BASELINE BIODIVERSITY SURVEY REPORT
FOR THE
HOLLY OAKS COUNTY PARK, LUELF POND PRESERVE, AND BARNETT RANCH PRESERVE PROPERTIES
COUNTY OF SAN DIEGO
DEPARTMENT OF PARKS AND RECREATION

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LIST OF ACRONYMS AND ABBREVIATIONS

ACPN	Anabat calls per night
ASMD	area-specific management directive
Cal-IPC	California Invasive Plant Council
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
DPR	County of San Diego Department of Parks and Recreation
FESA	Federal Endangered Species Act
FP	CDFW fully protected
GIS	geographic information system
GPS	global positioning system
MSCP	Multiple Species Conservation Program
PAMA	Pre-Approved Mitigation Area
PVC	polyvinyl chloride
SKR	Stephens' kangaroo rat
SSC	CDFW Species of Special Concern
TAIC	Technology Associates International Corporation
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
VCM	San Diego Vegetation Classification Manual
WL	CDFW watch list

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EXECUTIVE SUMMARY

In 1995 and 2000, the County of San Diego Department of Parks and Recreation acquired the approximately 42-acre Holly Oaks County Park and 87-acre Luelf Pond Preserve, and in 2002 acquired the 745-acre Barnett Park Preserve (hereafter collectively referred to as the Properties) totaling approximately 874 acres. The Properties are roughly 2.5 miles south of the center of Ramona and approximately 4 miles north of Barona within an unincorporated area of San Diego County. The Properties fall within the Multiple Species Conservation Program (MSCP) preserve system and consist primarily of non-native grassland, Diegan coastal sage scrub, southern mixed chaparral, and chamise chaparral. The majority of the habitat within the Properties is considered moderate to high quality with portions of Barnett Ranch Preserve considered very high quality. However, areas within the Properties are currently open to the public and show some evidence of impacts resulting from human activities (e.g., unauthorized trails). The purpose of biological surveys was to identify and map biological resources that exist on the Properties. This information will be used to update the Barnett Ranch Preserve Area-Specific Management Directives (Helix 2004a) and associated area-specific management directives to include all three Properties.

AECOM biologists performed the following biological inventory surveys within the Properties during winter, spring, summer, and fall of 2018: habitat mapping survey, sensitive/rare plant surveys, invasive non-native plant surveys, butterfly surveys, herpetological surveys, avian surveys, bat surveys, small mammal surveys, and medium and large mammal surveys. Baseline resource surveys for the Barnett Ranch Preserve were previously conducted between 2001 and 2003; however, the Preserve burned in the Cedar Fire in 2003, shortly after baseline resource surveys were complete, therefore drastically altering ecological conditions.

Vegetation community mapping used both Oberbauer-modified Holland Code (Oberbauer et al. 2008) and the San Diego Vegetation Classification Manual (VCM) (Sproul et al. 2011). Based on the VCM, 14 natural or naturalized plant alliances, associations, or semi-natural stands were identified within the Properties: Fascicled Tarplant Association, Mediterranean California naturalized annual and perennial grassland semi-natural stands, California sagebrush-California buckwheat-laurel sumac Association, California buckwheat Association, laurel sumac-deerweed Association, chamise-California buckwheat-California sage brush-black sage Association, chamise-mission manzanita-Ramona ceanothus Association, Eucalyptus Semi-Natural Stands, Fremont Cottonwood-Mulefat Association, Coast Live Oak-Arroyo Willow Association, coast live oak-poison oak-grass Association, Engelmann Oak-Coast Live Oak-Poison Oak-Grass Association and Goodding's Black Willow Association. Additional classifications for non-natural vegetation include Agriculture, Cactus, Developed and Olive tree.

A total of 287 species of plants were detected within all of the Properties combined. Within Holly Oaks County Park, 76 species were identified; within Luelf Pond Preserve, 202 species were identified; and within Barnett Ranch Preserve, 222 species were identified. This includes 45 non-native species at Holly Oaks County Park, 39 non-native plant species at Luelf Pond Preserve, and 42 non-native plant species at Barnett Ranch Preserve. Two naturally occurring special-status plants and two species that were likely introduced were found on both Barnett Ranch Preserve and Luelf Pond Preserve, and a number of additional species have potential to occur on those Preserves. Holly Oaks County Park did not support any special-status plants although there is a potential for several to occur. A total of 194 wildlife species were observed or detected within the Properties during surveys, including 30 invertebrates, three amphibians, 21 reptiles, 104 birds, and 37 mammals. Thirty-four special-status wildlife species were observed or detected within the Properties. Ten of the detected special-status wildlife species are also covered by the MSCP.

Based on the surveys conducted in 2018 and the presence of multiple special-status species within the Properties, management recommendations have been included to protect, preserve, and sustain populations of special-status species within the Properties. General management recommendations to protect special-status plant and wildlife species include monitoring and removing invasive non-native plant and wildlife species; maintaining fences or barriers to prevent unauthorized public access; and improving habitat for special-status species.

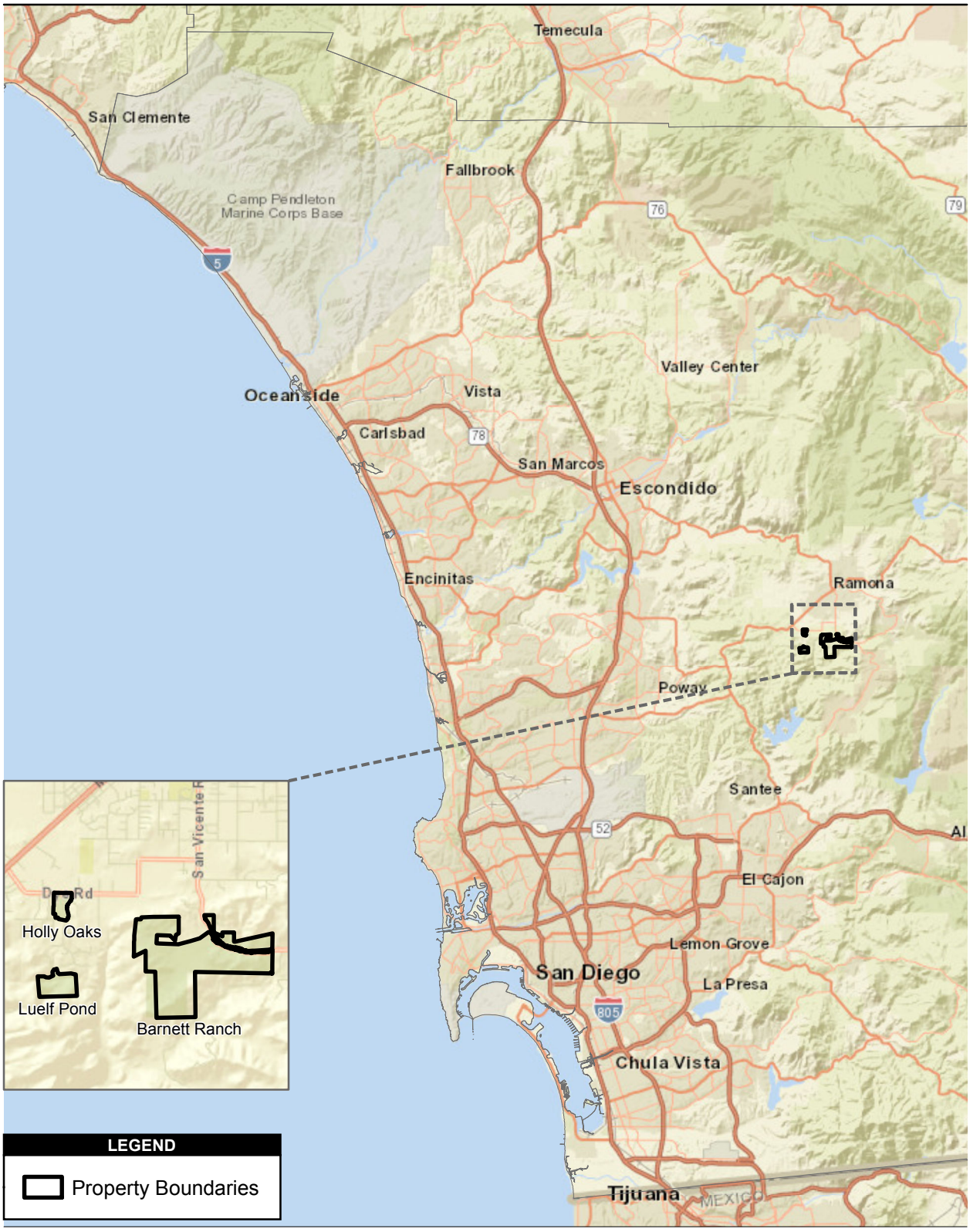
1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

Baseline biological resources surveys were conducted in spring, summer, and fall of 2018 on three Properties for the County of San Diego (County) Department of Parks and Recreation (DPR), including: Holly Oaks County Park (42 acres), Luelf Pond Preserve (87 acres), and Barnett Ranch Preserve (745 acres) (hereafter collectively referred to as the Properties) (Figures 1 and 2). The purpose of these surveys was to identify and map biological resources that exist on the Properties. This information will be used to update the Barnett Ranch Preserve Area-Specific Management Directives (Helix 2004a) and associated area-specific management directives (ASMDs) to include all three Properties.

1.2 MULTIPLE SPECIES CONSERVATION PROGRAM CONTEXT

The Properties are within the San Diego County Multiple Species Conservation Program (MSCP; Figure 3) and are part of network of various conserved lands to help meet conservation goals identified in the MSCP (Figure 4). They are within a major habitat and linkage area that extends into eastern San Diego County. Much of Barnett Ranch Preserve is considered "very high" and "high value," Luelf Pond Preserve is "moderate value" and Holly Oaks County Park is "high value" under the County Habitat Evaluation Model. The MSCP County of San Diego Subarea Plan (hereafter, Subarea Plan) (County of San Diego 1997) was approved by the San Diego County Board of Supervisors in 1997 and the County received the permits from the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game in 1998 (now California Department of Fish and Wildlife [CDFW]). The majority of Barnett Ranch Preserve has been identified in the Subarea Plan as part of a Pre-Approved Mitigation Area (PAMA) and has been preserved as a result of its high habitat value and importance for connectivity; the PAMA extends to the southwest to Marine Corps Air Station Miramar and beyond and connected blocks of habitat extend east to the Cuyamaca Mountains and beyond. PAMA land is designated as land with priority for conservation to assemble the County Preserve system. While not directly within the PAMA, Luelf Pond Preserve is adjacent to the PAMA and is on the northern edge of a large block of habitat that includes Barnett Ranch Preserve. While Holly Oaks County Park has not been included in the PAMA, Holly Oaks County Park does connect to the Ramona Grasslands that exist across Dye Road and to the north in an area proposed to be covered in the North County MSCP plan.



Source: ESRI, AECOM.

8 0 8 Miles

Scale: 1 = 538,560; 1 inch = 8.5 miles

Figure 1
Properties Vicinity Map

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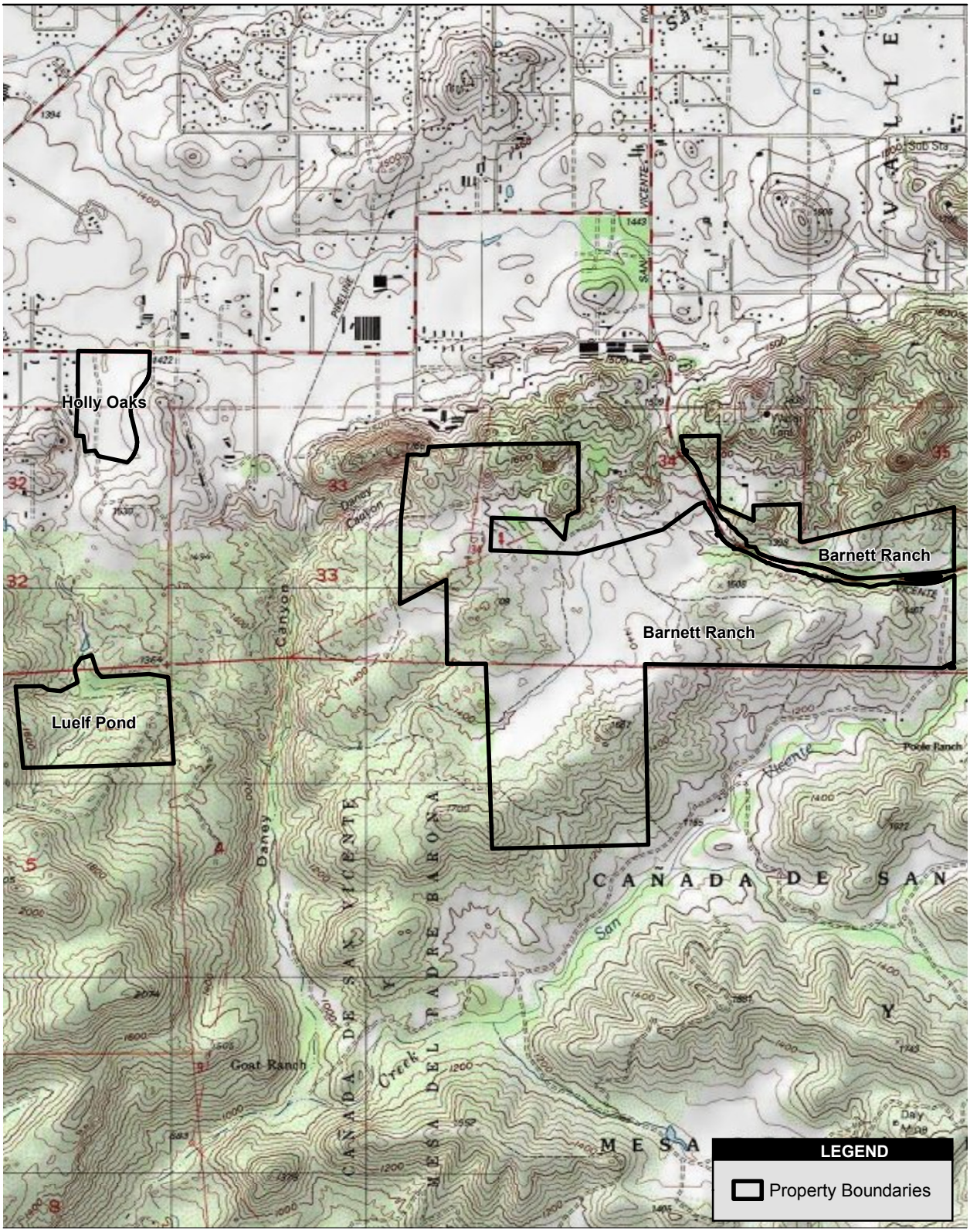

Source: USGS 7.5' Topographic Quadrangle San Vicente Reservoir CA 1973, Ramona CA 1985, El Cajon Mountain CA 1985, San Pasqual CA 1984

2,500 0 2,500 Feet

Scale: 1 = 30,000; 1 inch = 2,500 feet

Figure 2
Location of Properties

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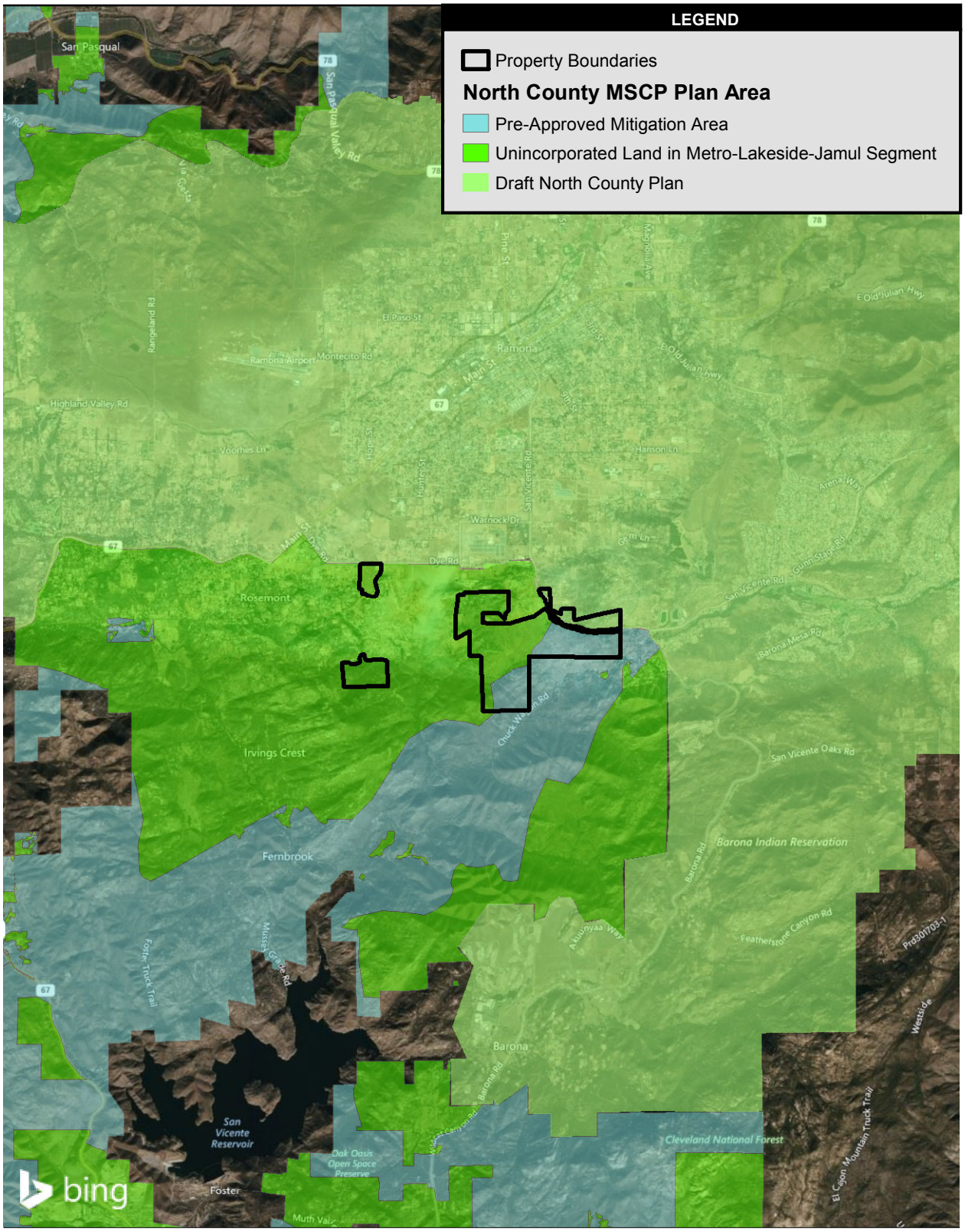

Source: SanGIS; AECOM.

