HELIX Environmental Planning

Sycamore Canyon/ Goodan Ranch Preserve Southern Parcel Addition

Baseline Biodiversity Survey Report

February 2020 | CSD-06.06

Prepared for:

County of San Diego
Department of Parks and Recreation
5500 Overland Avenue, Suite 410
San Diego, CA 92123

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

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ACRONYMS AND ABBREVIATIONS

°F	degree Fahrenheit
AMSL	Above Mean Sea Level
APN	Assessor Parcel Number
BCC	Birds of Conservation Concern
BCRA	Core Resource Area
BLM	Bureau of Land Management
CAL FIRE	California Department of Forestry and Fire Protection
Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
County	County of San Diego
DPR	Department of Parks and Recreation
FRAP	Fire and Resource Assessment Program
GIS	Geographic Information Systems
GPS	Global Positioning Unit
HELIX	HELIX Environmental Planning, Inc.
KBC	Klutz Biological Consulting
MCAS	Marine Corps Air Station
mph	miles per hour
MSCP	Multiple Species Conservation Program
NPS	National Park Service
PAMA	Pre-Approved Mitigation Area
Preserve	Sycamore Canyon/Goodan Ranch Preserve
RMP	Resource Management Plan
SANDAG	San Diego Association of Governments
SR	State Route
SSC	Species of Special Concern
U.S.	United States
USDA	U.S. Department of Agriculture

ACRONYMS AND ABBREVIATIONS (cont.)

USFS	U.S. Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USFWS	U.S. Fish and Wildlife Service
VCM	Vegetation Classification Manual
WL	Watch List
WRCC	Western Regional Climate Center

EXECUTIVE SUMMARY

The report presents the results of a baseline biological diversity study conducted by HELIX Environmental Planning, Inc. (HELIX) for the Southern Parcel addition to the Sycamore Canyon/Goodan Ranch Preserve (Preserve) located in an unincorporated portion of San Diego County (County), California (Figures 1-3). The approximately 20-acre Southern Parcel will be added to, and expand, the existing 2,693-acre Preserve. The purpose of this report is to identify, and map existing biological resources present within the Southern Parcel and to provide the County of San Diego Department of Parks and Recreation (DPR) with management information for those resources that that have not been previously identified within the existing Preserve.

Baseline biological diversity surveys for the Southern Parcel were conducted by HELIX biologists and subconsultant Klutz Biological Consulting between January and June 2019. Surveys included habitat/vegetation mapping, rare plant surveys, invasive non-native plant species mapping, butterfly surveys, herpetological drift fence with box funnel trap surveys, diurnal and nocturnal avian point count surveys, acoustical bat surveys, small mammal trapping, and passive medium and large mammal camera surveys.

Vegetation communities within the Southern Parcel were mapped based on the Vegetation Classification Manual (VCM) for Western San Diego County and then cross-walked to the Holland/Oberbauer classification system. Eight plant alliances, associations, or semi-natural stands were mapped within the Southern Parcel, all of which occur within the Preserve.

A total of 121 plant species were observed within the Southern Parcel comprised of 97 native and 24 non-native plant species. A total of three special status plant species were identified (willowy monardella [*Monardella viminea*], golden-rayed pentachaeta [*Pentachaeta aurea* ssp. *aurea*], and ashy spike-moss [*Selaginella cinerascens*]), including one species (willowy monardella) covered under the Multiple Species Conservation Program (MSCP) County of San Diego Subarea Plan. Of the 24 non-native plant species observed within the Southern Parcel, three target non-native invasive species were selected as a high priority for removal based on their invasive potential, prevalence, and ability for management: purple false brome (*Brachypodium distachyon*), Italian thistle (*Carduus pycnocephalus*), and Maltese star-thistle (*Centaurea melitensis*).

A total of 62 wildlife species were observed or detected within the Southern Parcel comprised of 16 invertebrates, one amphibian, two reptiles, 26 birds, and 17 mammal species. Thirteen (13) special status wildlife species were identified including three that are covered under the County's MSCP Subarea Plan (Belding's orange-throated whiptail [*Aspidoscelis hyperythra beldingi*], southern California rufous-crowned sparrow [*Aimophila ruficeps canescens*], and mule deer [*Odocoileus hemionus*]).

The Southern Parcel will be managed in conjunction with the main Preserve. Management of Southern Parcel's biological resources will follow the most current County management guidelines and methods.

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1.0 INTRODUCTION

1.1 PURPOSE OF REPORT

In 2013, the County of San Diego (County) Department of Parks and Recreation (DPR) acquired the approximately 20-acre Southern Parcel (Assessor's Parcel Number [APN] 374-030-01) to expand the existing approximately 2,693-acre Sycamore Canyon/Goodan Ranch Preserve (Preserve). The County proposes to manage the Southern Parcel of the Preserve in accordance with a revised Preserve Resource Management Plan (RMP). The Preserve is currently open to the public and is located within the planning boundaries of the Multiple Species Conservation Program (MSCP) preserve system within the MSCP County of San Diego Subarea Plan (County 1997). HELIX Environmental Planning, Inc. (HELIX) conducted a baseline biological diversity study to inventory and map biological resources present within the approximately 20-acre Southern Parcel. The purpose of this report is to document the Southern Parcel's existing biological resources, identify those that are sensitive and covered under the MSCP County of San Diego Subarea Plan, and provide DPR with management information for on-site vegetation communities, MSCP covered plant and animal species and invasive non-native species. The data and management recommendations presented in this report will be utilized to update the Preserve's existing Resource Management Plan (County 2013).

1.2 MULTIPLE SPECIES CONSERVATION PROGRAM CONTEXT

The Southern Parcel is located within the Metro-Lakeside-Jamul segment of the MSCP County of San Diego Subarea Plan in lands designated as Pre-Approved Mitigation Area. PAMA represents lands of high conservation value that are important to the overall success of the regional preserve system. Generally, they contain large, contiguous areas of habitat supporting important species populations or habitat areas and provide important functional linkages and movement corridors between them. Large swaths of conserved habitat occur within the vicinity of the Southern Parcel. These areas include the larger Sycamore Canyon/Goodan Ranch Preserve to the north, City of San Diego Park and Recreation Department owned lands within Sycamore Canyon to the north west, City of Poway owned lands north and south of Scripps Poway Parkway, California Department of Fish and Wildlife San Vicente Highlands Open Space Preserve to the east of State Route (SR-) 67, City of San Diego owned lands surrounding San Vicente Reservoir, County Sycamore Canyon/Goodan Ranch Preserve Connector Properties east of SR-67, County Boulder Oaks Preserve east of SR-67, and City of Poway owned lands surrounding Iron Mountain.

The Sycamore Canyon/Goodan Ranch Preserve signifies an important regional resource that contains large blocks high quality, diverse native habitat for variety of plant and wildlife species. Habitats within the Preserve includes Diegan coastal sage scrub, chamise chaparral, scrub oak chaparral, southern mixed chaparral, southern willow scrub, southern riparian woodland, coast live oak woodland, eucalyptus woodland, and non-native grassland. The Preserve supports several special status species including San Diego thorn-mint (*Acanthomintha ilicifolia*), willowy monardella (*Monardella viminea*), and coastal California gnatcatcher (*Polioptila californica californica*). Furthermore, it provides a key linkage between open space areas in the region connecting MCAS Miramar to Sycamore Open Space Preserve system and Preserve or open space lands further east. The inclusion of the Southern Parcel into the larger Preserve will increase the overall protection of native habitat and special status plant and animal species found in both the Southern Parcel and larger Preserve. Furthermore, the Southern Parcel connects the Preserve

to U.S. Fish and Wildlife Service (USFWS)-designated critical habitat for coastal California gnatcatcher and willowy monardella which occurs just south of the Southern Parcel. Southern Parcel Description

1.3 PROJECT LOCATION

The 20-acre Southern Parcel is situated within the inland valleys and foothills of an unincorporated portion of San Diego County, California (Figure 1, *Regional Location*). It is depicted within Section 4 of Township 15 South, Range 1 West, on the U.S. Geological Survey (USGS) 7.5-minute San Vicente Reservoir topographic quadrangle (Figure 2, *USGS Topography*). The Southern Parcel is situated southeast of the City of Poway, west of State Route (SR-) 67, north of the City of Santee, and east of Marine Corps Air Station (MCAS) Miramar. The Southern Parcel is located south of the existing Preserve boundary within Clark Canyon (Figure 3, *Aerial Photograph*) within the Metro-Lakeside-Jamul segment of the MSCP County of San Diego Subarea Plan in lands designated as Pre-Approved Mitigation Area (PAMA; Figure 4, *MSCP Designations and Conserved Lands*).

1.4 GEOGRAPHICAL SETTING

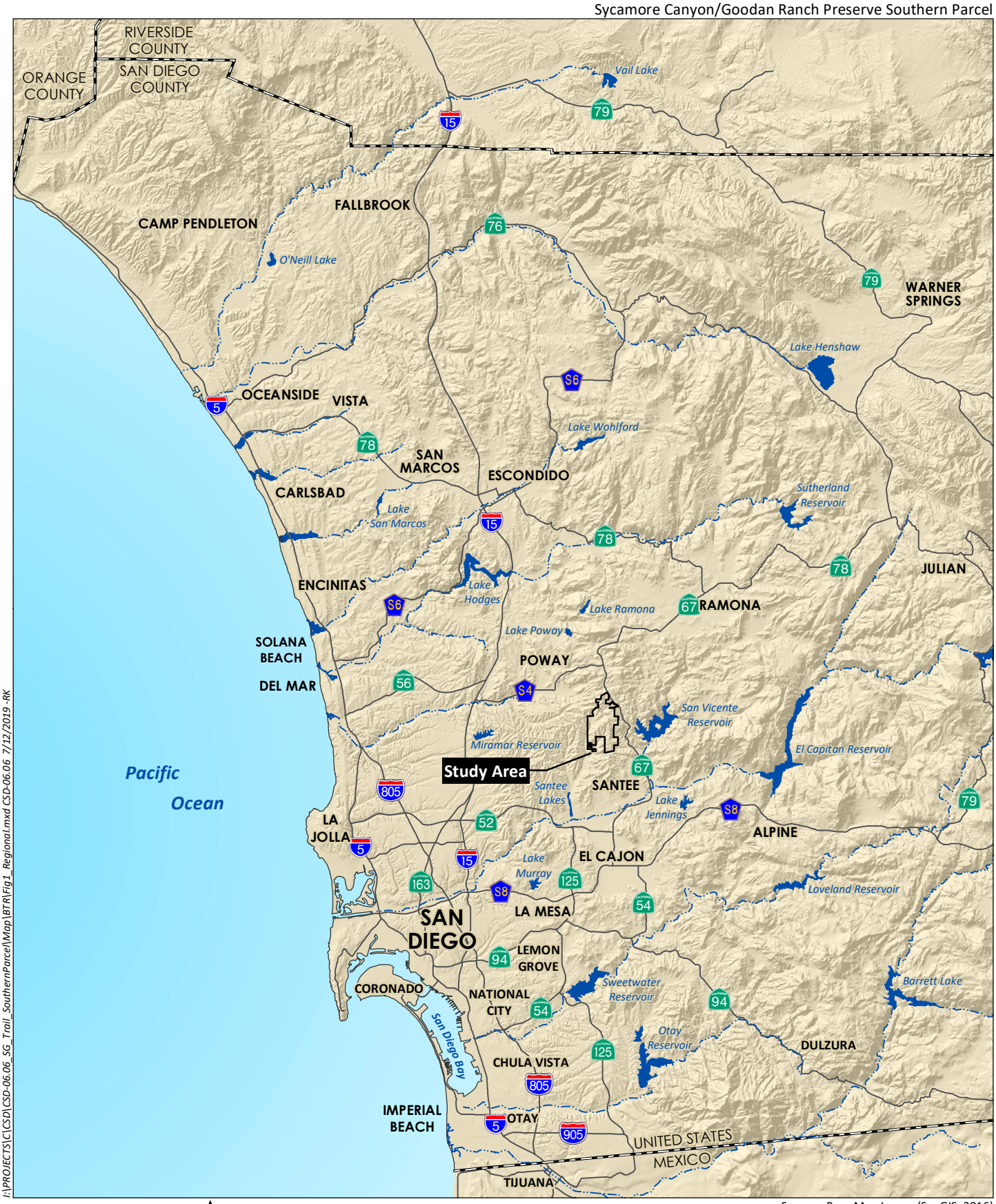
The Southern Parcel is situated within the western portion of the Peninsular Ranges of southern California within the central valley ecoregion of inland San Diego County. The climate is characterized as semi-arid steppe, with warm, dry summers and cool, moist winters (Hall 2007; Pryde 2004). It is located within Clark Canyon which contains a relatively narrow north-south valley bordered by east- and west-facing slopes. Elevations within the Southern Parcel range from approximately 600 feet above mean sea level (AMSL) along the canyon bottom within the central portion of the parcel to 780 feet AMSL along the eastern and western slopes.

1.5 GEOLOGY AND SOILS

The Southern Parcel is underlain by alluvial deposits dating to the Holocene within the canyon bottom and Stadium Conglomerate dating to the middle Eocene along the ridge slopes on either side of the canyon (Tan 2002). Two soil series are mapped within the Parcel (Figure 5, *Soils*) and consist of Redding cobbly loam, dissected, 15 to 20 percent slopes, and Stony land (U.S. Department of Agriculture [USDA] 2019). The Redding series is present on the ridge slopes and consists of well-drained, undulating to steep gravelly loams that have a gravelly clay subsoil and a hardpan (Bowman 1973). The Redding soil series supports a vegetation of mainly chamise, flattop buckwheat, sumac, scrub oak, and annual forbs and grasses. Stony land consists of many stones, boulders, and cobblestones, and some finer material and supports a vegetation of mostly brush and a few scattered oak trees (Bowman 1973).

1.6 CLIMATE

Weather patterns within the County and Southern Parcel are greatly influenced by its proximity to the Pacific Ocean. The climate of San Diego is classified as a Mediterranean climate, which indicates hot, sunny, and dry summers, and cooler, wetter winters. However, San Diego is more arid than most Mediterranean climates and averages 267 sunny days per year. This climate pattern is occasionally interrupted by extreme periods of hot weather, winter storms, or dry, easterly Santa Ana winds (Western Regional Climate Center [WRCC] 2019a). Santa Ana winds occur when easterly winds bring hot, dry air from the inland deserts. These occur most frequently in autumn but can occur any time of the year.



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Source: Base Map Layers (SanGIS, 2016)

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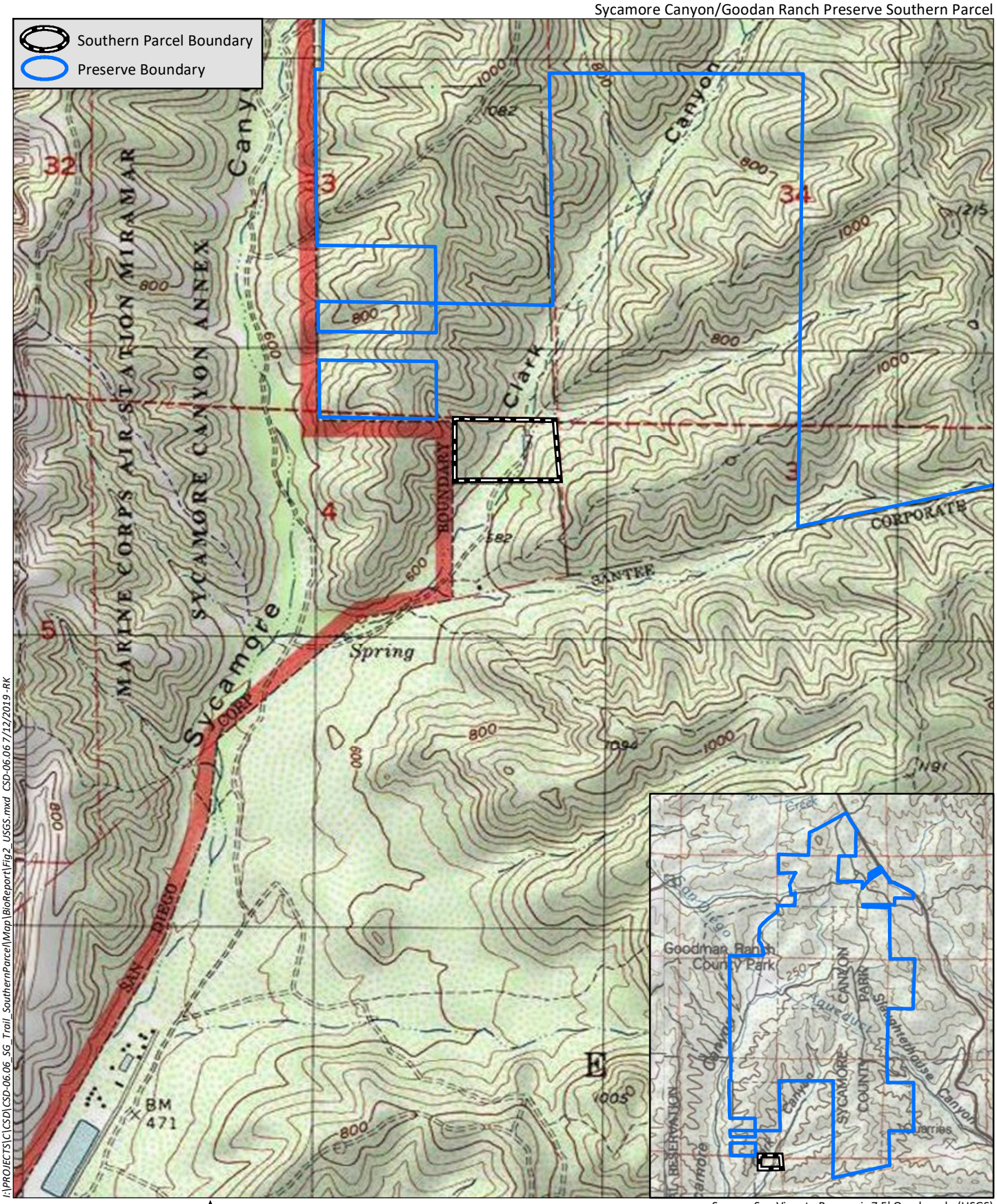
Regional Location

Figure 1



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Source: San Vicente Reservoir 7.5' Quadrangle (USGS)

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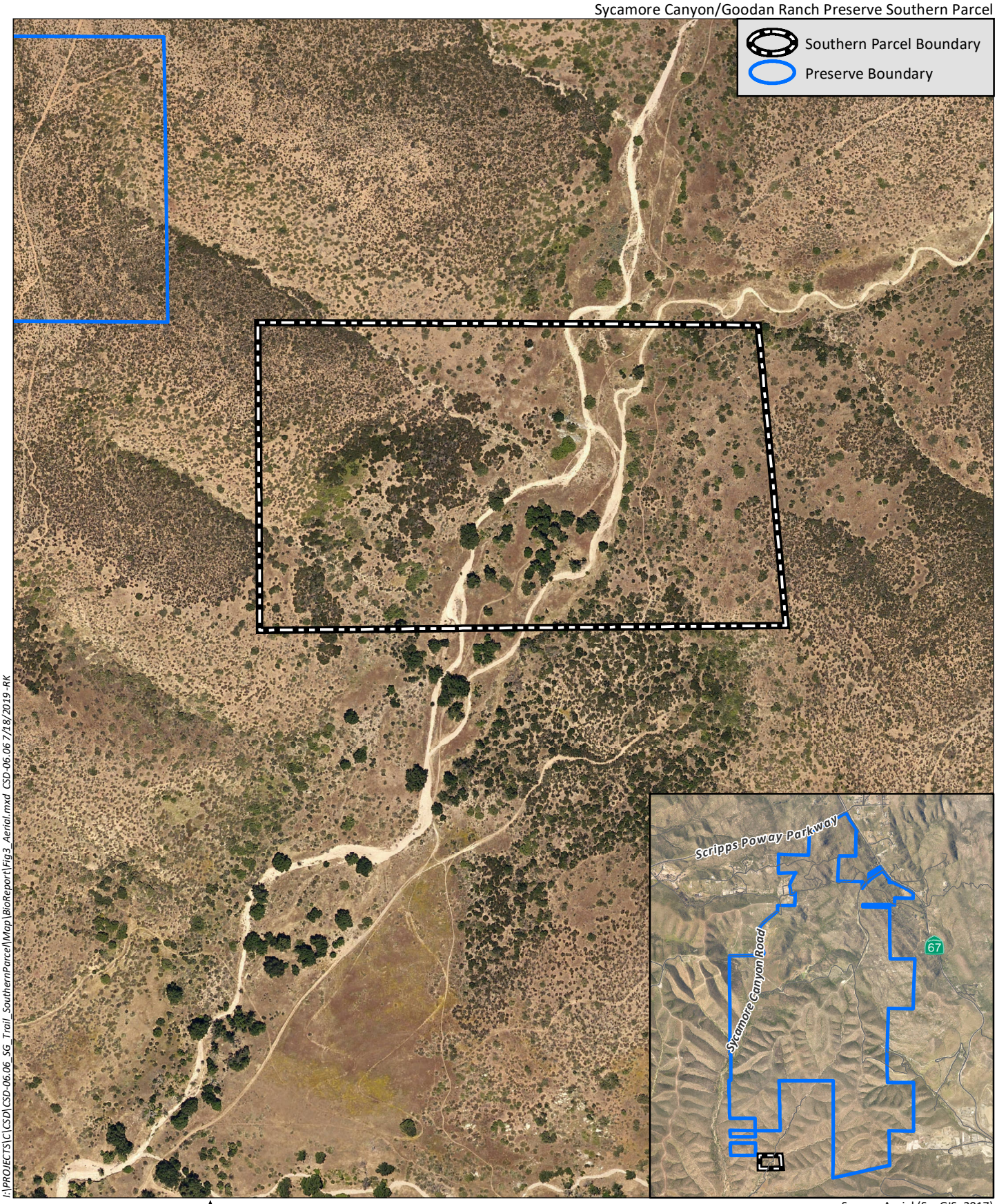
USGS Topography

Figure 2

Sycamore Canyon/Goodan Ranch Preserve Southern Parcel



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0 300 Feet

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Aerial Photograph

Figure 3

Sycamore Canyon/Goodan Ranch Preserve Southern Parcel

Southern Parcel Boundary
Preserve Boundary

MSCP Designation
Pre-Approved Mitigation Area
Unincorporated Land in Metro-Lakeside-Jamul Segment

Conserved Lands by Management Agency
County of San Diego DPR
California Department of Fish and Wildlife
City of Poway
City of San Diego Park and Recreation Department
City of San Diego Public Utilities Department
County of San Diego DPR
U.S. Fish and Wildlife Service
Unknown

Critical Habitat
Coastal California Gnatcatcher
Willowy Monardella

0 2,000 Feet

Source: Aerial Photo (SanGIS 2017); Conserved Lands (SANDAG Technical Services - GIS 2018); MSCP (SanGIS 2009); Critical Habitat (U.S. Fish and Wildlife Service 2018)

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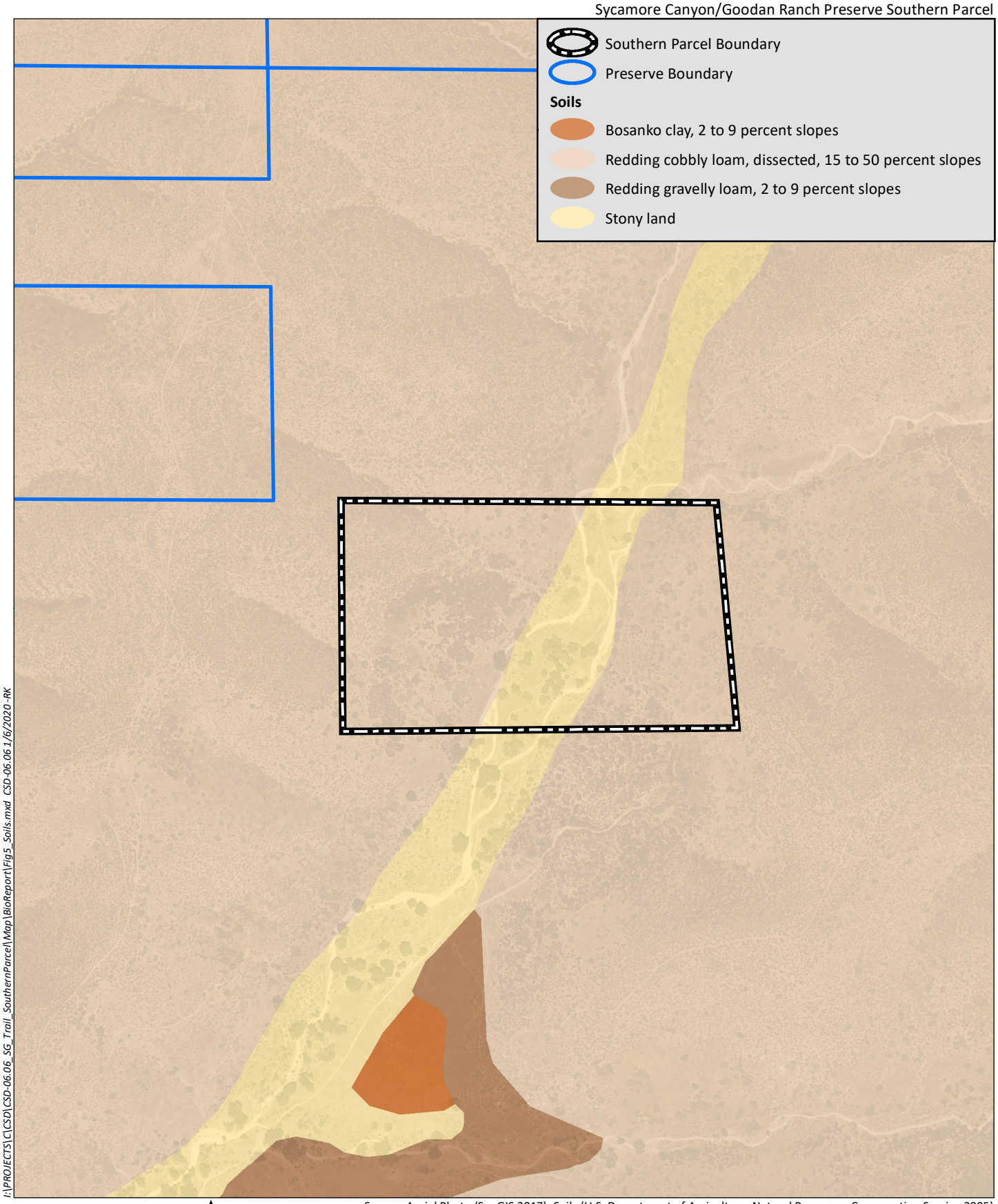
MSCP Designations and Conserved Lands

Figure 4

Sycamore Canyon/Goodan Ranch Preserve Southern Parcel



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Source: Aerial Photo (SanGIS 2017); Soils (U.S. Department of Agriculture, Natural Resources Conservation Service 2005)

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Soils

Figure 5

The inland positioning of the Southern Parcel lessens the coastal influence resulting in less-regulated temperatures. The average high temperature calculated for the surrounding Poway Valley area is approximately 75.1 degrees (°) Fahrenheit (F), with higher temperatures recorded during the summer and early fall months of June through September and cooler temperature recorded during the winter months of December and January. The average high temperature is 83.8°F whereas the average low temperature for is 38.6°F (WRCC 2019b). The mean annual precipitation for the Poway area is less than 13.24 inches, with most rainfall occurring between November and March and least amount occurring between June and August (WRCC 2019b).

1.7 HYDROLOGY

The Southern Parcel is located within the San Diego watershed, in the Santee hydrological subarea (Figure 6, *Hydrology*). The Parcel is situated within Clark Canyon and contains an ephemeral to intermittent drainage, Clark Canyon Creek, which flows north to south through the Southern Parcel. The Clark Canyon Creek is tributary to Sycamore Canyon Creek, the main north-south flowing drainage located within the Preserve. Sycamore Creek continues south where it meets with the San Diego River which ultimately flows west to the Pacific Ocean.

1.8 FIRE HISTORY

The Preserve is classified as a Very High Fire Hazard Severity Zone by the California Department of Forestry and Fire Protection (CAL FIRE 2019a). The entirety of the Preserve is designated as a state responsibility area lying within the service area of CAL FIRE and the City of Poway Fire Department. Based on historical fire perimeter data from CAL FIRE and Resource Assessment Program (FRAP), one fire has occurred within the Southern Parcel (CAL FIRE 2019b; Figure 7, *Fire History*). FRAP is a compiled statewide spatial database of fire perimeters from Bureau of Land Management (BLM), National Park Service (NPS), and U.S. Forest Service (USFS) fires totaling at least 10 acres and greater in size, and CAL FIRE fires totaling 300 acres and greater in size. One historic fire was recorded within the Southern Parcel, the Cedar Fire. The Cedar Fire occur in 2003 and burned the entire 20-acre Southern Parcel as shown on Figure 7 and detailed below in Table 1, *Fire Interval Data for the Southern Parcel*. In addition to the Cedar Fire, an adjacent fire event, the Rocoso Fire, occurred in 1994 to the south of the Parcel; however, the Rocoso Fire did not burn any portion of the Southern Parcel.

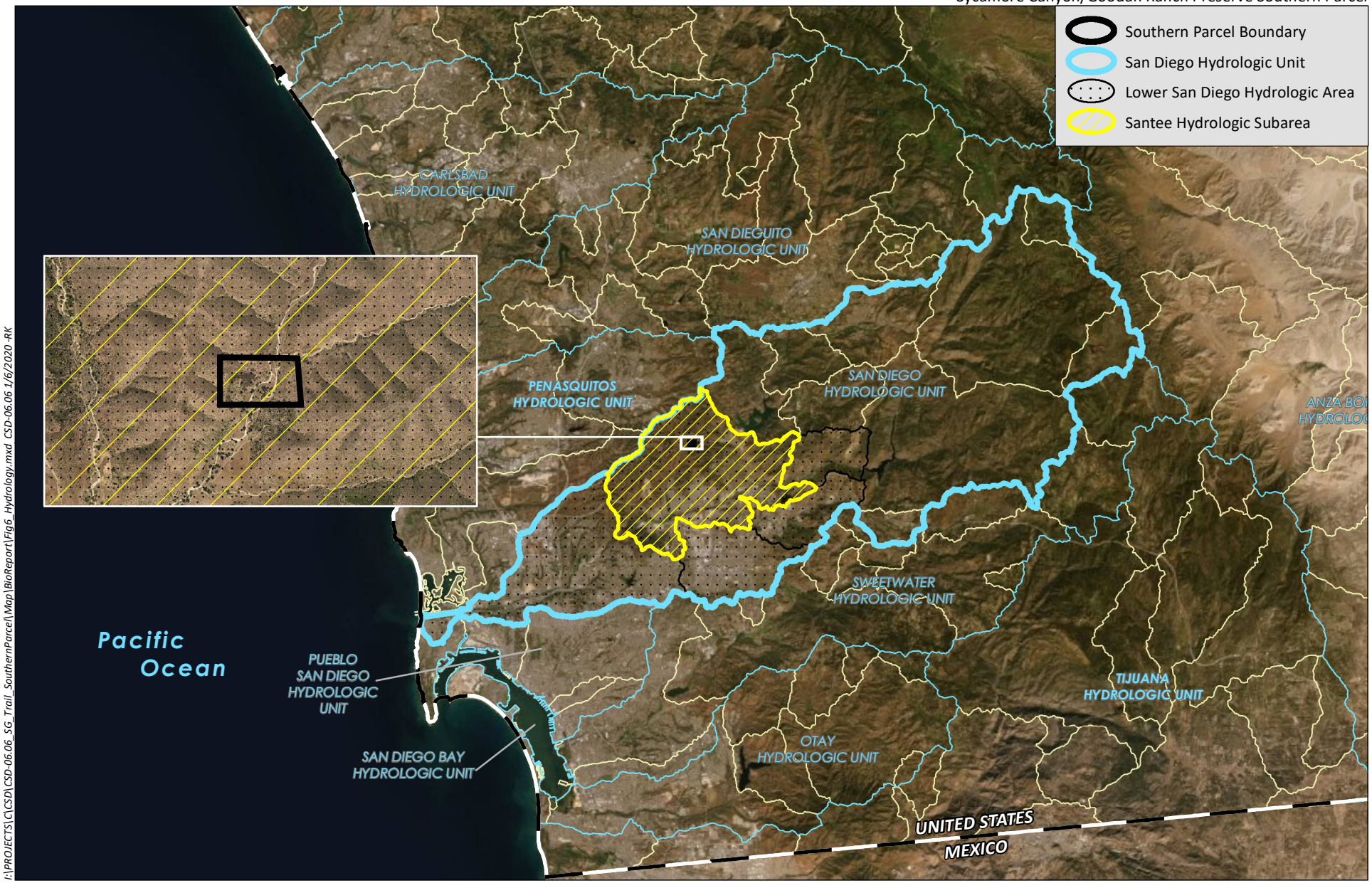
Table 1
FIRE INTERVAL DATA FOR THE SOUTHERN PARCEL

Fire Year	Fire Name	Interval from Previous Fire (years)	Acreage Burned within Parcel	Percent of Parcel Burned
1994	Rocoso Fire	Unknown	0	0
2003	Cedar	Unknown	20	100

1.9 TRAILS

There are no formal trails within the Southern Parcel, though an existing, unauthorized north-south trail is located within the canyon bottom. At this time, there is no authorized access permitted within the Southern Parcel addition.

