30	Y	G	.377' N .750' W
16	<i>Juniperus californica</i>	12	>30	Y	G	.377' N .757' W
17	<i>Juniperus californica</i>	18	>30	Y	G	.376' N .760' W
18	<i>Juniperus californica</i>	15	>30	Y	G	.374' N .761' W
19	<i>Juniperus californica</i>	18	>30	Y	G	.377' N .776' W
20	<i>Juniperus californica</i>	12	>30	Y	G	.371' N .773' W
21	<i>Juniperus californica</i>	14	>30	Y	G	.371' N .774' W
22	<i>Juniperus californica</i>	15	>30	Y	G	.384' N .782' W
23	<i>Juniperus californica</i>	18	>30	Y	G	.392' N .777' W
24	<i>Juniperus californica</i>	15	>30	Y	G	.391' N .770' W
25	<i>Juniperus californica</i>	15	>30	Y	G	.444' N .771' W
26	<i>Juniperus californica</i>	20	>30	Y	G	.446' N .789' W
27	<i>Rhus ovata</i>	8	>30	Y	M	.479' N .769' W
28	<i>Sambucus nigra</i> ssp. <i>cerulea</i>	10	>30	Y	G	.514' N .774' W
29	<i>Platanus racemosa</i>	25	>30	Y	G	.517' N .786' W
30	<i>Juniperus californica</i>	10	>30	Y	G	.530' N .767' W
31	<i>Prunus ilicifolia</i>	15	>30	Y	G	.574' N .789' W
32	<i>Juniperus californica</i>	22	>30	Y	G	.566' N .807' W

<sup>3</sup> The City of Highland Municipal Code uses circumference rather than diameter (see Section 2.12).

ID#	Scientific Name	Height (feet)	Circumference (inches)	Multiple Trunks?	Health	GPS
33	<i>Platanus racemosa</i>	30	>30	Y	G	.576' N .829' W
34	<i>Platanus racemosa</i>	22	>30	Y	G	.580' N .839' W
35	<i>Juniperus californica</i>	12	>30	Y	G	34° 06.581' N 117°09.842' W
36	<i>Sambucus nigra ssp. cerulea</i>	20	>30	Y	G	.540' N .817' W
37	<i>Juniperus californica</i>	10	>30	Y	G	.525' N .818' W
38	<i>Juniperus californica</i>	15	>30	Y	G	.516' N .832' W
39	<i>Juniperus californica</i>	12	>30	Y	G	.514' N .838' W
40	<i>Juniperus californica</i>	8	>30	Y	G	.520' N .845' W
41	<i>Juniperus californica</i>	10	>30	Y	G	.534' N .848' W
42	<i>Juniperus californica</i>	12	>30	Y	G	.504' N .863' W
43	<i>Juniperus californica</i>	15	>30	Y	G	.503' N .868' W
44	<i>Juniperus californica</i>	18	>30	Y	G	.504' N .873' W
45	<i>Juniperus californica</i>	14	>30	Y	G	.506' N .878' W
46	<i>Juniperus californica</i>	18	>30	Y	G	.488' N .853' W
47	<i>Juniperus californica</i>	10	>30	Y	G	.485' N .846' W
48	<i>Juniperus californica</i>	15	>30	Y	G	.479' N .847' W
49	<i>Juniperus californica</i>	12	>30	Y	G	.484' N .835' W
50	<i>Juniperus californica</i>	10	>30	Y	G	.492' N .832' W
51	<i>Juniperus californica</i>	20	>30	Y	G	.507' N .825' W
52	<i>Juniperus californica</i>	12	>30	Y	G	.507' N .823' W
53	<i>Juniperus californica</i>	10	>30	Y	G	.506' N .834' W
54	<i>Juniperus californica</i>	12	>30	Y	G	.496' N .818' W
55	<i>Juniperus californica</i>	10	>30	Y	G	.487' N .816' W
56	<i>Juniperus californica</i>	20	>30	Y	G	.471' N .815' W
57	<i>Juniperus californica</i>	20	>30	Y	G	.472' N .816' W
58	<i>Juniperus californica</i>	15	>30	Y	G	.474' N .800' W
59	<i>Juniperus californica</i>	20	>30	Y	G	.459' N .817' W
60	<i>Juniperus californica</i>	15	>30	Y	G	.390' N .786' W
61	<i>Juniperus californica</i>	6	>30	Y	M	.370' N .792' W
62	<i>Juniperus californica</i>	10	>30	Y	G	.370' N .796' W
63	<i>Juniperus californica</i>	15	>30	Y	G	.372' N .798' W
64	<i>Juniperus californica</i>	12	>30	Y	G	.370' N .803' W
65	<i>Juniperus californica</i>	10	>30	Y	G	.379' N .812' W
66	<i>Juniperus californica</i>	15	>30	Y	G	.389' N .827' W
67	<i>Juniperus californica</i>	15	>30	Y	G	.387' N .830' W
68	<i>Juniperus californica</i>	12	>30	Y	G	.383' N .840' W
69	<i>Juniperus californica</i>	14	>30	Y	G	.386' N .850' W
70	<i>Juniperus californica</i>	14	>30	Y	G	.398' N .846' W
71	<i>Juniperus californica</i>	22	>30	Y	G	.365' N .865' W
72	<i>Juniperus californica</i>	20	>30	Y	G	.365' N .872' W
73	<i>Juniperus californica</i>	15	>30	Y	G	.369' N .889' W
74	<i>Juniperus californica</i>	12	>30	Y	G	.376' N .886' W