8,350 4,175 0 8,350 Feet

1:100,200 1 inch = 8,350 feet

Figure 3
Multiple Species Conservation Program

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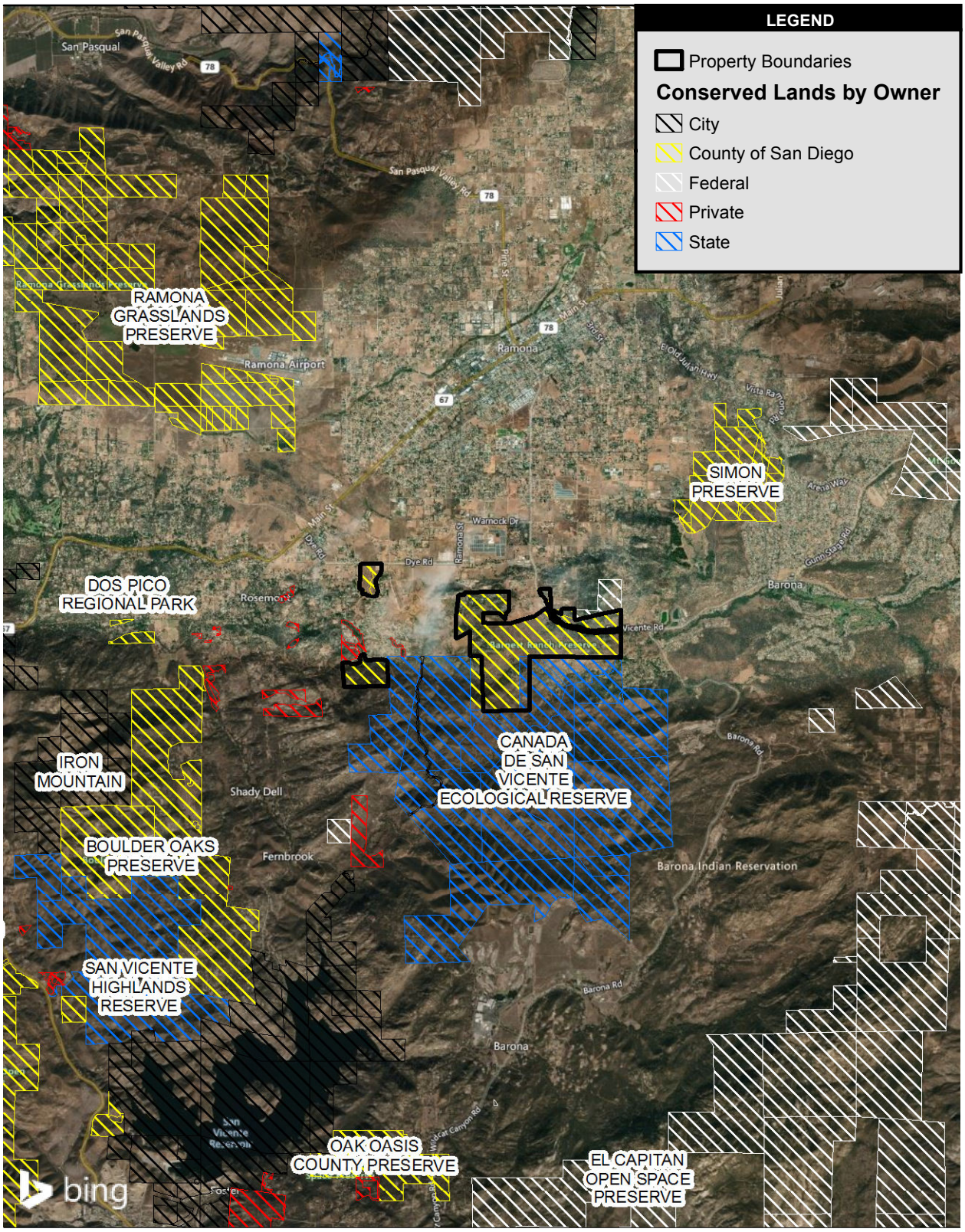

Source: SanGIS; AECOM.

8,350 4,175 0 8,350 Feet

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Figure 4
Conserved Lands

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Barnett Ranch Preserve is located along San Vicente Road and is bounded by rural residential and agricultural land to the north and CDFW land to the south. Land to the south is part of the 5,014-acre Cañada de San Vicente Ecological Reserve. Luelf Pond Preserve is adjacent to a subdivision to the north but land to the south and east is undeveloped lands that are designated as PAMA in the Subarea Plan. Holly Oaks County Park is surrounded by a residential subdivision to the south and east, rural residential development to the west, and open grassland and agricultural land to the north across Dye Road as a southern portion of the Ramona Grasslands.

The County maintains zoning information for these Properties (County of San Diego 2018). Holly Oaks County Park supports a Specific Plan zone (S88) designation with a 0.5-acre density. Land to its west and north is agricultural (A70) use with 2-acre lot size. The subdivision to the southeast is part of a Specific Plan also with 0.5-acre density. Land to the east is zoned for agriculture (A70) with 4-acre lot size or the more general agriculture (A72) with 10-acre lot size. Luelf Pond Preserve is also zoned as Specific Plan with 0.5-acre density. Land to its south is zoned agriculture (A70) with 4-acre lot size. Barnett Ranch Preserve is also zoned Specific Plan but with 0.20-acre density. The state land to its south has a similar zone classification. Land to the northeast and west of Barnett Ranch Preserve is zoned A70 with 4-acre lot size and land to its east is also zoned A70 but with 2-acre lot size and the land on the southeast corner of Barnett Ranch Preserve is zoned A70 with 1-acre lot size.

2.0 STUDY AREA DESCRIPTION

2.1 PROJECT LOCATION

Holly Oaks County Park, Luelf Pond Preserve, and Barnett Ranch Preserve combined equal approximately 874 acres and are located in the west-central portion of the unincorporated area of San Diego County, approximately 2 miles southeast of State Route 67. Holly Oaks County Park is south and adjacent to Dye Road, Luelf Pond Preserve is located 0.7 mile south of Holly Oaks County Park and Barnett Ranch Preserve is along a portion of San Vicente Road (Figure 2). The Properties are roughly 2.5 miles south of the center of Ramona and approximately 4 miles north of Barona. Holly Oaks County Park is within the northeast quarter of section 32 of R1E, T13S within the Ramona Quadrangle. Barnett Ranch Preserve is within the eastern quarter of section 33 and the southern half and a portion of the northwest and northeast quarters of section 34 and the southwest quarter of section 35 of R1E, T13S within the Ramona Quadrangle as well as the northwest quarter of section 3 of R1E, T14S within the El Cajon Quadrangle. Nearly all of Luelf Pond Preserve is within the northeast quarter of section 5 of R1E, T14S in the El Cajon Quadrangle.

Holly Oaks County Park consists of Assessor Parcels 285-120-20 and 285-120-08. Luelf Pond Preserve consists of Assessor Parcel 327-020-28. Barnett Ranch Preserve consists of Assessor Parcels 285-060-26, 285-070-33, 285-071-06, 328-01-001, 285-081-01 285-070-30 and a portion of 285-070-13.

2.2 GEOGRAPHICAL SETTING

Barnett Ranch Preserve and Luelf Pond Preserve are in the northern portion of a large block of undeveloped land. This large block of undeveloped land stretches from San Vicente Reservoir and Lakeside on the south and extends eastward into the rugged open space and ranch lands north of San Vicente Reservoir, across Cleveland National Forest Lands, and extends all the way to the Cuyamaca Mountains and east to the Salton Sea. This undeveloped land also extends to the southwest into the Marine Corps Air Station Miramar including a large amount of sensitive and high-quality habitat in between. This is one of the prime core areas that extend to the east in the region (County of San Diego 1998; City of San Diego 1998).

The Properties consist of three separate landforms. Holly Oaks County Park is a on the southern edge of the Ramona Valley and consists of a flat area at an elevation of 1,430 feet with a shallow drainage from the southeastern portion and northward through the middle of the site. Luelf Pond Preserve is mostly the north-facing slope and edge of a lowland drainage that connects to

mountainous terrain to the south. Elevations range from 1,330 feet on the northern low portion to nearly 1,600 feet on the top of the southern ridge. Barnett Ranch Preserve is a nearly closed broad valley south of Ramona proper that is surrounded by hills and ridges with portions of the western and southern ridges included as part of the property. The main valley is generally in the range of 1,420–1,435 feet in elevation and most of the surrounding ridges are between 1,500 feet and 1,600 feet in elevation. The elevations range from 1,225 feet on the southeast portion of the property to 1,680 feet on the hill on the southwest corner.

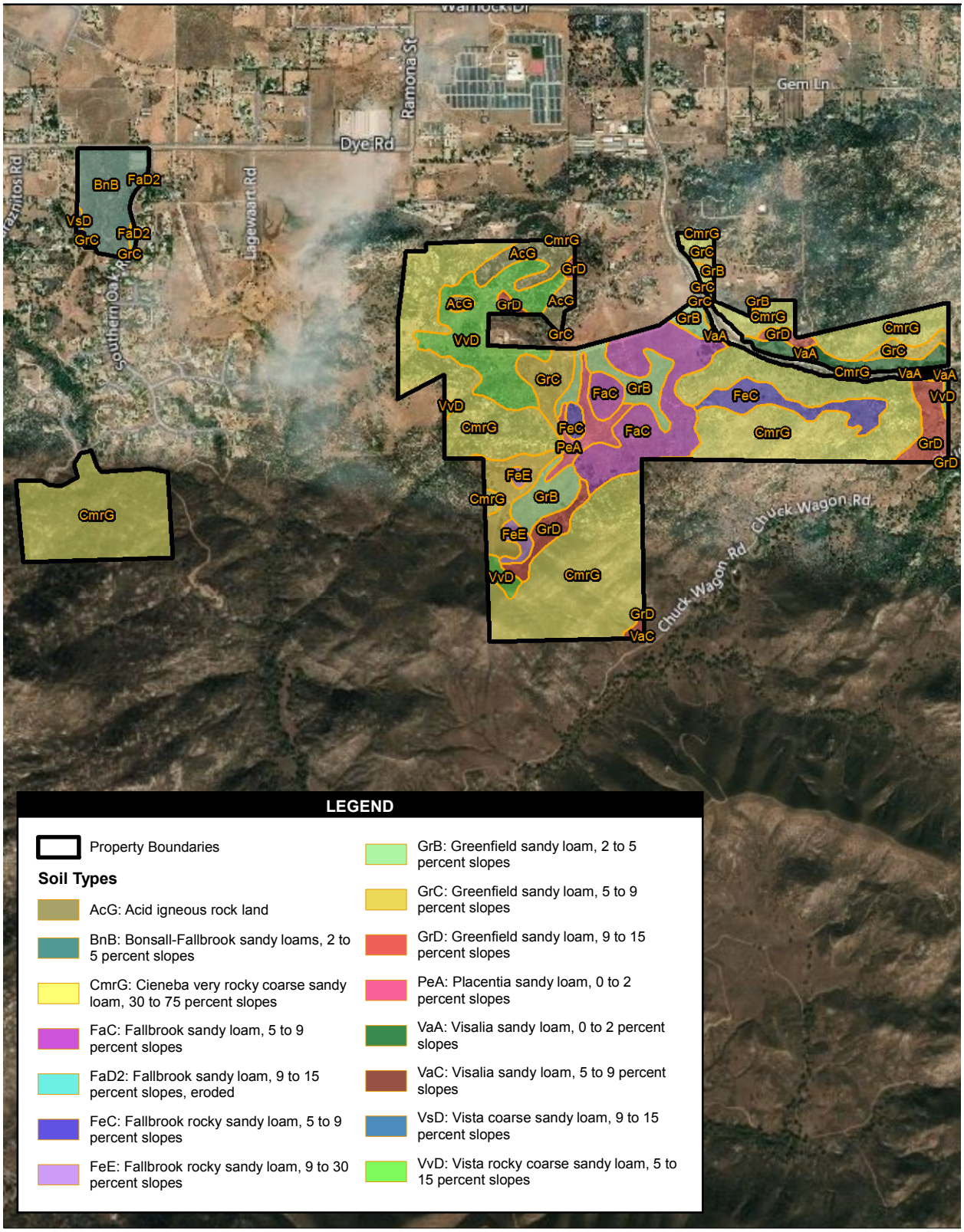
Holly Oaks County Park and the central part of Barnett Ranch Preserve have been used as grazing land and Holly Oaks County Park was cultivated in the late 1960s. Eastern parts of the valley of Barnett Ranch Preserve have been cultivated as recently as 1996. The hills surrounding Barnett Ranch Preserve have not been affected by disturbance except that they were burned in the 2003 Cedar Fire and perennial veldt grass (*Erharta calycina*) has spread heavily and become strongly established. Luelf Pond Preserve has apparently been subjected to very little disturbance from past land use activities. Otherwise, the vegetation has recovered from fires to a great extent. Overall, Barnett Ranch Preserve and Luelf Pond Preserve are in very good biological condition. Even though Holly Oaks County Park contains a large number of non-native species, it also supports a surprising number of native plant species.

2.3 GEOLOGY AND SOILS

According to Bowman (1973), Barnett Ranch Preserve contains 10 soil types belonging to six soil series (acid igneous rock land, Cieneba, Fallbrook, Greenfield, Placentia, and Vista). These six soil series mapped for Barnett Ranch Preserve are all derived from granitic rock or granitic alluvium. The soil of Luelf Pond Preserve is all Cieneba and the soil of Holly Oaks County Park is all a combination of Bonsall Series and Fallbrook series soil derived from deeply weathered granitic rock. Descriptions of each soil series and the attendant soil types follow Bowman (1973) and are shown in Figure 5 and Table 1.

2.3.1 Acid Igneous Rock Land

Acid igneous rock land (AcG) is rough, broken terrain including large boulders and rock outcrops of granitic rock. The soil material is loam to loamy coarse sand and is very shallow over decomposed granitic rock. This soil makes up 3.44 percent of Barnett Ranch Preserve.



Source: SSURGO; AECOM.

2,500 1,250 0 2,500 Feet

1:30,000 1 inch = 2,500 feet

Figure 5
Soils Map

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Table 1. Soil Acreages

Soil Name	Barnett Ranch Preserve		Luelf Pond Preserve		Holly Oaks County Park	
	Acreage	Percent of Total	Acreage	Percent of Total	Acreage	Percent of Total
Acid igneous rock land	25.60	3.44	-	-	-	-
Bonsall-Fallbrook sandy loams, 2 to 5 percent slopes	-	-	-	-	39.24	94.18
Cieneba very rocky coarse sandy loam, 30 to 75 percent slopes	366.93	49.25	87.07	100	-	-
Fallbrook sandy loam, 5 to 9 percent slopes	76.59	10.28	-	-	-	-
Fallbrook sandy loam, 9 to 15 percent slopes, eroded	-	-	-	-	1.08	2.58
Fallbrook rocky sandy loam, 5 to 9 percent slopes	28.14	3.78	-	-	-	-
Fallbrook rocky sandy loam, 9 to 30 percent slopes	6.95	0.93	-	-	-	-
Greenfield sandy loam, 2 to 5 percent slopes	46.06	6.18	-	-	-	-
Greenfield sandy loam, 5 to 9 percent slopes	48.59	6.52	-	-	0.35	0.83
Greenfield sandy loam, 9 to 15 percent slopes	39.61	5.32	-	-	-	-
Placentia sandy loam, 0 to 2 percent slopes	15.83	2.13	-	-	-	-
Visalia sandy loam, 0 to 2 percent slopes	20.85	2.80	-	-	-	-
Visalia sandy loam, 5 to 9 percent slopes	0.09	0.01	-	-	-	-
Vista coarse sandy loam, 9 to 15 percent slopes	-	-	-	-	1.00	2.40
Vista rocky coarse sandy loam, 5 to 15 percent slopes	69.80	9.37				
Total[1]	***745.056***	***100***	***87.07***	***100.00***	***41.66***	***100.00***

[1] Values may not sum due to rounding after summation.

2.3.2 Bonsall Series

The majority of the soil on Holly Oaks County Park consists of Bonsall-Fallbrook sandy loam a combination of soils from the Bonsall series and part of the Fallbrook series. Bonsall-Fallbrook sandy loam, 2 to 5 percent slopes (BnB) is about 50 percent Bonsall sandy loam and 45 percent Falbrook sandy loam. The Bonsall series consists of moderately well drained, shallow to moderately deep sandy lomes with a heavy clay loam subsoil. Bonsall soils occupy the swales and Fallbrook soils occupy the low mounds and ridges. In this combined series, Bonsall sandy loam is moderately well drained with a water holding capacity of 4 to 5.5 inches, and the Fallbrook soil has water holding capacity of 4.5 to 8 inches. These soils are deep, with Bonsall having a depth of

89 inches to granitic rock and Fallbrook a depth of 41 inches. For both soils, fertility is medium, runoff is slow and erosion hazard slight. For additional information on the Fallbrook series where it occurs in pure form, see Section 2.3.4.

2.3.3 Cieneba Series

Cieneba series includes shallow coarse sandy loams formed from granitic rock that weathered in place. Cieneba very rocky coarse sandy loam, 30 to 75 percent slopes (CmrG) is steep with rock outcrops on about 20 percent of the surface and very large granodioritic boulders on about 30 percent with the soil only 5 to 15 inches deep over hard granodiorite rock. Runoff is rapid to very rapid and erosion hazard high to very high. Available water-holding capacity is 1 to 1.5 inches. This soil type is the most widespread on Barnett Ranch Preserve comprising roughly 49.25 percent of the site. It entirely covers Luelf Pond Preserve but is absent from Holly Oaks County Park.

2.3.4 Fallbrook Series

Where it occurs in a pure form, Fallbrook series consists of well-drained, moderately deep to deep sandy loams that formed in material weathered in place from granodiorite. Fallbrook sandy loam, 5 to 9 percent slopes (FaC) composes the greatest part of the Fallbrook series on Barnett Ranch Preserve. Fallbrook rocky sandy loam, 5 to 9 percent slopes (FeC) consists of soil that is 20 to 36 inches deep over rock. Large boulders cover 10 to 25 percent of the surface and rock outcrops 10 percent. Water-holding capacity is 3 to 5 inches. Fallbrook series comprises roughly 14.99 percent of Barnett Ranch Preserve and 2.58 percent of Holly Oaks County Park.

2.3.5 Greenfield Series

Greenfield series consists of well-drained, very deep sandy loams derived from granitic alluvium. Greenfield sandy loam, 2 to 5 percent slopes (GrB) is found on alluvial fans. Greenfield sandy loam, 5 to 9 percent slopes (GrC) occurs on slightly greater slopes. Greenfield sandy loam, 9 to 15 percent slopes (GrD) is strongly sloping with available water-holding capacity of 5.5 to 6.5 inches. Runoff is medium and erosion hazard moderate. These three soil types together compose roughly 18.02 percent of Barnett Ranch Preserve and 0.83 percent of Holly Oaks County Park. It does not occur on Luelf Pond Preserve.

2.3.6 Placentia Series

Placentia series consists of moderately well-drained sandy loams with a clay subsoil that formed on granitic alluvium. Placentia sandy loam, 0 to 2 percent slopes (PeA) is nearly level and has an effective rooting depth of 10 to 20 inches. Runoff is very slow and erosion hazard is slight and

water-holding capacity is 4 to 5 inches. A small amount, roughly 2.13 percent of the Barnett Ranch Preserve, contains this soil. It is not present on Holly Oaks County Park or Luelf Pond Preserve.

2.3.7 Visalia Series

Visalia series consists of moderately well-drained, very deep sandy loams derived from granitic alluvium. Visalia sandy loam, 0 to 2 percent slopes (VaA) is nearly level soil on floodplains. Runoff is very slow and erosion hazard is slight. Water-holding capacity is 8 to 9.5 inches. Visalia sandy loam, 5 to 9 percent slopes (VaC) is moderately sloping, runoff is slow to medium, and erosion hazard is slight to moderate. Visalia soils constitute 2.81 percent of Barnett Ranch Preserve.