Sycamore Canyon/Goodan Ranch Preserve Southern Parcel



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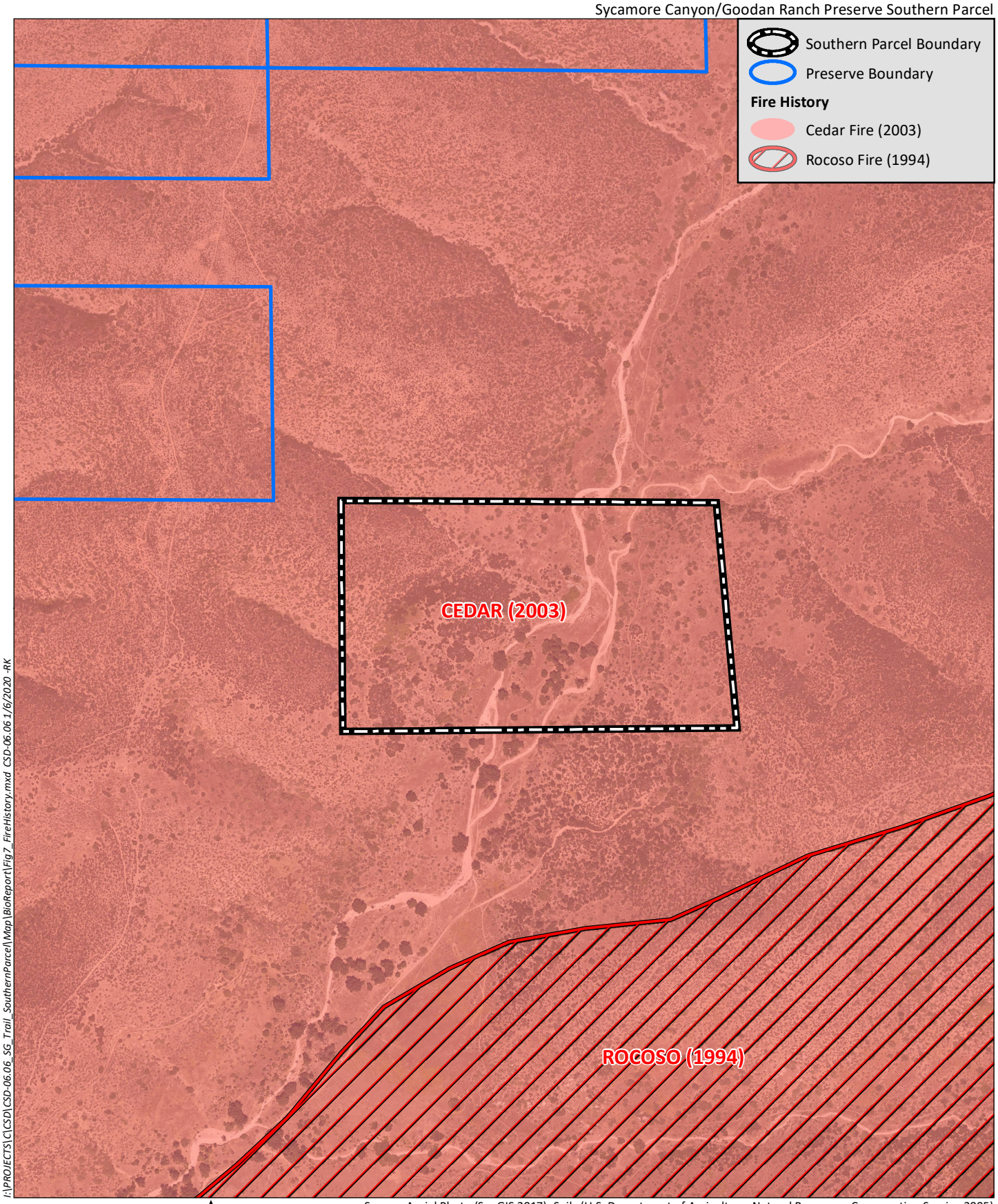
Source: Aerial Photo (Esri 2016); Hydrologic Units (California Interagency Watershed Mapping Committee 2004)

0 8 Miles

Hydrology

Figure 6

Sycamore Canyon/Goodan Ranch Preserve Southern Parcel



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Source: Aerial Photo (SanGIS 2017); Soils (U.S. Department of Agriculture, Natural Resources Conservation Service 2005)

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Fire History

Figure 7

2.0 METHODS

Baseline biological diversity surveys for the Southern Parcel were conducted by HELIX Environmental Planning, Inc. (HELIX) biologists and subconsultant Klutz Biological Consulting (KBC) between January and June 2019. Surveys included habitat/vegetation mapping, rare plant surveys, invasive non-native plant species mapping, butterfly surveys, terrestrial herpetological drift fence with box funnel trap surveys, diurnal and nocturnal avian point count surveys, acoustical bat surveys, small mammal trapping, and passive medium and large mammal camera surveys. A summary schedule of all baseline biological surveys completed in 2019 for the Southern Parcel is provided in Table 2, *Survey Information*.

Table 2
SURVEY INFORMATION

Survey Date	Survey Number	Personnel	Conditions[1]
Vegetation Mapping (additionally invasive and rare plant mapping, if observed)			
January 24, 2019	N/A	Korey Klutz[2]	NR[3]
Rare Plant Surveys (additionally invasive plant mapping, if observed)			
April 20, 2019	1	Korey Klutz	62-68°F; wind 0-5 mph; 0% clouds
June 18, 2019	2	Korey Klutz	64-79°F; wind 0-5 mph; 0% clouds
Butterfly Surveys			
March 23, 2019	1	Korey Klutz	60-66°F; wind 0-5 mph; 20-40% clouds
March 31, 2019	2	Korey Klutz	72-82°F; wind 0-5 mph; 0% clouds
April 5, 2019	3	Korey Klutz	60-66°F; wind 0-4 mph; 10-30% clouds
June 18, 2019	4	Korey Klutz	64-79°F; wind 0-5 mph; 0% clouds
Reptile Trapping Surveys			
June 10, 2019	1	Benjamin Rosenbaum	NR
June 11, 2019	1	Benjamin Rosenbaum	82-84°F; wind 0-2 mph; 10% clouds
June 12, 2019	1	Benjamin Rosenbaum	76-85°F; wind 0-2 mph; 0% clouds
June 13, 2019	1	Benjamin Rosenbaum	65-81°F; wind 0-3 mph; 20-100% clouds
June 14, 2019	1	Benjamin Rosenbaum	65-75°F; wind 1-3 mph; 0-90% clouds
Avian Point Count Surveys			
April 23, 2019	1 (diurnal)	Erica Harris	57-62°F; wind 0-1 mph; 100% clouds
April 24, 2019	1 (nocturnal)	Erica Harris Laura Moreton	52-58°F; wind 0-1 mph; 0% clouds
Bat Surveys			
April 24 – May 24, 2019	1 (passive)	Laura Moreton	NR
April 24, 2019	2 (active)	Laura Moreton Erica Harris	52-58°F; wind 0-1 mph; 0% clouds
Small Mammal Trapping			
June 5, 2019	1	Kelly Rios[4]	62°F[1]; wind 1-2 mph; 90% clouds
June 6, 2019	1	Kelly Rios	64°F; wind 2-3 mph; 80% clouds
June 7, 2019	1	Kelly Rios	64°F; wind 1-2 mph; 100% clouds
Wildlife Camera Survey			
April 23 – June 14, 2019	1	Erica Harris	NR

1 °F = degrees Fahrenheit; mph = miles per hour
2 Klutz Biological Consulting biologist
3 NR = Not Recorded
4 U.S. Fish and Wildlife Service Recovery Permit TE-018909-05

2.1 LITERATURE SEARCH

A thorough review of relevant maps, federal and state databases, and literature pertaining to biological resources known to occur within the Southern Parcel was conducted prior to HELIX conducting baseline biological surveys. Recent and historical aerial imagery, USGS topographic maps, soils maps (U.S. Department of Agriculture [USDA] 2019), and other relevant maps of the Southern Parcel and vicinity were acquired and reviewed to obtain updated information on the natural environmental setting. A query of special status species and habitats databases was also conducted, including USFWS species records (USFWS 2019a), California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB; CDFW 2019a), Calflora database (Calflora 2019), SanBIOS, and California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2019). Any recorded locations of species, habitat types, wetlands, and other resources were mapped and overlain onto aerial imagery using Geographic Information Systems (GIS).

2.2 SURVEY LIMITATIONS

Baseline biological diversity surveys within the Southern Parcel were conducted between January and June 2019. Additional surveys may be desired at a later date to establish a more thorough inventory of wildlife and plant species. Focused plant surveys were conducted in April and June to correspond with the blooming periods of the special status species with the highest potential to occur within the Southern Parcel. Not all plant species may have bloomed during the survey period, and it is possible that detection of some special status plant species may not have been possible due to the timing of the focused plant surveys and variable seasonal conditions (e.g., rainfall and temperatures) that influence growth and flowering. Noted animal species were identified by direct observation, vocalizations, or the observance of scat, tracks, or other signs. However, the lists of species identified are not necessarily comprehensive accounts of all species that utilize the Southern Parcel, as species that are nocturnal, secretive, or seasonally restricted may not have been observed or detected.

2.3 NOMENCLATURE

Nomenclature used in this report generally comes from the Holland (1986), Oberbauer et al. (2008), and the Vegetation Classification Manual (VCM) for Western San Diego County (San Diego Association of Governments [SANDAG] 2011a and b) for vegetation communities and land cover types; Jepson eFlora (2019) and Baldwin et al. (2012) for plants; North American Butterfly Association (2019) for butterflies; Society for the Study of Amphibians and Reptiles (2019) for reptiles and amphibians; American Ornithological Society (2019) for birds; and Bradley et al. (2014) and Tremor et al. (2017) for mammals. Plant species status is from the CNPS's Rare Plant Inventory (CNPS 2019), CDFW (2019b), County (2010a), and County (1997). Animal species status is from the CDFW (2019c), County (2010a), and County (1997).

2.4 VEGETATION COMMUNITY MAPPING

KBC biologist Korey Klutz mapped vegetation communities and land cover types within the Southern Parcel on January 24, 2019 (Table 2). Vegetation communities and land cover types were mapped on a 200-scale (1 inch = 200 feet) aerial of the site with the aid of Global Positioning System (GPS), as-needed. Mapping of the site included a 100-foot buffer pursuant to County's biology guidelines (County 2010a and 2010b). The Southern Parcel was surveyed on foot and with the aid of binoculars. Vegetation community classification was based on two separate systems: Vegetation Classification Manual (VCM)

for Western San Diego County (SANDAG 2011a and b) and Holland (1986), as modified by Oberbauer et al. (2008). The VCM classifies vegetation based on floristic and structural details that are represented as alliances and associations; vegetation within the Southern Parcel was mapped to the association level. Holland uses a hierarchical classification system that categorizes habitat and land use types based on location, distribution, structure, and dominant and characteristic plant species.

Vegetation was first mapped in the field according to VCM then cross-walked to the Holland/Oberbauer classification system. Direct translations between VCM and Holland do not exist for all vegetation types. Additionally, a single vegetation community under Holland may fit the definition of several different alliances or associations described within the VCM. Vegetation mapped within the Southern Parcel was translated from VCM to the equivalent classification unit under Holland. For associations or alliances that do not have direct translations, professional judgment was used to find the best corresponding vegetation community.

The vegetation survey included a general inventory of plant species encountered. Plant identifications were made in the field or in the lab through comparison with voucher specimens or photographs. All plant species observed during the 2019 biological surveys within the Southern Parcel are included in Appendix A, *Plant Species Observed*.

2.5 FLORISTIC SURVEYS

2.5.1 Rare Plant Surveys

A survey for special status plant species was conducted by Mr. Klutz during the spring and summer of 2019 (Table 2). Special status plant species include species that are: listed as threatened or endangered, proposed for listing, or are candidate species by the USFWS or the CDFW; those with a California Rare Plant Rank (CRPR) 1 through 4 as designated by the CNPS; those that are listed as sensitive by the County (2010a); and those covered by the County's MSCP South County Plan (County 1997). The survey periods were determined based on the recorded blooming periods of special status plant species known to occur within the Southern Parcel and surrounding area. The spring survey was conducted on April 20, 2019 which corresponded with the blooming period of the majority of the special status plant species with potential to occur. The summer rare plant survey was conducted on June 18, 2019 to detect late-blooming species.

Field survey methods conformed with the County's Biological Survey Guidelines (County 2010b), CNPS Botanical Survey Guidelines (CNPS 2001), Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities (CDFW 2000), and Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants (U.S. Fish and Wildlife Service [USFWS] 1996). The surveys were conducted on foot and consisted of walking meandering transects throughout the Southern Parcel visually searching for plants. Areas of steep terrain and impenetrable stands of vegetation were completed with visual aids (i.e., binoculars) from suitable vantage points. All plant species encountered during the field surveys were identified to subspecies or variety, if applicable, to determine sensitivity status. Special status plant species encountered were mapped using a hand-held GPS unit and/or on an aerial photograph.

2.5.2 Invasive Non-native Plant Species Mapping

The locations of invasive non-native plant species encountered during vegetation mapping and rare plant surveys were mapped by Mr. Klutz (Table 2). Invasive plant species include those rated as moderate to highly invasive by the California Invasive Plant Council (Cal-IPC 2019). The focus of the mapping effort was on invasive non-native plant species with the greatest potential to invade native habitats (e.g., giant reed [*Arundo donax*], black mustard [*Brassica nigra*], tree tobacco [*Nicotiana glauca*], etc.), or species that may not be rated as moderate or high, but are considered to have a localized potential for habitat invasion (e.g., rose natal grass [*Melinis repens* ssp. *repens*]). Ubiquitous species scattered across the Southern Parcel that pose limited potential for invasion into established habitats and that would be impractical to control on an individual basis (e.g., brome grasses [*Bromus* spp.] or mustards [family Brassicaceae]) were not mapped as individual occurrences; however, their presence was noted as components of non-native grasslands mapped in the Southern Parcel. Areas of steep terrain and impenetrable stands of vegetation were completed with visual aids (i.e., binoculars) from suitable vantage points.

Invasive non-native plant species locations were mapped using a sub-meter accurate hand-held GPS unit. All collected data were combined into a GIS data layer with points and polygons representing species locations.

2.6 WILDLIFE SURVEYS

Wildlife species were identified by direct observation (visually and by photograph), vocalizations, or the observance of scat, tracks, or other signs and recorded. Binoculars were used to aid in the identification of observed wildlife. A list of animal species observed or otherwise detected within the Southern Parcel during the baseline biological surveys is included as Appendix B, *Animal Species Observed or Detected*. Surveys occurred within representative habitats throughout the Southern Parcel and specific survey locations were recorded with GPS (Figure 8, *Biological Inventory Locations*).

2.6.1 Invertebrates

A habitat assessment for the County sensitive, federally endangered quino checkerspot butterfly (QCB; *Euphydryas editha quino*) and County sensitive, federal candidate for listing Hermes copper butterfly (*Lycaena hermes*) was completed in January during the habitat mapping survey (Table 2). Potentially suitable habitat for the quino checkerspot butterfly and Hermes copper butterfly was mapped and categorized as having either high, moderate, or low potential to support the species, or was mapped as excluded in areas that did not meet the constitute habitat requirements for the species. Host plants for both butterfly species were also mapped during the habitat assessment and the focused butterfly surveys. Host plants for quino checkerspot butterfly include dwarf plantain (*Plantago erecta*), purple owl's clover (*Castilleja exserta*), Coulter's snapdragon (*Antirrhinum coulterianum*), woolly plantain (*Plantago patagonica*), and Chinese houses (*Collinsia* spp.). The host plant for Hermes copper butterfly consists of spiny redberry (*Rhamnus crocea*) located within at least 10 feet of California buckwheat (*Eriogonum fasciculatum*), the primary adult nectaring plant.

Four general butterfly surveys were performed on March 23, March 31, April 5, and June 18, 2019, by Mr. Klutz (Table 2). The first three surveys were conducted during the quino checkerspot butterfly flight season, generally late January to early May (USFWS 2003) and were timed to occur after the first observation of adult quino checkerspot butterfly within the County was reported. The first observation

of adult QCB in San Diego County was on February 24, 2019, near Otay Lakes (Quino Biologists United 2019). The fourth survey was conducted during the Hermes copper butterfly flight season, generally mid-May to early-July (County 2010b). Surveys followed a Pollard style methodology (Taron and Ries 2015) where the surveyor walked a slow and steady pace along a transect and recorded all butterfly species encountered. Transects were conducted at a rate of 5 to 10 acres per hour and were focused along existing trails, dirt roads, ridgelines, and where host and/or nectar plants for quino checkerspot butterfly and Hermes Copper butterfly were observed. The surveys were not conducted during rain, high winds (greater than 10 mph), or cold days. The March and April surveys were conducted when weather conditions met those required for quino checkerspot butterfly, less than 60°F on a clear day or less than 70°F on days with 50 percent cloud cover or more (USFWS 2014). The June survey was conducted when weather conditions met those required for Hermes Copper, temperatures between 70°F and 95°F and cloud cover below 25 percent (County 2010b).

Although the surveys focused on butterflies, other invertebrates observed incidentally were identified down to the smallest identifiable taxonomic group. Incidental butterfly observations and other invertebrate species during other biological surveys were also recorded.

2.6.2 Herpetofauna

Terrestrial herpetofauna surveys were conducted to census both amphibian and reptile species that may be present within the Southern Parcel. Terrestrial surveys consisted of one active trapping session utilizing drift fence with funnel traps. The survey was conducted by HELIX biologist Benjamin Rosenbaum in June and was timed to occur within five days surrounding a new moon phase to capture peak amphibian and reptile activity (Table 2). The funnel traps were set up, sampled for four consecutive days, and then removed from the Southern Parcel (for example, set up on Monday, sampled daily Tuesday through Friday, and removed from the site on Friday).

Two trapping arrays were established in a flat, relatively open area in the southwestern portion of the Southern Parcel and recorded with a hand-held GPS unit (Figure 8). The terrestrial herpetofauna survey methods and trap design generally follow those described in the *Herpetological Monitoring Using a Pitfall Trapping Design in Southern California* (USGS 2008). The drift fences consisted of 100-foot segments of black silt fence secured upright into the ground with wooden stakes. The funnel traps were constructed with wood segments and mesh hardware cloth to create a box with a lid. Two funnels per box were constructed with mesh hardware cloth that were cut and rolled into cylindrical funnel shapes. The small end of each funnel was cut to have an opening of approximately two inches in diameter, which allowed animals, including large snakes, to enter the cylinder. The two funnel ends were fit into the traps with the small ends pointing inwards. All sharp points and edges were trimmed off during the cutting process to prevent injury to captured animals and field personnel. The funnel traps were positioned with the seams of both the body and end cones facing upwards to prevent animals from becoming injured on any rough edges of the hardware cloth. The funnel traps were covered with vegetation to avoid exposure to sunlight and precipitation. Small rocks were also placed on top of the closed container lids to prevent them from being opened by animals or wind.

Incidental observations and detections of amphibian and reptile species were recorded during the trapping survey.

Canyon Trail
Anabat 2
CAM2
T2
Point Count 1
T1
Point Count 2
Anabat 1
Array 1
T3
CAM1
Canyon Trail
Point Count 3
Array 2
T4
Scripps Poway Parkway
Sycamore Canyon Road
67
Southern Parcel Boundary
Preserve Boundary
Small Mammal Trapping Transect
Active Bat Survey Transect
Bat Location
Wildlife Camera
Avian Point Count
Reptile Trapping Location
0
100 Feet
N
Source: Aerial (SanGIS 2017)

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HELIX Environmental Planning

Biological Inventory Locations

Figure 8

2.6.3 Birds

Diurnal and nocturnal point count surveys were conducted during the spring (April) to census avian species within the Southern Parcel. One survey event consisting of both a diurnal survey and a nocturnal survey was completed by HELIX biologists Erica Harris and Laura Moreton on April 23 and 24, 2019 (Table 2). Three (3) point count locations were established a minimum of 250 meters apart across representative habitat types (e.g., Diegan coastal sage scrub, southern mixed chaparral, open coast live oak woodland, and unvegetated channel) present within the Southern Parcel (Figure 8). All point count locations were digitally recorded with a hand-held GPS unit.

The point counts consisted of a 10-minute survey period conducted at each count location. The diurnal surveys were conducted in the early morning hours directly following sunrise and completed no later than 10:30 a.m. The nocturnal surveys were conducted during the nighttime hours commencing no earlier than 30 minutes following sunset. Surveys did not occur during inclement weather conditions (e.g., high winds, rain, and dense fog) that would have reduced detectability. The order in which the count locations were surveyed was varied during each survey visit. The point counts generally followed methods described in the *Handbook of Field Methods for Monitoring Landbirds* (Ralph et al. 1993) and detailed below.

The point counts were conducted by a one- or two-person survey team. Biologists approached each point location cautiously to minimize disturbance to any birds in the area and waited at least one minute after arrival before starting the point count survey to allow for birds to adjust to their presence and record field conditions. Each point count survey lasted for a 10-minute period during which the species, abundance, behavior, and distance of all birds detected, both visually and aurally, were recorded on standardized data sheets. The distance of the individual(s) detected during the survey period was estimated up to 50 meters. The distance of individuals over 50 meters was generalized as greater than 50 meters since the accuracy of estimation diminishes as the distance from the observer increases. An attempt was made to count individuals only once to minimize double counting the same individual. Incidental observations of avian species between point locations were also be recorded. No differentiation between sex or adult and juvenile birds was recorded as part of the surveys. Individuals observed during surveys that were not able to be identified to a species level were instead identified to the closest taxonomic group.

No broadcasting of recordings or other methods for soliciting individuals were implemented during the diurnal surveys. However, recorded vocalizations of three common non-listed nocturnal species (great horned owl [*Bubo virginianus*]*,* barn owl [*Tyto alba*], and common poorwill [*Phalaenoptilus nuttallii*]) were broadcasted during the nocturnal surveys in April to aid in the detection of these species. The same methods described above were implemented for the nocturnal surveys with the following modifications. The first minute of the 10-minute survey period consisted of a passive observation during which surveyors visually searched for birds and listened for vocalizations. In minute two, a digitial recording of one of the above species was broadcasted over a hand-held Bluetooth speaker for 30 seconds followed by another passive observation period. In minute five, the third species was played, and again in minute eight. The recordings played were selected from iBird Pro, a digital application available on smart phones and tablets.

2.6.4 Mammals

Baseline biological diversity surveys for mammals consisted of several separate methods to inventory for bat species, small mammal, and medium to large mammal species. The following sections detail these survey methods.

2.6.4.1 Bat Surveys

Passive and active bat surveys were conducted in April through May 2019 (Table 2). The survey methods for the passive and active bat surveys are detailed below.

Passive Surveys

Passive acoustical monitoring for bats was conducted in two locations within the Southern Parcel (Figure 8). AnaBat Express detectors were deployed at these two locations for an approximately three-week period starting on April 24, 2019. At Location 1, recording occurred until the AnaBat batteries died on May 10, 2019. At Location 2, the AnaBat batteries died on May 15, 2019. The deployment locations were selected based on proximity to water, where possible, and an effort was made to survey multiple vegetation communities within the Southern Parcel. Location 1 was located within Diegan coastal sage scrub. Location 2 was located adjacent to unvegetated channel in an area with ponded water and open coast live oak woodland.

Active Surveys

One active bat survey was conducted by Ms. Moreton and Ms. Harris on April 24, 2019 in conjunction with the nocturnal avian survey (Table 2). The surveys consisted of walking through the Southern Parcel with an AnaBat Express detector in-hand to record bat species. The active survey commenced approximately one hour before local sunset and was completed one hour after sunset. Surveyors stopped at three-point count locations for approximately 10 minutes during the active survey.

Analook software was used to process the AnaBat Express recordings and aid in species identification. All bat calls were analyzed and compared with recordings from a library of voucher calls (Corbin and Livengood 2018) of species with potential to occur in the Southern Parcel. The number of species detected was determined for each passive detector survey location and for each active survey.

2.6.4.2 Small Mammal Trapping

Small mammals were inventoried with the use of live trapping techniques that generally followed procedures described in the *Field Methods and Techniques for Monitoring Mammals* (Hoffman et al. 2010). Four small mammal trapping transects (i.e., Transect 1, Transect 2, etc.) were established within various habitats and locations within the study area (Figure 8). HELIX biologist Kelly Rios conducted the small mammal trapping surveys; Ms. Rios is permitted by the USFWS (TE 018909-05) to handle special status species, including San Bernardino Kangaroo rat (*Dipodomys merriami parvus*). Two consecutive nights of trapping were conducted on June 5 and 6, 2019 during the summer season to coincide with the breeding season and peak small mammal activity (Table 2). The trapping session was timed to occur within five days surrounding a new moon phase. No daytime trapping occurred.

The small mammal trapping transects extended between 89 to 141 meters. Each transect consisted of a meandering trap-line with 15 traps along each of the four transects (approximately 10-meters apart), for

a total of 60 traps or a total of 120 trap nights. Traps were sign-set (e.g., set at burrow entrances, runs, and dust baths) to the extent feasible to capture the greatest diversity possible. Traps consisted of Sherman live traps (model LFATDG). Traps were baited with peanut butter and bird seed within two hours of sunset each evening and were checked the following morning near dawn (prior to 10:00 a.m.), or before daytime temperatures reached levels that could result in animal mortality. Traps were set in locations that provided the greatest chance for diversified data collection (e.g., interface between vegetation community types, areas of microhabitat changes, etc.). All array locations were digitally recorded in the field with a hand-held GPS unit and marked with flagging tape during each trapping session.

All captured animals were processed (i.e., data collected included location captured) and identified to species. No ear notching, toe clipping, fur cutting, microchipping, or any other means of semi-permanent/permanent marking was performed as part of the trapping surveys. All captured animals were released within the immediate area following data collection. If the animal did not immediately leave the area, they were placed under cover to reduce the risk of predation. All traps were closed during the day so that no additional animals would be captured.

2.6.4.3 Medium to Large Mammals

Motion-activated cameras were deployed within the Southern Parcel to document the presence of wildlife, specifically medium and large mammals. Two (2) Brown Spec Ops Extreme cameras were installed within the Southern Parcel where signs of movement and use, such as tracks and scat, were observed (Figure 8). The camera stations were digitally recorded in the field with a hand-held GPS unit.

One extended camera deployment period was conducted. The cameras were installed on April 24, 2019 and removed on June 14, 2019 and timed to coincide with the breeding season and peak mammal activity (Table 2). The ground in front of the camera was baited with a scent lure (Carman's Superior Animal Lure) and installed at each camera location to aid in the detection and identification of wildlife species.

Following the surveys, all images were downloaded and reviewed by HELIX biologists Erica Harris and Angelina Bottani. All photographs were analyzed for the presence of wildlife species and all species recorded were identified to the closest taxonomic group possible.

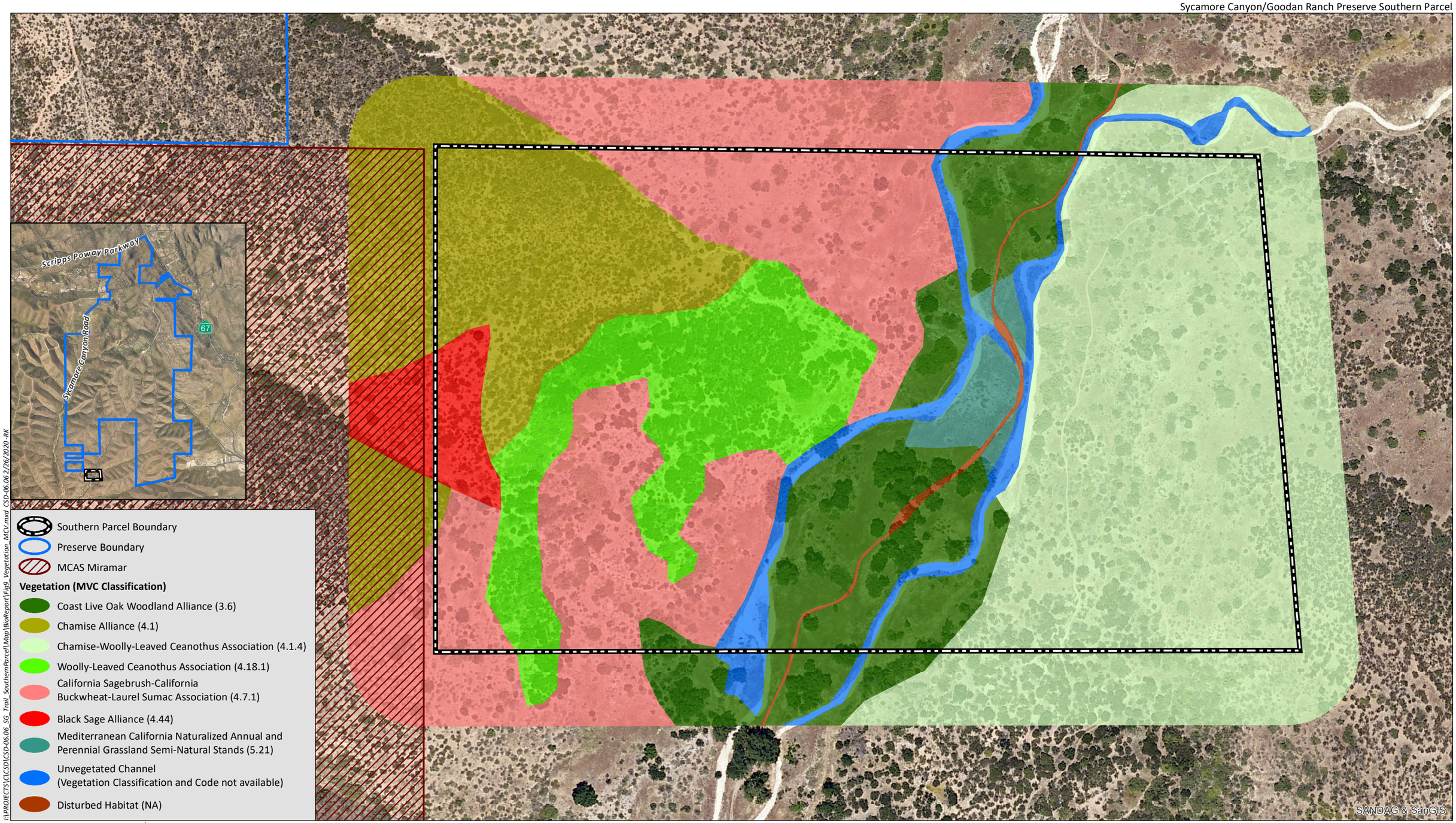
3.0 BASELINE SURVEY RESULTS

This section summarizes habitat types present within the Southern Parcel, and plant and wildlife species observed or otherwise detected during biological surveys. Special status plant and animal species identified in the Southern Parcel as part of the baseline surveys are presented, as well as those with high potential to occur. Completed lists of all plant and animal species detected within the TRVRP are included as Appendices A and B, respectively. Special status plant and animal species that were not detected during the baseline surveys but have potential to occur are included as Appendices C, *Special Status Plant Species with Potential to Occur*, and D, *Special Status Animal Species with Potential to Occur*, respectively. An explanation of special status codes is included in Appendix E, *Explanation of Status Codes for Plant and Animal Species*. Representative photographs are included as Appendix F, *Representative Photographs.*

3.1 VEGETATION COMMUNITIES/HABITATS

A total of eight (9) plant alliances, associations, or semi-natural stands were mapped within the Southern Parcel (Table 3, *Vegetation Communities and Land Covers*): coast live oak woodland alliance, chamise alliance, chamise-woolly-leaved ceanothus association, woolly-leaved ceanothus association, California sagebrush-California Buckwheat-laurel sumac association, black sage alliance, Mediterranean California naturalized annual and perennial grassland-semi natural stands, unvegetated channel, and disturbed habitat. The VCM distribution of vegetation and land cover types are depicted on Figure 9, *Vegetation Communities/Habitats (Vegetation Classification)*; vegetation communities and land use types according Holland/Oberbauer are depicted on Figure 10, *Vegetation Communities/Habitats (Holland/Oberbauer)*. Vegetation communities present within the Southern Parcel were mapped based on the VCM and cross-walked to the Holland/Oberbauer classification system.

Sycamore Canyon/Goodan Ranch Preserve Southern Parcel



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Source: Aerial (SanGIS 2017); Vegetation (Korey Klutz 2019, Updated by HELIX 2019)

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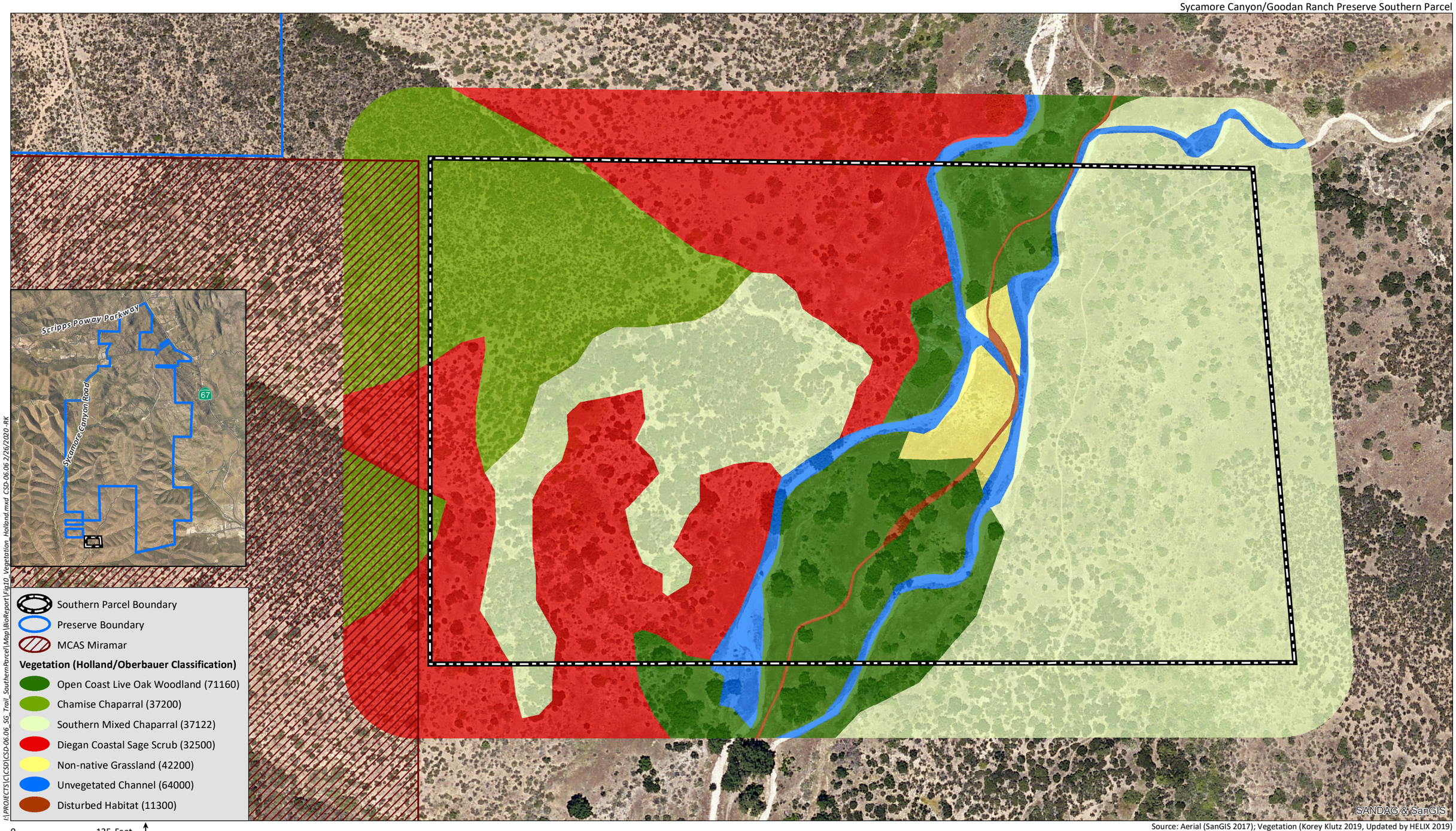
Vegetation Communities/Habitats (Manual of California Vegetation)

Figure 9

Sycamore Canyon/Goodan Ranch Preserve Southern Parcel



0 125 Feet

N

Source: Aerial (SanGIS 2017); Vegetation (Korey Klutz 2019, Updated by HELIX 2019)

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Vegetation Communities/Habitats (Holland/Oberbauer)

Figure 10

Table 3
VEGETATATION COMMUNITIES AND LAND COVERS

VCM code	VCM Alliance/ Association	VCM Common Name	Holland Code	Holland Classification	Southern Parcel (Acres)[1]	100-foot Buffer (Acres)[1]
Woodlands						
3.6	*Quercus agrifolia* Alliance	Coast Live Oak Woodland Alliance	71160	Coast Live Oak Woodland	2.66	0.86
				Woodlands Total	**2.66**	**0.86**
Sclerophyllous, Evergreen Shrubs						
4.1	*Adenostoma fasciculatum* Alliance	Chamise Alliance	37200	Chamise Chaparral	2.00	2.06
4.1.4	*Adenostoma fasciculatum-Ceanothus tomentosus* Association	Chamise-Woolly-Leaved Ceanothus Association	37122	Southern Mixed Chaparral	6.09	2.67
4.18.1	*Ceanothus tomentosus* Association	Woolly-Leaved Ceanothus Association	37120	Southern Mixed Chaparral	2.48	0.07
				Sclerophyllous, Evergreen Shrubs Total	**10.57**	**4.80**
Soft-Leaved, Drought-Deciduous Shrublands						
4.7.1	*Artemisia californica-Eriogonum fasciculatum-Malosma laurina* Association	California Sagebrush-California Buckwheat-Laurel Sumac Association	32500	Diegan Coastal Sage Scrub	3.80	2.80
4.44	*Salvia mellifera* Alliance	Black Sage Alliance	32500	Diegan Coastal Sage Scrub	0.21	0.49
				Soft-Leaved, Drought-Deciduous Shrublands Total	**4.02**	**3.29**
Herbaceous Vegetation						
5.21	Mediterranean California Naturalized Annual and Perennial Grassland Semi-Natural Stands	Mediterranean California Naturalized Annual and Perennial Grassland Semi-Natural Stands	42200	Non-native Grassland	0.43	--
				Herbaceous Vegetation Total	**0.43**	**--**
Unvegetated[2]						
N/A	Not Available	Not Available	11300	Disturbed Habitat	0.10	0.02
N/A	Not Available	Not Available	64200	Non-vegetated Channel	0.72	0.28
				Unvegetated Total	**0.72**	**0.28**
				GRAND TOTAL	**18.40**	**9.23**

[1] The Vegetation Classification Manual does not classify generally unvegetated habitats such as those found in the Holland/Oberbauer classification system: developed, disturbed habitat, open water, and unvegetated habitat (streambed).