ID#	Scientific Name	Height (feet)	Circumference (inches)	Multiple Trunks?	Health	GPS
75	<i>Juniperus californica</i>	20	>30	Y	G	.388' N .882' W
76	<i>Juniperus californica</i>	12	>30	Y	G	.439' N .887' W
77	<i>Juniperus californica</i>	10	>30	Y	G	.457' N .923' W
78	<i>Rhus ovata</i>	20	>30	Y	G	.479' N .906' W
79	<i>Nicotiana glauca</i>	15	>30	Y	G	.503' N .944' W
80	<i>Platanus racemosa</i> (2 trees)	25	>30	Y	G	.502' N .943' W
81	<i>Juniperus californica</i>	20	>30	Y	G	.502' N .955' W
82	<i>Juniperus californica</i>	15	>30	Y	G	34° 06.524' N 117°09.968' W
83	<i>Juniperus californica</i>	20	>30	Y	G	.525' N .949' W
84	<i>Platanus racemosa</i>	20	>30	Y	G	.502' N .917' W
85	<i>Platanus racemosa</i>	20	>30	Y	G	.503' N .919' W
86	<i>Juniperus californica</i>	18	>30	Y	G	.515' N .917' W
87	<i>Platanus racemosa</i>	18	>30	Y	G	.518' N .911' W
88	<i>Juniperus californica</i>	20	>30	Y	G	.522' N .910' W
89	<i>Platanus racemosa</i>	15	>30	Y	G	.559' N .933' W
90	<i>Platanus racemosa</i> (largely dead)	25	>30	Y	L	.564' N .937' W
91	<i>Platanus racemosa</i>	40	>30	Y	G	.567' N .914' W
92	<i>Platanus racemosa</i>	50	>30	Y	G	34° 06.587' N 117°10.060' W
93	<i>Eucalyptus sp.</i>	25	>30	Y	G	.583' N .034' W
94	<i>Platanus racemosa</i>	30	>30	Y	G	.581' N .009' W
95	<i>Platanus racemosa</i>	40	>24	N	G	34° 06.576' N 117°09.999' W
96	<i>Platanus racemosa</i>	25	>24	N	G	.573' N .998' W
97	<i>Platanus racemosa</i>	25	>24	N	G	.583' N .998' W
98	<i>Populus fremontii</i>	25	>24	N	G	.585' N .994' W
99	<i>Tamarix sp.</i>	15	>30	Y	G	.584' N .991' W
100	<i>Tamarix sp.</i>	15	>30	Y	G	.584' N .989' W
101	<i>Platanus racemosa</i>	35	>30	Y	G	.586' N .981' W
102	<i>Platanus racemosa</i>	20	>30	Y	G	.587' N .975' W
103	<i>Tamarix sp.</i>	15	>30	Y	G	.587' N .970' W
104	<i>Tamarix sp.</i>	15	>30	Y	G	.586' N .956' W
105	<i>Platanus racemosa</i>	15	>30	Y	G	.586' N .947' W
106	<i>Tamarix sp.</i>	12	>30	Y	G	.586' N .943' W
107	<i>Platanus racemosa</i>	25	>30	Y	G	34° 06.510' N 117°10.033' W
108	<i>Platanus racemosa</i>	25	>30	Y	G	.487' N .070' W
109	<i>Pinus sp.</i>	35	>24	N	G	.370' N .057' W
110	<i>Olea europea</i>	20	>30	Y	G	.374' N .066' W
111	Unidentified	30	>24	N	G	.375' N .072' W
112	<i>Populus fremontii</i>	40	>24	N	G	.375' N .084' W
113	<i>Schinus molle</i>	40	>30	Y	G	.380' N .095' W