2.3.8 Vista Series

Vista series consists of well-drained, moderately deep and deep coarse sandy loams derived from granodiorite or quartz diorite. Vista coarse sandy loam, 9 to 15 percent slopes occurs on 2.4 percent of Holly Oaks County Park. Vista rocky coarse sandy loam, 5 to 15 percent slopes (VvD) is 20 to 36 inches deep over weathered rock. About 10 percent of the area is covered with exposed bedrock, and about 10 percent with large boulders. The available water-holding capacity is 2 to 4.5 inches. Runoff is slow to medium and erosion hazard slight to moderate. Vista series soils constitute roughly 9.37 percent of the soil on Barnett Ranch Preserve and it is not present on Holly Oaks County Park or Luelf Pond Preserve.

2.4 CLIMATE

The climate of the Properties is influenced by the Pacific High pressure system from the Pacific Ocean. The precipitation from this system typically occurs in winter through a series of sporadic storms that progress southward from the north. The yearly variation from this system is high, with numerous below-normal rainfall seasons. Summers are generally warm and dry, with some coastal low-cloud influence occurring in the early part of the day. The closest consistent weather station to the Properties is located at the Ramona Fire Station 82, located 0.73 mile from Holly Oaks County Park, 1.4 miles from Luelf Pond Preserve, and 1.9 miles from Barnett Ranch Preserve (Western Regional Climate Center 2018). Average annual precipitation at the Ramona Fire Station located in the southern part of Ramona Valley is 16.22 inches of rain. February is the wettest month, receiving on average 3.47 inches. June and July are the driest months, with only 0.07 inch of rain recorded in June and 0.11 inch in July on average (Table 2). The summer months, from June through August, are generally dry and receive just over a third of an inch of rain. The upper portion of Luelf Pond Preserve and Barnett Ranch Preserve are at a higher elevation than the rest of Ramona, and potentially receive 1 or 2 inches more than the average rainfall at the Ramona Fire

Station. The average high temperature for August is 91.1 degrees Fahrenheit, but extreme temperatures associated with Santa Ana wind events can occur in September and October. These Santa Ana wind events drop humidity to below 10 percent and increase wildfire frequency. On July 6, 2018, Ramona recorded a record temperature of 117 degrees Fahrenheit (Accuweather 2018). This was the result of a large high-pressure dome over the western United States not associated with a Santa Ana that also set records elsewhere as it shifted its position across the Country (Samenow 2018).

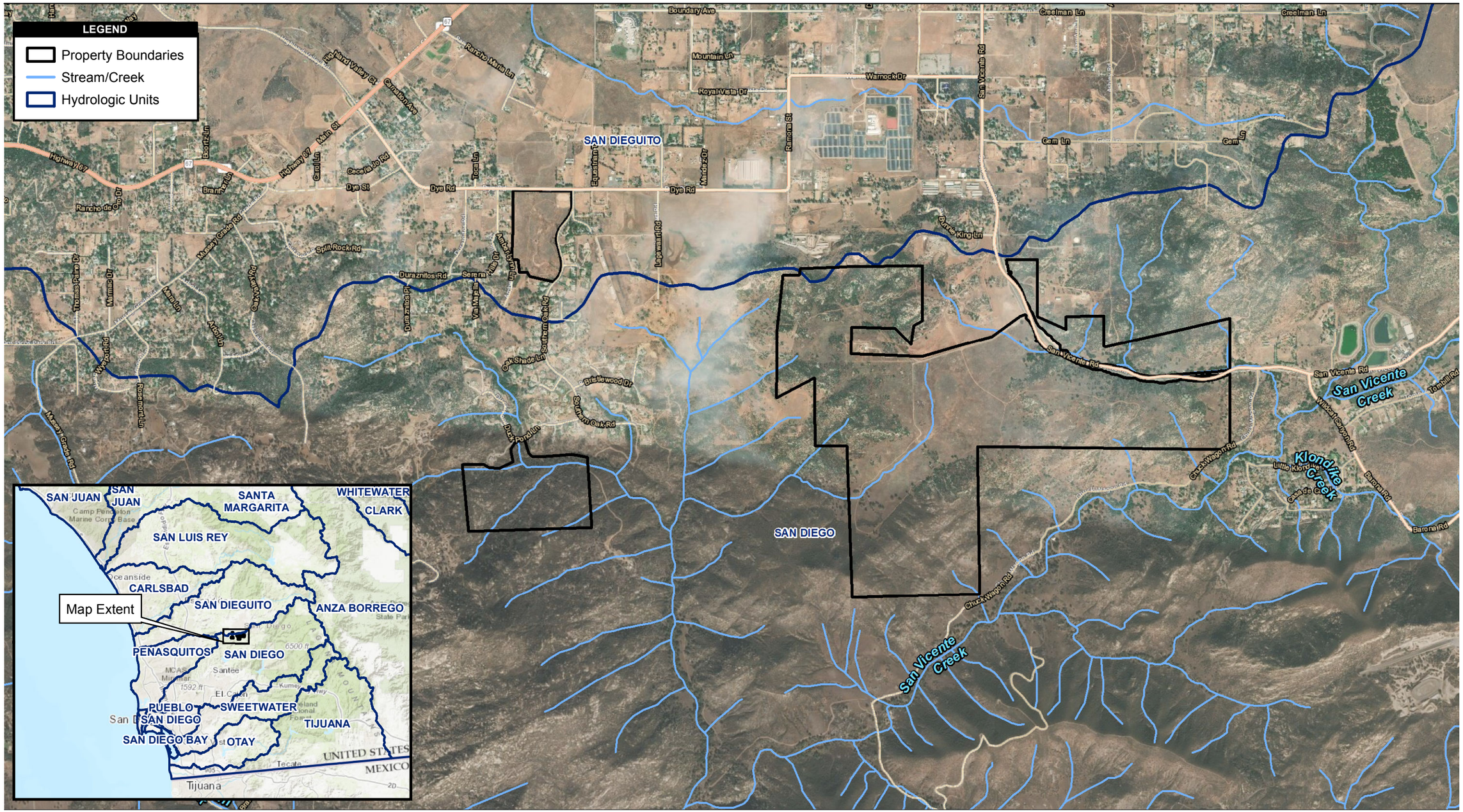
Table 2. Temperature and Precipitation Data for Ramona Fire Station 82 Weather Station (047228) near the Intersection of Dye Road and State Route 67

Period of Record: 2/ 1/1974 through 12/31/2005													
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**
Average Maximum Temperature (°F)	66.6	67.2	68.4	72.6	76.7	84.4	90.2	91.1	88.1	80.5	73.1	67.4	**77.2**
Average Minimum Temperature (°F)	38.1	39.1	41.0	43.1	48.3	51.7	56.3	57.4	55.2	48.1	41.9	36.8	**46.4**
Average Total Precipitation (inches)	3.47	3.53	3.17	1.21	0.39	0.07	0.11	0.16	0.33	0.68	1.36	1.71	**16.22**

Southern California has been experiencing an extended period of drought with the exception of the 2016 and 2017 rainfall seasons. For most of Southern California and particularly the interior portions in the Peninsular Ranges, the drought has been extensive. The seasonal total for Ramona for 2017–2018 was only 5.33 inches. However, the limited amount of rainfall that fell came during the optimal time for plants. While the long-term effects of drought are still exhibited in the vegetation, a number of annual plants exhibited good growth in the spring of 2018.

2.5 HYDROLOGY

The Properties are located within the greater San Diego Hydrologic Region. Within the greater San Diego watershed are two subunits reflective of the presence of the San Dieguito River and the San Diego River (Figure 6). Luelf Pond Preserve and Barnett Ranch Preserve are just south of the dividing line between two major hydrologic units: San Dieguito and San Diego (California Interagency Watershed Mapping Committee 2004). Holly Oaks County Park is within the San Dieguito River watershed just north of the dividing line between the watershed subunits. Rain that falls on Barnett Ranch Preserve flows into San Vicente Creek, which then flows into San Vicente Reservoir within the San Diego River watershed. Rain on Luelf Pond Preserve flows



Source: ESRI; Bing; USGS.

2,000 1,000 0 2,000 Feet

1:24,000 1 inch = 2,000 feet

Figure 6
Hydrology Map

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into Daney Canyon, which then enters San Vicente Creek within the San Diego River watershed. Rain that falls on Holly Oaks County Park eventually enters Santa Maria Creek north of Dye Road and across State Route 67 within the San Dieguito River watershed.

A small temporary stock pond exists on Barnett Ranch Preserve where it was apparently excavated sometime between 1996 and 2002. It contains water for the majority of the year but fluctuates following rain events and extended periods of drought. During the entirety of the 2018 survey efforts, the stock pond remained filled to varying degrees. The understory of an area of oak woodland near the southwest corner of Barnett Ranch Preserve also supports vegetation that verges on marshy at times. Within Luelf Pond Preserve, a stream is located along the northeast boundary, which contains various levels of water into the summer depending upon the amount of rainfall from the previous wet season. A few riparian trees grow at Holly Oaks County Park along a very shallow drainage that extends from the southeastern corner of the property through its middle to an undercrossing of Dye Road on the northern boundary.

Floods occur occasionally in this region; the greatest flood on record for San Diego County occurred in January 1916, when many stations received more than their normal seasonal precipitation during a 2-week period (McGlashan and Ebert 1918). Other floods occurred in 1927 and more recently in 1980 and one weekend in July of 2015 when remnants of a tropical storm dropped up to 4 inches in a short time. Because of the terrain configurations on the Properties, the effect of flooding would vary depending on which property is being viewed. During extensive flood periods, such as February 1980, it is likely that Holly Oaks County Park would have been inundated from runoff from the backup of water from Santa Maria Creek and the drainage north of the property, sometimes referred to as Etcheverry Creek. Luelf Pond Preserve has a drainage and stream located at the upper edge of the watershed. Localized flooding may occur on the streets, such as Duck Pond Lane, located near the site; however, due to the channel terrain, the water flow through Luelf Pond Preserve would remain relatively narrow with few ill effects. Barnett Ranch Preserve is also located at the upper edge of the watershed. The rolling terrain would limit the amount and extent of flooding in the property. The low, central portion may flood temporarily during storm events, but it would stay within the central lowlands of the Preserve. Any significant damage from flooding in that area is unlikely.

2.6 FIRE HISTORY

Based on historical fire data from the California Department of Forestry and Fire Protection and SanGIS, the Properties have been affected by five wildfires (Table 3 and Figures 7a – 7c) according to records beginning in 1913 (SanGIS 2016). The most recent fire to burn the Properties was the Cedar Fire of October 2003. It burned 100 percent of Luelf Pond Preserve and Barnett Ranch Preserve, and 22 percent of Holly Oaks County Park. The fires and drought of the past 15 years

have caused the loss of some oak trees and the chaparral is still regrowing. However, the chaparral vegetation has not fully recovered to pre-fire conditions based on the length of burned branches, compared to the shorter regrowing branches.

2.7 TRAILS

Sufficient trail systems at each Property meander through the various landscapes and provide access to various portions of the Properties (Figures 8a – 8c). The entrance to the Holly Oaks County Park public use area is at the intersection of Dye Road and Southern Oak Road. The northeast corner of the Property is a fully disturbed dirt lot and consists of a 2-acre parking/staging area and equestrian arena. A short loop trail approximately 7 feet in width and one mile in length encircles the perimeter and center of the Park in a figure eight shape and is frequented by equestrians and the occasional hiker, with various spur trails branching off to the west.

Luelf Pond Preserve is accessible from a public trailhead accessed off of Duck Pond Lane, in a developed, residential neighborhood. The trail follows the northern boundary of the Preserve heading east before wrapping south and terminating upslope on a high ridgetop (where it abuts a barbed-wire fence demarcating private property) after approximately two miles. This trail is heavily used by hikers, bikers, and equestrians.

Barnett Ranch Preserve has a large public staging area accessed off of San Vicente Road. A paved vehicle trail (Deviney Lane) intersects the Preserve from east to west and provides access to private landowners residing on property adjacent to the northwest boundary of the Preserve; however, this paved road is not open for public use. An additional utility access route also intersects the upper northwest portion of the Preserve. A 2.5 mile dirt trail (i.e., Rattlesnake Trail) encircles the central interior of the Preserve and provides public access to much of the site. Additional spur trails branch off from Rattlesnake Trail, totaling approximately four miles of multi-use trails throughout the Barnett Ranch Preserve. An additional portion of Barnett Ranch Preserve not currently open to the public is located on the opposite (northeast) side of San Vicente Road. This area is accessed via a small pull out along the northbound side of the road. A utility access route intersects the site in a north-to-south orientation and an additional vehicle trail providing access to private landowners is located in the northern most portion of the site. Although many of the trails within the Properties are passable with a vehicle, public vehicle access is strictly prohibited in each Property. Public trails within the properties are intended as footpaths, mountain bike routes, and equestrian trails.

Table 3. Fire Interval Data for the Properties

Fire Year	Fire Name	Interval from Previous Fire (years)	Acreage Burned	Percent of Properties Burned
Barnett Ranch Preserve				
1913	–	Unknown	425.73	57
1928	–	15	599.68	80
1978	Dye	50	534.74	72
2003	Cedar	25	745.06	100
Luelf Pond Preserve				
1913	–	Unknown	87.07	100
1972	Klondike	59	8.71	10
2003	Cedar	31	87.07	100
Holly Oaks County Park				
2003	Cedar	–	9.35	22

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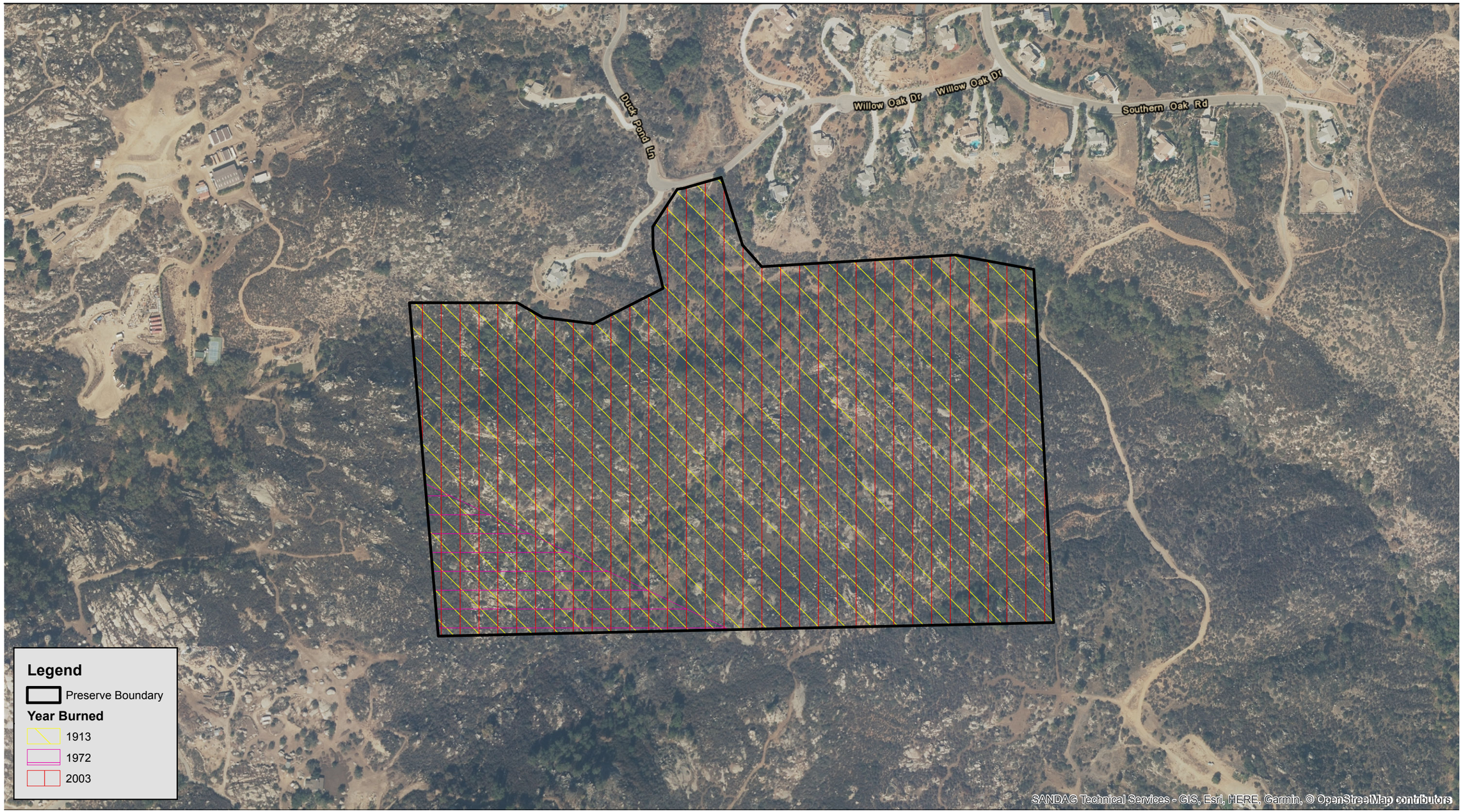
Source: SANDAG 2014

275 137.5 0 275 Feet

Scale: 1:3,300; 1 inch = 275 feet

Figure 7a
Fire History
Holly Oaks County Park

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\HollyOaks_Fire_History.mxd, 4/1/2019, paul.moreno



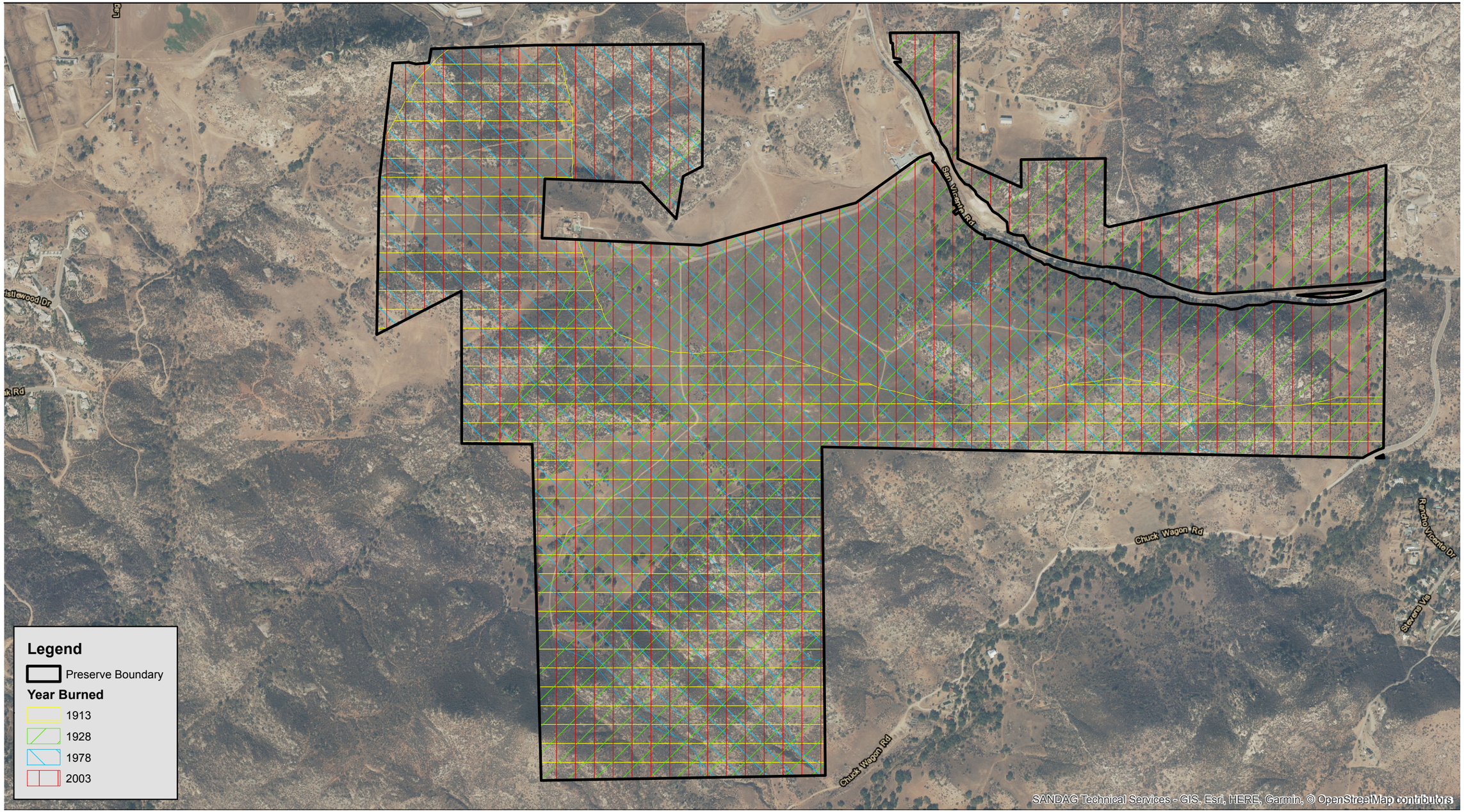
Source: SANDAG 2014

400 200 0 400 Feet

Scale: 1:4,800; 1 inch = 400 feet

Figure 7b
Fire History
Luelf Pond Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\LuelfPond_Fire_History.mxd, 4/1/2019, paul.moreno