[2] Acres rounded to the nearest hundredth.

The following vegetation community and land cover descriptions follow the VCM. Communities not described by the VCM, of which there are one, were described using Holland/Oberbauer.

Coast Live Oak Woodland Alliance (3.6)

This alliance is comprised primarily of coast live oak (*Quercus agrifolia*), with an understory of both native and naturalized plants. Understory plants observed within the Southern Parcel included Mexican elderberry (*Sambucus nigra*) California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), rip-gut grass (*Bromus diandrus*), slender wild oat (*Avena barbata*), and poison oak (*Toxicodendrum diversiloba*).

There are 2.66 acres of coast live oak woodland that occur primarily within the middle portion of the Southern Parcel.

Chamise Alliance (4.1)

The chamise alliance is comprised primarily of broad-leaved sclerophyll shrubs forming dense often impenetrable vegetation dominated by chamise (*Adenostoma fasciculatum*). Other species that may be present in low numbers include mission manzanita (*Xylococcus bico*lor), hairy ceanothus (*Ceanothus oliganthus*), inland scrub oak (*Quercus berberidifolia*); and big berry manzanita (*Arctostaphylos glauca*).

A total of two acres of the chamise alliance occur in the northwestern portion of the of the Southern Parcel.

Chamise/Woolly-leaved Ceanothus Association (4.1.4)

This association contains broad-leaved sclerophyll shrubs that form a dense shrub canopy that is often dominated by woolly-leaved ceanothus (*Ceanothus tomentosu*s) and chamise. Other shrubs species that can occur as codominant include laurel sumac, inland scrub oak, and a variety of different manzanita species.

Chamise/woolly-leaved ceanothus association occurs in the eastern portion of the Southern Parcel and is the most prominent habitat type totaling 6.09 acres.

Woolly-leaved Ceanothus Association (4.18.1)

This association is comprised almost entirely by woolly-leaved ceanothus but may contain sparse amounts of other subdominant shrubs including inland scrub oak, toyon (*Heteromoles arbutifolia*), and other lilac species (*Ceanothus* spp.)

There are 2.48 acres of the chamise/woolly-leaved ceanothus association occurring within the western portion of the Southern Parcel, primarily on the lower southeast facing slopes adjacent to the chamise chaparral alliance that occurs upslope.

California Sagebrush-California Buckwheat/Laurel Sumac Association (4.7.1)

This association contains a relatively open, semi-deciduous shrub layer dominated by California sagebrush (*Artemisia californica*), California buckwheat, and laurel sumac. The herb cover is generally

open and with a high species diversity. This association can occur both as a mature stable shrub community or as an early transitional stage of other shrublands in response to fire or other disturbance.

A total of 3.8 acres of the California sagebrush-California buckwheat/laurel sumac association occurs on the south and southeast facing slopes located on the western portion of the Southern Parcel.

Blake Sage Alliance (4.44)

The black sage alliance describes shrubland communities where black sage (Salvia mellifera) is a dominant or co-dominant species. This community typically occurs on dry slopes and alluvial fans where soils are shallow. Other associated species include those common in other sage scrub communities such as California sagebrush, California buckwheat, coyote bush (Baccharis pilularis), and California sunflower (Encelia californica).

A total of 0.21 acres of the black sage alliance occurs in the western portion of the Southern Parcel.

Mediterranean California Naturalized Annual and Perennial Grassland Semi-Natural Stands (5.21)

This classification describes a community where a mix of non-native grasses and forbs are dominant over native species. This vegetation type is widespread, representing situations where ruderal plants have been introduced through a history of repeated soil disturbance and replaced native species. Within the Southern Parcel, these stands are primarily comprised of slender wild oat, rip-gut grass, and foxtail chess (*Bromus madritensis* ssp. *madritensis*). Other species that occur in low numbers included California buckwheat, doveweed (*Croton setigerus*), and fascicled tarplant (*Deinandra fasciculatum*).

A total of 0.43-acre of this vegetation community occurs adjacent to the coast live oak woodland alliance within the central portion of the Southern Parcel.

Disturbed Habitat (Holland Code 11300)

Disturbed habitat consists of an unauthorized trail that has been established through the center of the Southern Parcel.

Non-Vegetated Channel (Holland Code 64200)

Unvegetated habitat (streambed) includes areas that are unvegetated and within the corridor of a stream or river. The stream or river may be ephemeral or intermittent, making open water an inappropriate name for this habitat type at the time vegetation mapping was conducted; however, these areas may contain water depending on time of year. Non-vegetated channel within the Southern Parcel consists of ephemeral to intermittent stream courses that are dominated by cobbly rock streambed and primarily convey water during and immediately following rain events.

A total of 0.72-acre of non-vegetated channel were mapped within the Southern Parcel within the central portion of the site. Two northeast to southwest trending channels occur within the lower-lying valley of the Southern Parcel generally flowing along the toe of western- and eastern-facing slopes.

3.2 PLANTS

A total of 121 plant species were observed within the Southern Parcel during the 2019 baseline surveys, consisting of 97 native and 24 non-native plant species (Appendix A).

3.2.1 Special Status Plant Species Observed

Special status plant species include species that are listed as threatened or endangered, proposed for listing, or are candidate species by the federal (USFWS) or state (CDFW) governments; those with a CRPR 1 through 4 as designated by the CNPS (CNPS 2019); those that are listed as sensitive by the County (2010a); and those covered by the MSCP County of San Diego Subarea Plan (County 1997).

Three (3) special status plant species were identified within the Southern Parcel during 2019 baseline biological surveys (Figure 11, *Special Status Plant Species*): willowy monardella (*Monardella viminea*), golden-rayed pentachaeta (*Pentachaeta aurea* ssp. *aurea*), and ashy spike-moss (*Selaginella cinerascens*). Willowy monardella is covered under the MSCP County of San Diego Subarea Plan. Plant descriptions are from the Jepson eFlora (2019), Rare Plants of San Diego County (Reiser 2001), CNPS Rare Plant Inventory (CNPS 2019), and Calflora (2019).

Willowy Monardella (*Monardella viminea*)
Status: FE/SE; CRPR 1B.1; County List A; MSCP Covered and Narrow Endemic Species
Willowy monardella is a small subshrub that is found within San Diego County at elevations between 160 and 740 feet. It generally occurs within alluvial ephemeral washes that contain cobbles and limited cover by large shrubs and trees. This species grows up to 50 centimeters in height and flowers between June and August.

A total of 22 individuals were observed within the central portion of the Southern Parcel, primarily within the western unvegetated channel (Figure 11). This species has also been observed within the southern portion of the Preserve, upstream of the Southern Parcel, during biological surveys conducted in 2008 (County 2009) and 2015 (ICF 2015). USFWS-designated critical habitat for the willowy monardella is located immediately south of the Southern Parcel (Figure 4).

Golden-rayed Pentachaeta (*Pentachaeta aurea* ssp. *aurea*)
Status: --/--; CRPR 4.2; County List D
Golden-rayed pentachaeta is an annual herb that is found within San Diego and Riverside Counties, and south in to Baja California. This small, yellow sunflower typically flowers from March through July. It occurs in openings of shrublands, woodlands, and forests, and within grasslands (both native and non-native) at elevations between 260 to 6,100 feet.

Approximately 50 individuals were mapped in four different locations within the northwestern portion of the Southern Parcel (Figure 11).

Ashy spike-moss (*Selaginella cinerascens*)
Status: --/--; CRPR 4.1; County List D
Ashy spike-moss is a perennial rhizomatous fern occurring within San Diego and Orange Counties, and south into Baja California. The species grows in sunny areas and under shrubs within chaparral and Diegan coastal sage scrub. It often occurs on red clay slopes at elevations between 20 and 2,100 feet.

Sycamore Canyon/Goodan Ranch Preserve Southern Parcel

Southern Parcel Boundary

Preserve Boundary

Special Status Animal Species

Amphibians

Western Spadefoot (*Spea hammondii*)

Reptiles

Belding's Orange-throated Whiptail (*Aspidoscelis hyperythra beldingi*)

Birds

Costa's Hummingbird (*Calypte costae*)

Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)

Turkey Vulture (*Cathartes aura*)

Yellow Warbler (*Setophaga petechia*)

Mammals

Mule Deer (*Odocoileus hemionus*)

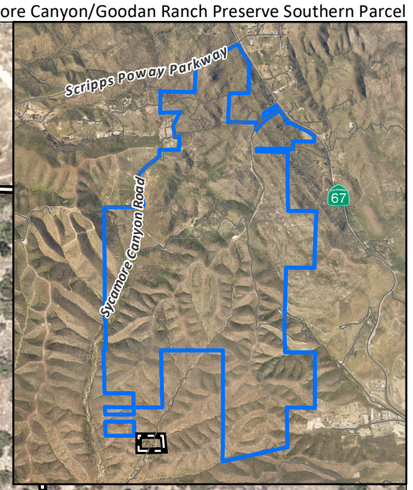
San Diego Bryant's (formerly desert) Woodrat (*Neotoma bryanti* [formerly *lepida] intermedia*)

San Diego Black-tailed Jackrabbit (*Lepus californicus bennettii*)

Pocketed Free-tailed Bat (*Nyctinomops femorasaccus*)

Western Mastiff Bat (*Eumops perotis*)

Yuma Myotis (*Myotis yumanensis*)



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Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Special Status Animal Species

Figure 15

Ashy spike-moss was observed in three different locations in the northwestern and southeastern portions of the Southern Parcel (Figure 11). Each location consisted of a patch about two to five meters in size. Soils within these patches were generally shallow, and compacted. This species has also been detected within the southwestern portion of the Preserve during biological surveys conducted in 2012 (Dudek 2013; County 2013) and in northern portion of the Preserve in 2016 (AECOM 2017).

3.2.2 Special Status Plant Species with High Potential to Occur

Based on an analysis of elevation, soils, vegetation communities, previous rare plant surveys conducted within the surrounding area, and recorded observations of special status plant species in and near the Southern Parcel, seven special status plant species have a high potential to occur in the Southern Parcel (Appendix C): Dean's milk-vetch (*Astragalus deanei*), San Diego County viguiera (*Bahiopsis laciniata*), delicate clarkia (*Clarkia delicata*), San Diego barrel cactus (*Ferocactus viridescens*), Graceful tarplant (*Holocarpha virgata* ssp. *elongata*), California adder's-tongue (*Ophioglossum californicum*), and rush-like bristleweed (*Xanthisma junceum*).

Dean's milk-vetch (*Astragalus deanei*)
Status: --/--; CRPR 1B.1; County List A
Dean's milk-vetch is a perennial herb occurring in southwestern San Diego County at elevations below 2,280 feet. It grows on open, shrubby slopes in chaparral but can also be found within coastal scrub, cismontane woodland, and riparian forest. The species flowers from February through May.

Suitable chaparral and coastal sage scrub habitat for the species occurs within the Southern Parcel along the eastern and western slopes. The species was detected within the northern portion of the Preserve during biological surveys conducted in 2016 (AECOM 2017).

San Diego County viguiera (*Bahiopsis laciniata*)
Status: --/--; CRPR 4.3; County List D
San Diego viguiera is a perennial shrub that occurs on a variety of soil types in arid Diegan coastal sage scrub. Generally, shrub cover is more open than at mesic, coastal locales supporting sage scrub. This species occurs at elevations between 295 and 2,461 feet. San Diego viguiera occurs in San Diego and Orange Counties, and in Baja California. Although this species is declining due to urbanization, it may be locally dominant and may colonize mildly disturbed areas.

Suitable coastal sage scrub habitat occurs within the western portion of the Southern Parcel. This species was detected within the southwestern portion of the Preserve during the biological surveys conducted in 2019 by HELIX for the Sycamore Canyon and Goodan Ranch Preserve Public Access Plan Project.

Delicate clarkia (*Clarkia delicata*)
Status: --/--; CRPR 1B.2; County List A
Delicate clarkia is an annual herb occurring within San Diego County at elevations between 770 and 3,280 feet. It is often found growing on gabbroic soils within chaparral and oak woodlands. The species flowers between April and May.

Suitable chaparral habitat for the species occurs within the Southern Parcel on the eastern and western slopes, though gabbroic soils are not mapped. The species was previously observed just outside the western boundary of the Preserve during biological surveys conducted in 2012 (Dudek 2013; County 2013.)

San Diego barrel cactus (*Ferocactus viridescens*)
Status: --/--; CRPR 2B.1; County List B; MSCP Covered
San Diego barrel cactus is a stem succulent shrub. Optimal habitat for this cactus appears to be Diegan coastal sage scrub hillsides, often at the crest of slopes and growing among cobbles. It is occasionally found on vernal pool periphery and mima mound topography in Otay Mesa. It occurs at elevations between 33 to 492 (10 to 150 meters). San Diego barrel cactus occurs in coastal San Diego County and Baja California.

Suitable coastal sage scrub and rocky soils occurs within the western portion of the Southern Parcel. Though this species has not been documented within the Preserve, there are numerous occurrences of the species within the surrounding area including to the west within Beeler Canyon and south within the Fanita Ranch area.

Graceful tarplant (*Holocarpha virgata* ssp. *elongata*)
Status: --/--; CRPR 4.2; County List D
Graceful tarplant is an annual herb that occurs within the southern California regions of southern Orange County, western Riverside County, and western San Diego County. The species is found at elevations between 195 and 3,600 feet, flowering between May and November. It primarily occurs in grasslands but can also grow in coastal sage scrub, chaparral, and cismontane woodland.

Suitable habitat occurs within the Southern Parcel and the species was observed within grassland habitat located in the central portion of the Preserve, adjacent to the southern coast live oak riparian forest, during surveys conducted in 2008 (County 2009) and within southwestern area of the Preserve in 2015 (ICF 2015).

California adder's-tongue (*Ophioglossum californicum*)
Status: --/--; CRPR 4.2; County List D
California adder's-tongue is a perennial rhizomatous herb that occurs within the Sacramento Valley, Sierra Nevada foothills, San Joaquin Valley, central coast, southern coast, and peninsular ranges of California. It grows within mesic areas of chaparral and grassland habitats, and along the margins of vernal pools between elevations of 186 to 1,722 feet. The species emerges in early spring during the rainy period, blooming from January through June. California adder's tongue is uncommon but sometimes locally abundant, often being overlooked.

Potential suitable habitat occurs within the Southern Parcel along Clark Canyon creek. The species was previously observed within grassland habitat located along the easternmost portions of the Preserve during surveys conducted in 2008 (County 2009).

Rush-like bristleweed (*Xanthisma junceum*)
Status: --/--; CRPR 4.3; County List D
Rush-like bristleweed is a perennial herb occurring within the San Jacinto Mountains and Peninsular Ranges of southern California at elevations below 3,330 feet. The species is found within xeric, low-growing chamise chaparral or Diegan coastal sage scrub habitats. It usually grows on exposed locations with rocky substrate that do not foster much annual understory. This inconspicuous species flowers May through October and is probably under reported.

Suitable habitat occurs within the Southern Parcel and the species was observed during surveys conducted in 2012 in the northern portion of the Preserve adjacent to Paragon Mesa Road (Dudek 2013; County 2013) and in the northeastern portion of the Preserve in 2016 (AECOM 2017).

3.2.3 Non-Native and/or Invasive Plants

A total of 24 non-native plant species were identified within the Southern Parcel during the 2019 baseline botanical surveys (Appendix A; Table 4, *Non-Native Plant Species within the Southern Parcel*). While multiple species of non-native plants were observed within the Southern Parcel, most were sporadically observed and not prevalent throughout the entire parcel. Non-native species that were observed sporadically are not considered invasive nor a high priority for mapping and removal. Additionally, many of these species are considered to have become "naturalized" in southern California.

Invasive and other non-native plants that were observed within the Southern Parcel are presented below with their associated Cal-IPC Inventory Ranking (Table 4). The definitions for the Cal-IPC ratings are as follows:

- **High**: Species have severe ecological impacts, are conducive to moderate to high rates of dispersal/establishment, and most are widely spread;

- **Moderate**: Species have substantial and apparent, but generally not severe, ecological impacts; are conducive to moderate to high rates of dispersal, though establishment is generally dependent on ecological disturbance; and distribution may range from limited to widespread;

- **Limited**: Species are invasive, but their ecological impacts are minor on a State-wide level, or there was not enough information to justify a higher score; have low to moderate rates of invasiveness; and are generally limited but may be locally persistent and problematic; and

- **None**: Species has not been listed by Cal-IPC.

Table 4
INVASIVE AND NON-NATIVE PLANT SPECIES WITHIN THE SOUTHERN PARCEL

Common Name	Scientific Name
Cal-IPC Ranking Moderate[1]	
Purple false brome	*Brachypodium distachyon*[2]
Italian thistle	*Carduus pycnocephalus*
Maltese star-thistle	*Centaurea melitensis*
slender oat	*Avena barbata*[2]
black mustard	*Brassica nigra*
ripgut brome	*Bromus diandrus*[2]
rattail sixweeks grass	*Festuca myuros*[2]
treasure flower	*Gazania linearis*
Bermuda buttercup	*Oxalis pes-caprae*
Cal-IPC Ranking Limited[1]	
soft chess	*Bromus hordeaceus*[2]
foxtail chess	*Bromus madritensis* ssp. *rubens*[2]
brass buttons	*Cotula coronopifolia*
red stemmed filaree	*Erodium cicutarium*

Table 4 (cont.)
INVASIVE AND NON-NATIVE PLANT SPECIES WITHIN THE SOUTHERN PARCEL

Common Name	Scientific Name
Cal-IPC Ranking Limited[1] (cont.)	
smooth cat's ear	*Hypochaeris glabra*
wild radish	*Raphanus sativus*
curly dock	*Rumex crispus*
No Cal-IPC Ranking[1]	
Mayweed	*Anthemis cotula*
long beaked filaree	*Erodium botrys*
white stemmed filaree	*Erodium moschatum*
petty spurge	*Euphorbia peplus*
crete weed	*Hedypnois cretica*
goldentop grass	*Lamarckia aurea*[2]
scarlet pimpernel	*Lysimachia arvensis*
common catchfly	*Silene gallica*

[1] Source: Cal-IPC 2019. Overall rating listed for southwest region, factoring impact, invasiveness, distribution, and documentation level.
[2] Non-native grass species.

Of the 24 non-native plant species observed within the Southern Parcel, three (3) were selected as a high priority for removal based on their invasive potential, prevalence throughout the Southern Parcel, and ability for management (Figure 12, *Invasive Plant Species of Concern*). Non-native grasses were not included as target non-native invasive species because they are naturalized both within the Southern Parcel and in the surrounding habitat and remain between six to 12 inches in height so as to not pose a risk to native vegetation. The three invasive plant species of concern are described below:

Purple False Brome (*Brachypodium distachyon*)

Purple false brome is an annual grass species native to southern Europe, northern Africa, and southwestern Asia east to India. This species generally occurs in loose bunches that are 15 to 40 cm in height. In San Diego County, this species commonly is found on clay soils and will displace native forbs and grasses.

This species was observed at two locations in the north-central portion of the Southern Parcel adjacent to the unvegetated channels in areas dominated by other annual non-native grasses (Figure 12). Less than 10 individuals were observed at each observation location.

Italian Thistle (*Carduus pycnocephalus*)

Italian thistle is a winter annual which varies in height from one to six feet. A native of the Mediterranean area and the Middle East, it is now widespread worldwide. It reproduces strictly from two types of seeds: brown seeds which stay with the plant inflorescences and silver seeds which are spread primarily by wind. Seeds can remain viable in the soil for up to 10 years. Italian thistle forms dense stands and outcompetes native plants for nutrients, space and sunlight. It grows best on disturbed soils and is generally not eaten by livestock.

Sycamore Canyon/Goodan Ranch Preserve Southern Parcel



0 100 Feet

Source: Aerial (SanGIS 2017)

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HELIX Environmental Planning

Invasive Plant Species of Concern

Figure 12

Italian thistle was observed at two locations in the central portion of the Southern Parcel underneath the canopy of two separate coast live oak trees (Figure 12). Each of these observations had less than 10 plants total.

Maltese Star-thistle (*Centaurea melitensis*)

Maltese star-thistle, or tocalote, is a winter annual which varies in height from about one to three feet. Resembling yellow star-thistle (*C. solstitialis*), it is sometimes mistaken for it, but blooms about a month ahead of it. It reproduces from seeds which germinate following fall rains and forms basal rosettes until sending up inflorescences in the early spring. Flowering occurs during the late spring and early summer. As with many thistle-like invasive plants, Maltese star-thistle takes valuable resources that would otherwise be available to native species.

Maltese star-thistle occurs in low densities along the southern portion of the Southern Parcel. The species was mapped at six different point locations (Figure 12).

3.3 WILDLIFE

A total of 62 wildlife species were observed or detected within the Southern Parcel during the 2019 baseline biological diversity surveys including 16 invertebrates[1], one amphibian, two reptiles, 26 birds, and 17 mammal species. A complete list of all wildlife species observed or detected within the Southern Parcel during the 2019 biological surveys is included as Appendix B.

3.3.1 Invertebrates

3.3.1.1 Butterflies

A total of 143 butterfly individuals composed of 12 species were observed within the Southern Parcel during the butterfly surveys (Table 6, *Butterfly Survey Results*). One species is from the family Hesperiidae (skippers), four species are from the family Lycaenidae (gossamer-wing), four species are from the family Nymphalidae (brush-footed), two species are from the family Pieridae (whites and sulphurs), and one species is from the family Riodinidae (metalmarks). The two most common butterfly species observed during the surveys was Painted Lady (*Vanessa cardui*) with 47 individuals followed by Behr's metalmark (*Apodemia mormo virgulti*) with 20 individuals. It should be noted that in 2019 Painted Lady butterflies underwent a massive migration event and were quite abundant throughout southern California during the months of March and April. Other species observed included Funereal Duskywing (*Erynnis funeralis*), Silvery Blue (*Glaucopsyche lygdamus*), Marine Blue (*Leptotes marina*), Acmon Blue (*Plebejus acmon*), Gray Hairstreak (*Strymon melinus*), Common Ringlet (*Coenonympha tullia*), Common Buckeye (*Junonia coenia*), West Coast Lady (*Vanessa annabella*), and Pacific Sara Orangetip (*Anthocharis sara sara*). No special status butterfly species were detected within the Southern Parcel during 2019 surveys.

[1] Unidentified skipper and blue are not counted as separate species as there is a possibility these observations represent already observed species since the species level identification was not able to be determined.

Table 5
BUTTERFLY SURVEY RESULTS

Species		Status	Spring 2019		Summer 2019		Total Individuals	Species Richness
Common Name	**Scientific Name**		**Individuals**	**Species Richness**	**Individuals**	**Species Richness**		
Family Hesperiidae (Skippers)								
Funereal Duskywing	*Erynnis funeralis*	--	4	X	2	X	**6**	**X**
Unidentified Skipper	--	--	1	--	--	--	**1**	**--**
Family Lycaenidae (Gossamer-wing Butterflies)								
Silvery (Southern) Blue	*Glaucopsyche lygdamus*	--	2	X	--	--	**2**	**X**
Marine Blue	*Leptotes marina*	--	5	X	1	X	**6**	**X**
Acmon Blue	*Plebejus acmon*	--	1	X	4	X	**5**	**X**
Unidentified Blue	---	--	6	--	--	--	**6**	**--**
Gray Hairstreak	*Strymon melinus*	--	--	--	4	X	**4**	**X**
Family Nymphalidae (Brush-footed Butterflies)								
Common Ringlet	*Coenonympha tullia*	--	--	--	10	X	**10**	**X**
Common Buckeye	*Junonia coenia*	--	2	X	1	X	**3**	**X**
Painted Lady	*Vanessa cardui*	--	44	X	3	X	**47**	**X**
West Coast Lady	*Vanessa annabella*	--	5	X	--	X	**5**	**X**
Family Pieridae (Whites and Sulphurs)								
Pacific Sara Orangetip	*Anthocharis sara sara*	--	12	X	2	X	**14**	**X**
Unidentified White	---	--	2	--	4	--	**6**	**--**
Unidentified Sulphur	---	--	--	--	8	X	**8**	**X**
Family Riodinidae (Metalmarks)								
Behr's Metalmark	*Apodemia mormo virgulti*	--	14	X	6	X	**20**	**X**
		TOTAL	**98**	**9**	**45**	**11**	**143**	**12**

Host plants for quino checkerspot butterfly and Hermes copper butterfly were mapped within the Southern Parcel during surveys. Quino checkerspot butterfly host plants observed on-site included dwarf plantain, purple owl's clover, and Chinese houses (Figure 13, *Quino Checkerspot Butterfly Habitat and Host Plants*). Dwarf plantain was the most abundant quino larval host plant observed within the Southern Parcel. It was prevalent throughout the survey area in scattered patches of low density (1 – 100 plants) to medium density (100 – 1,000 plants). Clusters of dwarf plantain patches were most common in the openings between the shrubland communities, particularly where there were shallow soils. All other host plant species were observed in low densities and widely scattered throughout the Southern Parcel with purple owl's clover being the second-most abundant larval host plant species. The quino checkerspot butterfly was not detected during the 2019 surveys.

The Hermes copper butterfly host plant, spiny redberry, was mapped in several locations of the Southern Parcel (Figure 14, *Hermes Copper Butterfly Habitat and Host Plants*). On-site suitable Hermes copper habitat occurs on the lower southeast facing slopes where spiny redberry shrubs are located in close proximity to California buckwheat shrubs. However, no Hermes copper butterflies were observed during the surveys. Hermes copper was once abundant throughout the shrubland habitat within the general vicinity of the Southern Parcel. However, suitable habitat within the Southern Parcel and surrounding area was burned in 2003 during the Cedar Fire (Figure 7) which severely impacted the species through habitat loss and extirpation of several known populations, including Sycamore Canyon County Park (Marschalek and Klein 2010). Furthermore, recent drought conditions and below average rainfall from 2014 through 2018 has restricted the distribution of the species and resulted in regional population declines (Marschalek and Deutschman 2019).

A variety of potential nectar resources were recorded within the Southern Parcel, including California buckwheat, California encelia, goldfields (*Lasthenia* spp.), ground pink (*Linanthus dianthiflorus*), and blue dicks (*Dichelostemma capitatum*).

3.3.1.1 Other Invertebrates

In addition to butterflies, three other invertebrate taxa were observed (Appendix B) including those from the orders Coleoptera (beetles) and orthopteran (grasshoppers, crickets, and katydids).

3.3.2 Herpetofauna

A total of two amphibian and one reptile individuals composed of two species were captured within the drift-fence funnel traps (Table 6, *Drift-Fence Funnel Trap Results*). One amphibian species, western spadefoot (*Spea hammondii*), was captured. One toad was captured in Array 1 and one toad was captured in Array 2 (Figure 15, *Special Status Animal Species*). The western spadefoot is a CDFW Species of Special Concern (SSC) and County Group 2 species. No other amphibian species were captured or incidentally observed during the trapping survey or other biological surveys.

One reptile species, San Diego gopher snake (*Pituophis catenifer annectens*), was caught in the drift-fence funnel traps. The gopher snake was captured in Array 2 on June 12, 2019 and was found deceased within the trap upon arrival. The traps were checked once within every 24-hour period during the trapping sessions; however, this individual perished for unknown causes. While the traps were covered in plant material to prevent weather exposure, additional plant material was placed on the traps on June 12, 2019 to provide additional shade for any wildlife caught in the traps and to avoid exposure to extreme weather conditions.

Sycamore Canyon/Goodan Ranch Preserve Southern Parcel

- Southern Parcel Boundary
- Preserve Boundary

Host Plants

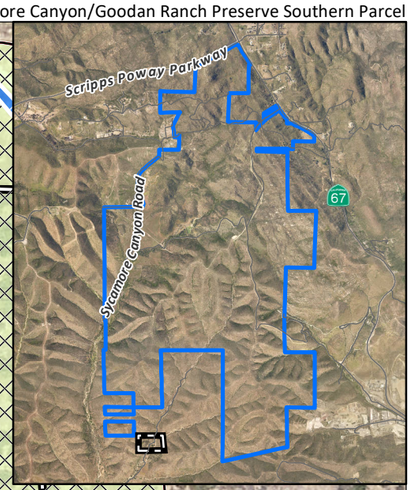
- Purple Owl's Clover (*Castilleja exserta*)
- Chinese Houses (*Collinsia heterophylla*)
- Dwarf Plantain (*Plantago erecta*)

Habitat Quality

- Medium Quality Habitat
- Low Quality Habitat
- Excluded Habitat

Vegetation (Holland/Oberbauer Classification)

- Open Coast Live Oak Woodland (71160)
- Chamise Chaparral (37200)
- Southern Mixed Chaparral (37122)
- Diegan Coastal Sage Scrub (32500)
- Non-native Grassland (42200)
- Unvegetated Channel (64000)



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SANDAG & SanGIS

0 100 Feet

Source: Aerial (SanGIS 2017)

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Quino Checkerspot Butterfly Habitat and Host Plants

Figure 13

Sycamore Canyon/Goodan Ranch Preserve Southern Parcel

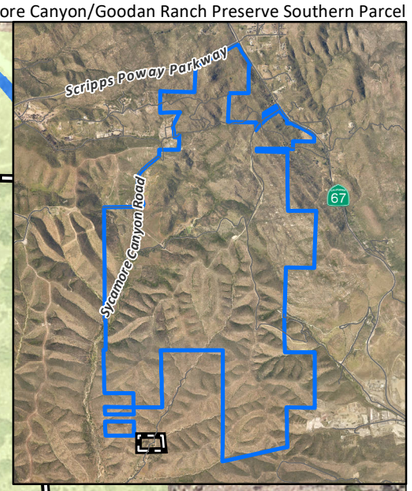
Southern Parcel Boundary
Preserve Boundary

Host Plant

Spiny Redberry (*Rhamnus crocea*)

Vegetation (Holland/Oberbauer Classification)

Open Coast Live Oak Woodland (71160)
Chamise Chaparral (37200)
Southern Mixed Chaparral (37122)
Diegan Coastal Sage Scrub (32500)
Non-native Grassland (42200)
Unvegetated Channel (64000)



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Source: Aerial (SanGIS 2017)

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HELIX Environmental Planning

Hermes Copper Butterfly Habitat and Host Plants

Figure 14

Sycamore Canyon/Goodan Ranch Preserve Southern Parcel

Southern Parcel Boundary

Preserve Boundary

Special Status Animal Species

Amphibians

- Western Spadefoot (*Spea hammondii*)

Reptiles

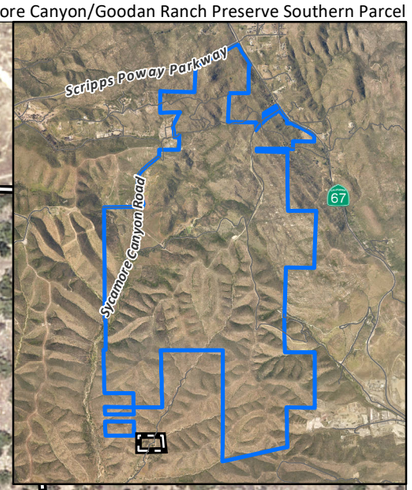
- Belding's Orange-throated Whiptail (*Aspidoscelis hyperythra beldingi*)

Birds

- Costa's Hummingbird (*Calypte costae*)
- Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)
- Turkey Vulture (*Cathartes aura*)
- Yellow Warbler (*Setophaga petechia*)

Mammals

- Mule Deer (*Odocoileus hemionus*)
- San Diego Bryant's (formerly desert) Woodrat (*Neotoma bryanti* [formerly *lepida] intermedia*)
- San Diego Black-tailed Jackrabbit (*Lepus californicus bennettii*)
- Pocketed Free-tailed Bat (*Nyctinomops femorasaccus*)
- Western Mastiff Bat (*Eumops perotis*)
- Yuma Myotis (*Myotis yumanensis*)



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0 100 Feet

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Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Special Status Animal Species

Figure 15

Table 6
DRIFT-FENCE FUNNEL TRAP RESULTS

Species		Status	Total
Common Name	**Scientific Name**		
San Diego gopher snake	*Pituophis catenifer annectens*	--	1
western spadefoot	*Spea hammondii*	CDFW SSC County Group 2	2
		TOTAL	**3**

One other reptile species was incidentally observed during the trapping surveys: Belding's orange-throated whiptail (*Aspidoscelis hyperythra*; Figure 15). Belding's orange-throated whiptail is a CDFW Watch List (WL) species, County Group 2 species, and MSCP covered species. No other reptile species were incidentally observed during the biological surveys.