ID#	Scientific Name	Height (feet)	Circumference (inches)	Multiple Trunks?	Health	GPS
114	<i>Populus fremontii</i> (in east eucalyptus grove)	40	>24	N	G	.548' N .004' W

### Eucalyptus Grove Tree Information

Grove	Average Circumference* (inches)	Average Height (feet)	Average Health	Estimated Number
East	10-12	20-30	Low/Moderate	1,100
West	13-16	30-35	Low/Moderate	2,200

\* Measurement taken at approximately 4.5 feet above ground level.

Data based on a subsample. Number of trees was estimated in 2006. Some of these trees are now dead.

All trees in the eucalyptus groves are expected to be impacted by the Project.

### GPS Coordinates\* of the Eucalyptus Groves (decimal degrees)

Grove	NW Corner N / W	NE Corner N / W	SE Corner N / W	SW Corner N / W
East	34.109583 / -117.166833	34.109433 / -117.166333	34.108483 / -117.166300	34.108600 / -117.167200
West	34.109650 / -117.168300	34.109683 / -117.167317	34.108417 / -117.167550	34.108217 / -117.168267

\* Coordinates taken from Google Earth.

## APPENDIX F: SITE PHOTOGRAPHS



Northwestern area of site, from northern boundary looking southwest. Riversidean alluvial fan sage scrub (RAFSS) with thick growth of non-native grasses (04.02.2019).



South-central area of site, looking northeast. RAFSS with thick growth of non-native grasses (04.02.2019).





Southeastern corner of site, looking north. RAFSS with junipers and non-native grasses (04.02.2019).



Southeastern area of site, looking west. RAFSS with non-native grasses. Utility poles are along Abbey Way at the southern boundary of the site (04.02.2019).





Northwestern area of the site, from northern boundary looking southwest. Disturbed/ruderal areas in foreground, eucalyptus groves in background (04.02.2019).



Northwestern area of the site, from northern boundary looking south-southeast. Eucalyptus groves (04.02.2019).





Northwestern area of the site, looking north-northwest. Eucalyptus groves in background, disturbed/ruderal area with trash dumping in foreground (07.01.2019).



Southwestern area of site, at southern boundary looking west. Paved road is Abbey Way; site is to the right (north) of the road and conservation areas to the left (south). Remnants of structure visible at right with ornamental vegetation (07.01.2019).





West-central area of site, looking south. Jojoba fields (04.02.2019)



West-central area of site, looking south-southwest. Jojoba fields and disturbed/ruderal areas (04.02.2019).





West-central area of site near western boundary, looking southeast.  
Disturbed/ruderal areas (07.01.2019).



Western area of site near southern boundary, looking north.  
Disturbed/ruderal areas with jojoba in background (07.01.2019).





West-central area of site, looking east. Disturbed/ruderal areas, RAFSS in background (04.02.2019).



Slender-horned spineflower reference population (May 9, 2019). Slender-horned spineflower was not found on the site.





Sapphire woollystar (*Eriastrum sapphirinum*) identified on the site (09.09.2019). Santa Ana River woollystar was not observed on the site.



Sapphire woollystar habitat on the site (09.09.2019).