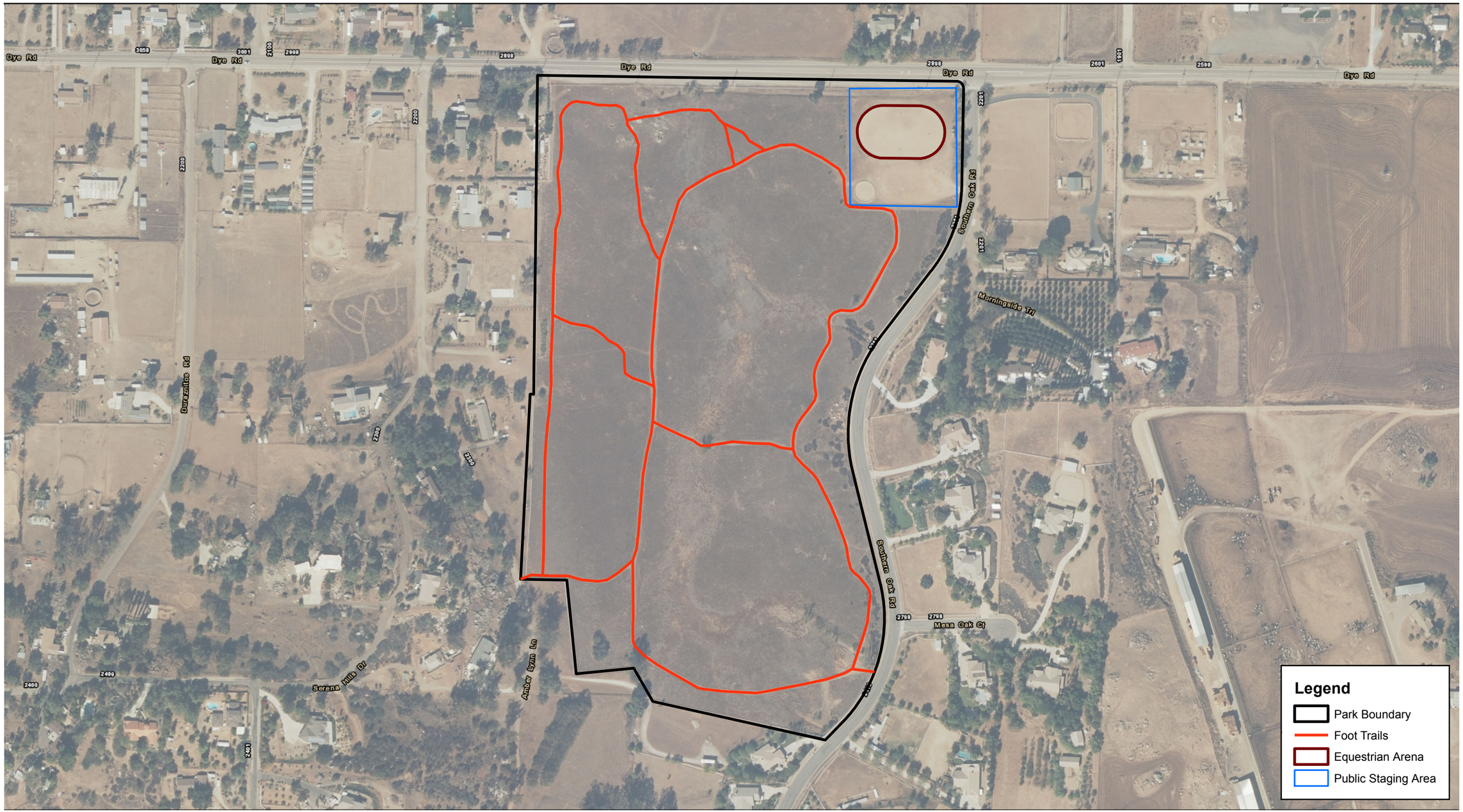
Source: SANDAG 2014

900 450 0 900 Feet

Scale: 1:10,800; 1 inch = 900 feet

Figure 7c
Fire History
Barnett Ranch Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\BarnettRanch_Fire_History.mxd, 4/1/2019, paul.moreno



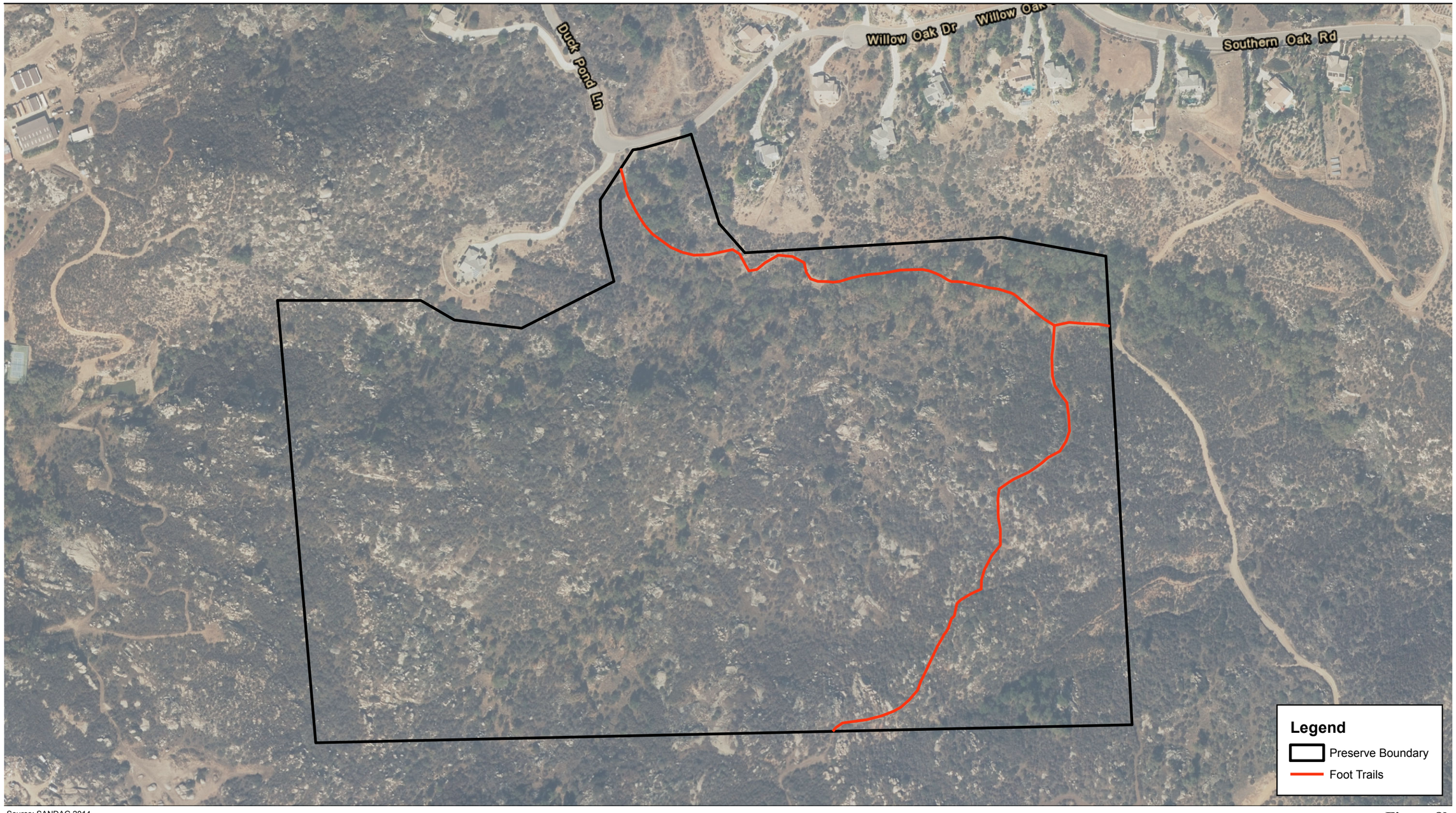
Source: SANDAG 2014

275 137.5 0 275 Feet

Scale: 1:3,300; 1 inch = 275 feet

Figure 8a
Existing Trails
Holly Oaks County Park

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\Trails_Holly.mxd, 4/1/2019, paul.moreno



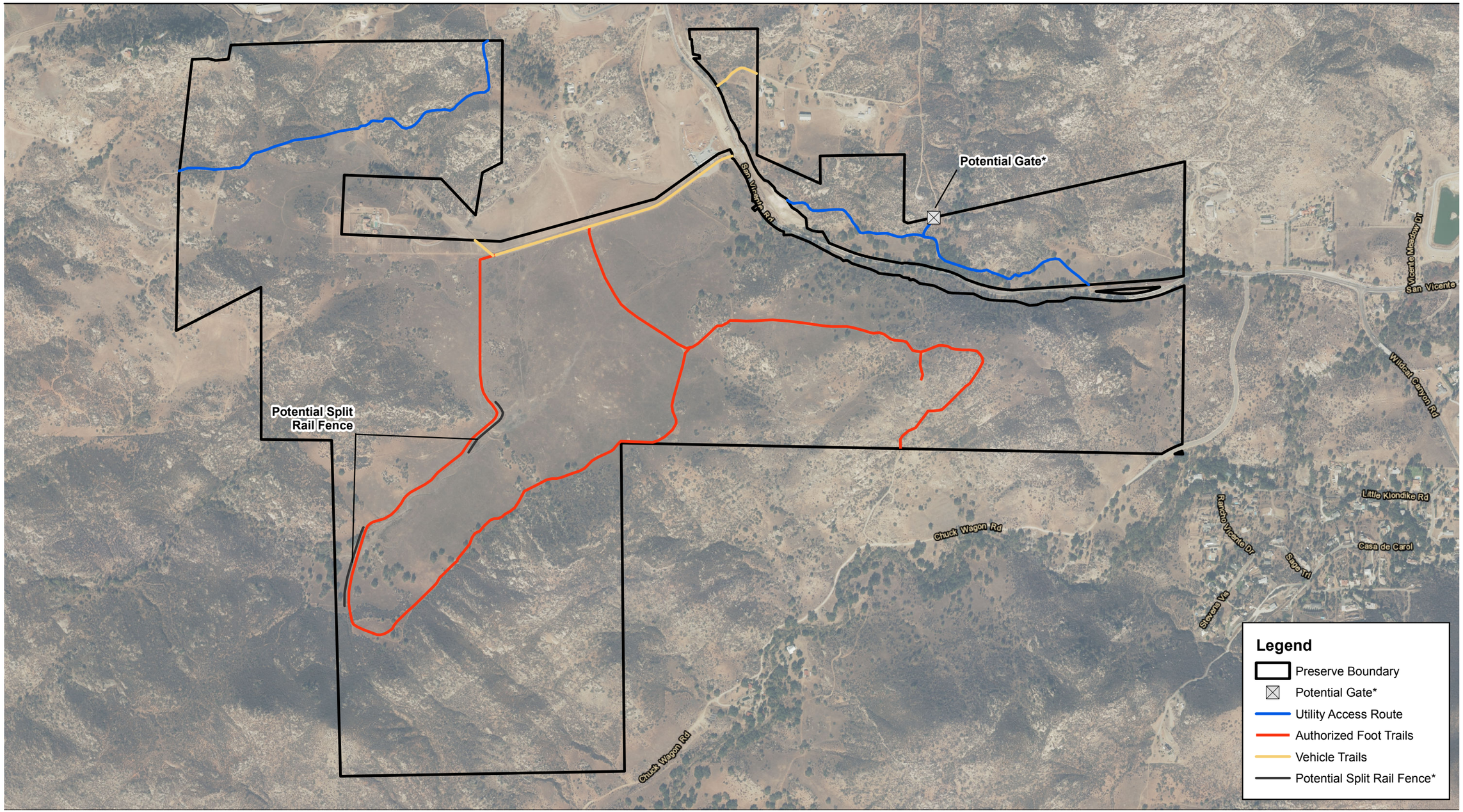
Source: SANDAG 2014

300 150 0 300 Feet

Scale: 1:3,600; 1 inch = 300 feet

Figure 8b
Existing Trails
Luelf Pond Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\Trails_Luelf.mxd, 4/1/2019, paul.moreno



Source: SANDAG 2014

900 450 0 900 Feet

Scale: 1:10,800; 1 inch = 900 feet

* - See Section 5.8.1 for details

Figure 8c
Existing Trails
Barnett Ranch Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\Trails_Barnett.mxd, 5/31/2019, paul.moreno

3.0 METHODS

Biological surveys were conducted on the Properties by AECOM biologists from March 2018 through September 2018. Table 4 lists the survey dates, personnel who conducted the surveys, and the type of survey conducted. Botanical surveys included vegetation mapping, rare plant surveys, and surveys for invasive plant species. Wildlife surveys included butterfly surveys, herpetological drift fence surveys, diurnal and nocturnal avian surveys, small mammal trapping, passive and active acoustical bat surveys, bat mist net surveys, and medium/large mammal remote camera surveys.

Table 4. Survey Type, Number, Dates, and Personnel

Survey Number	Survey Date	Survey Personnel
Reconnaissance Site Visit		
Initial Site Visit	December 21, 2018	Emma Fraser
Habitat Assessment	February 5, 2018	Andrew Fisher, Emma Fraser
Botanical Surveys		
1	January 3, 2018	Tom Oberbauer, Jenna Hartsook
2	January 8, 2018	Tom Oberbauer, Jenna Hartsook
3	April 24, 2018	Tom Oberbauer, Alix Fowler
4	May 15, 2018	Tom Oberbauer, Alix Fowler
5	May 16, 2018	Tom Oberbauer, Alix Fowler
6	May 23, 2018	Tom Oberbauer, Alix Fowler
7	October 15, 2018	Tom Oberbauer, Alix Fowler
8	October 16, 2018	Tom Oberbauer, Alix Fowler
Butterfly Surveys		
1	March 8, 2018	Brennan Mulrooney
2	March 20, 2018	Brennan Mulrooney
3	June 15, 2018	Brennan Mulrooney
4	August 8, 2018	Brennan Mulrooney
Herpetofauna Array Surveys		
Install	April 12 and 13, 2018	Andrew Fisher, Emma Fraser
1	April 16 through April 19, 2018	Andrew Fisher
2	April 25 through April 28, 2018	Andrew Fisher, Steve Montgomery, Emma Fraser
3	May 15 through May 18, 2018	Andrew Fisher, Emma Fraser, Sheila Madrak
4	May 25 through May 28, 2018	Andrew Fisher, Michael Anguiano
Small Mammal Surveys		
1	April 24 through April 28, 2018	Andrew Fisher, Steve Montgomery
Avian Surveys		
1	April 2, 2018	Brennan Mulrooney
1	April 17, 2018	Brennan Mulrooney
2	May 7, 2018	Brennan Mulrooney
2	May 16, 2018	Brennan Mulrooney
3	June 20, 2018	Brennan Mulrooney
3	June 27, 2018	Brennan Mulrooney

Table 4. Survey Type, Number, Dates, and Personnel

Survey Number	Survey Date	Survey Personnel
4	September 12, 2018	Brennan Mulrooney
4	September 19, 2018	Brennan Mulrooney
Wildlife Cameras		
1	March 21through June 27, 2018	Emma Fraser, Andrew Fisher
Bats		
Habitat Assessment	February 22, 2018	Drew Stokes
Bats – Passive Surveys		
Holly Oaks County Park and Luelf Pond Preserve		
1	March 18 through March 21, 2018	Drew Stokes
2	July 17 through July 19, 2018	Drew Stokes
3	September 10 through September 12, 2018	Drew Stokes
Barnett Ranch Preserve		
1	April 9 through April 11, 2018	Drew Stokes
2	July 10 through July 12, 2018	Drew Stokes
3	September 25 through September 27, 2018	Drew Stokes
Bats – Active Survey		
Holly Oaks County Park		
1	August 8, 2018	Drew Stokes
Luelf Pond Preserve		
1	August 22, 2018	Drew Stokes
Barnett Ranch Preserve		
1	July 12, 2018	Drew Stokes
2	September 25, 2018	Drew Stokes

A review of state and federal databases for existing biological resource information for the Properties was conducted to provide baseline information regarding special-status biological resources potentially occurring on the Properties and in the surrounding area. Sources reviewed and used included the California Natural Diversity Database (CNDDB), and California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants (CDFW 2018a; CNPS 2018). For the CNDDB, a search of a 1-mile radius around the Properties was conducted to determine if there were nearby or adjacent special-status species that might occur on the Properties (CDFW 2018a).

For purposes of this Baseline Biodiversity Report, species are considered "special-status species" if they meet at least one of the following criteria:

- Listed or proposed for listing (including candidate species[1]) under the Federal Endangered Species Act (FESA) or California Endangered Species Act (CESA).
- CDFW Species of Special Concern (SSC) (CDFW 2018b).
- CDFW fully protected species (FP) (CDFW 2018b).
- CDFW watch list species (WL) (CDFW 2018b).
- Listed by CNPS as California Rare Plant Ranks (CRPRs) 1A (presumed extinct in California and rare/extinct elsewhere), 1B (rare, threatened, and endangered in California and elsewhere), 2A (presumed extinct in California, but more common elsewhere), or 2B (rare, threatened, or endangered in California, but more common elsewhere) (CNPS 2018). All plants constituting CRPR 1A, 1B, 2A, or 2B meet the definition of Sections 2062 and 2067 (CESA) of the California Fish and Game Code (CFGC) (CNPS 2018).
- Some, but not all, CRPR 3 and 4 species. Some plants constituting CRPR 3 and 4 meet the definitions of Sections 2062 and 2067 (CESA) of the CFGC (CNPS 2018). CRPR 3 plants are those for which more information is needed (a review list) and CRPR 4 plants are those of limited distribution (watch list) (CNPS 2018).
- Species considered sensitive by the County (County of San Diego 2010).
- Any species covered by the MSCP.

Survey Limitations

Prior to the 2018 surveys, seasonal rainfall amounts for the Ramona region in the 2017–2018 season were far below normal. This season follows a series of rainfall seasons that were below normal except for the 2016–2017 season. This low level of precipitation created a rainfall deficit that was reflected in the vegetation, soil, and groundwater and it was only partially recovered as a result of the above normal 2016–2017 rainfall season. Shrub growth and rare or sensitive annuals and herbaceous perennials were likely to have been adversely affected by the extended period of low rainfall even though the 2016–2017 season would have provided some recovery. While the rainfall for the 2017–2018 season was well below average, the rain that did fall occurred in the mid-winter to early spring period, which facilitated plant growth.