Several non-target species were captured during the trapping surveys, including darkling beetle (family Tenebrionidae), Jerusalem cricket (*Stenopelmatus* sp.), and California root borer beetle (*Prionus californicus*).

3.3.3 Birds

A total of 70 individuals comprised of 24 avian species were detected within the Southern Parcel during avian point count surveys (Table 7, *Avian Point Count Survey Results*). Point Count 2 had the greatest number of individuals detected with 27 birds and the highest species diversity with 17 different species. This point count is located within the central portion of the Southern Parcel in the valley between the western and eastern slopes (Figure 8). Vegetation at this location consists primarily of open coast live oak woodland and non-native grassland (Figure 10). Point Count 1 had the second highest abundance and species diversity with 23 individuals detected comprised of 15 species. Point Count 1 is located in the northwestern portion of the site and is situated on the western slope (Figure 8). Vegetation at this location consists primarily of Diegan coastal sage scrub and southern mixed chaparral (Figure 10). Twenty (20) individuals were detected at Point Count 3 and consisted of 14 species. Point Count 3 is located in the southeastern portion of the Southern Parcel on the eastern slope (Figure 8). Vegetation at this location consists primarily of chamise chaparral (Figure 10).

Table 7
AVIAN POINT COUNT SURVEY RESULTS

Point Count	Daytime Surveys		Nighttime Surveys		Total	
	Individuals	**Species**	**Individuals**	**Species**	**Individuals**	**Species**
1	22	14	1	1	23	15
2	26	16	1	1	27	17
3	20	14	0	0	20	14
TOTAL	**68**	**23**	**2**	**1**	**70**	**24**

The most abundant species detected were California quail (*Callipepla californica*) and mourning dove (*Zenaida macroura*) with eight individuals each, followed by northern mockingbird (*Mimus polyglottos*) with 6 individuals (Table 8, *Avian Count Point Survey Results by Species*). One species, lesser nighthawk (*Chordeiles acutipennis*), was detected during the nocturnal surveys (Tables 7 and 8). However, it should be noted that great horned owl (*Bubo virginianus*) was observed during the morning survey when it was

flushed from the oak trees in the central portion of the site and flew west perching on shrubs on the western slope. A common poorwill (*Phalaenoptilus nuttallii*) was also heard calling during the morning point count surveys from the eastern slope.

Three special status bird species were observed during avian point count surveys (Table 8; Figure 15): Costa's hummingbird (*Calypte costae*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), and yellow warbler (*Setophaga petechia*). Costa's hummingbird and yellow warbler are both USFWS Bird of Conservation Concern (BCC). Yellow warbler is also a CDFW Species of Special Concern (SSC) and County Group 2 species. Southern California rufous-crowned sparrow is a CDFW WL species, County Group 1 species, and MSCP covered species. One other special status bird species was observed during the biological surveys: turkey vulture (*Cathartes aura*). Turkey vulture is a County Group 1 species. Turkey vultures were detected by the wildlife cameras in the northwestern portion of the Southern Parcel (Figure 15).

Table 8
AVIAN POINT COUNT SURVEY RESULTS BY SPECIES

Species		Status	1		2		3		TOTAL
Common Name	Scientific Name		am	pm	am	pm	am	pm	
American Crow	*Corvus brachyrhynchos*	-	-	-	-	-	1	-	**1**
Anna's Hummingbird	*Calypte anna*	-	-	-	1	-	-	-	**1**
Ash-throated Flycatcher	*Myiarchus cinerascens*	-	2	-	2	-	1	-	**5**
Bewick's Wren	*Thryomanes bewickii*	-	1	-	1	-	2	-	**4**
California Scrub-Jay	*Aphelocoma californica*	-	-	-	1	-	-	-	**1**
California Quail	*Callipepla californica*	-	2	-	3	-	3	-	**8**
California Thrasher	*Toxostoma redivivum*	-	1	-	-	-	1	-	**2**
California Towhee	*Melozone crissalis*	-	2	-	3	-	-	-	**5**
Common Poorwill	*Phalaenoptilus nuttallii*	-	1	-	-	-	-	-	**1**
Common Raven	*Corvus corax*	-	-	-	1	-	-	-	**1**
Costa's Hummingbird	*Calypte costae*	USFWS BBC	1	-	-	-	1	-	**2**
Great Horned Owl	*Bubo virginianus*	-	-	-	1	-	-	-	**1**
House Wren	*Troglodytes aedon*	-	1	-	2	-	1	-	**4**
Lazuli Bunting	*Passerina amoena*	-	1	-	-	-	1	-	**2**
Lesser Nighthawk	*Chordeiles acutipennis*	-	-	1	-	1	-	-	**2**
Mourning Dove	*Zenaida macroura*	-	4	-	3	-	1	-	**8**
Northern Mockingbird	*Mimus polyglottos*	-	2	-	3	-	1	-	**6**
(Northern) Red-shafted Flicker	*Colaptes auratus cafer*	-	-	-	-	-	1	-	**1**
Southern California Rufous-crowned Sparrow	*Aimophila ruficeps canescens*	CDFW WL; County Group 1; MSCP Covered	1	-	-	-	1	-	**2**
Spotted Towhee	*Pipilo maculatus*	-	-	-	1	-	3	-	**4**
White-crowned Sparrow	*Zonotrichia leucophrys*	-	1	-	1	-	-	-	**2**
Wrentit	*Chamaea fasciata*	-	2	-	1	-	2	-	**5**

Table 8 (cont.)
AVIAN POINT COUNT SURVEY RESULTS BY SPECIES

Species		Status	1		2		3		TOTAL
Common Name	Scientific Name†		am	pm	am	pm	am	pm	
Yellow Warbler	*Setophaga petechia*	USFWS BCC; CDFW SSC; County Group 2	-	-	1	-	-	-	**1**
Yellow-rumped Warbler	*Setophaga coronata*	-	-	-	1	-	-	-	**1**
		TOTAL	**22**	**1**	**26**	**1**	**20**	**0**	**70**

3.3.4 Mammals

3.3.4.1 Bats

Eight bat species were identified within the Southern Parcel during the active and passive bat surveys (Table 9, *Bat Survey Results*). Species detected included big brown bat (*Eptesicus fuscus*), western mastiff bat (*Eumops perotis*), hoary bat (*Lasiurus cinereus*), western small-footed bat (*Myotis ciliolabrum*), Yuma myotis (*Myotis yumanensis*), pocketed free-tailed bat (*Nyctinomops femorasaccus*), canyon bat (*Parastrellus hesperus*), and Mexican free-tailed bat (*Tadarida brasiliensis*). Four special status bat species were detected during the survey (Figure 15): western mastiff bat, pocketed free-tailed bat, western small-footed bat, and Yuma myotis. The western mastiff bat and pocketed free-tailed bat are CDFW SSC and County Group 2 sensitive animal species. Western small-footed bat and Yuma myotis are County Group 2 sensitive animal species.

Table 9
BAT SURVEY RESULTS

Species		Status	Passive Survey Results[1]		Active Survey Results[1]
			AnaBat Location		
Common Name	Scientific Name		1	2	
Big brown bat	*Eptesicus fuscus*	-	X	X	-
Western mastiff bat	*Eumops perotis*	CDFW SSC; County Group 2	X	X	-
Hoary bat	*Lasiurus cinereus*	-	X	X	-
Western small-footed bat	*Myotis ciliolabrum*	County Group 2	X	X	-
Yuma myotis	*Myotis yumanensis*	County Group 2	X	X	-
Pocketed free-tailed bat	*Nyctinomops femorasaccus*	CDFW SSC; County Group 2	X	X	-
Canyon bat	*Parastrellus hesperus*	-	-	X	-
Mexican free-tailed bat	*Tadarida brasiliensis*	-	X	X	X
		Species Richness	**7**	**8**	**1**

[1] X indicates that a species was present on site.

The number of bat calls recorded at each location is not necessarily indicative of the total number of bats present, as one bat may fly back and forth in front of a detector for an extended period of time. Therefore, the number of recorded calls does not directly correlate to the number of bats present. However, Mexican free-tailed bats were by far the most commonly recorded species and were documented during both passive surveys and the active surveys. Other commonly recorded species included big brown bats and Yuma myotis, which were both common in the two passive survey locations (Figure 8).

3.3.4.2 Small Mammals

A total of seven captures composed of four mammal species were captured during the small mammal trapping surveys (Table 10, *Small Mammal Trapping Results*). The most abundant mammal species captured was the California pocket mouse (*Chaetodipus californicus*), brush deermouse (*Peromyscus boylii*), and Dulzura kangaroo rat (*Dipodomys simulans*) with two captures each. Transect 2 had the most captures with three individuals following by Transect 4 with two individuals; two species were captured at each of these transects. One individual was captured along both Transect 1 and Transect 3.

Vegetation at Transect 1 is comprised of coast live oak woodland, non-native grassland, and unvegetated channel. Vegetation at Transect 2 consists of Diegan coastal sage scrub. Vegetation at Transect 3 consists of Diegan coastal sage scrub and southern mixed chaparral. Vegetation at Transect 4 is comprised of Diegan coastal sage scrub and coast live oak woodland.

Table 10
SMALL MAMMAL TRAPPING RESULTS

Species		Status	Trapping Transect				Total
Common Name	Scientific Name		T1	T2	T3	T4	
California pocket mouse	*Chaetodipus californicus*	-	1	-	1	-	**2**
San Diego Bryant's (formerly desert) woodrat	*Neotoma bryanti (formerly lepida) intermedia*	CDFW SSC; County Group 2	-	0	0	1	**1**
Brush deermouse	*Peromyscus boylii*	-	-	2	0	0	**2**
Dulzura kangaroo rat	*Dipodomys simulans*	-	-	1	0	1	**2**
		TOTAL	**1**	**3**	**1**	**2**	**7**

One special status species, San Diego Bryant's (formerly desert) woodrat (*Neotoma bryanti [formerly lepida] intermedia*), was captured within the small mammal traps. A single woodrat was captured along Transect 4 in the southwestern portion of the Southern Parcel (Figure 15). San Diego Bryant's woodrat is a CDFW SSC and County Group 2 species.

3.3.4.1 Medium and Large Mammals

Six mammal species were detected at the wildlife camera stations (Table 11, *Wildlife Camera Results*). Species detected included coyote (*Canis latrans*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), mule deer (*Odocoileus hemionus*), California ground squirrel (*Otospermophilus beecheyi*), desert cottontail (*Sylvilagus audubonii*), and unidentified rodent. Several incidental non-mammal species were detected by the cameras consisting of 11 avian species (Table 11). Four species were documented at Camera 1 which was located in the southwestern portion of the Southern Parcel along Clark Canyon Creek, and thirteen species were captured at Camera 2 located in the northwestern portion of the Southern Parcel (Figure 8).

Three special status species were detected at the wildlife camera stations: San Diego black-tailed jackrabbit, mule deer, and turkey vulture. Table 11 provides a summary of the wildlife camera surveys results. Representative photographs of species captured by the wildlife cameras are included in Appendix F.

Table 11
WILDLIFE CAMERA RESULTS

Species		Status	Detections		
			Camera Station		Total
Common Name	Scientific Name		1	2	
April 2019					
California Quail	*Callipepla californica*	--	--	X	**1**
Anna's Hummingbird	*Calypte anna*	--	--	X	**1**
Turkey Vulture	*Cathartes aura*	County Group 1	--	X	**1**
Common Raven	*Corvus corax*	--	X	X	**1**
Northern Mockingbird	*Mimus polyglottos*	--	--	X	**1**
California Thrasher	*Toxostoma redivivum*	--	--	X	**1**
Coyote	*Canis latrans*	--	X	X	**1**
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	CDFW SSC; County Group 2	--	X	**1**
Desert cottontail	*Sylvilagus audubonii*	--	--	X	**1**
Unidentified rodent	--	--	--	X	**1**
		April Species Richness	**2**	**10**	**10**
May 2019					
California Quail	*Callipepla californica*	--	--	X	**1**
Red-shafted Flicker	*Colaptes auratus cafer*	--	--	X	**1**
Greater Roadrunner	*Geococcyx californianus*	--	--	X	**1**
Northern Mockingbird	*Mimus polyglottos*	--	--	X	**1**
Ash-throated Flycatcher	*Myiarchus cinerascens*	--	--	X	**1**
California Thrasher	*Toxostoma redivivum*	--	--	X	**1**
Mourning Dove	*Zenaida macroura*	--	--	X	**1**
Coyote	*Canis latrans*	--	X	X	**1**
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	CDFW SSC; County Group 2	--	X	**1**
Mule deer	*Odocoileus hemionus*	County Group 2	X	--	**1**

Table 11 (cont.)
WILDLIFE CAMERA RESULTS

Species		Status	Detections		
			Camera Station		Total
Common Name	Scientific Name†		1	2	
May 2019 (cont.)					
Desert cottontail	*Sylvilagus audubonii*	--	X	X	**1**
Unidentified rodent	--	--	--	X	**1**
		May Species Richness	**3**	**11**	**12**
June 2019					
California Quail	*Callipepla californica*	--	--	X	**1**
California Towhee	*Melozone crissalis*	--	--	X	**1**
Ash-throated Flycatcher	*Myiarchus cinerascens*	--	--	X	**1**
California Thrasher	*Toxostoma redivivum*	--	--	X	**1**
Coyote	*Canis latrans*	--	--	X	**1**
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	CDFW SSC; County Group 2	--	X	**1**
Mule deer	*Odocoileus hemionus*	--	--	X	**1**
California ground squirrel	*Otospermophilus beecheyi*	--	--	X	**1**
Desert cottontail	*Sylvilagus audubonii*	--	--	X	**1**
Unidentified rodent	--	--	--	X	**1**
		June Species Richness	**0**	**10**	**10**
Total					
California Quail	*Callipepla californica*	--	--	X	**1**
Anna's Hummingbird	*Calypte anna*	--	--	X	**1**
Turkey Vulture	*Cathartes aura*	County Group 1	--	X	**1**
Red-shafted Flicker	*Colaptes auratus cafer*	--	--	X	**1**
Common Raven	*Corvus corax*	--	X	X	**1**
Greater Roadrunner	*Geococcyx californianus*	--	--	X	**1**
California Towhee	*Melozone crissalis*	--	--	X	**1**

Table 11 (cont.)
WILDLIFE CAMERA RESULTS

Species		Status	Detections		
			Camera Station		Total
Common Name	**Scientific Name†**		**1**	**2**	
Total (cont.)					
Northern Mockingbird	*Mimus polyglottos*	--	--	X	**1**
Ash-throated Flycatcher	*Myiarchus cinerascens*	--	--	X	**1**
California Thrasher	*Toxostoma redivivum*	--	--	X	**1**
Mourning Dove	*Zenaida macroura*	--	--	X	**1**
Coyote	*Canis latrans*	--	X	X	**1**
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	CDFW SSC; County Group 2	--	X	**1**
Mule deer	*Odocoileus hemionus*	County Group 2	X	X	**1**
California ground squirrel	*Otospermophilus beecheyi*	--	--	X	**1**
Desert cottontail	*Sylvilagus audubonii*	--	X	X	**1**
Unidentified rodent	--	--	--	X	**1**
		Total Species Richness	**4**	**17**	**17**

3.3.5 Special Status Wildlife Detected

Special status wildlife species are those listed as endangered, threatened, or rare, or a candidate for those listings by the federal government (USFWS) or State of California (CDFW); included on the County's Sensitive Animal List (County 2010a); or covered by the County's MSCP Subarea Plan (County 1997). Thirteen (13) special status wildlife species were observed or detected within the Southern Parcel during the 2019 surveys (Figure 15). Three of these species are covered under the County's MSCP Subarea Plan (Belding's orange-throated whiptail, southern California rufous-crowned sparrow, and mule deer). An explanation of special status codes is included in Appendix E. A description of special status species detected within the Southern Parcel is included in the following sections.

3.3.5.1 Invertebrates

No special status invertebrate species were detected within the Southern Parcel.

3.3.5.2 Amphibians

One special status amphibian species, western spadefoot, was detected within the Southern Parcel as described below:

Western spadefoot toad (*Spea hammondii*)
Status: --/SSC; County Group 2
The western spadefoot toad occurs from northern California southward to San Diego County and farther into Baja California to the west of the Sierra Nevada at elevations below 4,500 feet. This terrestrial species requires temporary pools for breeding. Suitable upland habitats include coastal sage scrub, chaparral, and grasslands but the species is most common in grasslands with vernal pools or mixed grassland-coastal sage scrub areas (Holland and Goodman 1998). The species breeds in temporary pools formed by heavy rains that hold standing water for more than three weeks to allow adequate time for tadpoles to metamorphose but is also found breeding in riparian habitats with suitable water resources (Feaver 1971). Breeding pools must lack exotic predators such fish, bullfrogs, and crayfish for the species to successfully reproduce (Jennings and Hayes 1994). The species estivates in burrows within upland habitats adjacent to potential breeding sites (Stebbins and McGinnis 1972).

The western spadefoot toad was captured in the southwestern portion of the Southern Parcel within reptile trapping array 1 and array 2 (Figures 8 and 15). Suitable breeding habitat for the species occurs along Clark Canyon Creek where temporary pools are formed following rain events.

3.3.5.3 Reptiles

One special status reptile species, Belding's orange-throated whiptail, was detected within the Southern Parcel as described below:

Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*)
Status: --/WL; County Group 2; MSCP Covered
The Belding's orange-throated whiptail is found in the southwestern portion of California within San Diego, Orange, western Riverside, and southern San Bernardino Counties on the western slopes of the Peninsular ranges below 3,500 feet (Jennings and Hayes 1994). Suitable habitat includes coastal sage scrub, chaparral, juniper woodland, oak woodland, and grasslands along with alluvial fan scrub and riparian areas. Occurrence of the species appears to be correlated with the presence of perennial plants

(such as California buckwheat, California sagebrush, black sage, or chaparral) that provide a food base for its major food source, termites (Bostic 1966).

A single Belding's orange-throated whiptail was incidentally observed within the southwestern portion of the Southern Parcel during reptile trapping surveys (Figure 15).

3.3.5.4 Birds

Four special status birds were detected within the Southern Parcel as described below:

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)
Status: --/WL; County Group 1; MSCP Covered
The southern California rufous-crowned sparrow range is restricted to southwestern California occurring from Santa Barbara south into northern Baja California, at elevations below 5,000 feet (Grinnell and Miller 1944). The species generally inhabits moderate to steep slopes vegetated with grassland, coastal sage scrub, and chaparral. They have been documented to prefer areas with California sagebrush but are generally absent from areas of dense stands of coastal sage scrub or chaparral (Collins 1999). The species may occur on steep grassy slopes without shrubs if rock outcrops are present (Zeiner et al. 1990).

The southern California rufous-crowned sparrow was heard singing in the northwestern and southeastern portions of the Southern Parcel during the avian point count surveys (Figure 15).

Costa's Hummingbird (*Calypte costae*)
Status: BCC/--
The Costa's hummingbird is found in deserts and xeric habitats west of the Continental Divide and south of the Great Basin from southern Utah, western and southern Arizona, to southern California and further into Baja California and Mexico (Baltosser et al. 1996). The species occurs year-round in southern California breeding along the coast in sage scrub and chaparral habitats from Santa Barbara County south to San Diego County, and east into the desert regions of Inyo County and south to Imperial County (Garrett and Dunn 1981). Breeding habitats include Sonoran Desert scrub, Mojave Desert scrub, coastal sage scrub, and chaparral.

The Costa's hummingbird was detected during the avian point count survey in in the northwestern and southeastern portions of the Southern Parcel (Figure 15). Suitable breeding habitat for the species occurs along the western and eastern slopes.

Turkey Vulture (*Cathartes aura*)
Status: --/--; County Group 1
The turkey vulture occurs throughout most of North America from southern Canada south to Mexico and into Central and South America. In California, the species occurs as a year-round resident along the coastal regions but breeds throughout the entire state. Preferred habitat includes farmland and forests, but the species is also found at pastures and agricultural areas in the west and has an increased presence in urban areas in the winter (Gaby 1982). The species nests in partly forested to forested areas isolated from humans with nest sites placed on rock outcrops, fallen trees, and abandoned buildings (Kirk and Mossman 1998). Vultures roost communally preferring stands of large trees or hilly areas, usually away from human disturbance (Evans and Sordahl 2009). They are opportunistic feeders of domestic and wild carrion, primarily mammals but also non-mammals, foraging and locating food through both sight and smell (Stager 1964).

Two turkey vultures were captured by the wildlife camera 1 within the northwestern portion of the Southern Parcel (Figures 8 and 15). The individuals were observed foraging on the ground in front of the camera in April 2019. Though the species utilizes the Southern Parcel for foraging opportunities, suitable breeding habitat for the species is absent from the Southern Parcel.

Yellow warbler (*Setophaga petechia*)
Status: BCC/SSC; County Group 2
The yellow warbler is a common to locally abundant species breeding throughout California, excluding most of the Mojave Desert and all of the Colorado Desert, and wintering in northern Mexico (Lowther et al. 1999). The species breeds in riparian areas dominated by willows near rivers, streams, lakes, and wet meadows as well as in montane shrub and conifer forests in higher elevation areas (Shuford and Gardali 2008).

The yellow warbler was heard singing within the central portion of the Southern Parcel during the avian point count survey (Figure 15). The individual was detected within the coast live oak woodland in April 2019. Suitable riparian habitat required by the species for breeding is absent from the Southern Parcel, therefore, the observation most likely represents a migrating individual.

3.3.5.5 Mammals

Seven special status mammal species were detected within the Southern Parcel as described below:

Western mastiff bat (*Eumops perotis*)
Status: --/SSC; County Group 2
The western mastiff bat has three widely separated populations with one occurring in southwestern United States from California east toward Texas and south across northern Mexico (Tremor et al. 2017). In California, the species occurs from Monterey County to San Diego County from the coast eastward to the Colorado Desert (Zeiner et al. 1990). The western mastiff bat is found in open, semi-arid to arid habitats including coastal and desert scrub, grasslands, woodlands, and palm oases. The species prefers to roost in high situations above the ground on vertical cliffs, rock quarries, outcrops of fractured boulders, and occasionally in tall buildings.

The western mastiff bat was detected during the passive bat surveys with calls recorded at AnaBat locations 1 and 2 which are located with along the western portion of the site adjacent to Clark Canyon Creek (Figures 8 and 15).

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)
Status: --/SSC; County Group 2
The San Diego black-tailed jackrabbit is one of nine subspecies of black-tailed-jackrabbit that occur in the United States (Hall 1951). It occurs along the coastal regions of southern California south to northern Baja California (Hall 1951). The species is found in arid regions preferring grasslands, agricultural fields, and sparse scrub. They are typically absent from areas with high-grass or dense brush, such as closed-canopy chaparral, primarily occupying short-grass and open scrub habitats.

The San Diego black-tailed jackrabbit was captured by wildlife camera 1 in the northwestern portion of the Southern Parcel (Figures 8 and 15). Detections included single individuals as well as groups of two foraging within the Southern Parcel.

Western small-footed myotis (*Myotis ciliolabrum*)
Status: --/--; County Group 2
The western small-footed myotis occurs within western North America from southern and south-central British Columbia, western United States, south through central Mexico (Barbour and Davis 1969). In California, the species is found along the coastal regions from Contra Costa County south to San Diego, on the west and east sides of the Sierra Nevada, and eastern Great Basin and desert regions from Modoc County south to San Bernardino County (Zeiner et al. 1990). The species is common within arid uplands below 8,900 feet, preferring open stands of forests and woodlands and brushy habitats adjacent to water, and is strongly associated with the chaparral zone and montane habitats in San Diego County (Tremor et al. 2017). The western small-footed myotis prefers humid roost sites found in cave-like habitats including rocky crevices, caves, mines, snags, buildings, and bridges (Zeiner et al. 1990).

The western small-footed myotis was detected during the passive bat surveys with calls recorded at AnaBat locations 1 and 2 which are located with along the western portion of the site adjacent to Clark Canyon Creek (Figures 8 and 15).

Yuma myotis (*Myotis yumanensis*)
Status: --/--; County Group 2
Yuma myotis occurs in western North America ranging from British Columbia to Central Mexico and eastward toward Colorado and Oklahoma (Sims 2000). The species is widespread in California but uncommon in the Mojave and Colorado Deserts, except in the mountain ranges bordering Colorado River Valley (Zeiner et al. 1990). Yuma myotis is found in a variety of habitats including juniper and riparian woodlands, riparian forests, and desert regions where bodies of water (i.e., rivers, streams, ponds, lakes, etc.) are present. The species is closely associated with water, which it uses for foraging and as a source of drinking water. They roost within caves, attics, buildings, mines, and other similar structures, and underneath bridges.

The Yuma myotis was detected during the passive bat surveys with calls recorded at AnaBat locations 1 and 2 which are located with along the western portion of the site adjacent to Clark Canyon Creek (Figures 8 and 15).

San Diego Bryant's (formerly desert) woodrat (*Neotoma bryanti [formerly lepida] intermedia*)
Status: --/SSC; County Group 2
The San Diego Bryant's (formerly desert) woodrat occurs along the coastal regions of Central California south to northern Baja California (Verts and Carrawaay 2002). In California, the species is found as far north as San Luis Obispo County and south to San Diego County, and in the western portions of San Bernardino and Riverside Counties. The San Diego Bryant's woodrat occupies a variety of shrub and desert habitats such as coastal sagebrush scrub, chaparral, pinyon-juniper woodland, and Joshua tree woodland among others. The species is often associated with rock outcroppings, boulders, cacti patches, and areas with dense understories. Woodrats construct dens used for shelter, food storage, and nesting around rock outcroppings and cacti using various materials such as twigs, sticks, and other debris.

A single San Diego Bryant's woodrat was captured during the small mammal trapping efforts along Transect 4 within the southwestern portion of the Southern Parcel (Figures 8 and 15).

Pocketed free-tailed bat (*Nyctinomops femorasaccus*)
Status: --/SSC; County Group 2
The pocketed free-tailed bat inhabits semiarid habitats including pinyon-juniper woodland, desert scrub, succulent scrub, desert riparian, desert washes, alkali desert scrub, Joshua tree woodland, and palm oases (Lancaster 2000). The species roosts in caves, mines, tunnels, and rock crevices but is also known to occasionally roost in buildings and holes in trees. The pocketed free-tailed bat occurs in southwestern United States and northern Mexico. The species is rare in California, occurring in Riverside, San Diego, and Imperial counties (Zeiner et al. 1990).

The pocketed free-tailed bat was detected during the passive bat surveys with calls recorded at AnaBat locations 1 and 2 which are located with along the western portion of the site adjacent to Clark Canyon Creek (Figures 8 and 15).

Southern Mule deer (*Odocoileus hemionus fuliginatus*)
Status: --/--; County Group 2; MSCP Covered
The mule deer is found throughout a variety of habitats within western North America from northern Alberta in Canada, south to central Mexico, and from the Pacific coast east to Missouri, lacking from only completely urbanized areas and the desert floor (Tremor et al 2017). Southern mule deer is one six subspecies within California ranging from Orange and Riverside Counties south through San Diego County to central Baja California (Pease et al. 2009; Tremor et al. 2007). The species distribution is determined by the quantity and quality of herbaceous foraging habitat, access to water sources, and vegetative and landforms that provide suitable protective cover (Natural Resources Conservation Science 2005).

Multiple individuals were documented within the western portion of the Southern Parcel by the wildlife cameras 1 and 2 (Figures 8 and 15).

3.3.6 Special Status Wildlife with High Potential to Occur

The potential for special status wildlife species to occur on the Southern Parcel was evaluated based on the elevation, vegetation communities, level of disturbance, recorded status, and distribution of the species within the vicinity, and the results of wildlife surveys. Eighteen (18) special status wildlife species were determined to have a high potential to occur within the Southern Parcel including one invertebrate, seven reptiles, six birds, and four mammal species.

3.3.6.1 Invertebrates

One special status invertebrate species was determined to have high potential to occur within the Southern Parcel as detailed below and in Appendix D.

Quino Checkerspot Butterfly (*Euphydryas editha quino*)
Status: Federal Endangered/--; County Group 1; MSCP Narrow Endemic
The Quino checkerspot butterfly occurs in western Riverside County, southern San Diego County, and northern Baja California Mexico (USFWS 2009). The species inhabits patchy shrublands or small tree landscapes with openings. Several vegetation types are known to support the species including coastal sage scrub, open chaparral, juniper woodland, and native grassland. Males, more so than females, are frequently observed on hilltops and ridgelines and exhibit a tendency to occur in barren spots amidst low-growing vegetation (USFWS 2003). Females deposit eggs on the species primary host plants which include dwarf plantain (*Plantago erecta*), desert plantain (*P. ovata*), woolly plantain (*P. patagonica*), white snapdragon (*Antirrhinum coulterianum*), thread-leaved bird's beak (*Cordylanthus rigidus*). Secondary larval host plants, plants that may consumed by larvae but not used by adults for ovipositing include purple owl's clover (*Castilleja exserta*) and Chinese houses (*Collinsia heterophylla*). Nectaring resources also play an important role in the species life cycle with butterflies documented frequently taking nectar from California buckwheat, goldfields (*Lasthenia* spp.), goldenstar (*Bloomeria* spp.), popcorn flower (*Plagiobothrys* spp.; *Cryptantha* spp.), onion (*Allium* spp.), chia (*Salvia columbariae*), and blue dicks (*Dichelostemma capitatum*), among others (USFWS 2003).

Suitable QCB habitat occurs along the eastern and western slopes within the Southern Parcel and several of the species host plants were documented during the 2019 biological surveys (Figure 13). There are numerous reported occurrences of the species within the surrounding area, including previous sightings within the Preserve. Furthermore, one quino checkerspot butterfly was documented within the Preserve along Slaughterhouse Canyon Trail by HELIX biologists in 2019 during surveys conducted for the Sycamore Canyon/Goodan Ranch Preserve Public Access Plan Project. The individual was observed approximately 1,500 feet from the southern boundary of the Preserve.

3.3.6.2 Amphibians

No other special status amphibian species was determined to have high potential to occur within the Southern Parcel as detailed in Appendix D.

3.3.6.3 Reptiles

Seven special status reptile species were determined to have high potential to occur within the Southern Parcel as detailed below and in Appendix D.

San Diego tiger whiptail (*Aspidoscelis tigris stejnegeri*)
Status: --/SSC; County Group 2
The San Diego tiger whiptail is a subspecies of tiger whiptail (*Aspidoscelis tigris*) occurring in the coastal region of southern California south in to Baja California at elevations below 7,500 feet (Zeiner et al. 1990). In California, the species ranges from San Luis Obispo south to San Diego County. It inhabits a wide variety of habitats primarily in hot and dry open areas with sparse vegetation. Associated habitats include coastal sage scrub, chaparral, riparian areas, woodlands, and rocky areas with sandy or gravel substrates.

Suitable coastal sage scrub and chaparral habitat occurs within the Southern Parcel. Additionally, the species was captured during reptile trapping surveys conducted within the Preserve in 2008 (County 2009) and 2016 (AECOM 2017).

Red diamond rattlesnake (*Crotalus ruber*)
Status: --/SSC; County Group 2
The red diamond rattlesnake occurs in southwestern portion of California from the Morongo Valley in San Bernardino County, west to the coast, and south to mid Baja California (Stebbins 1985). It is found at elevation ranges below 5,000 feet on coastal and desert slopes of the Peninsular Ranges (Jennings and Hayes 1994). The species utilizes several different habitats such as coastal sage scrub and desert slope scrub associations but is frequently observed in chamise and red shank chaparral (Jennings and Hayes 1994). The species shows a preference for habitats with heavy brush associated with large rocks or boulders (Klauber 1972).

Suitable coastal sage and chaparral habitat occurs along the western and eastern slopes of the Southern Parcel. Additionally, the species has been documented within the Preserve during biological surveys conducted in 2008 and 2012 (County 2009; Dudek 2009; County 2013) and was captured in the northern portion of the Preserve in 2016 (AECOM 2017).

Coronado skink (*Plestiodon skiltonianus interparietalis*)
Status: --/WL; County Group 2
The Coronado skink occurs from inland southern San Diego County west to the coast and south into northern Baja California though they can occur up into Riverside County where it intergrades with Skilton's skink (*Plestiodon skiltonianus skiltonianus*; Tanner 1957). Suitable habitats include grassland, woodlands, pine forests, and chaparral, especially in open sunny areas such as clearings and edges of creeks or rivers. This skink prefers rocky areas near streams with lots of vegetation but can also be found in areas away from water. They are occasionally seen foraging in leaf litter but more commonly found underneath surface objects, such as bark or rocks, where they live in extensive burrows (Stebbins and McGinnis 2012).

Suitable grassland and chaparral habitat are present within the Southern Parcel. The skink was also previously captured within the Preserve near Sycamore Canyon Creek during reptile trapping surveys conducted in 2008 (County 2009).

Rosy boa (*Lichanura orcutti*)
Status: --/--; County Group 2
The rosy boa occurs throughout southern California from Los Angeles County south to the Mexico border, from the coast east towards the Mojave and Colorado deserts, though the species is absent from most of Imperial County (Stebbins 2003). Along the coast and mountains, the species occupies rocky chaparral habitats found within canyons and hillsides. In the desert regions, the species inhabits scrub flats with good cover along with washes and canyons (Zeiner et al. 1990). The rosy boa has been found under rocks, in boulder piles, rock outcrops, and vertical canyon walls. Though the species can be common in riparian areas, permanent water is not required.

Suitable habitat for the species is present within the Southern Parcel. Though the species has not been documented during previous biological surveys conducted within the Preserve, it was previously observed within the Preserve by County Park Rangers in 2008 (County 2013).

Blainville's horned lizard (*Phrynosoma blainvillii*)
Status: --/SSC; County Group 2; MSCP Covered
The Blainville's horned lizard (formerly known as coast horned lizard [*Anota coronatum*] and San Diego horned lizard [*Phrynosoma coronatum blainvillii*]) occur from southern California to northern Baja California. In California, the species predominately occurs from Kern County south to San Diego County and west of the deserts at elevations below 8,000 feet (Brattstrom 1997). The species inhabits a wide variety of vegetation types including sagebrush scrub, chaparral, grasslands, forests, and woodlands but is restricted to areas with suitable loose, sandy soils with open areas for basking (Jennings and Hayes 1994). The horned lizard is an insectivore primarily feeding on native harvester ants (*Pogonmyrmex* sp.).

Suitable habitat is present within the Southern Parcel. The species was observed within the Preserve in 2008 (County 2009) and captured during reptile trapping events conducted in 2012 (Dudek 2013; County 2013) and 2016 (AECOM 2017).

Coast patch-nosed snake (*Salvadora hexalepis virgultea*)
Status: --/SSC; County Group 2
Coast patch-nosed snake, a subspecies of the western patch-nosed snake (*Salvadora hexalepis*), occurs along the coastal regions of southern California from the northern Carrizo Plains in San Luis Obispo County into northern Baja California at elevations below 7,000 feet (Jennings and Hayes 1994). The species inhabits semi-arid shrubby areas exhibiting a preference for chamise and redshank chaparral (Grismer 2002). Coast patch-nosed snake is also found within coastal sage scrub, along washes, sandy flats, canyons, and rocky areas. The presence of one, or more burrow, and refuge creating mammals may be required for this species to be present as it takes refuge and overwinters in burrows and woodrat nests (Jennings and Hayes 1994).