[1] Candidate species are those petitioned species that are actively being considered for listing under the Federal Endangered Species Act (FESA), as well as those species for which the U.S. Fish and Wildlife Service has initiated a FESA status review, as announced in the *Federal Register*. Proposed species are those candidate species that were found to warrant listing and have been officially proposed for listing in the *Federal Register*. Under the California Endangered Species Act, candidate species are those species currently petitioned for state-listing status.

The response of the annual plants and flowering shrubs was much greater than one might have expected given the low rainfall so that a strong representation of sensitive species was mapped, in particular for sensitive annuals like delicate clarkia (*Clarkia delicata*).

Also, while higher than average rainfall in 2016–2017 would have helped recovery, low amounts of rainfall from previous years likely affected the abundance of several butterfly, reptile, and amphibian species. The lack of sufficient rainfall for several years may have driven the populations of some wildlife species to lower levels, decreasing their detection probability. There is also the potential that the drought affected small mammal populations, which can affect the populations of some raptor species that rely on them as a food source.

3.1 VEGETATION COMMUNITIES/HABITAT

3.1.1 Vegetation Communities Mapping

Vegetation communities and land cover were delineated in the field in January 2018 using hard copy maps and global positioning system (GPS) reference points to enable accurate mapping on Google Earth high resolution aerial photographs. Mapping of the Properties was conducted by the same field staff who marked reference points and locations and was then delineated using ArcMap. Mapping of the Properties included a 100-foot buffer pursuant to County guidelines (County of San Diego 2010). Surveys were conducted throughout the Properties, with all roads and trails walked, high points visited for panoramic views, and a cross-country traverse across the major parts of the Properties. Vegetation classification during field mapping was based on the Vegetation Classification Manual for Western San Diego County (VCM; Sproul et al. 2011) and then cross-walked to the Holland (1986) classification system modified by Oberbauer (Oberbauer et al. 2008). Acreage calculations were generated using ArcGIS. Vegetation classifications described in Section 4.1 of this report follow the VCM.

3.2 PLANTS

Floristic surveys, including rare plant and invasive plant surveys, were conducted concurrently with vegetation mapping. Rare plant surveys for spring blooming rare plants were conducted on April 24, May 15, and May 16, 2018. Surveys for rare fall blooming plants were conducted on October 15 and 16, 2018.

3.2.1 Floristic Surveys

Special-Status/Rare Plant Surveys

AECOM botanists conducted comprehensive sensitive/rare plant surveys on the Properties. Rare plant surveys were conducted in accordance with the County Guidelines Report Format and Content Requirements for Biological Resources (County of San Diego 2010); *Guidelines for Conducting and Reporting Botanical Inventories of Federally Listed, Proposed, and Candidate Plants* (USFWS 1996); *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Natural Communities* (CDFG 2009); and *CNPS Botanical Survey Guidelines* (CNPS 2001). When evaluating the potential for special-status plant species to occur at Barnett Ranch Preserve, *Barnett Ranch Open Space Preserve Biological Resources Report* (Helix 2004b) and *Biological Monitoring Report for the Barnett Ranch Preserve (Monitoring Year 2009)* (TAIC 2010) were reviewed.

Accessible areas with a potential to support rare plant species were surveyed on foot. Surveys were floristic in nature; therefore, all plant species detected were identified to subspecies or variety to determine sensitivity status and recorded to inventory plant species on the Properties. For each rare plant species detected, attributes of relative abundance, general distribution, and geographic information system (GIS) coordinates were recorded within the Properties. Latin and common names follow *Checklist of Vascular Plans of San Diego County* (Rebman and Simpson 2014). A list of plant species detected on the Properties is included in Appendix A.

The vegetation, elevation, soil types and rock formations, disturbance, status, and distribution within the vicinity of the Properties were considered when evaluating the Properties' potential for special-status plant species to occur. The Properties are in an area of San Diego County known to support a number of sensitive species. However, the rock and soils on the Properties are derived from the more typical granitic rocks. The Properties do not appear to contain unusual soil types derived from limited rock types, such as metasedimentary soils, or gabbro soils, which are known to support higher concentrations of sensitive plants. Therefore, a lower number of special-status plants would be expected than if the Properties did contain those rock types. A table of the special-status plant species with potential to occur on the Properties is included in Appendix B.

Invasive Non-native Plant Species Mapping

Spring 2018 invasive non-native plant surveys occurred concurrently with rare plant surveys. For non-native species generally considered as naturalized, attributes of relative abundance and general distribution throughout the Properties were recorded. Special attention was given to the 29 invasive plant species identified as priorities for near-term management and monitoring by the San

Diego Management and Monitoring Program in their *Management Priorities for Invasive Non-native Plants* (Conservation Biology Institute 2012). Species of greatest concern include those rated by the California Invasive Plant Council (Cal-IPC) (2018), existing on the Federal Invasive and Noxious Plant List (U.S. Department of Agriculture Natural Resources Conservation Service 2014), or occurring on the California Noxious Weeds list (California Department of Food and Agriculture 2018). A list of invasive non-native plant species detected on the Properties is included in Appendix C.

Using GPS and GIS software, each population detected was mapped. Species considered the most invasive or represented in a few locations were of greatest priority for mapping individual locations. No Level 1 or 2 species, as identified in the *Management Priorities for Invasive Non-native Plants* (Conservation Biology Institute 2012), were detected on the Properties, which would have required AECOM to contact the County Project Manager within 7 days of detection, to allow the County to treat these species promptly.

3.3 WILDLIFE

General wildlife surveys occurred concurrently with focused surveys and assessments of the Properties. AECOM biologists identified wildlife species by sight, vocalizations, burrows, tracks, scat, nests, and other sign. Wildlife species detected during the field surveys of the Properties were identified to species (when possible) and recorded. A list of the wildlife species observed and/or detected on the Properties is included in Appendix D.

The suitability of habitats for special-status wildlife species to occur on the Properties was evaluated during wildlife surveys. The potential for special-status wildlife species to occur on the Properties was based on habitat suitability for each species, including elevation, vegetation communities, level of disturbance, and status and distribution within the vicinity of the Properties. When evaluating the potential for special-status wildlife species to occur at Barnett Ranch Preserve, B*arnett Ranch Open Space Preserve Biological Resources Report* (Helix 2004b) and *Biological Monitoring Report for the Barnett Ranch Preserve (Monitoring Year 2009)* (TAIC 2010) were reviewed for occurrences of special-status species based on historical surveys. Additionally, a CNDDB search of a 1-mile radius around all three Properties was conducted and was relied on more heavily when evaluating Luelf Pond Preserve and Holly Oaks County Park due to the lack of historical surveys conducted at both Properties. Species that occurred within the 1-mile radius CNDDB search or were historically detected within the existing Properties were considered for their potential to occur on the Properties.

If no suitable habitat (for breeding, foraging, wintering, or migrating) for the species was present within the Properties, then the species was considered to have no potential to occur. If no suitable

habitat for special-status wildlife species was present within the Properties, but there was a chance the species could migrate through the Properties (en route to suitable habitat elsewhere), they were considered to have a low potential to occur. If marginal, slim, or a small portion of suitable habitat was present within the Properties, or adjacent suitable habitat, then the species were considered to have a moderate potential to occur. If there was a large portion of suitable habitat within the Properties and a reasonable likelihood of occurrence based on nearby known populations, then the species were considered to have a high potential to occur. A table of the special-status wildlife species evaluated for potential to occur on the Properties is included in Appendix E.

3.3.1 Butterflies

General butterfly surveys were conducted on March 8, March 20, June 15, and August 8, 2018, to document the diversity of butterfly species within the Properties; and fell within the flight seasons for two special-status species with potential to occur within the Properties including both the quino checkerspot butterfly (*Euphydryas editha quino*) and hermes copper butterfly (*Lycaena hermes*), Surveys were conducted for the Properties using the Checklist Method (Royer et al. 1998). Surveys were conducted by a biologist slowly meandering around the Properties to look for butterfly species. Surveys were generally conducted during the warmest and sunniest periods of the day, from late morning to mid-afternoon, when butterfly activity was at its peak. Areas with flowering plants or potential butterfly nectar sources were checked, and old roads were walked as they provided easy access through vegetation and butterflies often rest on bare ground. The biologist walked open ridgelines, hilltops, or moist drainages as butterflies tend to concentrate in these areas. Binoculars were used to aid in butterfly identification. If suitable habitat for any sensitive species was detected, special effort to survey during those species flight seasons was made. Species were photographed if possible to confirm identification. Any incidental observations of butterflies that were made during other biological surveys were recorded. Survey number, survey date, and survey personnel are shown in Table 4. Although the survey dates fall within the flight season of a large number of butterflies, some species may have been missed due to the surveys taking place outside of peak flight windows for those species. In addition to butterflies, bird species encountered during butterfly surveys were recorded. This allowed for a more complete picture of the avian diversity through the year.

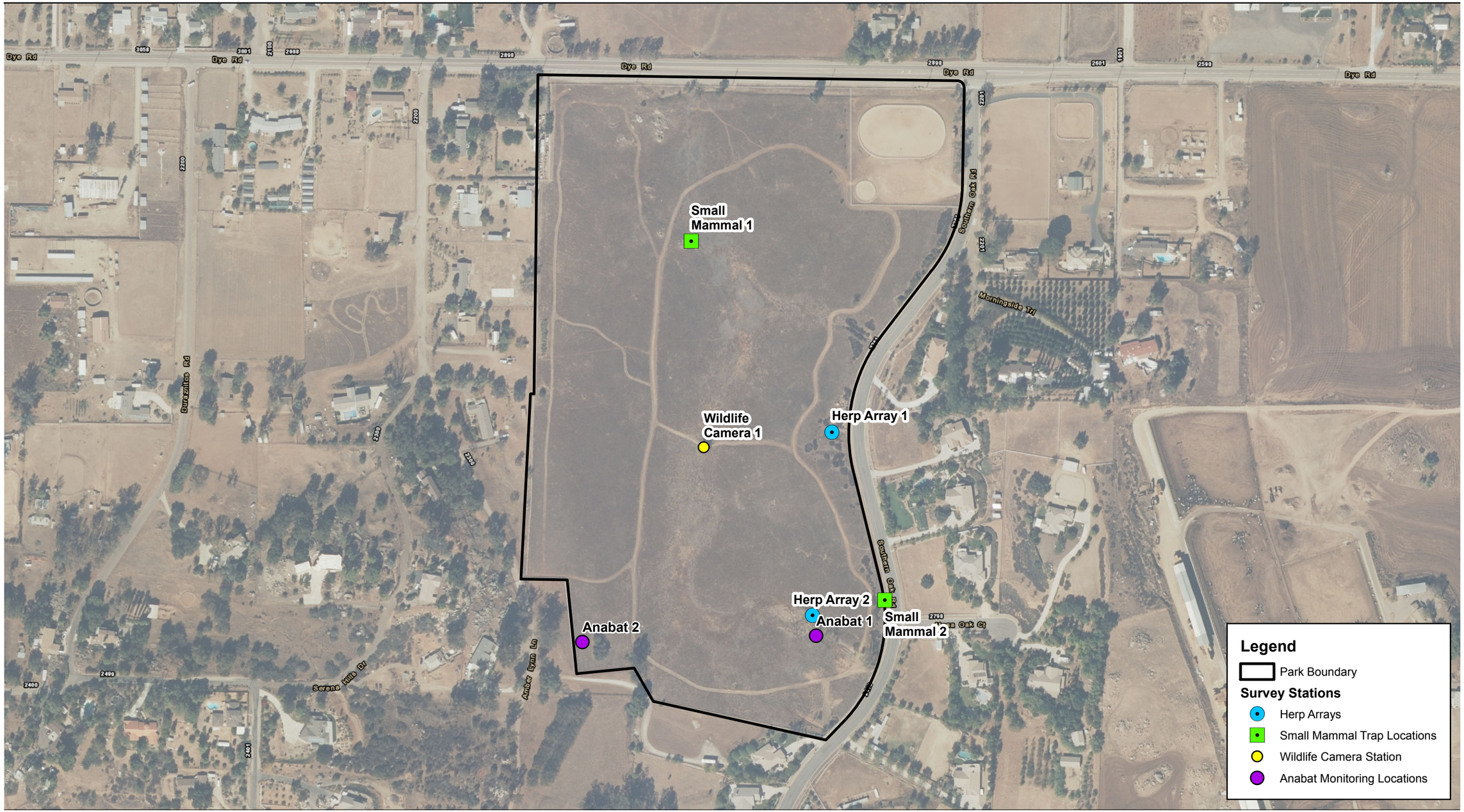
3.3.2 Herpetofauna

General herpetological surveys were conducted to document the presence of amphibian and reptile species within the Properties. Herpetological surveys were conducted using drift fences with a box funnel trap at each end of the fence (hereafter referred to as drift fence surveys; Anguiano and Diffendorfer 2015). Biologists assessed the Properties for the various herpetofaunal species that might occur based on knowledge of species in the region, vegetation communities, and

microhabitat conditions. Drift fences were strategically placed in a variety of locations with varying levels of cover, vegetation, soil types, and topographic levels (along ridges and in small valleys/canyons), to capture the diversity of the herpetofauna on the Properties. Additionally, the previous inventory studies (Helix 2004b; TAIC 2010) were reviewed to determine where trapping was historically conducted. No pitfall buckets were used as box funnel traps capture rates have been higher than pitfall buckets during monitoring on other County preserves (County of San Diego 2015).

Twelve drift fences with box funnel traps (hereafter, "Herp Arrays") were installed on the Properties on April 12 and 13, 2018 (Figures 9a – 9c); two at Holly Oaks County Park (Herp Arrays 1 and 2), two at Luelf Pond Preserve (Herp Arrays 3 and 4), and eight at Barnett Ranch Preserve (Herp Arrays 5 through12). Each drift fence consisted of one 50-foot-long by 1-foot-tall drift fence (composed of thick dark green shade cloth) trenched about 2 inches into the ground and staked in place with one box funnel trap (12 by 8 by 18 inches) at each end. Each box funnel trap had two 28-inch-long drift fence "wings" protruding off the front of each trap to increase the size of the funnel. Each box funnel trap contained a piece of polyvinyl chloride (PVC) pipe (generally 1 to 2 inches in diameter by 3 to 4 inches long) to provide shelter for captured animals. Since the box funnel traps capture any species that enter them, small mammals may be captured during the night. Therefore the PVC pipe contained pieces of cotton or synthetic batting material and a small amount of seed in case small mammals were captured in the box funnel traps. The cotton and seed in the PVC pipe provided a food and shelter source for small mammal species that might get captured in the box funnel traps during cold nights. Each box funnel trap was covered with a 2-foot by 2-foot piece of plywood to protect animals captured during the day from the heat of the sun.

Drift fences were monitored for approximately 8 days per month for 2 months, over four separate 4-day survey windows (April through May 2018; see Table 4 for specific survey dates). Traps were opened on the first day and checked every morning for 4 consecutive mornings. When box funnel traps were "opened" on the first day of a trapping session, they were placed at the ends of the drift fence to capture any animals that encountered the fence and followed it into the box funnel traps. The traps were run 24 hours a day for 4 days straight, and then "closed" on the fourth day. Traps were closed by tipping them on their sides and leaving the escape door open so that no animals could get accidentally trapped. Species captured (including small mammal species) were identified to species (if possible), age classed, photographed (particularly if they were a sensitive species), and released unharmed. Incidental observations of wildlife species that were made while walking between drift fences and during other biological surveys were also recorded. Drift fences and funnel traps were removed upon survey completion on May 28, 2018. Representative photographs of amphibian and reptile species were taken when possible (Appendix F).



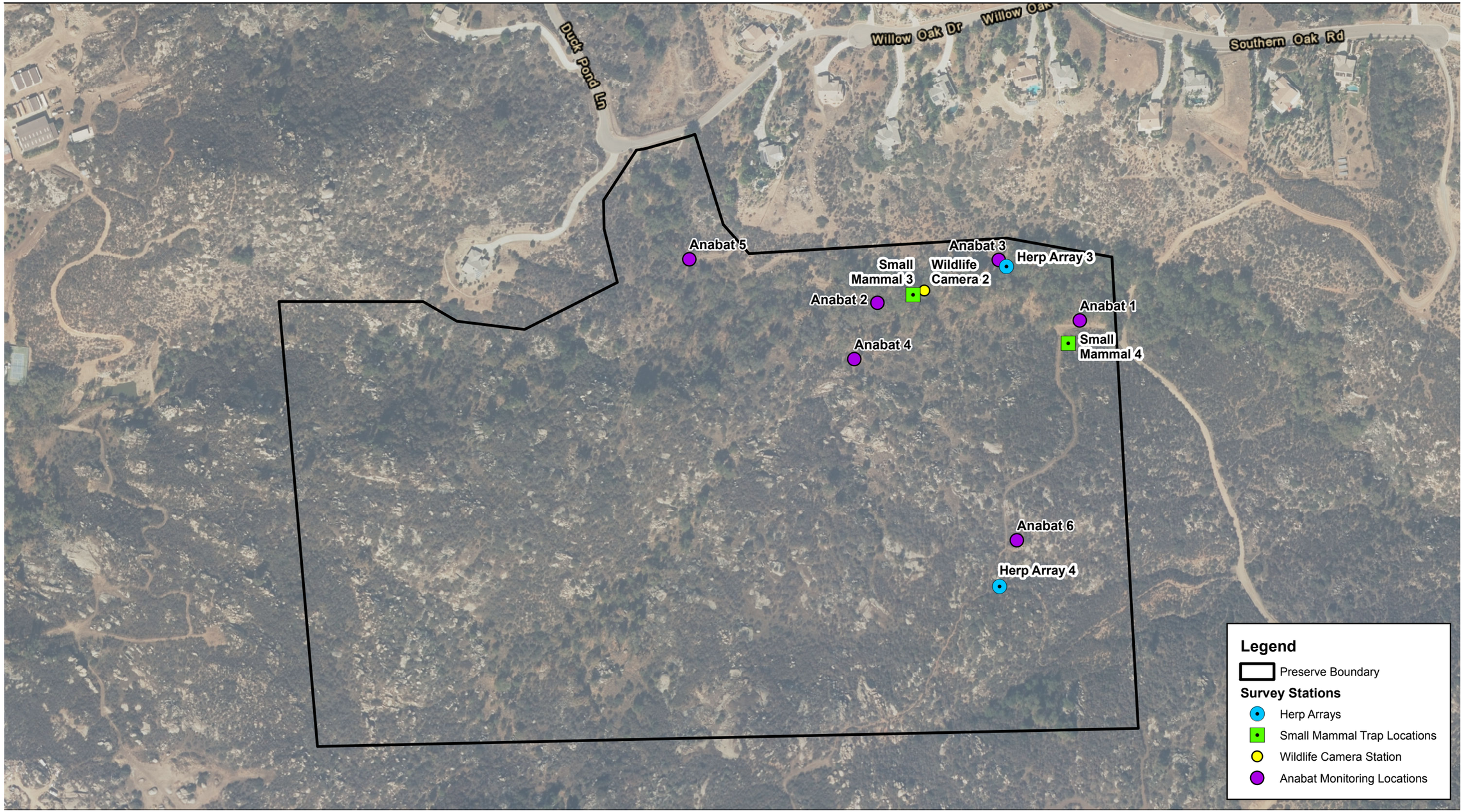
Source: SANDAG 2014

275 137.5 0 275 Feet

Scale: 1:3,300; 1 inch = 275 feet

Figure 9a
Biological Inventory Locations
Holly Oaks County Park

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\Stations_Holly.mxd, 4/1/2019, paul.moreno



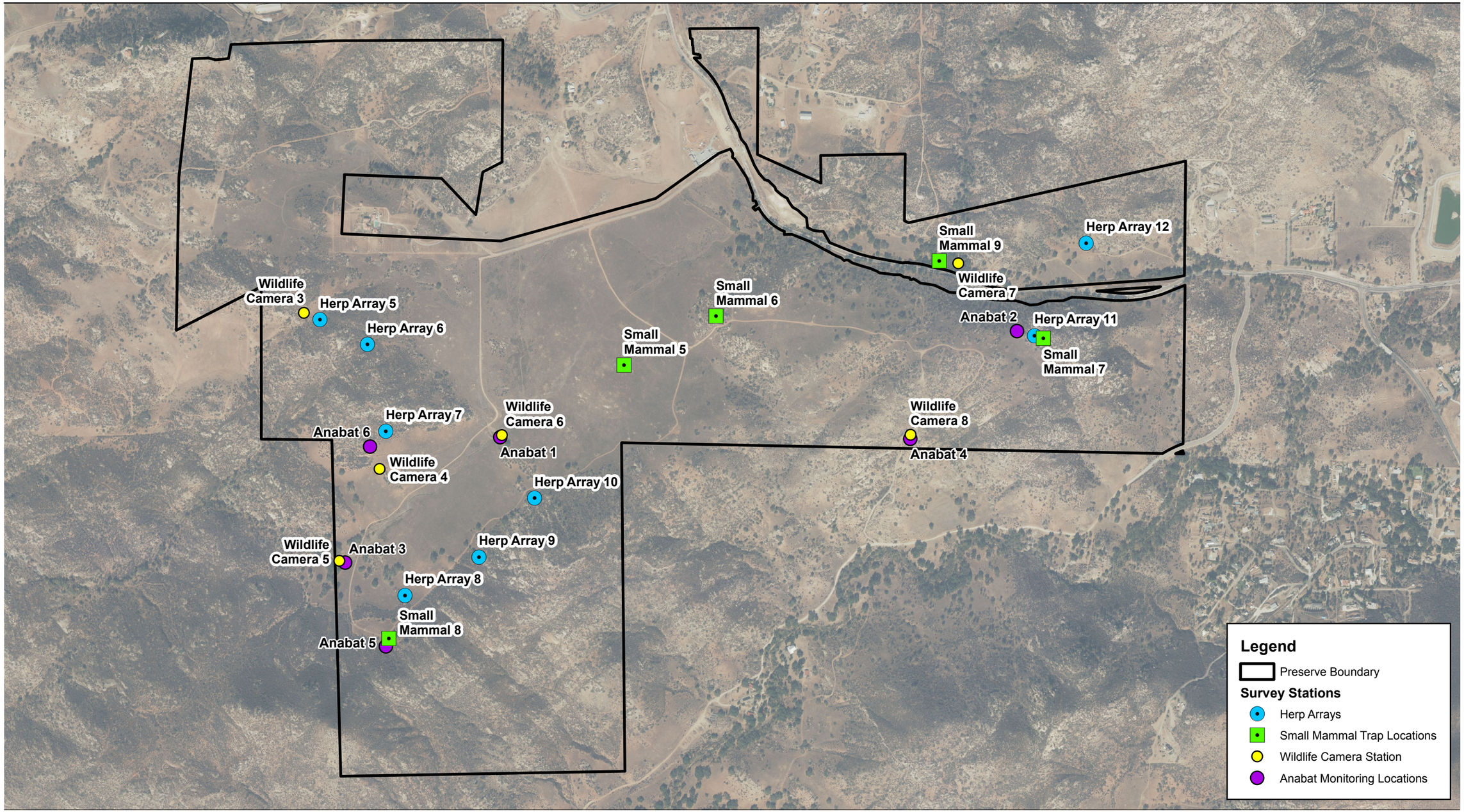
Source: SANDAG 2014

300 150 0 300 Feet

Scale: 1:3,600; 1 inch = 300 feet

Figure 9b
Biological Inventory Locations
Luelf Pond Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\Stations_Luelf.mxd, 4/1/2019, paul.moreno



Source: SANDAG 2014

900 450 0 900 Feet

Scale: 1:10,800; 1 inch = 900 feet

Figure 9c
Biological Inventory Locations
Barnett Ranch Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\Stations_Barnett.mxd, 4/1/2019, paul.moreno

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3.3.3 Birds

Nocturnal and diurnal avian surveys were conducted throughout the Properties to document avian species that nest, winter, or migrate through the Properties. The surveys were conducted by an ornithologist meandering through the various habitat types on the Properties. At each property, two 8-hour surveys (i.e., 1 day) were conducted per month for 4 months. These four surveys were spaced throughout the year (April, May, June, and September 2018) to capture data from each season, including spring and early fall migration periods (Table 4).

Nocturnal avian surveys consisted of calling and listening for nocturnal birds in the pre-dawn and post-dusk hours before and/or after the diurnal surveys. Therefore, nocturnal and diurnal surveys were conducted on the same day. The biologist arrived on the Properties 1 to 2 hours before sunrise and/or stayed after sunset and surveyed the Properties by walking dirt trails and listening and looking for various nocturnal species. The biologist periodically stopped and played the vocal recording (via iPhone or similar playback device) of nocturnal species with potential to occur, including common poorwill (*Phalaenoptilus nuttallii*), great horned owl (*Bubo virginianus*), western screech owl (*Megascops kennicottii*), barn owl (*Tyto alba*), and long-eared owl (*Asio otus*). The recording was played at different locations throughout the Properties, where potentially suitable habitat existed for the various nocturnal species.

Diurnal surveys consisted of meandering along the dirt trails within the Properties and recording avian species detected, without playing any vocal recordings. Additionally, the biologist surveyed canyons, ridges, or areas with good vantage points.

For both nocturnal and diurnal avian surveys, the biologist recorded the avian species and the GPS location for any special-status avian species detected. Weather conditions, such as temperature, wind, cloud cover, and visibility, were recorded during each survey. Incidental observations of avian species that were made during other biological surveys were also recorded. Representative photographs of avian species were taken when possible (Appendix F). In addition to birds, all butterfly species encountered during avian surveys were recorded. This allowed for a more complete picture of the butterfly diversity throughout the year.

3.3.4 Mammals

The following section details the survey methods used to inventory small mammals, medium to large mammals, and bats within the Properties.

Small Mammals

Small mammal trapping was conducted in April 2018 to document the diversity of small mammal species within the Properties. The vegetation, soils, and specific micro-habitat areas (such as rocky outcrops) were chosen based on the range of small mammal species that could occur and the types of habitats that different species prefer. Prior to the start of trapping, biologists conducted a habitat assessment for the federally endangered Stephens' kangaroo rat (SKR, *Dipodomys stephensi*) by walking throughout the Properties and identifying suitable habitat. SKR are known to occur around the Ramona Airport, but have not been historically detected within or immediately around the Properties. Biologists looked for burrow entrances, runway, litter mounds, dust-bathing sites, and vegetation that could support the species. Although no SKR sign (burrows, scat, tracks, and dust bathing locations) was identified during the habitat assessment, traps were still placed in the most appropriate habitat on-site and an SKR permitted biologist was present during all trapping efforts to confirm no SKR were captured. The specific locations of trapping locations are depicted in Figures 9a – 9c.

Traps were located in a range of Holland (1986) vegetation types: non-native grassland, California buckwheat, southern mixed chaparral, chamise chaparral, coastal sage-chaparral transition, southern coast live oak riparian forest, and coast live oak woodland to target specific small mammal species that occur in each habitat type. Both 9-inch and 12-inch Sherman live traps were used because different-sized small mammals prefer traps that they can easily fit in. Smaller pocket mice (*Chaetodipus* species) will fit into any sized trap, but larger wood rat species (*Neotoma* species) tend to prefer the larger 12-inch traps. The traps were baited with a combination of bird seed that consisted of millet, sunflower seed, dried raisins, sorghum, and cracked corn. The bird seed mixture was baked in an oven at 350 degrees for 15 minutes to kill the seed and prevent the unwanted introduction of new plant species.

Nine trap lines were set up throughout the Properties; two at Holly Oaks County Park (trap lines 1 and 2), two at Luelf Pond Preserve (trap lines 3 and 4), and five at Barnett Ranch Preserve (trap lines 5 through 9). Each trap line at Holly Oaks County Park and Luelf Pond Preserve consisted of 10 traps spaced out in a line meandering through the vegetation. Four of the trap lines at Barnett Ranch Preserve consisted of 20 traps and one trap line located at the center of the property consisted of 30 traps. The traps were spaced approximately 10 to 30 feet apart, depending on the terrain, vegetation, and presence of small mammal sign. Twelve-inch traps were placed in areas with a potential to capture woodrats (such as adjacent to woodrat nests). A total of 150 traps were set to sample the small mammal species at the Properties. Each trap was marked with brightly colored flagging, and the ends of each trapping line were double flagged to indicate the end of the trap line. Each trapping line was recorded with a GPS unit and photographed.

One trapping session was conducted and consisted of 4 consecutive trap nights from April 24 through April 28, 2018. Trapping was conducted during periods when no rain was forecast and night-time temperatures were generally higher than 50 degrees Fahrenheit. Traps were opened and baited in the late afternoon hours, and were checked early the following morning before direct sunlight could cause temperatures to rise in the traps, possibly resulting in mortality. Traps were placed in locations to minimize exposure to direct sunlight, and in locations where small mammals might frequent (such as along rock ledges, in front of woodrat nests, rock outcrops, runs, and burrow entrances). Biologists lightly scraped the surface of the ground where the trap was placed to provide a level surface on which to rest the trap.

When a small mammal was captured in a trap, it was identified to species and then released. If possible, the age of the animal was also recorded. Small mammals were not marked. All traps were closed in the morning to prevent any wildlife from entering the traps during the heat of the day. If ants were detected within or adjacent to traps, the traps were moved a few feet over to a new location free of ants.

In addition to the above-mentioned trapping, small mammals were captured incidentally during drift fence surveys for herpetofauna species. Any small mammal species captured during drift fence surveys were identified to species and released unharmed. Representative photographs of small mammal species were taken when possible and included in Appendix F.

Bats

Bat surveys were conducted on the Properties for foraging, roosting, and migratory bats using a combination of active and passive techniques to maximize the detection probability. Surveys included a daytime roost search and bat habitat assessment, mist netting, evening active acoustic surveys using an Anabat "walkabout" handheld bat detector, and nighttime passive acoustic surveys using Anabat "express" passive monitoring units.

Data from active surveys are helpful for determining the direction bats are flying, and determining how the bats are using the site (foraging, roosting, or flying through). Passive surveys are helpful in that bat calls are recorded and later reviewed using a computer with a library of known bat calls, aiding in identification of species (when possible). The habitat assessment and active/passive survey methods are further described below.

Roost Searches and Habitat Assessment

Prior to conducting bat surveys, a daytime habitat assessment survey was conducted at all three Properties on February 22, 2018, to identify potential roost sites and to select the locations of

passive monitoring that maximized the variety of habitats sampled and minimized potential sources of noise interference. During the habitat assessment, a bat biologist walked throughout the Properties to look for potential bat corridors, roosting areas, and foraging areas. Potential bat flight corridors were assessed by examining the terrain, topography, vegetation communities, and nearby bat attractants. Areas where the vegetation formed tunnels or where one vegetation community abutted an adjacent vegetation community to create an edge were examined. Potential roosting areas include oak trees and riparian vegetation for tree-dwelling bats, and rocky outcrops and caves or exfoliating rock for cave-dwelling species. If potential roost sites were identified during the habitat assessment survey, roost sites were visually inspected for guano, staining, and other signs of bat presence.

The bat biologist also looked for oak woodlands and areas with open vegetation to allow bats to fly through (as opposed to closed-canopy chaparral), and around open sources of water (if present) where food sources are plentiful in order to identify potential foraging areas.

Active and Mist Net Surveys

Bat surveys were conducted across a variety of seasons at the Properties to document the variety of bat species using several methods. An actively monitored AnaBat "walkabout" hand held bat detector was used to record bat vocalizations while the unaided ear was used to listen for audible bats. All bat calls were either identified to species in the field while the bat was flying by, or were recorded for identification later. Mist netting was only conducted at a stock pond on Barnett Ranch Preserve to accompany the active acoustic surveys since it was the only location with above-ground water where mist nets could be easily deployed to capture bats while drinking. The active surveys were conducted in the following way at each individual Property:

<u>Holly Oaks County Park</u>
Active bat surveys at Holly Oaks County Park were conducted only during the summer on August 8, 2018. An active acoustic survey was conducted during the summer by walking around the east, west, and south sides of the property for a 2-hour period beginning at sunset. Bats were visually observed before darkness, and bats were recorded with the AnaBat and listened for with the unaided ear during the survey period.

<u>Luelf Pond Preserve</u>
Active bat surveys at Luelf Pond Preserve were conducted only during the summer on August 22, 2018. An active acoustic survey was conducted during the summer by walking a loose transect along the main trail from the south end to the north end and back repeatedly for a 2-hour period beginning at sunset. Bats were visually observed before darkness, and bats were recorded with the AnaBat and listened for with the unaided ear during the survey period. During this particular active

survey, two dead snags that appeared to be potential bat day roosts were also observed for exiting bats.

Barnett Ranch Preserve

To document potential resident bat species over the summer and fall seasons, 2 nights of active bat surveys were conducted at Barnett Ranch Preserve on July 12 and September 25, 2018. Two active surveys were conducted near the stock pond for a 3-hour period beginning at sunset, once in the summer and again in the fall. An actively monitored AnaBat and the unaided ear were used to record and listen, respectively, for bats during the survey period. Two mist nets (one 9-meter, one 6-meter) were also placed over the stock pond in a "V"-shaped arrangement in an attempt to capture bats during each of the two active surveys. During this particular active survey, rocky outcroppings that appeared to be potential bat day roosts were also observed for exiting bats.

Passive Surveys

Passive bat surveys were conducted in spring, summer, and fall of 2018 (to document migratory and year-round resident species) at all three Properties (Table 4). These surveys were conducted by leaving up to six stationary Anabat units in the field at different locations (Figures 9a – 9c). The detectors were stationed to sample representative habitat on the Properties, including chaparral and grassland habitat, and were placed in the field at locations intended to maximize detections of multiple bat species. The Anabat SD2 detectors had standard microphones within BatHat microphone housing mounted approximately 10 to 12 feet above ground level. The number of units deployed at each of the three Properties was as follows:

Holly Oaks County Park – One unit in the spring (March 19–21), and two units in the summer (July 17–19) and fall (September 10–12) (Figure 9a).

Luelf Pond Preserve – Two units in the spring (March 19–21), three units in the summer (July 17–19), and four units in the fall (September 10–12) (Figure 9b).

Barnett Ranch Preserve – Six units per season (April 9–11, July 10–12, and September 25–27) (Figure 9c).

All units were set up and left to automatically record bat vocalizations for 3 consecutive nights simultaneously during each season of monitoring, and were retrieved after the 3 nights. The units were programmed to turn on at sunset and turn off at sunrise based on an internal GPS that automatically calculated sunset and sunrise based on location. Bat calls were automatically recorded by the units during the monitoring period and, at the end of each passive survey period, the bat detector equipment was removed. After the units were retrieved, the recorded bat calls were

reviewed and were identified to species (when possible) using a computer with a library of known bat calls. Bat activity was reported as number of bat calls, and relative activity for each species was reported as a percentage of activity of all recorded and identified bat calls. Representative photographs taken of various Anabat detectors are shown in Appendix F.

Medium to Large Mammals

Remote wildlife cameras were used to document the diversity of medium and large mammals that occur or move through the Properties. During the site reconnaissance survey on February 2, 2018, biologists assessed potential wildlife corridors while reviewing the potential wildlife corridor map in *Barnett Ranch Open Space Preserve Biological Resources Report* (Helix 2004b). Eight Reconyx cameras were set in areas of high mammal activity (based on animal tracks and scat), and along trails, roads, potential wildlife corridors (based on Helix 2004b), and high use areas or areas that may funnel or concentrate wildlife (e.g., near water sources, drainages). Two cameras were placed along established trails within the Holly Oaks County Park and Luelf Pond Preserve and six were placed throughout various portions of Barnett Ranch Preserve to sample a wide variety of various habitat types (Figures 9a – 9c).

Reconyx cameras were used because the trigger speed is less than 1 second, which maximizes the number of potential photos that can be taken of an animal that is moving quickly in front of the camera. Cameras were continually scanning their field-of-view to detect movement. The cameras were set to have "high sensitivity" to movement; therefore, anything from a small bird, to large mule deer (*Odocoileus hemionus*) would likely trigger the cameras to start taking photographs (as would branches, blades of grass, or other vegetative material that moved in the wind). Once triggered, the wildlife cameras were set to take a series of three photographs. The cameras were set to continue to take a series of three photographs until movement in front of the camera ceased (i.e., no time would elapse between trigger events).

Each camera was baited with several drops of Carman's Pro Choice scent lure (a commercially available trapping lure specifically formulated for attracting large mammals), which was placed on large rocks or sticks about 15 to 25 feet away from the camera in the approximate center of the camera's viewshed. The scent lure attracts a wide variety of wildlife and lures them into the center viewshed of the camera. The scent lure also keeps the animal in the viewshed of the camera (as the animal investigates the scent lure) so that several photos can be taken as the animal moves around sniffing, rubbing, or rolling onto the scent lure. A scent lure is particularly useful at night to lure wildlife to within the range of the semi-covert infrared flash. A camera with a semi-covert infrared flash was chosen because a white-light or LED flash can overexpose, or "white-out," a photograph, making the identification of the animal difficult. White-light or LED flashes can also scare wildlife away, but the infrared flash often attracts wildlife because it simply "glows."

All eight wildlife cameras were turned on and run for approximately 3 months from March 21 through June 27, 2018 (Table 4). To prevent vandalism and theft, cameras located in areas of high visibility were placed inside a bear-proof box and locked. Six of the wildlife cameras were strapped to large trees or boulders by using a combination of long cables and bungee cords wrapped around the support structure and secured through the bear-proof box with a lock. Two of the remaining cameras at Barnett Ranch Preserve were bolted to 4-foot-tall steel poles that were then buried into the ground. The cameras were oriented away from the sun (to the extent practical to reduce glare on the camera lens) and were positioned to take photos of wildlife walking along a trail, either headed toward, or away from, the wildlife camera. Representative photographs were taken of all eight wildlife cameras locations (Appendix F).

Throughout the survey period, cameras were periodically checked to confirm they were working, vegetation that might cause false triggers was removed, and batteries were replaced if needed. Photographs were downloaded directly in the field and reviewed and categorized based on the species detected. If necessary, the angle or viewshed of the cameras was adjusted to capture the highest-quality images. All photographs with anthropogenic activity were separated out and organized by camera number in order to make general assumptions regarding the amount of human traffic in certain areas of the Properties compared to others. Photographs of humans, dogs, vehicles, and horses were lumped together to understand the amount of human activity within the Properties.

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4.0 RESULTS AND DISCUSSION

This chapter details the vegetation communities within the Properties, including the acreages of the vegetation communities, and the results of the botanical and biological surveys.