Suitable chaparral and coastal sage scrub habitats are present along the eastern and western slopes of the Southern Parcel. The species was captured in the northeastern portion of the Preserve during reptile trapping surveys conducted in 2008 (County 2009) and 2016 (AECOM 2017).

Two-striped garter snake (*Thamnophis hammondii*)
Status: --/SSC; County Group 1
The two-striped garter snake ranges from Monterey County south along the coast into northern Baja California at elevations below 7,000 feet (Atsatt 1913). Commonly inhabits perennial and intermittent streams with rocky beds bordered by riparian habitats dominated by willows and other dense vegetation (Fitch 1941). The species has also been found in stock ponds and other artificially created aquatic habitats if bordered by dense vegetation with potential prey, such as amphibians and fish (Jennings and Hayes 1994).

Potentially suitable habitat for the species is present along Clark Canyon Creek, though riparian habitat is absent from the Southern Parcel and vegetation along the creek is generally open or absent. The species was reportedly observed within the Preserve by Park Rangers in 2008 (County 2013).

3.3.6.4 Birds

Six special status bird species were determined to have high potential to occur within the Southern Parcel as detailed below and in Appendix D.

Cooper's hawk (*Accipiter cooperii*)
Status: --/WL; County Group 1; MSCP Covered
The Cooper's hawk is widespread throughout North America ranging from southern Canada south to Mexico and occurring as a year-round resident within the majority of the continental United States. In California, the species breeds from Siskiyou County south to San Diego County and east to the Owens Valley at elevations below 9,000 feet (Curtis et al. 2006). The species inhabits forests, riparian areas, and more recently suburban and urban areas nesting within dense woodlands and forests and isolated trees in open areas (Chiang et al. 2012).

Suitable foraging and breeding habitat are present within the Southern Parcel and the species has been observed within the Preserve during wildlife surveys conducted in 2008 (County 2009).

Bell's sparrow (*Artemisiospiza belli*)
Status: BCC/WL; County Group 1
The Bell's sparrow is a resident of California found along the coastal regions from Trinity County south to San Diego County, east of the Cascade and Sierra Nevada ranges from southern Sierra County south through Owens Valley and the western edge of the Mojave Desert and Kern River basin, and desert slopes of Transverse Ranges (Marin and Carlson 1998). The species inhabits arid, semi-open scrubby habitats and is closely associated with big sagebrush (*Artemisia tridentata*) throughout most of its range thought it also occurs within coastal sage scrub, chaparral, and desert scrub habitats (Wiens and Rotenberry 1981). Typically breeds at elevations below 5,660 feet but has also been documented at elevations above 7,900 feet (Marin and Carlson 1998). In foothill chaparral, they tend toward younger, less dense stands that are recovering from recent fires and are less common in older, taller stands that have remained unburned (Stephenson and Calcarone 1999).

Suitable coastal sage scrub and chaparral habitat is present within the Southern Parcel. Bell's sparrow was detected throughout the Preserve during wildlife surveys conducted in 2008, including successful breeding observations (County 2009).

Loggerhead shrike (*Lanius ludovicianus*)
Status: BCC/SSC; County Group 1
The loggerhead shrike is found year-round throughout of the southern United States and southwards into Baja California and Mexico, with breeding populations also present in the north-central portion of the United States and southcentral Canada. In California, the species is found throughout the foothills and lowlands of California, with winter migrants found coastally north of Mendocino County (Zeiner et al. 1990). Shrikes are found in a variety of habitats seen foraging over open ground within areas of low-lying vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral, and beach with scattered shrubs (Yosef 1996). Individuals forage by perching to search for prey (such as large insects, small mammals, amphibians, reptiles, fish, and invertebrates) and using impaling as a means of handling prey (Zeiner et al. 1990).

Suitable open coast live oak woodland, chaparral, and grassland habitat is present within the Southern Parcel and there are multiple reported eBird sightings of the species within the northern portion of the Preserve.

Coastal California gnatcatcher (*Polioptila californica californica*)
Status: FT/SSC; County Group 1; MSCP Covered
The coastal California gnatcatcher is a year-round resident occurring from southern California south to northwest Baja California (Atwood and Bolsinger 1992). In California, the species is found from Ventura County south to San Diego County and east to the western portions of San Bernardino and Riverside Counties. Coastal California gnatcatchers typically occur in arid, open sage scrub habitats on gently slopes hillsides to relatively flat areas at elevations below 1,640 feet but may occur as high as 3,000 feet (Grishaver et al. 1998). The composition of sage scrub in which gnatcatchers are found is variable; however, California sagebrush is at least present as dominant or co-dominant species (Atwood and Bontrager 2001). The species is mostly absent from areas dominated by black sage, white sage, or lemonadeberry, though in inland areas the species may occur more regularly in areas dominated by black sage (Mock 2004).

Suitable coastal sage scrub habitat is present within the Southern Parcel and the species was detected within the northern and southwestern portions of the Preserve during wildlife surveys conducted in 2012 and 2016 (Dudek 2013; County 2013; AECOM 2017). USFWS-designated critical habitat for the coastal California gnatcatcher occurs immediately south of the Southern Parcel (Figure 4).

Western bluebird (*Sialia mexicana*)
Status: --/--; County Group 2; MSCP Covered
The western bluebird is found throughout the western United States, Mexico, and southwestern Canada. The species is a common year-round resident throughout California but is absent from the higher mountain regions and eastern deserts (Guinan et al. 2008). Western bluebirds breed in open woodlands, riparian habitats, grasslands, and farmlands. They nest and roost in cavities of trees and snags, often in holes previously created by woodpeckers, and nest boxes. Bluebirds are found in a wider variety of habitats in the winter.

Limited suitable breeding habitat occurs in the Southern Parcel, though the species was observed within the central and northern portions of the Preserve during wildlife surveys conducted in 2008 and 2016, including a nesting pair near Sycamore Canyon Creek in 2008 (County 2009; AECOM 2017).

Barn owl (*Tyto alba*)
Status: --/--; County Group 2
The barn owl is a wide-ranging species found throughout the continental United States and San Diego County. The species is a common, yearlong resident found in open habitats such as grassland, chaparral, riparian, and wetlands avoiding dense forests and open desert habitats (Zeiner et al. 1990). The species is also found in urban and suburban areas. Barn owls nest in sheltered areas of cliffs or man-made structures, on ledges, and in crevices, culverts, nest boxes, and cavities in trees. The species roosts in dense vegetation, and on cliffs, buildings, and other man-made structures.

Suitable habitat occurs within the Southern Parcel and the species was detected in the northern, central, and southwestern portions of the Preserve during avian point count surveys conducted in 2008 and 2012 (County 2009; Dudek 2013; County 2013).

3.3.6.5 Mammals

Four special status mammal species were determined to have high potential to occur within the Southern Parcel, as described below and in Appendix D.

Pallid bat (*Antrozous pallidus*)
Status: --/SSC; County Group 2
The pallid bat occurs from southeastern British Columbia south through the western U. S., further into Baja California and central Mexico (Hermanson and O'Shea 1983). In California, the species is common at lower elevations, though can occur at elevations up to 8,000 feet (Black 1974), except is absent from the higher elevations of the Sierra Nevada (Hall 1981). The species is characteristic of desert regions being locally common in the Great Basin, Mojave, and Sonoran deserts but also inhabits other arid environments such as grasslands, open scrub, woodlands, and forests, particularly in areas with rock outcroppings near water (Hermanson and O'Shea 1983). Suitable roosting areas include caves, mines, rock crevices, trees and sage, bat houses, and other man-made structures adjacent to open areas for foraging (Vaughn and O'Shea 1976). The species appears to be intolerant of most human disturbances, being mostly absent from urban and suburban areas (Tremor et al. 2017).

Suitable habitat is present within the Southern Parcel and the species was documented within the Preserve during surveys conducted in 2012 (County 2013; Dudek 2013).

Dulzura pocket mouse (*Chaetodipus californicus femoralis*)
Status: --/SSC; County Group 2
The Dulzura pocket mouse occurs within the foothills and mountains of southern California and northern Baja California being limited to San Diego County within the U.S. (Tremor et al. 2017). The species prefers gravelly substrates with good sun exposure with open to dense vegetation. It is commonly found at the edge of chaparral but also inhabits grassland, coastal sage scrub, oak woodland (Tremor et al. 2017). The species tends to be more abundant on steeper than gentler slopes and may occur on the upper portions of the desert slopes of the mountains.

Suitable habitat is present within the Southern Parcel and the species was captured within the Preserve during the small mammal trapping surveys conducted in 2008 and 2016 (County 2009; AECOM 2017). Additionally, two individuals were caught off-site in 1992 in upper Sycamore Canyon about 0.5 mile north of Goodan Ranch.

Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)
Status: --/SSC; County Group 2
The northwestern San Diego pocket mouse occurs from western Riverside County throughout southwestern California to northern Baja California at elevations below 6,000 feet (McClenaghan 1983). The species inhabits coastal sage scrub, grasslands, and chaparral communities, and generally exhibits a strong microhabitat affinity for moderately gravelly and rocky substrates (Price and Waser 1984). They tend to forage for seeds from California sagebrush, California buckwheat, lemonade berry, and grasses under shrub and tree canopies, or around rock crevices (Reichman and Price 1993).

Suitable habitat is present within the Southern Parcel and the species was captured within the Preserve during the small mammal trapping surveys conducted in 2012 and 2016 (Dudek 2013; County 2013; AECOM 2017). Additionally, two individuals were reportedly caught off-site in upper Sycamore Canyon about 0.5 mile north of Goodan Ranch in 1992.

Mountain Lion (*Puma concolor*)
Status: --/--; County Group 2; MSCP Covered
The mountain lion is found throughout western North America ranging from western Canada south throughout central Mexico (Pierce and Bleich 2003). In California the species is an uncommon permanent resident occurring in nearly all habitats, expect xeric regions of Mojave and Colorado deserts

where their main prey, mule deer, is absent (Zeiner et al. 1990). Mountain lions are most common in riparian areas with brushy habitats that provide enough protective cover and habitat connections for movement between core habitat areas (Dickson and Beier 2002). Other habitat associations include chaparral, open woodlands, and coniferous forests. Rugged or steep terrain with rocky areas, cliffs, and ledges and adequate vegetative cover are also important characteristics of this species habitat (Pierce and Bleich 2003).

Suitable habitat and prey species (i.e., mule deer) are present within the Southern Parcel and DPR staff have previously reported observations of this species within the Preserve in 2008 (County 2009).

3.3.7 Invasive Animal Species

No invasive animal species were detected within the Southern Parcel during the 2019 biological survey. Invasive animal species previously detected within the Preserve that have moderate potential to occur within the Southern Parcel based on presence of suitable habitat and previous observation within the overall Preserve include European starling (*Sturnus vulgaris*) and brown-headed cowbird (*Molothrus ater*).

The European starling is found throughout North America from Alaska south through Canada and into Mexico (Cabe 1993). The species is native to Europe, central Asia, and northern Africa having been introduced to the United States in New York City in 1890. The species expanded rapidly, reaching the west coast in 1942 (Jewett 1942; Linz et al. 2007). Starlings occur in a wide variety of lowland open habitats including fields, farms, open groves parks, and other urban areas. They tend to be less common in scrub, forests, and desert environments (Cabe 1993). Starlings are cavity-nesting birds and have been known to compete aggressively with native cavity-nesting birds for nest sites (Ingold 1989). Cavity-nesting species detected within Southern Parcel include Bewick's wren, house wren, ash-throated flycatcher and red-shafted (northern) flicker, all of which are not considered sensitive.

The brown-headed cowbird is found throughout the United States, occurring year-round along the coastal regions of California and breeding within the interior portion of the state. The species historically occurred in the United States as far east the Great Plains but have expanded west into California in the last century as regions became settled, habitats were modified, and agricultural and pasture lands expanded (Laymon 1987). They are found in a variety of habitats including prairies, riparian areas, pastures and agricultural fields, orchards, and residential areas showing a preference for human-modified habitats (Airola 1986). Cowbirds are brood parasites opportunistically laying eggs in the nests of other birds. They have been reported to parasitize the nests of over 220 species including special status species such as the coastal California gnatcatcher, yellow warbler, and least Bell's vireo (Lowther 1993; Kus 1999). Cowbird nestlings often out-compete nestlings of the host species and have been implicated in the decline of many species including the least Bell's vireo (USFWS 1998).

3.4 WILDLIFE MOVEMENT CORRIDORS

Wildlife corridors connect otherwise isolated pieces of habitat and allow movement or dispersal of plants and animals. Local wildlife corridors allow access to resources such as food, water, and shelter within the framework of their daily routine. Regional corridors provide these functions over a larger scale and link two or more large habitat areas, allowing the dispersal of organisms and the consequent mixing of genes between populations. A corridor is a specific route that is used for the movement and migration of species and may be different from a linkage in that it represents a smaller or narrower

avenue for movement. A linkage is an area of land that supports or contributes to the long-term movement of animals and genetic exchange by providing live-in habitat that connects to other habitat areas. Many linkages occur as stepping-stone connections that are made up of a fragmented archipelago arrangement of habitat over a linear distance.

As part of the Final MSCP (City 1998), the Southern Parcel, and Preserve, was identified within the Central Poway/San Vicente Reservoir/North Poway biological core resource area (BCRA). Biological core resource areas are defined as "areas that support a high concentration of sensitive wildlife resources which, if lost or fragmented, could not be replaced". The Southern Parcel, and larger Preserve, is located within a rural, relatively undeveloped portion of San Diego County containing large expanses of high quality, native vegetation that provides habitat for a variety of plant and wildlife species. It provides a critical link to undeveloped open space areas to the northeast (such as Boulder Oaks Preserve), east (San Vicente Reservoir and Oakoasis County Preserve), and southwest (MCAS Miramar and Mission Trail Regional Park). The Southern Parcel, Preserve, and much of the surrounding area are mapped as Pre-Approved Mitigation Area (PAMA) lands under the County's MSCP Subarea Plan (County 1997), thereby increasing the overall conservation value of the area. The PAMA in the region is based on the core and linkage concept of landscape-level conservation. The configuration of preserve lands includes large, contiguous areas of habitat supporting important species populations or habitat areas and important functional linkages and movement corridors between them.

Several medium- to small-sized mammal species were observed within the Southern Parcel, including black-tailed jackrabbit and coyote, and several other species have been documented within the Preserve such as racoon and bobcat. Larger mammal species such as mule deer were also detected, and mountain lion have been reportedly observed within the Preserve in the past. There are no barriers to impede wildlife within the Preserve, though larger transportation corridors such as Scripps Poway Parkway, SR-67, and SR-52 are located to the north, northeast, and southwest of the site which may constrain wildlife movement where individuals travel through wildlife tunnels, underpasses, or overpasses, and can result in wildlife mortality where animals attempt to cross roads where wildlife crossings are not available or functional. Regardless, the Southern Parcel, and overall Preserve, function as both a local and regional movement corridor for wildlife species found in the region. The area facilitates movement between the Poway and Ramona areas to Mission Trails Regional Park in the south and connects these areas to the eastern Cuyamaca and Laguna Mountains.

4.0 CONCLUSIONS AND MANAGEMENT RECOMMENDATIONS

Biological surveys conducted by HELIX at the Southern Parcel in 2019 documented eight plant alliances, associations, or semi-natural stands; 121 plant species, including three special status plants and one MSCP covered species; and 62 wildlife species, including 13 special status animals and three MSCP covered species. All of the mapped vegetation communities within the Southern Parcel occur within the Preserve; it should be noted that although non-vegetated channel (streambed) has not been specifically mapped within the Preserve, this vegetation community is prevalent within the canyon bottoms of the Preserve and, therefore, does not represent a new vegetation community. A total of four species covered under the MSCP were observed: willowy monardella, Belding's orange-throated whiptail, southern California rufous-crowned sparrow, and mule deer.

DPR will manage the Southern Parcel as part of the Preserve in accordance with the most current County management guidelines and methods. Management recommendations and resource-specific conclusions are presented for MSCP covered species.

4.1 VEGETATION COMMUNITIES/HABITATS

The Southern Parcel is comprised of eight vegetation alliances, associations, or semi-natural stands. Management directives should consist of ongoing habitat monitoring, habitat restoration, and removal and control of invasive and non-native plant species. There are no additional management actions recommended at this time.

4.2 PLANTS

One MSCP covered plant species was documented within the Southern Parcel: willowy monardella. Willowy monardella is included in the County's Targeted Monitoring Plan (Environmental Science Associates and ICF 2015, 2019). The population within the Southern Parcel will be added into the species monitoring plots and managed in accordance with the Targeted Monitoring Plan or the most current County management guidelines and methods.

4.3 WILDLIFE

The current survey effort documented 13 special status wildlife, including three MSCP covered species: Belding's orange-throated whiptail, southern California rufous-crowned sparrow, and mule deer.

Proposed management measures include habitat monitoring, wildlife surveys, habitat restoration, removal and control of invasive and non-native plant species, non-native wildlife species control, and fire prevention and control in accordance with the most current County management guidelines and methods.

4.3.1 Critical Habitat

USFWS-designated critical habitat for willowy monardella and coastal California gnatcatcher occur just south of the Southern Parcel, and a small amount of coastal California gnatcatcher habitat extends into the southeastern portion of the site (Figure 4). Willowy monardella was found within the Southern Parcel along Clark Canyon Creek (Figure 11) and coastal California gnatcatcher has high potential to occur within the Diegan coastal sage scrub habitat.

4.4 INVASIVE NON-NATIVE SPECIES REMOVAL AND CONTROL

4.4.1 Plants

In total, 24 non-native plant species were identified within the Southern Parcel. No plant species with a high invasive ranking by the Cal-IPC (2019) were observed, though three species were selected as a high priority for removal and control: purple false brome, Italian thistle, and Maltese star-thistle. Purple false brome and Italian thistle were mapped within the canyon bottom, primarily in areas dominated by annual non-native grasses (Figure 12). Maltese star-thistle was mapped in the southern portion of the Southern Parcel in areas dominated by non-native grasses and chaparral (Figure 12). These invasive, non-native plant species have potential to impose substantial and apparent, but generally not severe,

ecological impacts and are conducive to moderate to high rates of dispersal, though establishment is generally dependent on ecological disturbance. Removal and control of invasive and non-native plant species present within the Southern Parcel will be conducted in accordance with the most current successful and regionally appropriate treatment methods.

4.4.2 Invasive Non-native Wildlife

No introduced and naturalized animal species were observed within the Southern Parcel during baseline surveys. Two animal species previously observed with the Preserve that are considered to be invasive and/or pose a threat to native species include European starling and brown-headed cowbird; both of these species have potential to occur within the Southern Parcel. The European starling is not anticipated to pose an immediate or significant threat to native wildlife species at this time. Though the species has potential to out compete or displace native cavity nesting species, European starlings have not been found to cause population level declines of native species (Koenig 2003). The brown-headed cowbird has become a wildlife management concern within the region because of the species brood parasitism, particularly of the least Bell's vireo (Kus 2002).

4.4.3 Restoration Opportunities

In general, the Southern Parcel is composed of high-quality native habitat, primarily coastal sage scrub and chaparral communities (Figures 9 and 10) and there are limited restoration opportunities. The central portion of the site contains non-native grassland dominated by abundant annual non-native plant species. Restoration opportunities within the Southern parcel should focus on control of invasive and non-native plant species, particularly within the coastal sage scrub and chaparral portions of the site. Host plants for quino checkerspot butterfly were observed in these areas and the species has high potential to occur within the Southern Parcel. Control of annual non-native plant species within these native habitat areas would preserve the integrity of native habitat in the Southern Parcel and prevent degradation of habitat that has potential to support quino checkerspot butterfly and other special status animal and plant species.

Additional restoration opportunities within the Southern Parcel could include treatment of the on-site non-native grassland habitat. Non-native grassland could be controlled through the implementation of several grow-kill cycles, or periodic weed whipping of annual non-native grasses prior to the formation of seedheads. These methods would help prevent the distribution of non-native seed in the Southern Parcel and reduce the non-native seedbank within the parcel. A native seed mix could be applied in the treatment area to encourage the growth of native grasses and other herbaceous native species.

4.5 FIRE MANAGEMENT

The Southern Parcel was burned in the 2003 Cedar Fire (Figure 7) and is classified as a very high fire hazard zone by CAL FIRE (2019). Fire prevention, control and management measures were included in the Preserve's current RMP (County 2013) and should be implemented in the Southern Parcel. These measures include maintenance of access roads, fuel management, fire suppression, and prescribed burns.

4.6 WILDLIFE LINKAGES AND CORRIDORS

The Southern Parcel is located within a local and regional wildlife movement corridor. Wildlife is expected to move freely through the Southern Parcel as there are no movement barriers such as gates, fences, artificial lighting, or development within or immediately adjacent to the Southern Parcel. DPR should protect corridor functionality and support local wildlife daily and seasonal movement patterns in the Southern Parcel by maintaining on-site vegetation communities.

4.7 ADDITIONAL MANAGEMENT RECOMMENDATIONS

4.7.1 Public Access

There is currently no authorized public access to the Southern Parcel, though an unauthorized trail runs through the central portion of the site through the open coast live oak woodland and non-native grassland habitats. Hikers, joggers, and mountain bikers were observed utilizing this unauthorized trail on several occasions during biological surveys. There are no gates, fencing, or signage within the Southern Parcel to indicate trespassing. The unauthorized trail appears to originate northeast of the Southern Parcel at the Highway 67 Staging Area within a drainage. Additional measures to barricade the trail from public use, if future use is not planned, may be required. This could include the installation of debris, such as logs and plant material, at the start of the unauthorized trail near the staging area to prevent discourage continued use of this illegal trail.

4.7.2 Hydrological Management

An ephemeral drainage, Clark Canyon Creek, flows north-south through the Southern Parcel. This drainage connects to Sycamore Canyon Creek which flows south to the San Diego River. DPR staff should ensure that natural drainage patterns are maintained, and Best Management Practices, such as the installation straw wattles along unstable slopes, are implemented as-need to control erosion and prevent contaminants from washing downstream.

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6.0 REFERENCES

AECOM. 2017. Vegetation Management Plan for the Wu and Cielo Properties. County of San Diego Department of Parks and Recreation. January.

Airola, D.A. 1986. Brown-headed Cowbird Parasitism and Habitat Disturbance in the Sierra Nevada. Journal of Wildlife Management. Volume 50, No. 4.

American Ornithological Society. 2019. Checklist of North and Middle American Birds (online). Available at: http://checklist.aou.org/taxa/

Atsatt. S.R. 1913. The Reptiles of San Jacinto Area of Southern California. University of California Publications of Zoology. Volume 12.

Atwood, J.L. and J.S. Bolsinger. 1992. Elevational distribution of California Gnatcatchers in the United States. Journal of Field Ornithology. Volume 63: Issue 2. Available at: https://sora.unm.edu/sites/default/files/journals/jfo/v063n02/p0159-p0168.pdf

Atwood, J.L. and D.R. Bontrager. 2001. California Gnatcatcher (*Polioptila californica*), Version 2.0. In The Birds of North America (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, New York. Available at: https://doi.org/10.2173/bna.574

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.

Baltosser, H.W. and P.E. Scott. 1996. Costa's Hummingbird (*Calypte costae*), Version 2.0. In The Birds of North America (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology. Ithaca, New York. Available at: https://doi.org/10.2173/bna.251

Barbour, R. W., and W. H. Davis. 1969. Bats of America. University Press of Kentucky, Lexington. 286 pp. Black, H. L. 1974. A North Temperate Bat Community: Structure and Prey Populations. Journal of Mammalogy. 55:138-157

Bostic, D.L. 1966. Food and Feeding Behavior of the Teiid Lizard, *Cnemidophorus hyperythrus beldingi*. Herpetologica. Volume 22, No. 1.

Bowman 1973. *Soil Survey: San Diego Area*. United States Department of Agriculture. Beltsville, MD.

Bradley, R.D., L.K. Ammerman, R.J. Baker, L.C. Bradley, J.A. Cool, R.D. Dowler, C. Jones, D.J. Schmidly, F.B. Stangi, R.A. Van De Bussche, B. Wursig. 2014. Revised Checklist of North American Mammals North of Mexico. Museum of Texas Tech University Occasional Papers. Number 327. Available at: http://www.nsrl.ttu.edu/publications/opapers/ops/OP327.pdf

Brattstrom, B.H. 1997. Status of the Subspecies of the Coast Horned Lizard, Phrynosoma coronatum. Journal of Herpetology. Volume 31, No. 3. Available at: http://yubawatershedinstitute.org/wp-content/uploads/2015/04/StatusCoast.pdf

Cabe, P. R. (1993). European Starling (*Sturnus vulgaris*), Version 2.0. In The Birds of North America (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. Available at: https://doi.org/10.2173/bna.48

California Department of Forestry and Fire Protection. 2019a. Fire and Resource Assessment Program (FRAP). FRAP Mapping. Available at: http://frap.fire.ca.gov/data/frapgismaps-subset.

2019b. California Statewide Fire Map. Available at: http://www.fire.ca.gov/general/firemaps.

Calflora. 2019. Calflora Information of Wild California Plants. Available at: https://www.calflora.org//

California Department of Fish and Wildlife. California Natural Diversity Data Base. 2019a. RareFind Database Program, Version 5. Available at: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data

2019. Special Vascular Plants, Bryophytes, and Lichens List. Natural Diversity Database. August. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109390&inline

2019c. Special Animal List. Natural Diversity Database. August. Available at: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

2000. Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, or Endangered Plants and Natural Communities. December 9.

California Invasive Plant Council. 2019. California Invasive Plant Inventory Database. Available at: http://www.cal-ipc.org/paf/.

California Native Plant Society. 2019. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society (CNPS), Rare Plant Program. California Native Plant Society. Sacramento, California. Available at: http://www.rareplants.cnps.org.

2001. CNPS Botanical Survey Guidelines. Available at: https://cnps.org/wp-content/uploads/2018/03/cnps_survey_guidelines.pdf.

Chiang, Sophia N., Peter H. Bloom, Anne M. Bartuszevige, and Scott, E. Thomas. 2012. Home Range and Habitat Use of Cooper's Hawks in Urban and Natural Areas. Online (www.ucpress.edu/go/sab) in C. A. Lepczyk and P. S. Warren (editors). Urban Bird Ecology and Conservation. Studies in Avian Biology. No. 45. Available at: https://content.ucpress.edu/ancillaries/12112/lepczyk_special_topic_b.pdf

Collins, P.W. 1999. Rufous-crowned Sparrow (*Aimophila ruficeps*), Version 2.0. In The Birds of North America (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology. Ithaca, New York. Available at: https://doi.org/10.2173/bna.472

Corbin, C. and K. Livengood. 2018. Title: Scientific Bat Acoustics Course Workshop Materials and Voucher Calls. September 30 to October 4.

Curtis, O.E., R.N. Rosenfield, and J. Bielefeldt. 2006. Cooper's Hawk (*Accipiter cooperii*), Version 2.0. In The Birds of North America (A. F. Poole, Editor). Cornell Lab of Ornithology. Ithaca, New York. Available at: https://doi.org/10.2173/bna.75

Dudek. 2013. Final Baseline Biodiversity Survey for the Sycamore South and Hagey Study Areas. February.

Evans, B.A. and T.A. Sordahl. 2009. Factors Influencing Perch Selection by Communally Roosting Turkey Vultures. Journal of Field Ornithology. Volume 80, No. 4.

Environmental Science Associates and ICF. 2015, revised 2019. Targeted Monitoring Plan. Prepared for the County of San Diego Department of Parks and Recreation. July. Revised July 2019.

Feaver, P.E. 1971. Breeding Pool Selection and Larval Mortality of Three California Amphibians: Ambystoma tigrinum californiense Gray, Hyla regilla Baird and Girard, and Scaphiopus hammondii Girard. Thesis, Fresno State College, Fresno, California. July.

Fitch, H.S. 1941. The Feeding Habits of California Garter Snakes. California Fish and Game. 27.

Gaby, S.R.P. 1982. Age-specific Resource Utilization by Wintering Migrant Turkey Vultures (*Cathartes aura*) in South Florida. Ph.D. Thesis, University of Miami. Miami, Florida.

Garrett, K. and J. Dunn. 1981. Birds of Southern California: Status and Distribution. Los Angeles Audubon Society.

Grinnell, J. and A.H. Miller. 1944. The Distribution of the Birds of California. Pacific Coast Avifauna Number 27. Copper Ornithological Club, Berkeley, California. Available at: https://sora.unm.edu/sites/default/files/journals/pca/pca_027.pdf

Grishaver, M.A., P.J. Mock, and Kristine L. Preston. 1998. Breeding Behavior of the California Gnatcatcher in Southwestern San Diego County, California. Western Birds. Volume 29. Available at: https://sora.unm.edu/sites/default/files/journals/wb/v29n04/p0299-p0322.pdf

Grismer, L.L. 2002. Amphibians and Reptiles of Baja California, Including Its Pacific Islands and the Islands in the Sea of Cortés. The University of California Press.

Guinan, J.A., P.A. Gowaty, and E.K. Eltzroth. 2008. Western Bluebird (Sialia mexicana), Version 2.0. In the Birds of North America (A. F. Poole, Editor). Cornell Lab of Ornithology. Ithaca, New York. Available at: https://doi.org/10.2173/bna.510

Hall, Clarence A., Jr. 2007. *Introduction to the Geology of Southern California and its Native Plants*. University of California Press, Berkeley.

Hall, R.E. 1981. The Mammals of North America, Second Edition. New York, New York: John Wiley and Sons Inc. Hall, R.E. 1951. A synopsis of the North American Lagomorpha. University of Kansas Publications, Museum of Natural History. Volume 5, No. 10.

Hermanson, J. W., and T. J. O'Shea. 1983. Antrozous pallidus. Mammalian Species. 213:1-8.

Hoffman, A., J. Decher, C. Voigt, J. Schaer, F. Rovero, and G. Wibbelt. 2010. Chapter 19: Field Methods and Techniques for Monitoring Mammals. In Book Manual on Field Recording Techniques and Protocols for All Taxa Biodiversity Inventories and Monitoring. Belgian Development Cooperation. Available at: http://www.abctaxa.be/volumes/volume-8-manual-atbi/volumes/volume-8-manual-atbi/chapter-19/Chapter_19.pdf.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program, State of California, Department of Fish and Game, Sacramento.

Holland, D.C., and R.H. Goodman Jr. 1998. A Guide to the Amphibians and Reptiles of MCB Camp Pendleton, San Diego County, California. Final report prepared for AC/S Environmental Security Resources Management Division under Contract M00681-94-0039.

ICF International. 2015. CMP Preserves Plan Surveys Report. November.

Ingold, Danny J. 1989. Nesting phenology and competition for nest sites among Redheaded and Red-bellied Woodpeckers and European Starlings. Auk 106: 209-217.

Jennings, R. M. and M.P. Hayes. 1994. Amphibian and reptile Species of Special Concern in California. Final report submitted to California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, California, under Contract 8023. Available at: http://www.elkhornsloughctp.org/uploads/files/1401225720%2382%20%3D%20Jennings%20and%20Hayes.pdf

Jepson Herbarium, Jepson Flora Project (eds.). 2019. Jepson eFlora, Available from: http://ucjeps.berkeley.edu/eflora/.

Jewett, Stanley G. 1942. The European Starling in California. Condor. 44: 79.

Kirk, D.A. and M.J. Mossman. 1998. Turkey Vulture (Cathartes aura), version 2.0. In The Birds of North America (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology. Ithaca, New York. Available at: https://doi.org/10.2173/bna.339

Klauber, L. M. 1956. Rattlesnakes: Their Habits, Life Histories and Influence on Mankind. Volumes 1 and 2. University of California Press. Los Angles.

Koenig, W. D. 2003. European starlings and their effect on native cavity-nesting birds. Conservation Biolog0.y 17:1134–1140.

Kus, B. 2002. Least Bell's Vireo (*Vireo bellii pusillus*). The Riparian Bird Conservation Plan: a strategy for reversing the decline of riparian-associated birds in California. California Partners in Flight. Available at: http://www.prbo.org/calpif/htmldocs/riparian_v-2.html

1999. Chapter on Impacts of Brown-headed Cowbird Parasitism on Productivity of the Endangered Least Bell's Vireo. Studies of Avian Biology. Volume 1, Number 18. Available at: https://sora.unm.edu/sites/default/files/SAB_018_1999%20P160-166_Impacts%20of%20Brown-Headed%20Cowbird%20Parasitism%20on%20Productivity%20of%20the%20Endangered%20Least%20Bell%27s%20Vireo_Barbara%20E.%20Kus.pdf

Lancaster, E. 2000. Nyctinomops femorosaccus Pocketed Free-tailed Bat. Animal Diversity Web. University of Michigan Museum of Zoology. Available at: https://animaldiversity.org/accounts/Nyctinomops_femorosaccus/

Laymon, S.A. 1987. Brown-headed Cowbirds in California: Historical Perspectives and Management Opportunities in Riparian Habitats. Western Birds. Number 18. Available at: https://www.westernfieldornithologists.org/archive/V18/18(1)%20p0063-p0070.pdf

Linz, George M., Homan, J.H., Gaukler, S.M., Penry, L.B., Bleier, W.J. 2017. European Starlings: A Review of an Invasive Species with Far-Reaching Impacts. Managing Vertebrate Invasive Species: Proceedings of an International Symposium (G. W. Witmer, W. C. Pitt, K. A. Fagerstone, Eds). USDA/APHIS/WS, National Wildlife Research Center, Fort Collins, CO.

Lowther, P. E., C. Celada, N.K. Klein, C.C. Rimmer, and D.A. Spector. 1999. Yellow Warbler (Setophaga petechia), version 2.0. In The Birds of North America (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology. Ithaca, New York. Available at: https://doi.org/10.2173/bna.454

Lowther, P. E. 1993. Brown-headed Cowbird (Molothrus ater), Version 2.0. In The Birds of North America (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology. Ithaca, New York. Available at: https://doi.org/10.2173/bna.47

McClenaghan, L.R. Jr. 1983. Notes on the Population Ecology of Perognathus fallax in Southern California. The Southwestern Naturalist. Volume 28.

Marschalek, Daniel A., and D.H. Deutschman. 2019. Hermes Copper Surveys 2019 Flight Season. Final Report for San Diego Association of Governments. August 14.

Marschalek, Daniel M., and M.W. Klein, Sr. 2010. Distribution, ecology, and conservation of Hermes copper (Lycaenidae: *Lycaena [Hermelycaena] hermes*). Journal of Insect Conservation. 14:721–730.