4.1 VEGETATION COMMUNITIES/HABITAT

Vegetation community classification was based on two separate systems: the VCM (Sproul et al. 2011) and the Holland (1986) (as modified by Oberbauer et al. 2008) classification system. Field mapping was conducted in January 2018 according to the VCM and then cross-walked to the Holland/Oberbauer classification system. The predominant vegetation community within the Properties is the Mediterranean California naturalized annual and perennial grassland semi-natural stands. It composes more than 30 percent of the combined acreages of the Properties with more than 272 acres. Three other vegetation classifications cover large areas of the Properties: *Adenostoma fasciculatum—Xylococcus bicolor* Association (Chamise-Mission Manzanita Association) with 178 acres or 20 percent of the total, *Malosma laurina – Acmispon glaber* Association (laurel sumac-deerweed association) with 113 acres or 13 percent of the total, and *Artemisia californica- Eriogonum fasciculatum – Malosma laurina* Association (California sagebrush-California buckwheat-laurel sumac association) with 105 acres or 12 percent of the total.

Other notable vegetation communities include *Quercus agrifolia-Toxicodendron diversilobum*-Grass Association (Coast Live Oak-Poison Oak-Grass Association) with nearly 45 acres, *Deinandra fasciculata* Association (Fascicled Tarplant Association) covering nearly 13 acres of Barnett Ranch Preserve, and *Adenostoma fasciculatum-Xylococcus bicolor-Ceanothus tomentosus* Association (Chamise-Mission Manzanita-Ramona Ceanothus Association) covering more than 66 acres at Luelf Pond Preserve. However, the vegetation on Luelf Pond Preserve falls into that classification based on the dominance by chamise and mission manzanita and chaparral whitethorn (*Ceanothus leucodermis*). Ramona ceanothus (*Ceanothus tomentosus*), which is typically part of this community, was not found on any of the properties. The Helix report (2004b) identified Ramona ceanothus on Barnett Ranch Preserve but it was not found in 2018 and it was not listed in the TAIC (2010) report. It is not clear whether it was eliminated by the Cedar Fire. Furthermore a number of the chaparral whitethorn that have regrown after the fires appear under stress, potentially from the extended drought period.

Acreages of the vegetation communities on the Properties are listed in Table 5. Vegetation communities according to the Holland/Oberbauer classification system and VCM are included in Figures 10a – 10c and 11a – 11c, respectively.

The following vegetation communities and land cover type descriptions for the Properties follow those designated in the VCM.

4.1.1 Herbaceous

Fascicled Tarplant Association (*Deinandra fasciculata* Association) (5.13.1)

Portions of Barnett Ranch Preserve support large populations of fascicled tarplant. Following wet rainfall seasons, a continuous patch of this plant species occurs on 13 acres in the north-central portion of the valley that exists on the property. While the 2017–2018 rainfall season was not suitable for generating large numbers of fascicled tarplant, the skeletons of the plants from the 2016–2017 season were still visible early in 2018 allowing the possibility of mapping it. While the fascicled tarplant does occur at Holly Oaks County Park, it has not been recently found in numbers that would indicate it forms a vegetation community. Typically, during seasons with lower rainfall, this plant would not be as visible and the vegetation would likely be mapped as non-native grassland. This vegetation is classified as wildflower field under the Holland/Oberbauer classification system and is categorized as Tier III vegetation under the Subarea Plan (County of San Diego 1997)[2].

Mediterranean California naturalized annual and perennial grassland semi-natural stands (5.21)

This vegetation community type occurs on approximately 238.10 acres of Barnett Ranch Preserve where it is generally located in the bottom of shallow valley in the main portion of the Preserve and on 34.38 acres at Holly Oaks County Park where narrow meadow-like features exist. These areas are dominated by invasive non-native species including wild oats (*Avena fatua*), ripgut brome (*Bromus diandrus*), and other brome species (*B. hordeaceus* and *B. madritensis*). On the edges, it is dominated by red-stem filaree (*Erodium cicutarium*). However, native species are also present including fascicled tarplant, vinegar weed (*Trichostema lanceolatum*), doveleaf (*Croton setiger*), and Spanish clover (*Acmispon americanus*). This vegetation is classified as non-native grassland under the Holland/Oberbauer classification system and is categorized as Tier III vegetation under the Subarea Plan (County of San Diego 1997).

[2] Habitats that the County considers sensitive are categorized in four tiers, with Tier I being the most sensitive and Tier IV being the least sensitive. Tier I, II, and III habitat require mitigation if impacted while Tier IV habitats do not.

Table 5. Barnett Ranch Preserve, Luelf Pond Preserve, and Holly Oaks County Park
Vegetation/Land Cover Type Acreages – Holland/Oberbauer and San Diego Vegetation Classification Manual

Vegetation Type		Barnett Ranch Preserve		Luelf Pond Preserve		Holly Oaks County Park		Total[1]	
		Property	100-ft Buffer	Property	100-ft Buffer	Property	100-ft Buffer	Properties	100-ft Buffer
Herbaceous									
42300 Wildflower Field	5.13.1 *Deinandra fasciculata* Association; Fascicled Tarplant Association	12.97	-	-	-	-	-	12.97	-
42200 Non-Native Grassland (or Annual Grassland)	5.21 Mediterranean California naturalized annual and perennial grassland semi-natural stands	238.10	24.54	0.29	-	34.38	2.05	272.77	26.59
Scrub									
32500 Diegan Coastal Sage Scrub: Coastal Form	4.7.1 *Artemisia californica- Eriogonum fasciculatum – Malosma laurina* Association; California Sagebrush-California Buckwheat - Laurel Sumac Association	104.90	26.33	-	-	-	-	104.90	26.33
32500 Diegan Coastal Sage Scrub: Coastal Form	4.35.1 *Malosma laurina – Acmispon glaber* Association; Laurel sumac – Deerweed Association	113.35	14.57	-	-	-	-	113.35	14.57
32800 Flat-topped or California Buckwheat	4.23.1 *Eriogonum fasciculatum* Association; California buckwheat Association	3.91	4.17	-	-	0.97	-	4.88	4.17
Chaparral									
37G00 Coastal Sage-Chaparral Transition	4.1.2 *Adenostoma fasciculatum* – (*Eriogonum fasciculatum – Artemisia californica – Salvia mellifera*) Association; Chamise – California Buckwheat – California Sagebrush – Black Sage Association	36.51	1.60	2.19	1.12	-	-	38.70	2.72
37200 Chamise Chaparral	4.2.1 *Adenostoma fasciculatum—Xylococcus bicolor* Association; Chamise - Mission Manzanita Association	178.82	13.25	-	-	-	-	178.82	13.25
37120 Southern Mixed Chaparral	4.2.3 *Adenostoma fasciculatum – Xylococcus bicolor—Ceanothus tomentosus* Association; Chamise - Mission Manzanita – Ramona Ceanothus Association	-	-	66.18	16.98	-	-	66.18	16.98
Woodland									
79100 Eucalyptus Woodland	3.2 *Eucalyptus* (*globulus, camaldulensis*) Semi-Natural Stands; Eucalyptus Semi-Natural Stands	1.05	0.74	-	-	0.29	1.22	1.34	1.96
62500 Southern Riparian Woodland	3.5.1 *Populus fremontii—Baccharis salicifolia* Association; Fremont Cottonwood—Mulefat Association	-	-	-	-	0.19	-	0.19	-
62500 Southern Riparian Woodland	3.8.1 *Salix gooddingii* Association; Goodding's Black Willow Association	-	-	-	-	0.13	-	0.13	-
61310 Southern Coast Live Oak Riparian Forest	3.6.3 *Quercus agrifolia--Salix laseolepis* Association; Coast Live Oak—Arroyo Willow Association	4.64	-	4.43	0.33	-	-	9.07	0.33
71160 Coast Live Oak Woodland	3.6.4 *Quercus agrifolia—Toxicodendron diversilobum*—Grass Association; Coast Live Oak - Poison Oak - Grass Association	31.73	4.32	12.97	0.85	0.12	-	44.81	5.18
71180 Englemann Oak Woodland	3.7.2 *Quercus engelmannii—Quercus agrifolia—Toxicodendron diversilobum*—Grass Association; Engelmann Oak—Coast Live Oak—Poison Oak—Grass Association	0.32	-	-	-	-	-	0.32	-
Other									
18000 General Agriculture	Other – Agriculture	4.60	1.33	-	-	-	-	4.60	1.33
11000 Non-Native Vegetation	Other – Cactus	-	-	-	-	0.04	-	0.04	-
11300 Disturbed Habitat	Other – Disturbed Habitat	10.91	3.38	1.03	0.75	5.51	6.50	17.45	10.64
12000 Urban/Developed	Other – Developed	3.26	14.39	-	0.54	-	4.27	3.26	19.21
18100 Orchards and Vineyards	Other – Olive	-	-	-	-	0.02	-	0.02	-
	Total[1]	***745.06***	***108.63***	***87.07***	***20.54***	***41.66***	***14.04***	***873.79***	***143.20***

[1] Values may not sum due to rounding after summation.

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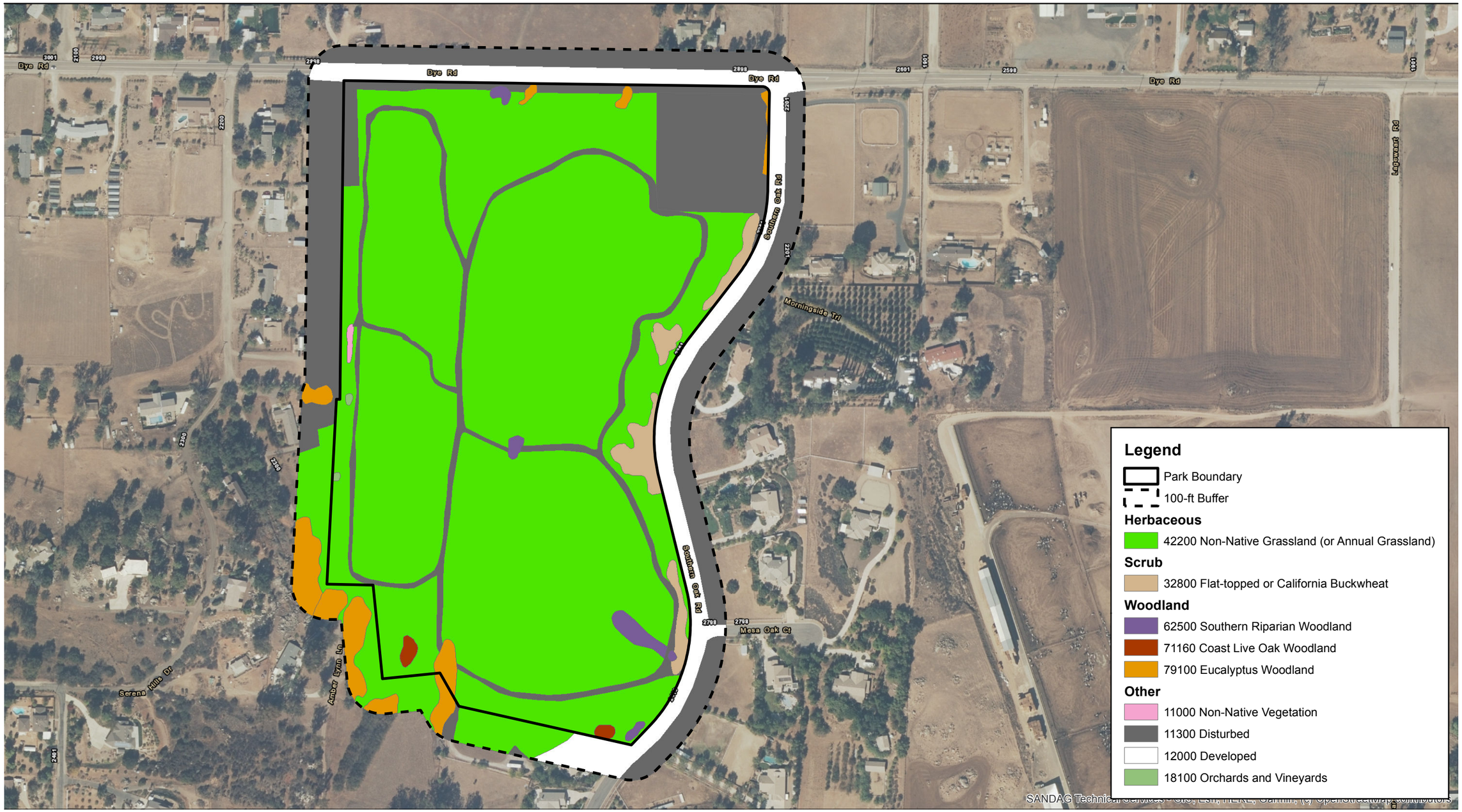


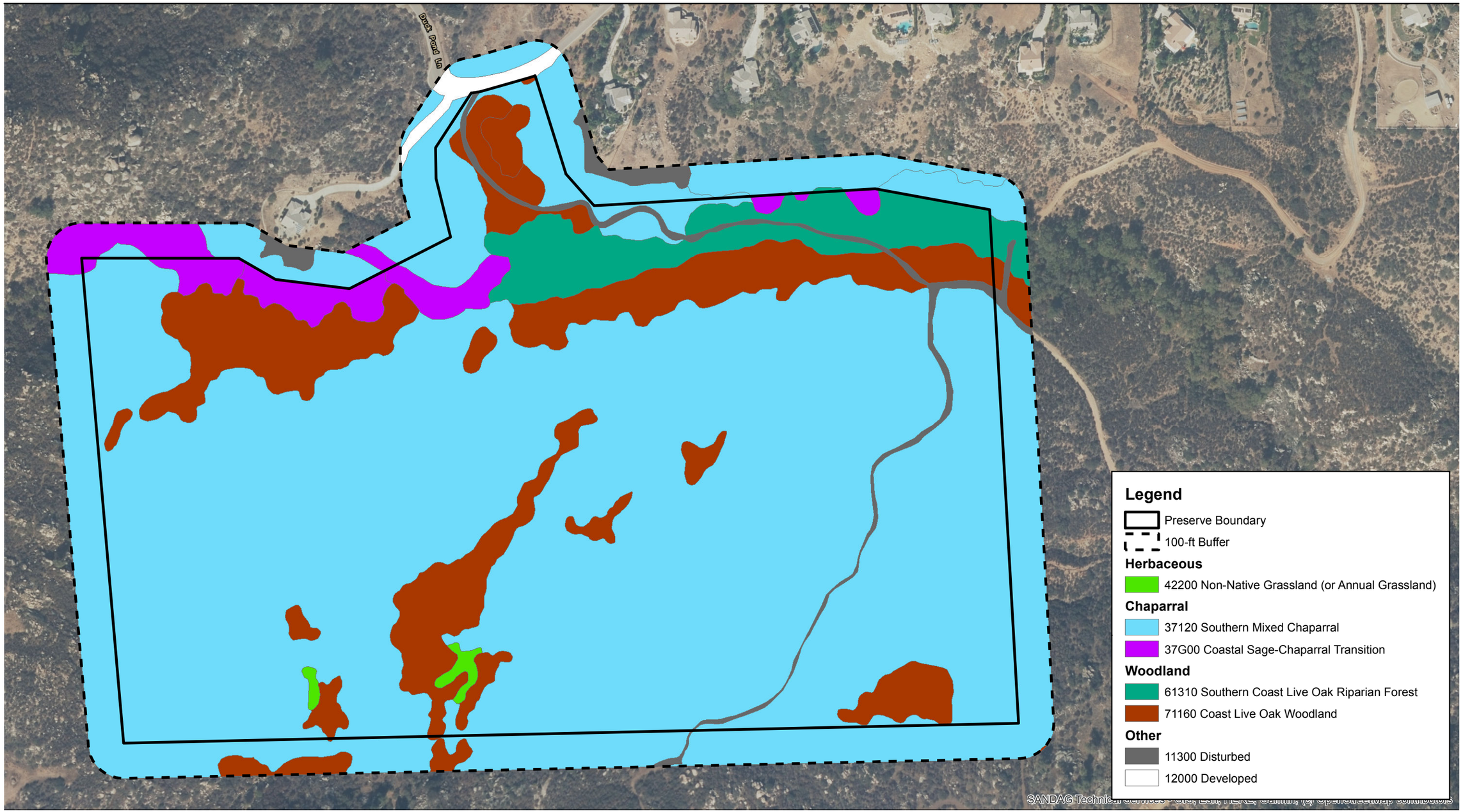
Source: SANDAG 2014

275 137.5 0 275 Feet

Scale: 1:3,300; 1 inch = 275 feet

Figure 10a
Vegetation Map - Holland Classification
Holly Oaks County Park

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\Veg_Holly_HOLLAND_2.mxd, 5/29/2019, paul.moreno



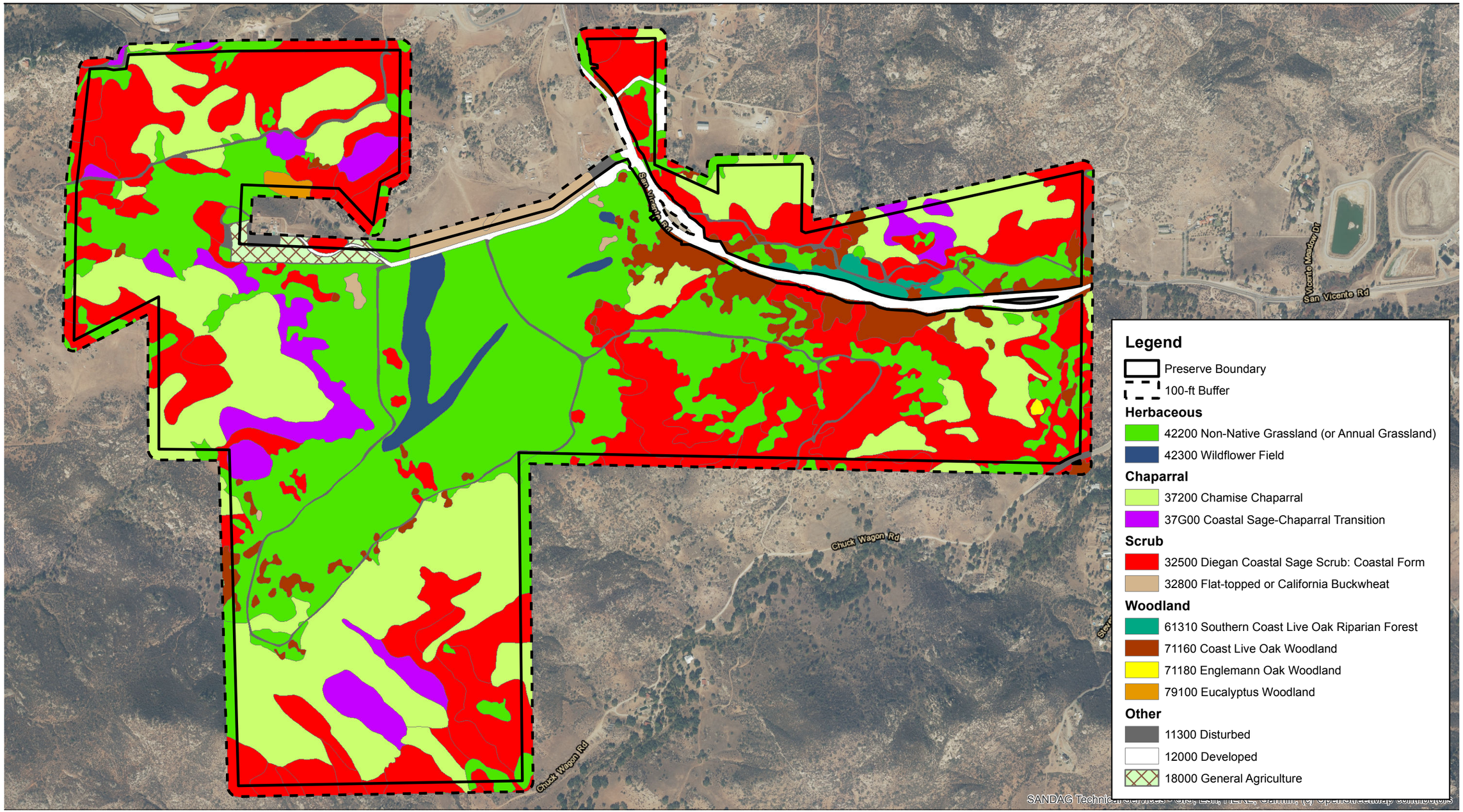
Source: SANDAG 2014

275 137.5 0 275 Feet

Scale: 1:3,300; 1 inch = 275 feet

Figure 10b
Vegetation Map - Holland Classification
Luelf Pond Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\Veg_Luelf_HOLLAND_2.mxd, 5/29/2019, paul.moreno