Martin, J. W. and B. A. Carlson (1998). Bell's Sparrow (Artemisiospiza belli), version 2.0. In The Birds of North America (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. Available at Birds of North America: https://birdsna.org/Species-Account/bna/species/belspa2

McClenaghan, L. R., JR. 1983. Notes on the population ecology of *Perognathus fallax* (Rodentia: Heteromyidae) in southern California. The Southwestern Naturalist, 28:429-436.McEachern, K., B.M. Pavlik, J. Rebman, and R. Sutter. 2007. San Diego Multiple Species Conservation Program (MSCP) Rare Plant Monitoring Review and Revision. U.S. Geological Survey. Western Ecological Research Center. Scientific Investigations Report 2007-5016.

Mock, P. 2004. California Gnatcatcher (Polioptila californica). The Coastal Scrub and Chaparral Bird Conservation Plan: a strategy for protecting and managing coastal scrub and chaparral habitats and associated birds in California. California Partners in Flight. Available at: http://www.prbo.org/calpif/htmldocs/scrub.html

Natural Resources Conservation Science. Wildlife Habitat Management Institute. 2005. Mule Deer (*Odocoileus hemionus*). Fish and Wildlife Habitat Management Leaflet. May. Available at: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_010100.pdf

North American Butterfly Association. 2019. Checklist of North American Butterflies Occurring North of Mexico, Edition 2.3. Available at: http://www.naba.org/pubs/enames2_3.html.

Oberbauer, T., M. Kelly, and J. Buegge. 2008. Draft Vegetation Communities of San Diego County. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California," R. F. Holland, Ph.D., October 1986. March. Available at: http://www.sdcanyonlands.org/pdfs/veg_comm_sdcounty_2008_doc.pdf

Pease, Katherine M., Freedman, A.H., Pollinger, J.P., McCormack, J.E., Buermann, W., Rodzen, J., Banks, J., Meredith, E., Bleich, V.C., Schaefer, R.J., Jones, K., Wayne, R.K. 2009. Landscape Genetics of California Mule Deer (*Odocoileus hemionus*): The Roles of Ecological and Historical Factors in Generating Differentiation. Molecular Ecology. 18(9):1848-1862.

Pierce, B.M., Bleich, V.C., 2003. Mountain lion. In: Feldhamer, G.A., Thompson, B.C., Chapman, J.A. (Eds.), Wild Mammals of North America. The Johns Hopkins Press, Baltimore, pp. 744– 757.

Price, M.V. and N.M. Waser. 1984. On the Relative Abundance of Species: Postfire Changes in a Coastal Sage Scrub Rodent Community. Ecology. Volume 65, Issue 4.

Pryde, Philip, R. 2004. San Diego: An Introduction to the Region. Sunbelt Publications; 4th edition.

Quino Biologists United. 2019. LinkedIn Corporation. Available at: https://www.linkedin.com/groups/3801513.

Ralph, J.C., T.E. Martin, G.R. Geupel, D.F. DeSante, and P. Pyle. 1993. Handbook for Field Methods for Monitoring Landbirds. Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture. General Technical Report PSW-GTR-144-www. Available at: https://www.birdpop.org/docs/pubs/Ralph_et_al_1993_Handbook_of_Field_Methods_for_Monitoring_Landbirds.pdf

Reichman, O.J. and M.V. Price. 1993. Ecological aspects of heteromyid foraging. Reiser, C.H. 2001. Rare Plants of San Diego County. July.

Reiser, C.H. 2001. Rare Plants of San Diego County. San Diego, CA: Aquifer Press. San Diego, City of. 1998. Final Multiple Species Conservation Program Plan. August 1998. Available at: https://www.sandiegocounty.gov/content/dam/sdc/pds/mscp/docs/SCMSCP/FinalMSCPProgramPlan.pdf

San Diego, County of. 2013. Resource Management Plan for Sycamore Canyon and Goodan Ranch Preserve San Diego County. June.

2009. Resource Management Plan for Sycamore Canyon and Goodan Ranch Preserve San Diego County. June.

2010a. County of San Diego Guidelines for Determining Significance, Biological Resources. Available at: http://www.co.san-diego.ca.us/dplu/docs/Biological_Guidelines.pdf

2010b. County of San Diego Report Format and Content Requirements, Biological Resources. Available at: http://www.co.san-diego.ca.us/dplu/docs/Biological_Report_Format.pdf

1997. Multiple Species Conservation Program County of San Diego Subarea Plan. October 22.

San Diego Association of Governments. 2019. San Diego Geographic Information Source (SanGIS) parcel lookup tool. Available at: http://sdgis.sandag.org/map.aspx

2011a.Vegetation Classification Manual for Western San Diego County. San Diego Association of Governments. February. Available at: https://sdmmp.com/upload/SDMMP_Repository/0/dwqy61g2v47f0bst8c9zhkrmjp3xn5.pdf

2011b. Vegetation Classification Manual for Western San Diego County. San Diego Association of Governments. Electronic Key to Western San Diego County Vegetation.

Shuford, D.W., and T. Gardali. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento. Available at: https://www.wintuaudubon.org/Documents/BSSC-Shuford%20and%20Gardali%202008.pdf.

Sims, K. 2000. *Myotis yumanensis* Yuma Myotis. Animal Diversity Web. University of Michigan Museum of Zoology. Available at: https://animaldiversity.org/accounts/Myotis_yumanensis/.

Society for the Study of Amphibians and Reptiles. 2019. North American Standard English and Scientific Names Database. Available at: https://ssarherps.org/cndb.

Stager, K.E. 1964. The Role of Olfaction in Food Location by the Turkey Vulture (*Cathartes aura*). Los Angeles County Museum. Contributions in Science. No. 81. Available at: https://nhm.org/site/sites/default/files/pdf/contrib_science/CS81.pdf.

Stebbins, R.C. 2203. A field guide to western reptiles and amphibians. Third edition, revised. Peterson Field Guides. Houghton Mifflin Company. Boston, Massachusetts

Stebbins, R.C. 1985. A field guide to western reptiles and amphibians. Second edition, revised. Peterson Field Guides. Houghton Mifflin Company. Boston, Massachusetts

Stebbins, R.C., and S.M. McGinnis. 2012. Field Guide to Amphibians and Reptiles of California: Revised Edition. California Natural History Guides. University of California Press, Berkeley, Los Angeles.

1972. Amphibians and Reptiles of California. California Natural History Guides. University of California Press, Berkeley, Los Angeles

Stephenson, J., and G. M. Calcarone. 1999. Southern California mountains and foothills assessment: habitat and species conservation issues. General Technical Report PSWGTR-172, USDA Forest

Service, Pacific Southwest Research Station, Albany, California, USA. Available at: https://sdmmp.com/upload/SDMMP_Repository/0/hc2xjtp3kbs9frn4z76m51wv8dyq.pdf

Tan, Siange S. 2002. Geologic Map of the San Vicente Reservoir 7.5' Quadrangle, San Diego County, California: A Digital Base. Geologic Survey submitted to the Department of Conservation California Geological Survey.

Tanner, W.W. 1957. A Taxonomic and Ecological Study of the Western Skink (*Eumeces skiltonianus*). Great Basin Naturalist. Volume 17, Numbers 3 – 4. Available at: https://scholarsarchive.byu.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1381&context=gbn.

Taron, D. and L. Reis. 2015. Butterfly Monitoring for Conservation. In Butterfly Conservation in North America. Springer, Dordrecht. Available at: https://www.butterflyinformatics.org/sites/default/files/Taron%20and%20Ries%202015%20Bfly%20Cons.pdf.

Tremor, S., D. Stokes, W. Spencer, J. Diffendorfer, H. Thomas, S. Chives, and P. Unitt. 2017. San Diego Mammal Atlas. San Diego Natural History Museum.

U.S. Department of Agriculture. 2019. WebSoil Survey. Available at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

U.S. Geological Survey. 2008. Herpetological Monitoring Using a Pitfall Trapping Design in Southern California. U.S. Geological Survey Techniques and Methods 2-A5. Available at: https://pubs.usgs.gov/tm/tm2a5/pdf/tm2a5.pdf.

U.S. Fish and Wildlife Service. 2019. Occurrence Information for Multiple Species within Jurisdiction of the Carlsbad Fish and Wildlife Office (CFWO). Available at: http://www.fws.gov/carlsbad/gis/cfwogis.html

2014. Quino checkerspot butterfly survey guidelines. December 15. Available at: https://www.fws.gov/cno/es/Recovery_Permitting/insects/quino_checkerspot_butterfly/QuinoCheckerspotButterfly_SurveyGuidelines_20141215.pdf.

2009. Five Year Review for Quino Checkerspot Butterfly (*Euphydryas editha quino*). U.S. Fish and Wildlife Service Carlsbad Fish and Wildlife Office. August 13. Available at: https://www.fws.gov/carlsbad/SpeciesStatusList/5YR/20090813_5YR_QCB.pdf.

2003. Recovering Plan for the Quino Checkerspot Butterfly (Euphydryas editha quino). August 11. Available at: https://ecos.fws.gov/docs/recovery_plan/030917.pdf

1998. Draft Recovery Plan for the Least Bell's Vireo. U.S. Fish and Wildlife Service, Portland, Oregon.

1996. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants. September 23. Available at:

https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/Documents/Listed_plant_survey_guidelines.pdf.

Terry A. Vaughan, Thomas J. O'Shea, Roosting Ecology of the Pallid Bat, *Antrozous pallidus*, *Journal of Mammalogy*, Volume 57, Issue 1, 27 February 1976, Pages 19-42, https://doi.org/10.2307/1379510

Verts, B.J., and L.N. Carraway. 2002. *Neotoma lepida*. Mammalian Species.

Western Regional Climate Center. 2019a. "Climate of California." Available at: https://wrcc.dri.edu/Climate/narrative_ca.php

WRCC. 2019b. "Period of Record Monthly Climate Summary, Poway Valley." Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7111

Wiens, J. A. and J. T. Rotenberry. 1981. Habitat associations and community structure of birds in shrubsteppe environments. Ecological Monographs 5:21-41.

Yosef, R. 1996. Loggerhead shrike (*Lanius ludovicianus*). In The Birds of North America, No. 231 (A. Poole and F. Gill, eds.). Cornell Lab of Ornithology, Ithaca, NY, USA. Available at: https://doi.org/10.2173/bna.231.

Zeiner, D.C., W. F. Laudenslayer, K. E. Mayer, and M. White eds. 1990. California's Wildlife: Volume II - Birds. California Department of Fish and Game. Sacramento, California.

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Appendix A

Plant Species Observed

Appendix A
Plant Species Observed

Family	Scientific Name*,¥,†	Common Name	Status[1]
Adoxaceae	*Sambucus nigra*	black elderberry	-
Agavaceae	*Hesperoyucca whipplei*	Chaparral yucca	-
Anacardiaceae	*Malosma laurina*	laurel sumac	-
	Rhus integrifolia	lemonade berry	-
	Rhus ovata	sugar bush	-
	Toxicodendron diversilobum	poison oak	-
Apiaceae	*Apiastrum angustifolium*	wild celery	-
	Daucus pusillus	American wild carrot	-
	Sanicula arguta	sharp toothed sanicle	-
Asteraceae	*Ambrosia psilostachya*	western ragweed	-
	*Anthemis cotula**	Mayweed	-
	Artemisia californica	California sagebrush	-
	Baccharis salicifolia	mule fat	-
	Baccharis sarothroides	desertbroom baccharis	-
	Carduus pycnocephalus¥	Italian thistle	-
	Centaurea melitensis¥	Maltese star thistle	-
	Chaenactis artemisiifolia	white pincushion	-
	Chaenactis glabriuscula	yellow pincushion	-
	*Cotula coronopifolia**	brass buttons	-
	Deinandra fasciculata	clustered tarweed	-
	Erigeron canadensis	Canada horseweed	-
	Eriophyllum confertiflorum var. *confertiflorum*	golden yarrow	-
	*Gazania linearis**	treasure flower	-
	Grindelia camporum	gumweed	-
	*Hedypnois cretica**	Crete weed	-
	Helianthus gracilentus	slender sunflower	-

Appendix A (cont.)
Plant Species Observed

Family	Scientific Name*,¥,†	Common Name	Status[1]
Asteraceae	*Hypochaeris glabra**	smooth's cat's ears	
	Isocoma menziesii var. *menziesii*	Menzies' goldenbush	-
	Lasthenia sp.	goldfields	-
	Layia platyglossa	coastal tidy tips	-
	Pentachaeta aurea ssp. *aurea*†	golden-rayed pentachaeta	CRPR 4.2; County List D
	Porophyllum gracile	odora	-
Boraginaceae	*Amsinckia menziesii*	small flowered fiddleneck	-
	Cryptantha intermedia	common cryptantha	-
	Emmenanthe penduliflora var. *penduliflora*	whispering bells	-
	Eucrypta chrysanthemifolia var. *chrysanthemifolia*	spotted hideseed	-
	Phacelia cicutaria var. *hispida*	caterpillar phacelia	-
	Phacelia grandiflora	large flowered phacelia	-
	Phacelia parryi	Parry's phacelia	-
Brassicaceae	*Brassica nigra**	black mustard	-
	Caulanthus heterophyllus	slender pod jewelflower	-
	Lepidium nitidum	shining peppergrass	-
	*Raphanus sativus**	wild radish	-
Caryophyllaceae	*Silene gallica**	common catchfly	-
Convolvulaceae	*Calystegia macrostegia*	Island morning glory	-
Crassulaceae	*Crassula connata*	sand pygmyweed	-
Cucurbitaceae	*Marah macrocarpa*	chilicothe	-
Cyperaceae	*Eleocharis macrostachya*	common spikerush	-
Euphorbiaceae	*Acalypha californica*	California copperleaf	-
	Croton setiger	doveweed	-
	*Euphorbia peplus**	petty spurge	-
Fabaceae	*Acmispon glaber*	deerweed	-
	Acmispon micranthus	small flowered lotus	-

Appendix A (cont.)
Plant Species Observed

Family	Scientific Name*,¥,†	Common Name	Status[1]
	Acmispon strigosus	strigose lotus	-
	Lupinus bicolor	miniature lupine	-
	Lupinus concinnus	Bajada lupine	-
	Lupinus hirsutissimus	stinging lupine	-
Fagacaeae	*Quercus agrifolia*	coast live oak	-
	Quercus berberidifolia	Inland scrub oak	-
Geraniaceae	*Erodium botrys**	long beaked filaree	-
	*Erodium cicutarium**	red stemmed filaree	-
	*Erodium moschatum**	white stemmed filaree	-
Grossulariaceae	*Ribes indecorum*	white flowering currant	-
	Ribes speciosum	fuchsia flowered gooseberry	-
Iridaceae	*Sisyrinchium bellum*	blue eyed grass	-
Lamiaceae	*Monardella viminea*†	willowy monardella	FE; SE; CRPR 1B.1; County List A; MSCP Covered
	Salvia apiana	white sage	-
	Salvia mellifera	black sage	-
	Trichostema lanceolatum	vinegarweed	-
Liliaceae	*Calochortus splendens*	splendid mariposa lily	-
	Calochortus weedii	Weed's mariposa lily	-
Linaceae	*Linum lewisii* var. *lewisii*	prairie flax	-
Malvaceae	*Malacothamnus fasciculatus*	chaparral bush mallow	-
	Sidalcea malviflora ssp. *sparsifolia*	southern checkerbloom	-
Myrsinaceae	*Lysimachia arvensis**	scarlet pimpernel	-
Nyctaginaceae	*Mirabilis laevis* var. *crassifolia*	California four o'clock	-
Onagraceae	*Camissoniopsis hirtella*	hairy suncup	-
	Camissoniopsis robusta	robust suncup	-
	Clarkia purpurea ssp. *quadrivulnera*	purple clarkia	-
	Eulobus californicus	California primrose	-

Appendix A (cont.)
Plant Species Observed

Family	Scientific Name*,¥,†	Common Name	Status[1]
Orobanchaceae	*Castilleja exserta* ssp. *exserta*	Purple owl's clover	-
Oxalidaceae	*Oxalis californica*	California wood sorel	-
Oxalidaceae	*Oxalis pes-caprae**	Bermuda buttercups	-
Papaveraceae	*Eschscholzia californica*	California poppy	-
Phrymaceae	*Diplacus puniceus*	sticky monkeyflower	-
	Diplacus brevipes	wide throated yellow monkeyflower	-
Plantaginaceae	*Antirrhinum kelloggii*	Kellogg's snapdragon	-
	Antirrhinum nuttallianum ssp. *nuttallianum*	Nuttall's snapdragon	-
	Collinsia heterophylla	purple Chinese houses	-
	Keckiella antirrhinoides var. *antirrhinoides*	chaparral beard tongue	-
	Keckiella cordifolia	heart leaved keckiella	-
	Penstemon spectabilis var. *spectabilis*	showy penstemon	-
	Plantago erecta	dotseed plantain	-
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat	-
	Pterostegia drymarioides	fairy mist	-
	*Rumex crispus**	curly dock	-
Poaceae	*Avena barbata**	slender wild oat	-
	Brachypodium distachyon¥	Purple false brome	-
	*Bromus diandrus**	rip-gut brome	-
	*Bromus hordeaceus**	soft chess	-
	Bromus madritensis ssp. *rubens**	foxtail	-
	*Festuca myuros**	rattail sixweeks grass	-
	*Lamarckia aurea**	goldentop grass	-
	Muhlenbergia microsperma	littleseed muhly	-
	Muhlenbergia rigens	deergrass	-
Polemoniaceae	*Linanthus dianthiflorus*	ground pink	-
	Navarretia hamata ssp. *hamata*	hooked pincushion plant	-

Appendix A (cont.)
Plant Species Observed

Family	Scientific Name*,¥,†	Common Name	Status[1]
Pteridaceae	*Pellaea mucronata* ssp. *mucronata*	Bird's foot fern	-
Ranunculaceae	*Clematis pauciflora*	small leaved clematis	-
Rhamnaceae	*Ceanothus tomentosus*	woolly leaf ceanothus	-
	Rhamnus crocea	redberry	-
	Rhamnus ilicifolia	hollyleaf redberry	-
Rosaceae	*Adenostoma fasciculatum*	chamise	-
	Cercocarpus minutiflora	south mountain mahogany	-
	Prunus ilicifolia ssp. *ilicifolia*	hollyleaf cherry	-
Rubiaceae	*Galium aparine*	common bedstraw	-
Rununculaceae	*Delphinium parryi*	San Bernardino larkspur	-
Selaginellaceae	*Selaginella cinerascens*†	ashy spike-moss	CRPR 4.1, County List D
Solanaceae	*Datura wrightii*	Jimsonweed	-
Themidaceae	*Bloomeria crocea* var. *crocea*	common goldenstar	-
	Dichelostemma capitatum ssp. *capitatum*	blue dicks	-

† Special Status Species
* Non-native Species
¥ Target Invasive Species
[1] F = Federal; S = State of California; E = Endangered; T = Threatened; CE = Candidate Endangered; R = Rare

CRPR = California Native Plant Society Rare Plant Rank: 1A – presumed extirpated in California and either rare or extinct elsewhere; 1B – rare, threatened, or endangered in California and elsewhere; 2A – presumed extirpated in California, but more common elsewhere; 2B – rare, threatened, or endangered in California, but more common elsewhere; 3 – more information needed; 4 – watch list for species of limited distribution. Extension codes: .1 – seriously endangered; .2 – moderately endangered; .3 – not very endangered.

County of San Diego Sensitivity Status: Plant species are divided into Groups A through D on the County Rare Plant List. **Groups A and B** Plants include those that have a very high level of sensitivity, either because they are listed as threatened or endangered or because they have very specific natural history requirements that must be met. **Groups C and D** Plants include those species that are becoming less common but are not yet so rare that extirpation or extinction is imminent without immediate action. These species tend to be prolific within their suitable habitat types.

MSCP Covered Species: Covered Species under County MSCP Subarea Plan; NE = Narrow Endemic Species under County MSCP Subarea Plan.

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Appendix B

Animal Species Observed or Detected

Appendix B
Animal Species Observed or Detected

Taxon		Scientific Name†	Common Name	Status[1]
Order	**Family**			
INVERTEBRATES				
Coleoptera	Cerambycidae	*Prionus californicus*	California root borer beetle	--
	Tenebrionidae	unidentified	darkling beetle	--
Lepidoptera	Hesperiidae	*Erynnis funeralis*	Funereal Duskywing	--
		--	Unidentified Skipper	--
	Lycaenidae	*Glaucopsyche lygdamus*	Silvery Blue	--
		Leptotes marina	Marine Blue	--
		Plebejus acmon	Acmon Blue	--
		--	Unidentified Blue	--
		Strymon melinus	Gray Hairstreak	--
	Nymphalidae	*Coenonympha tullia*	Common Ringlet	--
		Junonia coenia	Common Buckeye	--
		Vanessa cardui	Painted Lady	--
		Vanessa annabella	West Coast Lady	--
	Pieridae	*Anthocharis sara sara*	Pacific Sara Orangetip	--
		--	Unidentified White	--
		--	Unidentified Sulphur	--
	Riodinidae	*Apodemia mormo virgulti*	Behr's Metalmark	--
Orthoptera	Stenopelmatidae	*Stenopelmatus* sp.	Jerusalem cricket	--
VERTEBRATES				
Amphibians				
Anura	Scaphiopodidae	*Spea hammondii*†	Western Spadefoot	SSC; County Group 2
Reptiles				
Squamata	Colubridae	*Pituophis catenifer annectens*	San Diego gophersnake	--
	Teiidae	*Aspidoscelis hyperythra beldingi*†	Belding's orange-throated whiptail	WL; County Group 2; MSCP Covered

Appendix B (cont.)
Animal Species Observed or Detected

Taxon		Scientific Name†	Common Name	Status[1]
Order	**Family**			
Birds				
Accipitriformes	Cathartidae	*Cathartes aura*†	Turkey Vulture	County Group 1
Apodiformes	Trochilidae	*Calypte anna*	Anna's Hummingbird	--
		Calypte costae†	Costa's Hummingbird	BCC
Caprimulgiformes	Caprimulgidae	*Chordeiles acutipennis*	Lesser Nighthawk	--
		Phalaenoptilus nuttallii	Common Poorwill	--
Columbiformes	Columbidae	*Zenaida macroura*	Mourning Dove	--
Cuculiformes	Cuculidae	*Geococcyx californianus*	Greater Roadrunner	--
Galliformes	Odontophoridae	*Callipepla californica*	California Quail	--
Passeriformes	Aegithalidae	*Psaltriparus minimus*	Bushtit	--
	Cardinalidae	*Passerina amoena*	Lazuli Bunting	--
	Corvidae	*Aphelocoma californica*	California Scrub-Jay	--
		Corvus corax	Common Raven	--
	Mimidae	*Mimus polyglottos*	Northern Mockingbird	--
		Toxostoma redivivum	California Thrasher	--
	Parulidae	*Setophaga coronata*	Yellow-rumped Warbler	--
		Setophaga petechia†	Yellow Warbler	BCC; SSC; County Group 2
	Passerellidae	*Aimophila ruficeps canescens*†	Southern California Rufous-crowned Sparrow	WL; County Group 1; MSCP Covered
		Melozone crissalis	California Towhee	--
		Pipilo maculatus	Spotted Towhee	--
		Zonotrichia leucophrys	White-crowned Sparrow	--
	Sylviidae	*Chamaea fasciata*	Wrentit	--
	Troglodytidae	*Thryomanes bewickii*	Bewick's Wren	--
		Troglodytes aedon	House Wren	--
	Tyrannidae	*Myiarchus cinerascens*	Ash-throated Flycatcher	--
Piciformes	Picidae	*Colaptes auratus cafer*	(Northern) Red-Shafted Flicker	--
Strigiformes	Strigidae	*Bubo virginianus*	Great Horned Owl	--

Appendix B (cont.)
Animal Species Observed or Detected

Taxon		Scientific Name†	Common Name	Status[1]
Order	**Family**			
Mammals				
Artiodactyla	Cervidae	*Odocoileus hemionus*†	mule deer	County Group 2; MSCP Covered
Carnivora	Canidae	*Canis latrans*	coyote	--
Chiroptera	Molossidae	*Eumops perotis californicus*†	western mastiff bat	SSC; County Group 2
		Nyctinomops femorasaccus†	pocketed free-tailed bat	SSC; County Group 2
		Tadarida brasiliensis	Brazilian free-tailed bat	--
	Vespertilionidae	*Eptesicus fuscus*	big brown bat	--
		Lasiurus cinereus	hoary bat	--
		Myotis ciliolabrum†	western small-footed myotis	County Group 2
		Myotis yumanensis†	Yuma myotis	County Group 2
		Pipistrellus hesperus	American parastrelle	--
Lagomorpha	Leporidae	*Lepus californicus bennettii*†	San Diego black-tailed jackrabbit	SSC; County Group 2
		Sylvilagus audubonii	desert cottontail	--
Rodentia	Cricetidae	*Neotoma bryanti* (formerly *lepida*) *intermedia*†	San Diego Bryant's (formerly desert) woodrat	SSC; County Group 2
		Peromyscus boylii	brush deermouse	--
	Heteromyidae	*Chaetodipus californicus*	California pocket mouse	--
		Dipodomys simulans	Dulzura kangaroo rat	--
	Sciuridae	*Otospermophilus beecheyi*	California ground squirrel	--

[1] F = Federal; S = State of California; E = Endangered; T = Threatened; CE = Candidate Endangered; R = Rare; BCC = Federal Bird of Conservation Concern; SSC = State Species of Special Concern; FP = State Fully Protected; WL = Watch List

County of San Diego Sensitivity Status: Animals are divided into Groups 1 and 2 on the Sensitive Animal List. **Group 1** Animals include those that have a very high level of sensitivity, either because they are listed as threatened or endangered or because they have very specific natural history requirements that must be met. **Group 2** Animals include those species that are becoming less common but are not yet so rare that extirpation or extinction is imminent without immediate action. These species tend to be prolific within their suitable habitat types.

MSCP Covered Species: Covered Species under the County MSCP Subarea Plan; NE = Narrow Endemic Species under the County MSCP Subarea Plan

† Special Status Species

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Appendix C

Special Status Plant Species Potential to Occur

Appendix C
Special Status Plant Species Observed or with Potential to Occur

Species Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
San Diego thorn-mint (*Acanthomintha ilicifolia*)	FT/SE CRPR 1B.1 County List A MSCP Covered MSCP NE	Annual herb. Typically found on clay soils within chaparral, coastal scrub, valley and foothill grassland, and vernal pools. Flowering period: April to June. Elevation: below 3,150 feet (960 meters).	**Low.** Though the species has been documented within the Preserve (County 2009), suitable clay soils are not mapped within the Southern Parcel. This species was not observed during the 2019 HELIX rare plant surveys.
California adolphia (*Adolphia californica*)	--/-- CRPR 2B.1 County List B	Perennial shrub. Most often found in sage scrub but occasionally occurs in peripheral chaparral habitats, particularly hillsides near creeks on clay soils. Flowering period: December to April. Elevation: below 1,312 feet (400 meters).	**Low.** Suitable clay soils are not mapped within the Southern Parcel. however, no recent or historical records for this conspicuous shrub within the Preserve.
Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*)	FE/-- CRPR 1B.1 County List A MSCP Covered	Perennial shrub. Found within relatively open, coastal chaparral. At occasional inland sites it occurs in denser mixed chaparral. Flowering period: December to June. Elevation: below 1,200 feet (365 meters).	**Low.** Suitable chaparral habitat occurs within the Southern Parcel; however, no recent or historical records for this conspicuous shrub within the Preserve. The species has been documented over 2.5 miles southwest of the Southern Parcel within Marine Corps Air Station (MCAS) Miramar and at Mission Trails Regional Park.
San Diego sagewort (*Artemisia palmeri*)	--/-- CRPR 4.2 County List D	Perennial herb. Typically found along stream courses, often beneath riparian woodland, on sandy and mesic soils. May occur in coast live oak woodland, coastal sage scrub, and southern mixed chaparral. Flowering period: June to October. Elevation: below 1,969 feet (600 meters).	**Moderate.** Suitable stream habitat occurs within the Southern Parcel but is dominated by rocky and cobbly soils. However, the species has been previously documented in the northern portion of the Preserve during surveys conducted in 2008 (County 2013). This species was not observed during the 2019 HELIX rare plant surveys.
Western spleenwort (*Asplenium vespertinum*)	--/-- CRPR 4.2 County List D	Perennial rhizomatous herb. Occurs in chaparral, cismontane woodland, and coastal scrub along rocky bluffs. Flowering period: February to June. Elevation: 590 to 3,280 feet (180 to 1,000 meters).	**Low.** Suitable habitat rocky bluffs do not occur within the Southern Parcel and there are no recent or historical records within the Preserve. A historical record from 1935 was recorded to the east of the Preserve at San Vicente Reservoir.

Appendix C (cont.)
Special Status Plant Species Observed or with Potential to Occur

Species Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Dean's milk-vetch (*Astragalus deanei*)	--/-- CRPR 1B.1 County List A	Perennial herb. Found on open, shrubby slopes in chaparral. Also occurs within coastal scrub, cismontane woodland, and riparian forest. Flowering period: February to May. Elevation: 246 to 2,280 feet (75 to 695 meters).	**High.** Suitable habitat occurs within the Southern Parcel and the species was previous detected in the northern portion of the Preserve during surveys conducted in 2016 (AECOM 2017).
Encinitas baccharis (*Baccharis vanessae*)	FT/SE CRPR 1B.1 County List A MSCP Covered MSCP NE	Perennial shrub. Relatively low-growing mature chaparral is the primary habitat. Also found in southern maritime and southern mixed chaparrals, and understory of Torrey-pine forest. Flowering period: August to December. Elevation: 197 to 984 feet (60 to 300 meters).	**Low.** Suitable chaparral habitat is present within the Southern Parcel; however, no recent or historical records for this conspicuous shrub within the Preserve. The nearest observation occurs over 4 miles north of the Preserve at Mount Woodson.
San Diego County viguiera (*Bahiopsis laciniata*)	--/-- CRPR 4.3 County List D	Perennial shrub. Occurs on a variety of soil types within coastal sage scrub. Generally, shrub cover is more open than at mesic, coastal locales supporting sage scrub. Flowering period: February to August. Elevation: 295 to 2,461 feet (90 to 750 meters).	**High.** Suitable habitat occurs within the Southern Parcel and the species was detected in the southwestern portion of the Preserve during the 2019 biological surveys conducted by HELIX for the Sycamore Canyon and Goodan Ranch Preserve Public Access Plan Project.
San Diego goldenstar (*Bloomeria clevelandii*)	--/-- CRPR 1B.1 County List A MSCP Covered	Perennial bulbiferous herb. Occurs in valley grasslands and coastal scrub, particularly near mima mound topography or in the vicinity of vernal pools, on clay soils. Flowering period: April to May. Elevation: 164 to 1,526 feet (50 to 465 meters).	**Low.** Suitable clay soils are not mapped within the Southern Parcel though the species has been previously documented just south of the Preserve in the Fanita Ranch area.
Orcutt's brodiaea (*Brodiaea orcuttii*)	--/-- CRPR 1B.1 County List A MSCP Covered	Perennial bulbiferous herb. Grows on mesic or clay soils within grasslands and vernal pools. Additional habitat associations include closed-cone coniferous forest, chaparral, woodlands, and meadows and seeps. Flowering period: May to July. Elevation: 98 to 5,550 feet (30 to 1,692 meters).	**Low.** Clay soils are not mapped within the study area, though grassland habitat along the Clark Canyon Creek is potentially suitable for the species. However, there are no recent or historical records within the Preserve. This species was observed south of the Preserve at Marine Corps Air Station Miramar as recently as 2012.

Appendix C (cont.)
Special Status Plant Species Observed or with Potential to Occur

Species Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Lewis' evening-primrose (*Camissoniopsis lewisii*)	--/-- CRPR 3	Annual herb. Occurs on sandy or clay soils within grasslands, coastal scrub, cismontane woodland, and coastal bluffs and dunes. Flowering period: March to June. Elevation: below 2,600 feet (800 meters).	**Low.** Suitable grassland habitat is present within the Southern Parcel; however, there are no recent or historical records within the Preserve. The species has been historically observed east of the Preserve near San Vicente Reservoir and south within Mission Trails Regional Park.
Lakeside ceanothus (*Ceanothus cyaneus*)	--/-- CRPR 1B.2 County List A MSCP Covered MSCP NE	Perennial shrub. Occurs on slopes and ridgelines in closed cone coniferous forest and chaparral. Flowering period: April to June. Elevation: 770 to 2,540 feet (235 to 755 meters).	**Low.** Suitable chaparral habitat is present within the Southern Parcel; however, there are no recent or historical records of this conspicuous shrub within the Preserve. A historical record from 1940 was recorded to the east within San Vicente Reservoir.
Delicate clarkia (*Clarkia delicata*)	--/-- CRPR 1B.2 County List A	Annual herb. Occurs in chaparral and oak woodlands, often on gabbroic soils. Flowering period: April to May. Elevation: 770 to 3,280 feet (235 to 1,000 meters).	**High.** Suitable habitat chaparral habitat occurs within the Southern Parcel, though gabbroic soils are not mapped. This species was observed just outside of the western boundary of the Preserve during surveys conducted in 2012 (Dudek 2013; County 2013).
San Miguel savory (*Clinopodium chandleri*)	--/-- CRPR 1B.2 County List A MSCP Covered	Perennial shrub. Occurs within coastal scrub, chaparral, cismontane woodland, riparian woodland, and grasslands on rocky, gabbroic, or metavolcanic soils. Flowering period: March to July. Elevation: 390 to 3,530 feet (120 to 1,075 meters).	**Moderate.** Suitable chaparral and rocky soils occur within the Southern Parcel; however, there are no recent or historical records within the Preserve. The nearest observation occurs 4 miles to the northeast north of San Vicente Reservoir.
Summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*)	--/-- CRPR 1B.2 County List A	Perennial shrub. Occurs in chaparral and cismontane woodland. Flowering period: May to June. Elevation: 328 to 1,804 feet (100 to 550 meters).	**Low.** Suitable chaparral habitat occurs within the Southern Parcel; however, there are no recent or historical records of this conspicuous shrub within the Preserve. Recent documented occurrences of the species are located over 8 miles south within Mission Trails Regional Park.
Small-flowered morning-glory (*Convolvulus simulans*)	--/-- CRPR 4.2 County List D	Annual herb. Occurs on clay soils and serpentine seeps in openings within chaparral, coastal scrub, and native grassland. Flowering period: April to June. Elevation: 98 to 2,871 feet (30 to 875 meters).	**Low.** Suitable clay soils or serpentine seeps are absent from the Southern Parcel. However, the species was observed at several locations within the Preserve in 2008 (County 2009).

Appendix C (cont.)
Special Status Plant Species Observed or with Potential to Occur

Species Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
San Diego sand aster (*Corethrogyne filaginifolia* var. *incana*)	--/-- CRPR 1B.1 County List A MSCP Covered	Perennial herb. Occurs within grasslands, coastal bluff scrub, coastal scrub, and chaparral. Flowering period: June to September. Elevation: 15 to 2,362 feet (5 to 720 meters).	**Moderate.** Suitable habitat is present within the Southern parcel; however, there are no recent or historical records within the Preserve. Documented occurrences occur to the east at the west end of San Vicente Reservoir and south within Mission Trails Regional Park.
Western dichondra (*Dichondra occidentalis*)	--/-- CRPR 4.2 County List D	Perennial herb. Found among rocks and shrubs within grasslands, coastal sage scrub, chaparral, and oak woodlands. Often proliferates on recently burned slopes. Flowering period: March to June. Elevation: below 1,706 feet (520 meters).	**Moderate.** Suitable habitat is present within the Southern Parcel; however, there are no recent or historical records within the Preserve. The species was detected east of the Preserve just west of SR 67 along Sunrise Powerline and over 4 miles southwest within MCAS Miramar.
Variegated dudleya (*Dudleya variegata*)	--/-- CRPR 1B.2 County List A MSCP Covered MSCP NE	Perennial herb succulent. Occurs on clay soils of dry hillsides and mesas within chaparral, valley grassland, foothill woodland and coastal sage scrub communities. Flowering period: April to June. Elevation: below 984 feet (300 meters).	**Low.** Suitable clay soils are not mapped within the Southern Parcel. However, the species has been previously documented within the Preserve in 2008 (County 2009).
Palmer's goldenbush (*Ericameria palmeri* var. *palmeri*)	--/-- CRPR 1B.1 County List B MSCP Covered MSCP NE	Perennial Shrub. Found in mesic areas within coastal sage scrub and chaparral. Flowering period: September to November. Elevation: below 1,968 feet (600 meters).	**Low.** Suitable habitat occurs within the Southern Parcel; however, there are no recent or historical records of this conspicuous shrub within the Preserve. The nearest observation occurs 5 miles east along Wildcat Canyon Road.
San Diego barrel cactus (*Ferocactus viridescens*)	--/-- CRPR 2B.1 County List B MSCP Covered	Perennial (stem succulent) shrub. Grows in sandy to rocky areas within coastal scrub, chaparral, grasslands, and vernal pools. Flowering period: May to June. Elevation: below 1,480 feet (450 meters).	**High.** Suitable habitat and rocky soils occur within the Southern Parcel and there are numerous occurrences of the species within the surrounding area including to the west within Beeler Canyon and south within the Fanita Ranch area.

Appendix C (cont.)
Special Status Plant Species Observed or with Potential to Occur

Species Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Mission Canyon bluecup (*Githopsis diffusa* ssp. *filicaulis*)	--/-- CRPR 3.1	Annual herb. Occurs in mesic and disturbed areas within chaparral. Flowers April to June. Flowering period: April to June. Elevation: 1,475 and 2,300 feet (450 to 700 meters).	**Low.** Suitable habitat is present within the Southern Parcel, but the site lies outside of the known elevation range for this species. There are no recent or historical records for within the Preserve. The nearest observation occurs over 6 miles east within the Silverwood Wildlife Sanctuary.
San Diego gumplant (*Grindelia hallii*)	--/-- CRPR 1B.2 County List A	Perennial herb. Grows on dry slopes and meadows within open pine and oak woodlands. Also found within chaparral and grasslands. Flowering period: July to October. Elevation: 600 to 5,725 feet (185 to 1,745 meters).	**Low.** Suitable dry slopes and chaparral habitat occur within the Southern Parcel; however, there are no recent records within the Preserve and the site is located at the lower elevation limit of the species. Documented occurrences of the species are generally located further east near Descanso and Cuyamaca Mountains.
Palmer's grapplinghook (*Harpagonella palmeri*)	--/-- CRPR 4.2 County List D	Annual herb. Found in clay soils in annual grasslands and coastal sage scrub. Flowering period: March to May. Elevation: 65 to 3,100 feet (20 to 955 meters).	**Low.** Suitable clay soils are not mapped within the Southern Parcel, though the species was documented in the northwest portion of the Preserve during surveys conducted in 2008 (County 2009).
Graceful tarplant (*Holocarpha virgata* ssp. *elongata*)	--/-- CRPR 4.2 County List D	Annual herb. Occurs in grasslands, coastal scrub, chaparral, and cismontane woodland. Flowering period: May to November. Elevation: 195 to 3,600 feet (60 to 1,100 meters).	**High.** Suitable habitat occurs within the Southern Parcel and the species was observed within grassland habitat located in the central portion of the Preserve, adjacent to the southern coast live oak riparian forest, during surveys conducted in 2008 (County 2009) and within southwestern area of the Preserve in 2015 (ICF 2015).
Ramona horkelia (*Horkelia truncata*)	--/-- CRPR 1B.3 County List A	Perennial herb. Occurs on clay and gabbroic soils within chaparral and woodlands. Flowering period: May to June. Elevation: 1,310 to 4,265 feet (400 to 1,300 meters).	**None.** Suitable clay or gabbroic soils are not mapped within the Southern Parcel and there are no recent or historical records within the Preserve. The nearest observation is approximately 6 miles northeast of the Preserve, north of San Vicente Reservoir.

Appendix C (cont.)
Special Status Plant Species Observed or with Potential to Occur

Species Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Decumbent goldenbush (*Isocoma menziesii* var. *decumbens*)	--/-- CRPR 1B.2 County List A	Perennial shrub. Occurs in sandy soil and disturbed areas on the inland side of dunes, hillsides, and arroyos within coastal sage scrub and chaparral communities. Flowering period: July to November. Elevation: below 450 feet (135 meters).	**Low.** Suitable habitat occurs within the Southern Parcel, but the site is located at the upper elevation limit of the species and there are no recent or historical records for this perennial shrub within the Preserve. The closest reported occurrences is located over 1.5 miles southeast near Eucalyptus Hills Elementary School in Santee.
San Diego marsh-elder (*Iva hayesiana*)	--/-- CRPR 2B.2 County List B	Perennial herb. Found in alkaline flats, depressions, and streambanks within wetland communities. Flowering period: April to October. Elevation: 32 to 1,640 feet (10 to 500 meters).	**Low.** Potentially suitable habitat occurs within the Southern Parcel along Clark Canyon Creek; however, there are no recent or historical records for this conspicuous perennial herb within the Preserve. The nearest observation occurs over 5 miles south within Mission Trails Regional Park.
Gander's pitcher sage (*Lepechinia ganderi*)	--/-- CRPR 1B.3 County List A MSCP Covered MSCP NE	Perennial shrub. Occurs on gabbroic and metavolcanic soils within coastal sage scrub, chaparral, coniferous forests, and grasslands. Flowering time: June to July. Elevation: 980 to 3,600 feet (300 to 1,100 meters).	**None.** Suitable gabbroic and metavolcanic soils are not mapped within the Southern Parcel and the site lies outside of the species known elevation range. There are no recent of historical records for this perennial shrub within the Preserve.
Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*)	--/-- CRPR 4.3 County List A	Annual herb. Grows in openings in sage scrub and chaparral at the coastal and foothill grasslands. Typically observed in relatively dry, exposed locales rather than beneath a shrub canopy. Also, found in disturbed areas Flowering period: March to June. Elevation: below 9,186 feet (2,800 meters).	**Moderate.** Suitable habitat occurs within the Southern Parcel; however, there are no recent or historical records within the Preserve. The closest occurrence is located over 3 miles northeast near Boulder Oaks County Park.
Felt-leaved monardella (*Monardella hypoleuca ssp. lanata*)	--/-- CRPR 1B.2 County List A MSCP Covered MSCP NE	Perennial (rhizomatous) herb. Found within chaparral understory, typically beneath mature stands of chamise in xeric, rocky, granitic slopes. Flowering period: May to October. Elevation: 985 and 5,000 feet (300 to 1500 meters).	**Low.** Suitable habitat chaparral habitat occurs within the Southern Parcel; however, the site lies outside of the species known elevation range. There are no recent or historical records within the Preserve. The closest occurrence is located over 4 miles northeast near Iron Mountain.

Appendix C (cont.)
Special Status Plant Species Observed or with Potential to Occur

Species Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Willowy monardella (*Monardella viminea*)	FE/SE CRPR 1B.1 County List A MSCP Covered MSCP NE	Perennial herb. Associated with riparian scrub, usually at sandy locales in seasonally dry washes is habitat of this small subshrub. Generally, there is no canopy cover, and river cobbles may lie in close proximity. Flowering period: June to August. Elevation: below 1,300 feet (400 meters).	**Present.** Twenty-two (22) individuals were observed within the Southern Parcel along Clark Canyon Creek during the 2019 biological surveys (Figure 12). This species has also been observed within the southern portion of the Preserve, upstream of the Southern Parcel, during biological surveys conducted in 2008 (County 2009) and 2015 (ICF 2015). Designated Critical Habitat occurs just south of the Southern Parcel.
California adder's-tongue (*Ophioglossum californicum*)	--/-- CRPR 4.2 County List D	Perennial rhizomatous herb. Occurs within mesic areas of chaparral and grassland habitats, and along the margins of vernal pools. Flowering period: January to June. Elevation: 196 to 1,722 feet (60 to 525 meters).	**High.** Potentially suitable habitat occurs within the Southern Parcel along Clark Canyon Creek. The species previously observed in one area within the Preserve during surveys conducted in 2008 (County 2009).
Gander's ragwort (*Packera ganderi*)	--/SR CRPR 1B.2 County List A	Perennial herb. Occurs on gabbroic soils within the understory of chaparral and recently burned chaparral slopes. Flowering period: April to June. Elevation: 1,310 to 3,940 feet (400 to 1,200 meters).	**None.** Suitable gabbroic soils are not mapped within the Southern Parcel and there are no recent or historical records of this perennial herb within the Preserve. The closest reported observation occurs over 4 miles northeast just east of Iron Mountain.
Golden-rayed pentachaeta (*Pentachaeta aurea* ssp. *aurea*)	--/-- CRPR 4.2 County List D	Annual herb. Occurs in grassy areas within coastal scrub, chaparral, cismontane woodland, lower montane coniferous forest, riparian woodland. Flowering period: March to July. Elevation: 260 to 6,100 feet (80 and 1,850 meters).	**Present.** Approximately 50 individuals were mapped in four different locations within the northwestern portion of the Southern Parcel (Figure 12).
Chaparral rein orchid (*Piperia cooperi*)	--/-- CRPR 4.2 County List D	Perennial herb. Generally found on dry sites within grasslands, chaparral, and cismontane woodland. Flowering period: March to June. Elevation: 50 to 5,200 feet (15 to 1,585 meters).	**Moderate.** Suitable chaparral and grassland habitat occur within the Southern Parcel; however, there are no recent or historical records of this perennial herb within the Preserve. The species was observed in 1991 over 4.5 miles northeast of the Preserve south of Dos Picos Park.

Appendix C (cont.)
Special Status Plant Species Observed or with Potential to Occur

Species Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
Cedros Island oak (*Quercus cedrosensis*)	--/-- CRPR 2B.2 County List B	Perennial tree. Closed-cone coniferous forest with chaparral and coastal scrub. Flowering period: April to May. Elevation: 328 to 5,900 feet (100 to 1,800 meters).	**Presumed Absent.** This species was recorded within the Preserve in 2004, 0.5 mile south of the staging area on Beeler Canyon Road but was not observed during biological surveys conducted in 2008 or 2012. This conspicuous perennial tree would most likely have been observed if present.
Nuttall's scrub oak (*Quercus dumosa*)	--/-- CRPR 1B.1 County List A	Perennial shrub. Occurs on sandy or clay loam soils near the coast within coastal scrub, chaparral, cismontane woodland, and riparian woodland. Flowering period: March to May. Elevation: below 656 feet (200 meters).	**Moderate.** Suitable habitat occurs within the Southern Parcel; however, there are no recent or historical records within the Preserve. The species was observed to the southwest within MCAS Miramar in 2000.
Engelmann oak (*Quercus engelmannii*)	--/-- CRPR 4.2 County List D	Perennial tree. Occurs on slopes and foothills within grasslands, chaparral, oak woodland, and riparian woodlands. Flowering period: March to June. Elevation: 160 to 4,300 feet (50 to 1,300 meters).	**Presumed Absent.** Suitable habitat occurs within the Southern Parcel and the species occurs within the northern portion of the Preserve (AECOM 2017). However, this conspicuous perennial tree would most likely have been observed if present.
Ashy spike-moss (*Selaginella cinerascens*)	--/-- CRPR 4.1 County List D	Rhizomatous fern. Occurs in chaparral and coastal sage scrub. Elevation: below 1,804 feet (550 meters).	**Present.** Observed in three different locations in the northwestern and southeastern portions of the Southern Parcel (Figure 12). Each location consisted of a patch about 2 to 5 meters in size. This species was also previously detected within the southwestern portion of the Preserve during biological surveys conducted in 2012 (Dudek 2013; County 2013) and in northern portion of the Preserve in 2016 (AECOM 2017).
Purple stemodia (*Stemodia durantifolia*)	--/-- CRPR 2B.1 County List B	Perennial herb. Grows on wet sand or rocks within riparian habitats or drying streambeds. Flowering period: year-round. Elevation: below 1,312 feet (400 meters).	**Moderate.** Suitable habitat occurs within the Southern Parcel along Clark Canyon Creek; however, there are no recent or historical records of this perennial herb within the Preserve. The species has been observed over 6 miles southwest of the site within Mission Trails Regional Park as recently as 2018.

Appendix C (cont.)
Special Status Plant Species Observed or with Potential to Occur

Species Name	Status[1]	Habit, Ecology and Life History	Potential to Occur[2]
San Diego County needle grass (*Stipa diegoensis*)	--/-- CRPR 4.2 County List D	Perennial herb. Found in rocky, mesic soils near streams or along the coast within coastal scrub and chaparral. Flowering period: February to June. Elevation: 30 to 2,600 feet (10 and 800 meters).	**Low.** Suitable habitat occurs within the Southern Parcel along Clark Canyon Creek; however, there are no recent or historical records of this perennial herb within the Preserve. The species has been observed over 6 miles southwest of the site within Mission Trails Regional Park as recently as 2012.
Rush-like bristleweed (*Xanthisma junceum*)	--/-- CRPR 4.3 County List D	Perennial herb. Found in xeric, low-growing chamise chaparral or Diegan coastal sage scrub. Usually grows on exposed locations with rocky substrate that do not foster much annual understory. An inconspicuous species that flowers late and is probably under reported. Flowering period: May to October. Elevation: below 3,300 feet (1,000 meters).	**High.** Suitable habitat occurs within the Southern Parcel and the species was observed during surveys conducted in 2012 in the northern portion of the Preserve adjacent to Paragon Mesa Road (County 2013) and in the northeastern portion of the Preserve in 2016 (AECOM 2017).

[1] Listing codes as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; CE = Candidate Endangered; R = Rare

CRPR = California Native Plant Society Rare Plant Rank: 1A – presumed extirpated in California and either rare or extinct elsewhere; 1B – rare, threatened, or endangered in California and elsewhere; 2A – presumed extirpated in California, but more common elsewhere; 2B – rare, threatened, or endangered in California, but more common elsewhere; 3 – more information needed; 4 – watch list for species of limited distribution. Extension codes: .1 – seriously endangered; .2 – moderately endangered; .3 – not very endangered.

County of San Diego Sensitivity Status: Plant species are divided into Groups A through D on the County Rare Plant List. **Groups A and B** Plants include those that have a very high level of sensitivity, either because they are listed as threatened or endangered or because they have very specific natural history requirements that must be met. **Groups C and D** Plants include those species that are becoming less common but are not yet so rare that extirpation or extinction is imminent without immediate action. These species tend to be prolific within their suitable habitat types.

MSCP Covered Species: Covered Species under County's MSCP Subarea Plan; NE = Narrow Endemic Species under the County's MSCP Subarea Plan.

[2] Potential to Occur is assessed as follows: **None**: There are no present or historical records of the species occurring on or in the immediate vicinity of the study area and the diagnostic habitats and soils associated with the species do not occur on or in the immediate vicinity of the project; **Low**: Suitable habitat is present in the study area and a historical record of the species occurs in the immediate vicinity but existing conditions such as elevation, soils, density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, and/or isolation substantially reduce the possibility that the species may occur; **Moderate**: The diagnostic habitats associated with the species occur on or in the immediate vicinity of the study area, but there is not a recorded occurrence of the species within the immediate vicinity. Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity; **High**: Suitable habitat occurs in the study area and the species has been recorded recently on or in the immediate vicinity but the species was not observed during project surveys; **Present**: The species was observed during biological surveys for the project and is assumed to occupy the study area; **Presumed Absent**: Species would be visible all year and would have been observed if present.

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Appendix D

Special Status Wildlife Species Potential to Occur

Attachment D
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
INVERTEBRATES			
San Diego fairy shrimp (*Branchinecta sandiegonensis*)	FE/-- County Group 1 MSCP Covered MSCP NE	Restricted to vernal pools and other ephemeral basin in southern California from coastal Orange County to San Diego County. Found in seasonally astatic pools which occur in tectonic swales or earth slump basins and other areas of shallow, standing water often in patches of grassland and agriculture interspersed in coastal sage scrub and chaparral.	**Low.** Vernal pools were not documented within the Southern Parcel during biological surveys and the species has not been documented within the Sycamore Canyon/Goodan Ranch Preserve. However, the species was documented immediately south of the site within the Fanita Ranch area.
Quino checkerspot butterfly (*Euphydryas editha quino*)	FE/-- County Group 1 MSCP NE	Occurs in California from western Riverside County southwards to southern San Diego County. Inhabits open and sparsely vegetated areas that contain larval host plant species (principally dot-seed plantain [*Plantago erecta*], woolly plantain [*Plantago patagonia*] but also Coulter's snapdragon [*Antirrhinum coulterianum*], and rigid bird's beak [*Cordylanthus rigidus*]) and nectar sources. Often found on rounded hilltops, ridgelines, and occasionally rocky outcrops. Occurs within a wide range of open-canopied habitats including vernal pools, sage scrub, chaparral, grassland, and open oak and juniper woodland communities.	**High.** Suitable habitat occurs within the Southern Parcel and several of the species host plants were documented during the 2019 biological surveys. There are numerous reported occurrences of the species within the surrounding area, including previous sightings within the Preserve. Furthermore, one quino checkerspot butterfly was documented within the Preserve along Slaughterhouse Canyon Trail by HELIX biologists in 2019. The individual was observed approximately 1,500 feet from the southern boundary of the Preserve.
Harbison's dun skipper (*Euphyes vestris harbisoni*)	--/-- County Group 1 MSCP NE	Occurs in the foothills of northern and southern San Diego County, extreme western Riverside County, and southern Orange County. Prefers oak woodlands but is also found within chaparral or riparian areas that have narrow canyons or drainages where the species host plant, San Diego sedge (*Carex spissa*) is found. Generalist feeder with a preference for milkweeds and thistle. Nectaring resources include morning glory (*Calystegia macrostegia tenuifolia*), red thistle (*Cirsium occidentale*), loosestrife (*Lythrum californicum*), and less frequently golden yarrow (*Eriophyllum confertiflorum*) and black mustard (*Brassica nigra*).	**Moderate.** Suitable habitat occurs within the Southern Parcel but the species host plant was not observed. The species has been previously documented within Preserve north and east of the Ranger Station along Sycamore Canyon Creek in 2001.

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
INVERTEBRATES (cont.)			
Hermes copper butterfly (*Lycaena hermes*)	FC/-- County Group 1	Found in coastal sage scrub and southern mixed chaparral habitats with mature specimens of its larval host plant, spiny redberry (*Rhamnus crocea*). This species appears to utilize redberry stands growing in deeper, well drained soils of canyon bottoms and north-facing hillsides. Nectaring resources include California buckwheat (*Eriogonum fasciculatum*), chamise (*Adenostoma fasciculatum*), and California sunflower (*Encelia californica*), among others.	**Low.** Suitable habitat is present within the Southern Parcel and the species host plant was documented in the southern portion of the site during biological surveys. The species was previously observed within the Preserve and surrounding area prior to the 2003 Cedar Fire; however, the fire burned suitable habitat within the Southern Parcel and surrounding area which severely impacted the species through habitat loss and extirpation of several known populations, including within the Preserve (Marschalek and Klein 2010). Furthermore, recent drought conditions and below average rainfall from 2014 through 2018 has restricted the distribution of the species and resulted in regional population declines (Marschalek 2019).
VERTEBRATES			
Amphibians			
Arroyo toad (*Anaxyrus californicus*)	FE/SSC County Group 1 MSCP Covered MSCP NE	Inhabits low gradient, medium to large streams and rivers with intermittent and perennial flow in coastal and desert drainages of central and southern California. Breeding habitat specialists that require slow-moving streams composed of sandy soils with sandy streamside terraces. May occupy first-order streams, though most populations inhabit second-sixth-order streams that have extensive braided channels and sediment deposits of sand, gravel, or pebbles that are redistributed by flooding. Utilizes shallow pools (at least 1-inch deep) for breeding, egg-laying, and tadpole development. Vulnerable to habitat destruction and alteration due to changes in hydrology, including construction of dams and water diversions. Impacted by the presence of non-native predators such as American bullfrog (*Lithobates catesbeianus*).	**None.** Suitable breeding habitat is absent from the Southern Parcel and there are no occurrences of the species within the vicinity. The nearest reported location is over 5 miles northeast of the Southern Parcel along San Vicente Creek. Clark Canyon Creek consists of a rocky, ephemeral to intermittent drainage that lacks suitable sandy soils and riparian habitat to support the species.

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Amphibians (cont.)			
Western spadefoot toad (*Spea hammondii*)	--/SSC County Group 2	Occurs from northern California southward to San Diego County, and west of the Sierra Nevada at elevations below 4,500 feet. This terrestrial species requires temporary pools for breeding. Suitable upland habitats include coastal sage scrub, chaparral, and grasslands. Most common in grasslands with vernal pools or mixed grassland-coastal sage scrub areas. Breeds in temporary pools formed by heavy rains, but also found in riparian habitats with suitable water resources. Breeding pools must lack exotic predators such fish, bullfrogs, and crayfish for the species to successfully reproduce. Estivates in burrows within upland habitats adjacent to potential breeding sites.	**Present.** Two individuals were captured during the herpetofauna surveys within the drift fence-funnel traps. The species has also been previously documented within eastern and northern portions of the Preserve in 2008 (County 2009).
Reptiles			
California glossy snake (*Arizona elegans occidentalis*)	--/SSC	Occurs along the coastal regions from San Francisco south to San Diego County; though it is absent along the central coast of California. Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers open areas and areas with soils loose enough for easy burrowing.	**Low.** Suitable habitat occurs within the Southern Parcel; however, the only reported occurrences of the species within the area are from the 1940s and are located over 5 miles from the site.
Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*)	--/WL County Group 2 MSCP Covered	Found within the southwestern portion of California in southern San Bernardino, western Riverside, Orange, and San Diego Counties on the western slopes of the Peninsular ranges below 3,500 feet. Suitable habitat includes coastal sage scrub, chaparral, juniper woodland, oak woodland, and grasslands along with alluvial fan scrub and riparian areas. Occurrence of the species correlated with the presence perennial plants (such as California buckwheat, California sagebrush, black sage, or chaparral) to provide a food base for its major food source, termites.	**Present.** A single individual was incidentally observed within the southern portion of the Southern Parcel during the herpetofauna surveys. The species has also documented in the northern and central portions of the Preserve in 2008 (County 2009), northern and southwestern portions in 2012 (Dudek 2013; County 2013), and northern portion in 2016 (AECOM 2017).
San Diego tiger whiptail (*Aspidoscelis tigris stejnegeri*)	--/SSC County Group 2	Occurs along the coastal region of southern California from San Luis Obispo south to San Diego County. Inhabits a wide variety of habitats, primarily in hot and dry open areas with sparse vegetation, from sea level to 7,500 feet. Associated habitats include coastal sage scrub, chaparral, riparian areas, woodlands, and rocky areas with sandy or gravel substrates.	**High.** Suitable habitat occurs within the Southern Parcel and the species was captured during reptile trapping surveys conducted within the Preserve in 2008 (County 2009) and 2016 (AECOM 2017).

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Reptiles (cont.)			
San Diego banded gecko (*Coleonyx variegatus abbotti*)	--/SSC County Group 1	Occurs in the coastal regions of southern California from interior Ventura County to San Diego County, although the species is absent from the extreme outer coast. Inhabits coastal sage scrub and chaparral habitats, most often occurring in granite or rocky outcrops.	**Low.** Suitable habitat is present within the Southern Parcel but there are no recent occurrences of the species within the surrounding area. The most recent reported observation of the species consists of a voucher specimen from the 1920s located over 3 miles east of the site.
Red diamond rattlesnake (*Crotalus ruber*)	--/SSC County Group 2	Occurs in southwestern portion of California from San Bernardino County southward to San Diego County at elevations below 5,000 feet. Has a wide tolerance for varying environments including the desert, coastal sage scrub, dense foothill chaparral, warm inland mesas and valleys, and cool coastal zones. Most commonly found near heavy brush with large rocky microhabitats. Chamise and red shank chaparral associations may offer better structural habitat for refuges and food resources.	**High.** Suitable habitat is present within the Southern Parcel and was observed within Preserve during biological conducted in 2008 and 2012 (County 2009; Dudek 2009; County 2013), and was captured in the northern portion of the Preserve in 2016 (AECOM 2017).
San Diego ring-necked snake (*Diadophis punctatus similis*)	--/-- County Group 2	Found mainly in San Diego County along the coast to the west of the mountain and desert regions, and in extreme southwestern Riverside County. Prefers moist habitats and often found near intermittent streams. Suitable habitat includes wet meadows, rocky hillsides, farmland, grassland, chaparral, mixed coniferous forests, and woodlands. Secretive with individuals usually found under the cover of rocks, wood, boards and other surface debris, but occasionally seen moving on the surface on cloudy days, dusk, or at night.	**Moderate.** Suitable habitat is present within the Southern Parcel; however, the majority of reported occurrences of the species within the vicinity are prior to 1950. The most recent report is located over 4 miles east of the site from 2008.

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Reptiles (cont.)			
Coronado skink (*Plestiodon skiltonianus interparietalis*)	--/WL County Group 2	Occurs from in coastal and inland portions of southern San Diego County, though can occur north into Riverside County where it intergrades with Skilton's skink (*Plestiodon skiltonianus skiltonianus*). Suitable habitats include grassland, woodlands, pine forests, and chaparral, especially in open sunny areas such as clearings and edges of creeks or rivers. Prefers rocky areas near streams with lots of vegetation but can also be found in areas away from water. Occasionally seen foraging in leaf litter but more commonly found underneath surface objects, such as bark or rocks, where it lives in extensive burrows.	**High.** Suitable habitat is present within the Southern Parcel and the species was previously captured within the Preserve near Sycamore Canyon Creek during reptile trapping surveys conducted in 2008 (County 2009).
Rosy boa (*Lichanura orcutti*)	--/-- County Group 2	Occurs in throughout southern California south of Los Angeles County to the Mexico border, from the coast east towards the Mojave and Colorado deserts, though the species is absent from most of Imperial County. Inhabits arid scrublands, semi-arid shrublands, rocky shrublands, rocky deserts, canyons, and other rocky areas. Appears to be common in riparian areas but does not require permanent water.	**High.** Suitable habitat is present within the Southern Parcel and the species was previously observed within the Preserve by County Park Rangers in 2008 (County 2009) and was captured in the northern portion of the Preserve in 2016 (AECOM 2017).
Blainville's horned lizard (*Phrynosoma blainvillii*)	--/SSC County Group 2 MSCP Covered	Occurs from southern California to northern Baja California. In California, the species predominately occurs from Kern County south to San Diego County west of the desert at elevations below 8,000 feet. Inhabits a wide variety of vegetation types including sagebrush scrub, chaparral, grasslands, forests, and woodlands but is restricted to areas with suitable sandy, loose soils with open areas for basking. Diet primarily composed of native harvester ants (*Pogonmyrmex* sp.) and are generally excluded from areas invaded by Argentine ants (*Linepithema humile*).	**High.** Suitable habitat is present within the Southern Parcel and the species was observed within the Preserve in 2008 (County 2009) and captured during reptile trapping events conducted in 2012 (Dudek 2013; County 2013) and 2016 (AECOM 2017).

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Reptiles (cont.)			
Coast patch-nosed snake (*Salvadora hexalepis virgultea*)	--/SSC County Group 2	Occurs in the coastal regions of California from the Carrizo Plains in San Luis Obispo County south to San Diego County at elevations below 7,000 feet. Inhabits semi-arid shrubby areas such as chaparral and coastal sage scrub exhibiting a preference for chamise and red-shank chaparral. Also found along washes, sandy flats, canyons, and rocky areas. Takes refuge and overwinters in burrows and woodrat nests.	**High.** Suitable habitat is present within the Southern Parcel and the species was captured in the northeastern portion of the Preserve during reptile trapping surveys conducted in 2008 (County 2009) and 2016 (AECOM 2017).
Two-striped garter snake (*Thamnophis hammondii*)	--/SSC County Group 1	Found in California from Monterey County south along the coast to San Diego County and into northern Baja California at elevations below 7,000 feet. Commonly inhabits perennial and intermittent streams with rocky beds bordered by riparian habitats dominated by willows and other dense vegetation. Also been found in stock ponds and other artificially created aquatic habitats if bordered by dense vegetation and potential prey, such as amphibians and fish, are present.	**High**. Suitable habitat is present within the Southern Parcel and the species was observed by Park Rangers during in 2008 (County 2013).
Birds			
Cooper's Hawk (*Accipiter cooperii*)	--/WL County Group 1 MSCP Covered	In California, breeds from Siskiyou County south to San Diego County and east to the Owens Valley at elevations below 9,000 feet. Inhabits forests, riparian areas, and more recently suburban and urban areas nesting within dense woodlands and forests and isolated trees in open areas.	**High.** Suitable habitat is present within the Southern Parcel and the species was observed within the Preserve during wildlife surveys conducted in 2008 (County 2009).
Sharp-shinned Hawk (*Accipiter striatus*)	--/WL County Group 1	Primarily winters and migrates throughout California with breeding records in the northern and central portions of the State, but the species breeding range in California is poorly known. Breeds within most closed-canopy woodlands and forests, including riparian habitats, from sea level to near alpine elevations, generally nesting in trees near openings. Wintering habitat similar to breeding habitat but more expansive to include suburban and agricultural areas.	**Moderate.** Suitable wintering habitat is present within the Southern Parcel and there are numerous eBird sightings of the species south of the site near Santee Lakes. The species was observed in the northern portion of the Preserve in 2016 (AECOM 2017). The species would be expected to only occur as a wintering visitor as the site is located outside the species' known breeding range.

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Birds (cont.)			
Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)	--/WL County Group 1 MSCP Covered	Restricted to southwestern California occurring from Santa Barbara County southwards to San Diego County at elevations below 5,000 feet. Generally found on moderate to steep slopes vegetated with grassland, coastal sage scrub, and chaparral. Prefer areas with California sagebrush but area also generally absent from areas with dense stands of coastal sage scrub or chaparral. May occur on steep grassy slopes without shrubs if rock outcrops are present.	**Present**. The species was detected within coastal sage scrub and chaparral habitat located in the western and eastern portion of the Southern Parcel during the avian point counts. Furthermore, the species was previously documented within Preserve during wildlife surveys conducted in 2008, 2012, and 2016 (County 2009; Dudek 2013; County 2013; AECOM 2017).
Grasshopper Sparrow (*Ammodramus savannarum*)	--/SSC County Group 1	In California, generally occurs west of the Cascade and Sierra Nevada foothills from Del Norte County south to San Diego County below 4,900 feet. Primarily a grassland species that prefers short to middle-height, moderately open grasslands with scattered shrubs. More likely to be found in large tracts of habitat instead of small fragments.	**Moderate**. Limited suitable habitat is present within the Southern Parcel. The species was previously documented within the Preserve prior to the 2003 Cedar Fire but there are no recent reported observations of the species within the area.
Golden Eagle (*Aquila chrysaetos*)	BCC/WL, FP County Group 1 MSCP Covered	Uncommon permanent resident and migrant found throughout California, except the center of the Central Valley. More common in southern California than in northern regions. Occurs in a variety of habitats, nesting in cliffs or trees within rugged terrain and foraging over plains, grasslands, or low and open shrublands including chaparral and coastal sage scrub. Typically absent from heavily forested areas or on the immediate coast and almost never detected in urbanized environments.	**Moderate.** Suitable foraging habitat is present within the Southern Parcel; however, suitable nesting habitat is absent. The species was observed within the Preserve flying overhead during wildlife surveys conducted in 2008 (County 2009). The site is generally situated adjacent to heavily urbanized areas and lacks suitable remote habitat and cliffs suitable for nesting. This species likely only occurs as a migrant or foraging visitor.
Bell's sparrow (*Artemisiospiza belli*)	BCC/WL County Group 1	Resident of California found along the coastal regions from Trinity County south to San Diego County, east of the Cascade and Sierra Nevada ranges from southern Sierra County south through Owens Valley and the western edge of the Mojave Desert and Kern River basin, and desert slopes of Transverse Ranges. Breeds in dry coastal sage scrub and chaparral, desert scrub, and similar other open, scrubby habitats at elevations below 5,660 feet but has also been documented at elevations above 7,900 feet. In foothill chaparral, tend toward younger, less dense stands that are recovering from recent fires and are less common in older, taller stands that have remained unburned.	**High.** Suitable habitat is present within the Southern Parcel and the species was detected throughout the Preserve during wildlife surveys conducted in 2008, including successful breeding observations (County 2009).

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Birds (cont.)			
Long-eared Owl (*Asio otus*)	--/SSC County Group 1	Occurs throughout California, particularly in the Central Valley and southern California deserts. Found in dense riparian habitats and oak woodlands adjacent to open foraging areas. Typically nests in abandoned raptor nests in willows and oaks and atop woodrat nests and accumulations of debris trapped in the crotches of large oaks. Winters in communal roosts in dense willow thickets, tamarisk groves, palo verde, and conifers.	**Low.** Limited suitable habitat is present within the Southern Parcel. The species was historically documented within the Preserve (Unitt 2004) but has not been observed since the 2003 Cedar Fire (County 2013). There are no recent occurrences or eBird sightings of the species within the surrounding area.
Burrowing Owl (*Athene cunicularia*)	BCC/SSC County Group 1 MSCP Covered MSCP NE	Found from central California east to the Mojave Desert and south to coastal San Diego County. Primarily a grassland species that prefers areas with level to gentle topography and well-drained soils. Species can also occupy agricultural areas, vacant lots, and pastures. Requires underground burrows for nesting and roosting that are typically dug by other species such as California ground squirrel (*Spermophilus beecheyi*). Also utilizes natural rock cavities, debris piles, culverts, and pipes for nesting and roosting.	**Not Expected.** Suitable habitat is present within the Southern Parcel and a presumed migrant individual was observed within the Preserve during wildlife surveys conducted in 2008 (County 2009). However, there are no wintering and breeding observations of the species within the surrounding area. Though migrating individuals may temporarily utilize the site, the species is not anticipated to winter or breed within the Southern Parcel based on the lack of observations within the Preserve and surrounding area.
Red-shouldered Hawk (*Buteo lineatus*)	--/-- County Group 1	In California, the species occurs to the west of Sierra Nevada occupying mature oak and riparian woodlands, eucalyptus groves, and suburban areas near forested areas. Nests in trees, both native and non-native, often located near a water source such as stream or pond.	**Moderate.** Limited suitable habitat is present within the Southern Parcel; however, a pair was documented building a nest near the Ranger Station in 2008 (County 2009).
Costa's Hummingbird (*Calypte costae*)	BCC/--	Found in deserts and xeric habitats west of the Continental Divide and south of the Great Basin from southern Utah, western and southern Arizona, to southern California and further into Baja California and Mexico. Occurs year-round in southern California breeding along the coast in sage scrub and chaparral habitats from Santa Barbara County south to San Diego County, and east to desert regions of Inyo County south to Imperial County. Breeding habitats include Sonoran desert scrub, Mojave desert scrub, coastal sage scrub, and chaparral.	**Present.** The species was detected within the western and eastern portions of the Southern Parcel during the avian point count surveys.

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Birds (cont.)			
Coastal Cactus Wren (*Campylorhynchus brunneicapillus sandiegensis*)	BCC/SSC County Group 1 MSCP Covered MSCP NE	One of seven subspecies occurring in southern California from southern Orange County south to San Diego County. Occupies native scrub vegetation with thickets of mature cacti consisting of cholla (*Cylindropuntia* spp.) or prickly-pear cactus (*Opuntia littoralis*). Cacti must be tall enough to support and protect the bird's nest (typically 3 feet or more in height). Surrounding vegetation usually consists of coastal sage scrub habitat with shrubs normally below the level of nest placement.	**None.** Patches of mature cacti required by the species for nesting do not occur within the Southern Parcel. Closest documented location is over 2 miles east of the Preserve boundary.
Turkey Vulture (*Cathartes aura*)	--/-- County Group 1	In California, the species occurs as a year-round resident along the coastal regions but breeds throughout the entire state. Preferred habitat includes farmland and forests but is also found at pastures and agricultural areas in the west and has an increased presence in urban areas during the winter. Nests in partly forested to forested areas isolated from humans on rock outcrops, fallen trees, and abandoned buildings. Roosts communally preferring stands of large trees or hilly areas, usually away from human disturbance. Opportunistic feeders of domestic and wild carrion, primarily mammals but also non-mammals, foraging and locating food through both sight and smell.	**Present.** Two individuals were documented by the wildlife camera within the northwestern portion of the Southern Parcel. The species was also observed within the Preserve during wildlife surveys conducted in 2008, 2012, and 2016 (County 2009; Dudek 2009; County 2013; AECOM 2017).
Vaux's swift (*Chaetura vauxi*)	--/SSC	Occurs as a migrant and summer resident in California. Breeds within the northern and central portions of the State from Del Norte County south to Santa Cruz County, and within the Cascade-Sierra Nevada range from Siskiyou County south to Fresno County. Only occurs as a migrant in southern California. Nests in tree cavities and less frequently in artificial structures such as chimneys. Suitable habitat includes coniferous and mixed forests, particularly coast redwood habitats and Douglas-fir forests in California.	**Moderate.** One individual was detected flying overhead during wildlife surveys conducted in 2008 (County 2009). The species would be expected to only occur within the Southern Parcel as a migrant as the site is located outside of the species' known breeding range.

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Birds (cont.)			
Northern Harrier (*Circus cyaneus*)	--/SSC County Group 1 MSCP Covered	Occurs as a year-round resident in California. Inhabits open areas including wetlands, marshes, marshy meadows, grasslands, riparian woodlands, desert scrub, and pastures and agricultural areas. Breeding populations in southern California from Ventura County to San Diego County are highly fragmented with many local populations extirpated mostly likely as a result of habitat loss and degradation. Nests on the ground in wetlands and uplands within patches of dense, often tall, vegetation in undisturbed areas.	**Moderate**. Suitable foraging habitat is present within the Southern Parcel and the species was detected foraging over the Preserve during wildlife surveys conducted in 2008 (County 2009). Limited suitable nesting habitat (i.e., grasslands) occurs within the Southern Parcel.
White-tailed Kite (*Elanus leucurus*)	--/FP County Group 1	Year-long resident of California residing along the coasts and valleys west of the Sierra Nevada foothills and southeast deserts, though the species has also been documented breeding in arid regions east of the Sierra Nevada and within Imperial County. Inhabits low elevation grasslands, wetlands, oak woodlands, open woodlands, and is associated with agricultural areas. Breeds in riparian areas adjacent to open spaces nesting isolate trees or relatively large stands.	**Moderate**. Limited breeding habitat occurs within the Southern Parcel but the species was observed perched and foraging within the Preserve near Sycamore Canyon Creek during wildlife surveys conducted in 2008 (County 2009).
California Horned Lark (*Eremophila alpestris actia*)	--/WL County Group 2	One of 21 recognized subspecies occurring in the coastal ranges of California from San Joaquin Valley to northern Baja California. Inhabits a wide variety of open habitats with low, sparse vegetation where trees and large shrubs are generally absent. Suitable habitats include grasslands along the coast, deserts within the inland regions, shrub habitat at higher elevations, and agricultural areas.	**Moderate**. Suitable habitat is present within the Southern Parcel and the species was detected within the Preserve during wildlife surveys conducted in 2008 (County 2009). Limited suitable breeding habitat (i.e., grasslands) occur within the Southern Parcel.
Merlin (*Falco columbarius*)	--/WL County Group 2	Uncommon winter migrant in California occurring from September to May at elevations below 5,000 feet. Often found in open woodland, grasslands, cultivated fields, marshes, estuaries and sea coasts and are rarely found in heavily wooded areas or over open deserts.	**Moderate.** Suitable wintering habitat is present within the Southern Parcel and the species was detected within the Preserve in 2007 but was not documented during wildlife surveys conducted in 2008 and 2012 (County 2009; County 2013).

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Birds (cont.)			
Prairie Falcon (*Falco mexicanus*)	BCC/WL County Group 1	In California, the species is an uncommon permanent resident and migrant that ranges from southeastern deserts northwest along the inner coastal mountains and Sierra Nevada but is absent from northern coastal fog belt. Primary habitats include grasslands, savannahs, alpine meadows, some agricultural fields during the winter season, and desert scrub areas where suitable cliffs or bluffs are present for nest sites. Requires sheltered cliff ledges for cover and nesting which may range in height from low rock outcrops of thirty feet to cliffs up to and higher than 400 feet.	**Low.** Suitable foraging habitat occurs within the Southern Parcel, but suitable nesting habitat is absent. If present, this species likely only occurs as a migrant or foraging visitor. There are no reported occurrences of the species within the Preserve or surrounding area.
Yellow-breasted Chat (*Icteria virens*)	--/SSC County Group 1	Occurs throughout North America from Canada south to Baja California and Mexico. Breeds from southern British Columbia south to Baja California and winters in southern Baja California and south Texas south to Mexico and Panama. In California, the species occurs as a migrant and summer resident breeding from the coastal regions in northern California, east of the Cascades, and throughout the central and southern portions of the State. Breeds in early successional riparian habitats with well-developed shrub layer and an open canopy nesting on the borders of streams, creeks, rivers, and marshes.	**None**. Suitable riparian habitat for the species is absent from the Southern Parcel, though the species was detected within the Preserve in riparian habitat adjacent to Clark Canyon during wildlife surveys conducted in 2008 (County 2009).
Bald eagle (*Haliaeetus leucocephalus*)	BCC/SE, FP County Group 1 MSCP covered	In California, occurs as a permanent resident, wintering visitor, and uncommon winter migrant. Associated with aquatic habitats including coastal areas, rivers, lakes, and reservoirs, and forested shorelines or cliffs. Breeds mostly in the northern portion of the State within Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity Counties. Rare breeder in central and southern California. Fairly common as a local winter migrant at a few favored inland waters in southern California such as Big Bear Lake, Cachuma Lake, Lake Mathews, Nacimiento Reservoir, San Antonio Reservoir, and along the Colorado River.	**Not Expected.** Suitable foraging, wintering, and nesting habitat is absent from the Southern Parcel, though the species was observed flying over the northern portion of the Preserve in 2016 (AECOM 2017). The species likely only disperses over the Southern Parcel as the site, and larger Preserve, lack large bodies of water and other suitable foraging habitat for the species.

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Birds (cont.)			
Loggerhead Shrike (*Lanius ludovicianus*)	BCC/SSC County Group 1	In California, found year-round throughout the foothills and lowlands with winter migrants found coastally north of Mendocino County. Inhabits a variety of habitats seen foraging over open ground within areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs. Individuals forage by perching to search for prey (such as large insects, small mammals, amphibians, reptiles, and fish) and using impaling as a means of handling prey.	**High.** Suitable habitat is present within the Southern Parcel and there are multiple eBird sightings of the species within the northern portion of the Preserve.
Osprey (*Pandion haliaetus*)	--/WL County Group 1	Within California, breeding populations reside in the Cascade and Sierra mountain ranges, though small numbers of the species also breed within San Diego County. Although widely seen on the coast, these birds are rare transients in the interior portions of southern California. Restricted to large water bodies such as rivers, lakes, and reservoirs supporting fish with suitable nesting habitat such as rocky pinnacles or large trees and snags. Build their large nests, often in dead tops of older trees and man-made structures.	**None.** Suitable habitat is absent from the Southern Parcel, though the species was observed soaring over the Preserve during wildlife surveys conducted in 2008 (County 2009). The species would likely only disperse through the Southern Parcel as the site lacks suitable aquatic habitat required by the species for foraging and nesting. The species has been documented east of the Southern Parcel at San Vicente Reservoir.
Coastal California gnatcatcher (*Polioptila californica californica*)	FT/SSC County Group 1 MSCP Covered	Year-round resident of California occurring from Ventura County south to San Diego County, and east to the western portions of San Bernardino and Riverside Counties. Typically occur in arid, open sage scrub habitats on gently slopes hillsides to relatively flat areas at elevations below 3,000 feet. The composition of sage scrub in which gnatcatchers are found varies; however, California sagebrush is at least present as dominant or co-dominant species. The species is mostly absent from areas dominated by black sage, white sage, or lemonadeberry, though the species may occur more regularly in inland regions dominated by black sage.	**High.** Suitable coastal sage scrub habitat is present within the Southern Parcel and the species was detected within the Preserve during wildlife surveys conducted in 2012 and 2016 (Dudek 2013; County 2013; AECOM 2017). USFWS-designated critical habitat for this species occurs immediately south of the Southern Parcel.

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Birds (cont.)			
Yellow Warbler (*Setophaga petechia*)	BCC/SSC County Group 2	Common to locally abundant species breeding throughout California at elevations below 8,500 feet, excluding most of the Mojave Desert, and all of the Colorado Desert. Breeds in riparian areas dominated by willows (*Salix* spp.) and cottonwoods (*Populus* spp.) near rivers, streams, lakes, and wet meadows. Also breeds in montane shrub and conifer forests in higher elevation areas.	**Present.** The species was detected within the central portion of the Southern Parcel during the avian point count surveys. However, the site lacks suitable riparian habitat required by the species for breeding. Observations were presumably migrating individuals.
Western Bluebird (*Sialia mexicana*)	--/-- County Group 2 MSCP Covered	Common year-round resident throughout California, but absent from the higher mountains and eastern deserts. Breeds in open woodlands, riparian habitats, grasslands, and farmlands. Nests and roosts in cavities of trees and snags, often in holes previously created by woodpeckers, and nest boxes. Winters in a wider variety of habitats.	**High.** Limited suitable breeding habitat occurs in the Southern Parcel, though the species was observed within the central and northern portions of the Preserve during wildlife surveys conducted in 2008 and 2016, including a nesting pair near Sycamore Canyon Creek in 2008 (County 2009; AECOM 2017).
Barn Owl (*Tyto alba*)	--/-- County Group 2	Common, yearlong resident of California found in open habitats such as grassland, chaparral, riparian, and wetlands avoiding dense forests and open desert habitats. Also occurs in urban and suburban areas. Nests in sheltered areas of cliffs or man-made structures on ledges, in crevices, culverts, nest boxes, and in tree cavities. Roosts in dense vegetation, cliffs, and buildings and other man-made structures.	**High.** Suitable habitat occurs within the Southern Parcel and the species was detected within the Preserve during avian point count surveys conducted in 2008 and 2012 (County 2009; Dudek 2013; County 2013).
Least Bell's Vireo (*Vireo bellii pusillus*)	FE/SE County Group 1 MSCP NE MSCP Covered	Summer resident of California breeding along the coast and western edge of the Mojave Desert from Santa Barbara County south to San Diego County, and east to Inyo County, San Bernardino, and Riverside Counties. Breeding habitat consists of early to mid-successional riparian habitat, often where flowing water is present, but also found in dry watercourses within the desert. A structurally diverse canopy and dense shrub cover is required for nesting and foraging. Dominant species within breeding habitat includes cottonwood and willows with mule fat, oaks, and sycamore, and mesquite (*Prosopis glandulosa*) and arrowweed (*Pluchea sericea*) within desert habitats. The species can be tolerant of non-native species presence, such as tamarisk.	**None.** Suitable riparian habitat required by the species is absent from the Southern Parcel.

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Mammals			
Pallid bat (*Antrozous pallidus*)	--/SSC County Group 2	Locally common species found at low elevations in California, though can occur at elevations up to 8,000 feet. Characteristic of desert regions being locally common in in the Great Basin, Mojave, and Sonoran deserts. Also associated with other arid and open habitats including grasslands, shrublands, woodlands, and forests, particularly in areas with rock outcroppings near water. Suitable roosting areas include caves, mines, rock crevices, trees and sage, bat houses, and other man-made structures adjacent to open areas for foraging. Appears to be intolerant of most human disturbances, being mostly absent from urban and suburban areas.	**High.** Suitable habitat is present within the Southern Parcel and the species was documented within the Preserve during surveys conducted in 2012 (County 2013; Dudek 2013).
Dulzura pocket mouse (*Chaetodipus californicus femoralis*)	--/SSC County Group 2	Occurs within the foothills and mountains of southern California and is limited San Diego County. Inhabits a variety of habitats including grassland, coastal scrub, chaparral, sagebrush, desert wash and scrub, oak woodland, and pinyon-juniper woodlands. Prefers gravelly substrates with good sun exposure and is often found within or on the edge of chaparral. More abundant on steeper than gentler slopes and may occur on the upper portions of the desert slopes of the mountains.	**High.** Suitable habitat is present within the Southern Parcel and the species was captured within the Preserve during the small mammal trapping surveys conducted in 2008 and 2016 (County 2009; AECOM 2017). Additionally, two individuals were caught in 1992 in upper Sycamore Canyon about 0.5 mile north of Goodan Ranch.
Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)	--/SSC County Group 2	Occurs throughout southwestern California from western Riverside County south to San Diego County at elevations below 6,000 feet. Inhabits coastal sage scrub, grasslands, and chaparral communities, and generally exhibits a strong microhabitat affinity for moderately gravelly and rocky substrates. Forage for seeds from California sagebrush, California buckwheat, lemonade berry, and grasses under shrub and tree canopies, or around rock crevices.	**High.** Suitable habitat is present within the Southern Parcel and the species was captured within the Preserve during the small mammal trapping surveys conducted in 2012 and 2016 (County 2013; Dudek 2013; AECOM 2017). Additionally, two individuals were caught in 1992 in upper Sycamore Canyon about 0.5 mile north of Goodan Ranch.

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Mammals (cont.)			
Mexican long-tongued bat (*Choeronycteris mexicana*)	--/SSC County Group 2	Found in southern California from Ventura County south to San Diego County. Occurs in arid habitats below 7,900 feet such grasslands, scrub, mixed forest, and canyons in mountain ranges rising from the desert. Primarily found in urban and suburban areas in San Diego County. Roosts in in caves and mines, and man-made structures such as garages, office buildings, under porches, and warehouses.	**Low**. Potentially suitable habitat is present within the study area; however, the species is primarily known to occur in development areas within southern California. There are no recent occurrences of the species within the surrounding area, the closest reported location is from 1981 in Poway.
Townsend's big-eared bat (*Corynorhinus townsendii pallescens*)	--/SSC County Group 2	Occurs throughout California but distribution is strongly correlated with the availability of caves and cave-like roosting habitat. Found in a variety of habitats with presence of caves or cave-like structures (such as buildings). In San Diego County, presumed absent from coastal areas being found more commonly in historic mining districts and boulder-strewn regions (i.e., Escondido, Lakeside, Dulzura, Jacumba, etc.).	**Low.** Potential roosting habitat within the Southern Parcel is limited to hollows within oak trees. However, the species was detected in the northern portion of the Preserve in 2016 (AECOM 2017). One adult male was collected in 2012 approximately 2 miles northwest of the Preserve at Sycamore Canyon Road, 1.5 miles west of Goat Peak.
Western mastiff bat (*Eumops perotis californicus*)	--/SSC County Group 2	In California, the species occurs from Monterey County to San Diego County from the coast eastward to the Colorado Desert. Found in open, semi-arid to arid habitats including coastal and desert scrub, grasslands, woodlands, and palm oases. Prefers to roost in high situations above the ground on vertical cliffs, rock quarries, outcrops of fractured boulders, and occasionally tall buildings.	**Present.** The species was recorded by the bat detectors within the western portion of the Southern Parcel. Additionally, the species was documented in the Preserve during wildlife surveys conducted in 2008 (County 2009). Individuals have also been documented approximately 4 miles north in Dos Picos County Park.
Western red bat (*Lasiurus blossevillii*)	--/SSC County Group 2	In California, the species is locally common occurring from Shasta County south to San Diego County and west of the Sierra Nevada/Cascade Range and deserts. Mainly occurs in riparian woodlands populated by willows, cottonwoods, sycamores, and oak trees but can be found in non-native vegetation such as tamarisk, eucalyptus, and orchards. Primarily roosts in trees preferring heavily shaded areas which are open underneath.	**Moderate.** Suitable riparian habitat is absent from the Southern Parcel, though the species may utilize the oak woodland habitat on site. The species was documented in the Preserve during wildlife surveys conducted in 2008, 2012, and 2016 (County 2009; Dudek 2013; County 2013; AECOM 2017).

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Mammals (cont.)			
Western yellow bat (*Lasiurus xanthinus*)	--/SSC	Occurs from southern California through southern Nevada, western Arizona, and southern New Mexico. Found in Los Angeles, San Bernardino, and San Diego Counties of California. In San Diego, commonly found in Anza Borrego Desert but is also established west of the desert within rural to suburban areas including Escondido, Vista, Ramona, Lakeside, El Cajon, and La Mesa. Roosts primarily on dead palm frond skirts of native and non-native fan palms (*Washingtonia* spp.) but has also been observed in cottonwoods and yuccas (*Yucca* spp.; *Hesperoyucca* ssp.). Occurs within a variety of habitats where palms are present including desert riparian, desert washes, palm oasis, cottonwood-willow riparian forest, and developed areas.	**Low.** Suitable riparian habitat and fan palms are absent from the Southern Parcel, though the species was documented within the Preserve during wildlife surveys conducted in 2008, 2012, and 2016 (County 2009; Dudek 2013; County 2013; AECOM 2017).
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	--/SSC County Group 2	Occurs along the coastal regions of southern California south to northern Baja California. Found in arid regions preferring grasslands, agricultural fields, and sparse scrub. Typically absent from areas with high-grass or dense brush, such as closed-canopy chaparral, and too rugged, rocky, and steep slopes. Primarily occupies short-grass and open scrub habitats.	**Present.** The species was documented by the wildlife camera in the northwestern portion of the Southern Parcel. Additionally, the species was documented within the Preserve during wildlife surveys conducted in 2008 and 2012 (County 2009; Dudek 2013; County 2013).
Western small-footed myotis (*Myotis ciliolabrum*)	--/-- County Group 2	In California, found along the coastal regions from Contra Costa County south to San Diego, on the west and east sides of the Sierra Nevada, and eastern Great Basin and desert regions from Modoc County south to San Bernardino County. Common within arid uplands below 8,900 feet, preferring open stands of forests and woodlands and brushy habitats adjacent to water. Strongly associated with the chaparral and montane habitats in San Diego County. Presence of riparian areas and waters appears to be important in distribution. Roosts solitarily or in small numbers preferring humid roost sites found in cave-like habitats including rocky crevices, caves, mines, snags, buildings, and bridges.	**Present.** The species was recorded by the bat detectors within the western portion of the Southern Parcel. Additionally, the species was documented within the Preserve during wildlife surveys conducted in 2008, 2012, and 2016 (County 2009; Dudek 2013; County 2013; AECOM 2017).

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Mammals (cont.)			
Yuma myotis (*Myotis yumanensis*)	--/-- County Group 2	Widespread in California but uncommon in the Mojave and Colorado Deserts, except in the mountain ranges bordering the Colorado River valley. Found in a variety of habitats including juniper and riparian woodlands, riparian forests, and desert regions where bodies of water (i.e., rivers, streams, ponds, lakes, etc.) are present. Closely associated with water which it uses for foraging and sources of drinking water. Roosts in caves, attics, buildings, mines, underneath bridges, and other similar structures.	**Present.** The species was recorded by the bat detectors within the western portion of the Southern Parcel. Additionally, the species was documented within the Preserve during wildlife surveys conducted in 2008, 2012, and 2016 (County 2009; Dudek 2013; County 2013; AECOM 2017).
San Diego Bryant's (formerly desert) woodrat (*Neotoma bryanti [formerly lepida] intermedia*)	--/SSC County Group 2	Occurs along the coastal regions of California being found as far north as San Luis Obispo County, south to San Diego County, and in the western portions of San Bernardino and Riverside Counties. Inhabits a variety of shrub and desert habitats such as coastal sagebrush scrub, chaparral, pinyon-juniper woodland, and Joshua tree woodland among others. Often associated with rock outcroppings, boulders, cacti patches, and areas with dense understories. Construct dens used for shelter, food storage, and nesting around rock outcroppings and cacti using various materials such as twigs, sticks, and other debris.	**Present.** A single individual was captured within the Southern Parcel during the small mammal trapping survey. Additionally, the species was captured within the Preserve during the small mammal trapping surveys conducted in 2008, 2009, and 2016 (County 2009; Dudek 2013; County 2013; AECOM 2017).
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	--/SSC County Group 2	Rare in California occurring from Los Angeles County eastwards to San Bernardino County, and southwards to San Diego County. Closely associated with their preferred roosting habitats consisting of vertical cliffs, quarries, and rocky outcrops. Sometimes roosts under tiled roofs and observed utilizing bat boxes. Habitat generalists foraging in grasslands, shrublands, riparian areas, oak woodlands, forests, meadows, and ponds favoring larger water bodes for drinking.	**Present.** The species was recorded by the bat detectors within the western portion of the Southern Parcel. Additionally, the species was documented within the Preserve during wildlife surveys conducted in 2008, 2012, and 2016 (County 2009; Dudek 2013; County 2013; AECOM 2017).

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Mammals (cont.)			
Big free-tailed bat (*Nyctinomops macrotis*)	--/SSC County Group 2	Rare in California with species found in urban areas of San Diego County. Closely associated with their preferred roosting habitats consisting of vertical cliffs, quarries, and rocky outcrops. Also roosts in buildings and occasionally holes in trees. Associated with coastal and desert scrub, forests, riparian zones, and montane woodlands. Probably does not breed in California.	**Low.** Potentially suitable roosting habitat within the Southern Parcel is limited to hollows within oak trees. There are no reported occurrences located in the Preserve. Individuals have been documented approximately over 4 miles south of the site in Lakeside.
Southern Mule deer (*Odocoileus hemionus fuliginatus*)	--/-- County Group 2 MSCP Covered	Found throughout California with the species lacking from only completely urbanized areas and the desert floor. Distribution determined by vegetation type, water availability, and quality and quantity of foraging habitat. Inhabits a wide array of habitats from grasslands, meadows, coastal sage scrub, chaparral, riparian and montane forests. Crepuscular activity and movements are along routes that provide the greatest amount of protective cover.	**Present**. Multiple individuals were documented within the western portion of the Southern Parcel by the wildlife cameras. Mule deer were documented within the Preserve during biological surveys conducted in 2008, 2012, and 2016 (County 2009; Dudek 2013; County 2013; AECOM 2017).
Mountain Lion (*Puma concolor*)	--/-- County Group 2 MSCP Covered	Uncommon permanent resident found throughout California in nearly all habitats, expect xeric regions of Mojave and Colorado deserts where the primarily prey, mule deer, is absent. Most common in riparian areas with brushy habitats that provide enough protective cover and habitat connections for movement between core habitat areas. Other habitat associations include chaparral, open woodlands, and coniferous forests. Rugged or steep terrain with rocky areas, cliffs, and ledges and adequate vegetative cover are also important habitat characteristics.	**High.** Suitable habitat and prey species are present within the Southern Parcel and Park Rangers have previously reported observations of this species within the Preserve in 2008 (County 2009).

Attachment D (cont.)
Special Status Animal Species Potential to Occur

Species Name	Status[1]	Habitat Associations	Potential to Occur[2]
Mammals (cont.)			
American badger (*Taxidea taxus*)	--/SSC County Group 2 MSCP Covered	Uncommon, permanent resident found through California, except for the extreme north coast areas. Associated with large blocks of undeveloped land composed of open valleys, alluvial fans, meadows, grasslands, and sandy desert. Dens function as sites for resting and parturition. Friable, easily crumbled soils are important for denning.	**Low.** Though suitable habitat is present within the Southern Parcel, there are no reported occurrences of the species with the surrounding area. The species was reportedly detected over 5 miles east of the site at tracking stations along Wildcat Canyon in 2003 and 2004.

[1] Listing codes are as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; FC = Federal candidate species; CE = Candidate Endangered; R = Rare; BCC = Federal Bird of Conservation Concern; SSC = State Species of Special Concern; FP = State Fully Protected; WL = Watch List

County of San Diego Sensitivity Status: Animals are divided into Groups 1 and 2 on the Sensitive Animal List. **Group 1** Animals include those that have a very high level of sensitivity, either because they are listed as threatened or endangered or because they have very specific natural history requirements that must be met. **Group 2** Animals include those species that are becoming less common but are not yet so rare that extirpation or extinction is imminent without immediate action. These species tend to be prolific within their suitable habitat types.

MSCP Covered Species: Covered Species under County's MSCP Subarea Plan; NE = Narrow Endemic Species under the County's MSCP Subarea Plan.

[2] Potential to Occur is assessed as follows: **None**: Species is so limited to a particular habitat that it cannot disperse on its own, and habitat suitable for its establishment and survival does not occur in the study area; **Not Expected**: There are no present or historical records of the species occurring on or in the immediate vicinity of the study area. The species moves freely and might disperse through or across the study area, but suitable habitat for residence or breeding does not occur; **Low**: Suitable habitat is present in the study area and there is a historical record of the species in the project vicinity, but no sign of the species was observed during surveys. Existing conditions such as elevation, species composition, density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, and/or isolation may substantially reduce the possibility that the species may occur; **Moderate:** Diagnostic habitats associated with the species occur on or adjacent to the study area, but there is not a recorded occurrence of the species within the immediate vicinity. Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity; **High**: Suitable habitat associated with the species occurs in the study area and the species has been recorded recently on or near the project, but was not observed during biological surveys; **Present**: The species was observed during biological surveys for the project and is assumed to occupy the study area.

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Appendix E

Explanation of Status Codes for Plant and Animal Species

Appendix E
Explanation of Status Codes for Plant and Animal Species

FEDERAL AND STATE CODES

U.S. Fish and Wildlife Service (USFWS)

BCC	Bird of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
FC	Federal candidate species
FE	Federally listed endangered
FPD	Federally proposed for delisting
FPE	Federally proposed endangered
FPT	Federally proposed threatened
FT	Federally listed threatened

USFWS Birds of Conservation Concern (BCC)

The primary legal authority for Birds of Conservation Concern (2008) is the Fish and Wildlife Conservation Act of 1980 (FWCA), as amended. Other authorities include the Endangered Species Act, Fish and Wildlife Act (1956) and 16 USC §701. A FWCA 1988 amendment (Public Law 100-653, Title VIII) requires the Secretary of the Interior through the USFWS to "identify species, subspecies, and populations of all migratory non-game birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973." The 2008 BCC report is the most recent effort by the USFWS to carry out this proactive conservation mandate.

The BCC report aims to identify accurately the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent the USFWS' highest conservation priorities and draw attention to species in need of conservation action. The USFWS hopes that by focusing attention on these highest priority species, the report will promote greater study and protection of the habitats and ecological communities upon which these species depend, thereby ensuring the future of healthy avian populations and communities. Birds of Conservation Concern 2008 lists are available online at https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php.

USFWS Federal Candidate (FC) Species

Federal candidate species are those for which the USFWS has on file "sufficient information on biological vulnerability and threats to support a proposal to list as endangered or threatened, but for which preparation and publication of a proposal is precluded by higher-priority listing actions. [The USFWS] maintain[s] this list for a variety of reasons: to notify the public that these species are facing threats to their survival; to provide advance knowledge of potential listings that could affect decisions of environmental planners and developers; to provide information that may stimulate conservation efforts that will remove or reduce threats to these species; to solicit input from interested parties to help us identify those candidate species that may not require protection under the [Endangered Species Act] or additional species that may require the Act's protections; and to solicit necessary information for setting priorities for preparing listing proposals" (Federal Register 70:90 [May 11, 2005]).

Appendix E (cont.)
Explanation of Status Codes for Plant and Animal Species

USFWS Federal Proposed Endangered (FPE) Species

Any species the Service has determined is in danger of extinction throughout all or a significant portion of its range and the Service has proposed a draft rule to list as endangered. Proposed endangered species are not protected by the take prohibitions of section 9 of the ESA until the rule to list is finalized. Under section 7(a)(4) of the ESA, federal agencies must confer with the Service if their action will jeopardize the continued existence of a proposed species.

USFWS Federal Proposed Threatened (FPT) Species

Any species the Service has determined is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and the Service has proposed a draft rule to list as threatened. Proposed threatened species are not protected by the take prohibitions of section 9, consistent with any protective regulations finalized under section 4(d) of the ESA, until the rule to list is finalized. Under section 7(a)(4) of the ESA, federal agencies must confer with the Service if their action will jeopardize the continued existence of a proposed species.

USFWS Bald and Golden Eagle Protection Act (BGEPA)

In 1782, Continental Congress adopted the bald eagle as a national symbol. During the next one and a half centuries, the bald eagle was heavily hunted by sportsmen, taxidermists, fisherman, and farmers. To prevent the species from becoming extinct, Congress passed the Bald Eagle Protection Act in 1940. The Act was extremely comprehensive, prohibiting the take, possession, sale, purchase, barter, or offer to sell, purchase, or barter, export or import of the bald eagle "at any time or in any manner."

In 1962, Congress amended the Eagle Act to cover golden eagles, a move that was partially an attempt to strengthen protection of bald eagles, since the latter were often killed by people mistaking them for golden eagles. The golden eagle, however, is accorded somewhat lighter protection under the Act than the bald eagle. Another 1962 amendment authorizes the Secretary of the Interior to grant permits to Native Americans for traditional religious use of eagles and eagle parts and feathers.

California Department of Fish and Wildlife (CDFW)

SCE	State candidate for listing as endangered
SCT	State candidate for listing as threatened
SE	State listed endangered
SR	State listed rare
ST	State listed threatened
SSC	State species of special concern
WL	Watch List
FP	Fully Protected species refers to all vertebrate and invertebrate taxa of concern to the Natural Diversity Data Base regardless of legal or protection status. These species may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFW.
Special Animal	Refers to all vertebrate and invertebrate taxa of concern to the Natural Diversity Database regardless of legal or protection status.

OTHER CODES AND ABBREVIATIONS

California Native Plant Society California Rare Plant Rank (CRPR) Codes

Lists

1A = Presumed extirpated in California and either rare or extinct elsewhere. Eligible for state listing.

1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing.

2A = Presumed extirpated in California but common elsewhere. Eligible for state listing.

2B = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing.

3 = Review List: Plants about which more information is needed. Some eligible for state listing.

4 = Watch List: Plants of limited distribution. Needs monitoring for changes in population status. Few (if any) eligible for state listing.

List/Threat Code Extensions

.1 = Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

.2 = Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

.3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

A “CA Endemic” entry corresponds to those taxa that only occur in California.

All List 1A (presumed extinct in California) and some List 3 (need more information; a review list) plants lacking threat information receive no extension. Threat Code guidelines represent only a starting point in threat level assessment. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Code.

Appendix E (cont.)
Explanation of Status Codes for Plant and Animal Species

County of San Diego

Plant sensitivity:

List A	Plants rare, threatened, or endangered in California and elsewhere
List B	Plants rare, threatened, or endangered in California but more common elsewhere
List C	Plants that may be quite rare but need more information to determine true rarity status
List D	Plants of limited distribution and are uncommon but not presently rare or endangered

Animal sensitivity:

Group 1	Animals that have a very high level of sensitivity, either because they are listed as threatened or endangered or because they have very specific natural history requirements that must be met
Group 2	Animals that are becoming less common but are not yet so rare that extirpation or extinction is imminent without immediate action. These species tend to be prolific within their suitable habitat types.

Multiple Species Conservation Program (MSCP) Covered

Multiple Species Conservation Program covered species for which the County of San Diego has take authorization within the MSCP (South County) subarea.

MSCP Narrow Endemic

Narrow endemic species are native species that have "restricted geographic distributions, soil affinities, and/or habitats." The MSCP participants' subarea plans have specific conservation measures to ensure impacts to narrow endemics are avoided to the maximum extent practicable.

Appendix F

Representative Photographs



Photo 1. Overview of Southern Parcel from the northwestern portion of the site facing southeast.



Photo 2. Overview of Southern Parcel from southeastern portion of the site facing northwest.

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Photo 3. Central portion of the Southern Parcel facing east towards to the western facing hills.



Photo 4. Central portion of the Southern Parcel facing west towards to the eastern facing hills.

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Photo 5. Clark Canyon Creek along the eastern portion of the Southern Parcel, facing north (upstream).



Photo 6. Clark Canyon Creek along the western portion of the Southern Parcel, facing north (upstream).

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Photo 7. Drift fence-funnel trap array within the southwestern portion of the Southern Parcel.



Photo 8. Western spadefoot captured within the drift fence-funnel trap on June13, 2019.

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Photo 9. Two coyotes captured by Camera 2 within the northwestern portion of the Southern Parcel on May 24, 2019.



Photo 10. Mule deer captured by Camera 2 within the northwestern portion of the Southern Parcel on June 6, 2019.

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Photo 11. Two San Diego black-tailed jackrabbits captured by Camera 2 within the northwestern portion of the Southern Parcel on June 1, 2019.



Photo 12. Two Turkey Vultures captured by Camera 2 within the northwestern portion of the Southern Parcel on April 23, 2019.

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