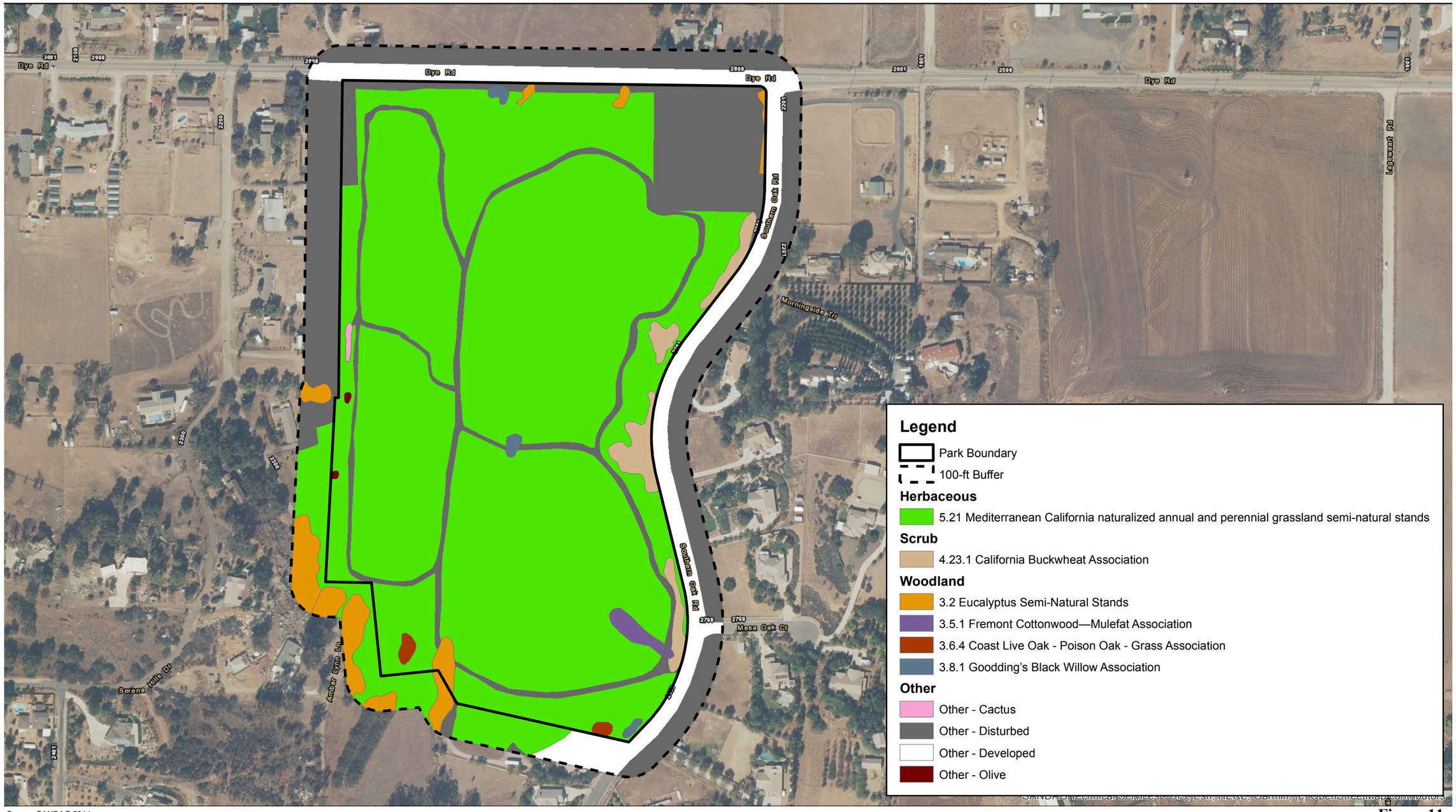
Source: SANDAG 2014

900 450 0 900 Feet

Scale: 1:10,800; 1 inch = 900 feet

Figure 10c
Vegetation Map - Holland Classification
Barnett Ranch Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\Veg_Barnett_HOLLAND_2_colors.mxd, 5/31/2019, paul.moreno



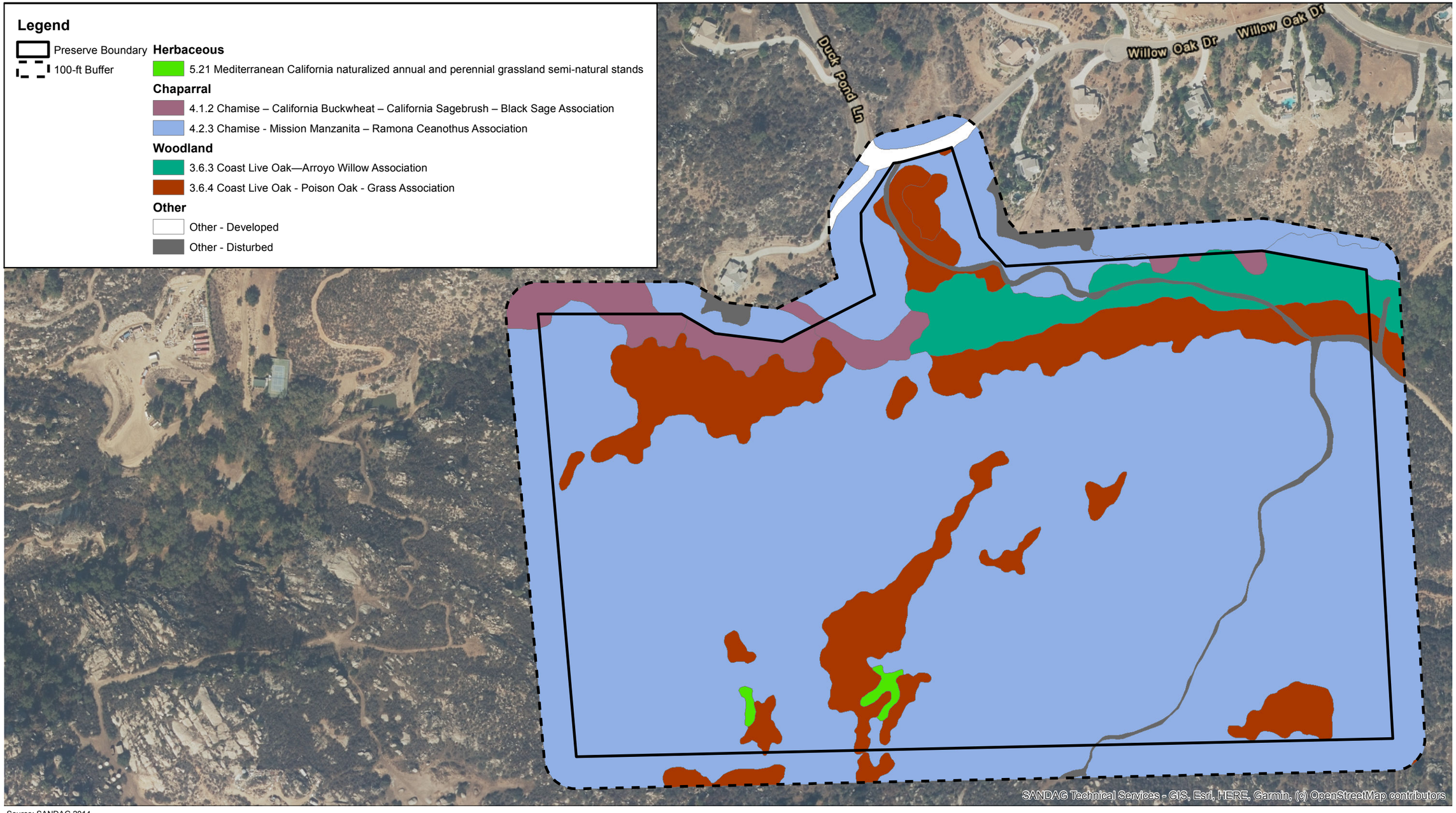
Source: SANDAG 2014

275 137.5 0 275 Feet

Scale: 1:3,300; 1 inch = 275 feet

Figure 11a
Vegetation Map - VCM Classification
Holly Oaks County Park

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\Veg_Holly_VCM_2.mxd, 5/29/2019, paul.moreno



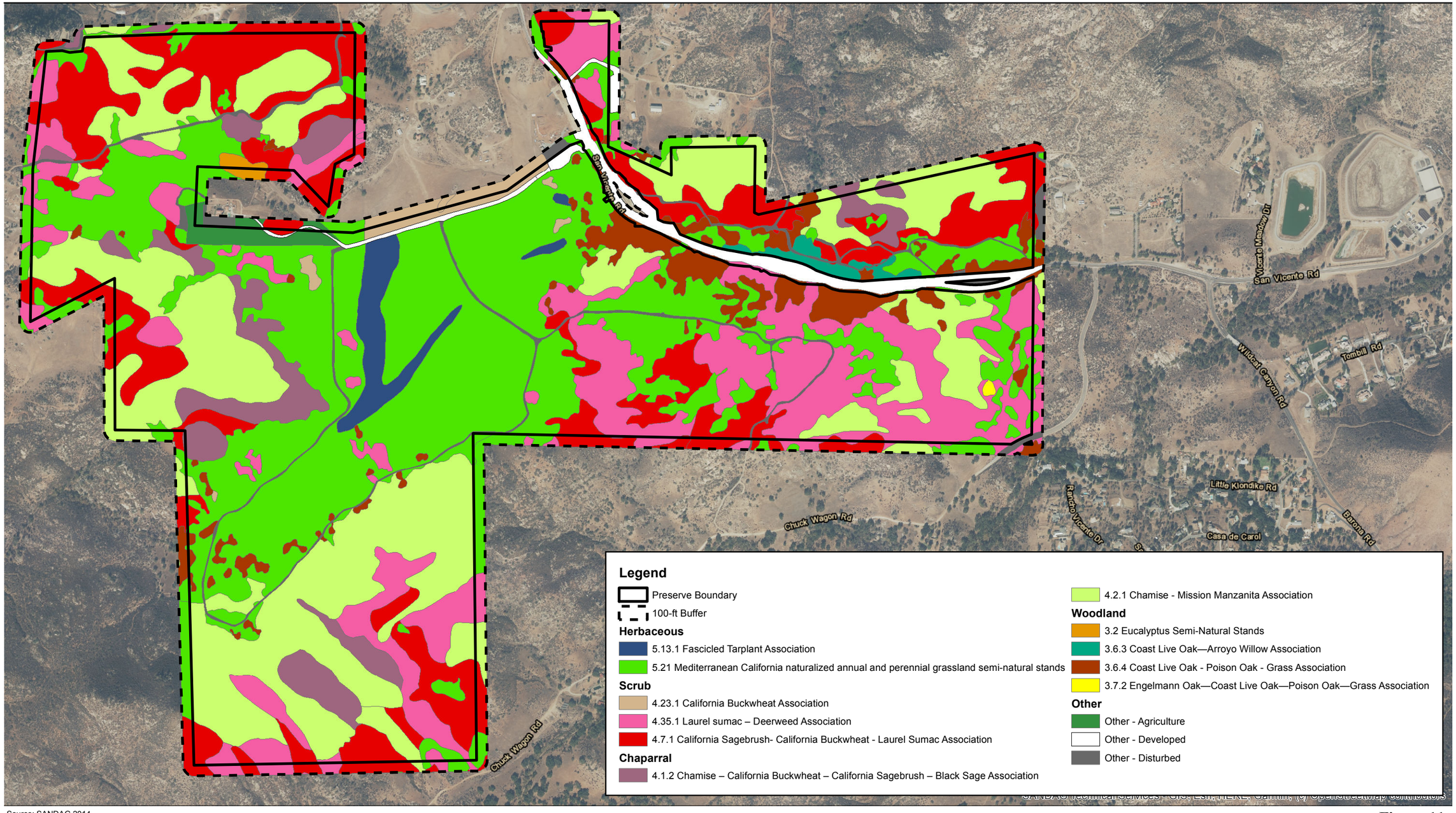
Source: SANDAG 2014

300 150 0 300 Feet

Scale: 1:3,600; 1 inch = 300 feet

Figure 11b
Vegetation Map - VCM Classification
Luelf Pond Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\Veg_Luelf_VCM_2.mxd, 5/29/2019, paul.moreno



Source: SANDAG 2014

900 450 0 900 Feet

Scale: 1:10,800; 1 inch = 900 feet

Figure 11c
Vegetation Map - VCM Classification
Barnett Ranch Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\Veg_Barnett_VCM_2.mxd, 5/31/2019, paul.moreno

4.1.2 Scrub

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

California sagebrush-California buckwheat-laurel sumac association (*Artemisia californica/ Eriogonum fasciculatum-Malosma laurina* association) is the classic form of vegetation common in coastal regions of Southern California. The three plant species occur as co-dominants but also in association with a number of other species, including sawtooth goldenbush (*Hazardia squarrosa*), coyote bush (*Baccharis pilularis*), and chaparral candle (*Hesperoyucca whipplei*). This association occurs on approximately 104.99 acres of Barnett Ranch Preserve, especially on the south-facing slopes on the southern portion of the site. This vegetation is classified as coastal sage scrub under the Holland/Oberbauer classification system and is categorized as Tier II vegetation under the Subarea Plan (County of San Diego 1997).

California Buckwheat Association (4.23.1)

As the name implies, this vegetation community is dominated by California buckwheat (*Eriogonum fasciculatum*). It is found in lowlands near grasslands, and in areas where disturbance has occurred. On Barnett Ranch Preserve, 3.91 acres of it is found in patches within the grasslands or on the perimeter. On Holly Oaks County Park, 0.97 acre of it is found along the eastern perimeter of the site. Prior to 2006, this area was mostly grassland habitat without any shrubs. The vegetation that exists along the road at the present time was the result of a natural revegetation event that occurred. This vegetation is classified as coastal sage scrub under the Holland/Oberbauer classification system and is categorized as flat-topped buckwheat under the Holland/Oberbauer classification system and is categorized as Tier II vegetation under the Subarea Plan (County of San Diego 1997).

Laurel Sumac-Deerweed Association (4.35.1)

The Laurel Sumac-Deerweed Association (*Malosma laurina-Acmispon glaber* association) is dominated by laurel sumac and the deerweed often only appears following a fire though it may persist for some time between fires. On Barnett Ranch Preserve, it grows in patches on the southern hills and the north western portion of the site. The northeastern portion is covered with nearly closed canopy of laurel sumac with California buckwheat growing among the laurel sumac. Laurel sumac is resilient following fires and is often the first plant to resprout within a few weeks. It is also frost sensitive; therefore, its presence in high numbers indicates lower levels of frost. On Barnett Ranch Preserve, it covers 113.35 acres and does not occur on Luelf Pond Preserve or Holly Oaks County Park. This vegetation is classified as coastal sage scrub under the Holland/Oberbauer

classification system and is categorized as Tier II vegetation under the Subarea Plan (County of San Diego 1997).

4.1.3 Chaparral

Chamise-California Buckwheat-California Sage Brush-Black Sage Association (4.1.2)

Chamise-California Buck wheat-California Sage Brush-Black Sage Association (*Adenostoma fasciculatum-Eriogonum fasciculatum-Artemisia californica-Salvia mellifera* association) is a transition between chaparral and coastal sage scrub. It occurs on slopes that are more exposed than those with the Chamise-Mission Manzanita-Ramona Ceanothus association. However, as a representative of transitional vegetation between chaparral and sage scrub, this vegetation classification is the best fit. However, not all of its locations such as these Properties support black sage. On Barnett Ranch Preserve, it occurs on 36.51 acres on the southwest and southeast portions. On Luelf Pond Preserve, it consists of 2.19 acres and occurs primarily in the northern edge. This vegetation is classified as coastal sage chaparral scrub under the Holland/Oberbauer classification system and is categorized as Tier II vegetation under the Subarea Plan (County of San Diego 1997).

Chamise-Mission Manzanita Association (4.2.1)

Chamise-Mission Manzanita Association (*Adenostoma fasciculatum-Xylococcus bicolor* association) comprises chaparral vegetation that is commonly found in central San Diego County. It often occurs on south-facing slopes more on areas with deeper soils but also on north slopes in areas where the soil or the moisture conditions are not favorable enough to include Ceanothus and scrub oaks. On Barnett Ranch Preserve, it covers 178.82 acres and is dominant on the hills along the southern perimeter and the northwestern portion. This vegetation is classified as chaparral under the Holland/Oberbauer classification system and is categorized as Tier III vegetation under the Subarea Plan (County of San Diego 1997).

Chamise-Mission Manzanita- Ramona Ceanothus Association (4.2.3)

Chamise-Mission Manzanita-Ramona Ceanothus association (*Adenostoma fasciculatum-Xylococcus bicolor-Ceanothus tomentosus* association) is a widespread association in San Diego County. However, while the vegetation on Barnett Ranch Preserve and Luelf Pond Preserve contains areas with chamise (*Adenostoma fasciculatum*) and mission manzanita (*Xylococcus bicolor*), Ramona ceanothus (*Ceanothus tomentosus*) was not found on these Properties despite occurring nearby in the vicinity of both Properties. Chaparral whitethorn (*Ceanothus leucodermis*) is growing in these areas instead of the Ramona ceanothus; many of the plants appear under stress, possibly from drought. This named vegetation classification was the closest one to match the

vegetation on the site. This vegetation community occurs on the southern portion of Luelf Pond Preserve where it covers 66.18 acres. Herbaceous plants often occur in openings of this association, and spread throughout the vegetation following fire. This vegetation would be classified as southern mixed chaparral under the Holland/Oberbauer classification system and is categorized as Tier III under the Subarea Plan (County of San Diego 1997).

4.1.4 Woodland

Eucalyptus Semi-Natural Stands (3.2)

On Barnett Ranch Preserve, Eucalyptus Semi-Natural Stands is composed of a stand of *Eucalyptus globulus* on the northwestern portion of the Preserve just outside of the boundary of a private property. The stand, consisting of 1.05 acres, appears quite uniform and appears to have been burned in the 2003 Cedar Fire. It is significantly smaller in area than it was before the fire, and dead trunks remain standing and toppled to the ground in the area of the former grove. This vegetation is also represented on the southern part of Holly Oaks County Park where a row of trees extends from within the Park and off-site to the south. Using Google Earth, it is possible to view the changes in vegetation over time with older sets of aerial images. Using these images, it appears that those eucalyptus trees became established on the site between 1994 and 1996 with the area covered with open grassland prior to that time. Around 2002, two additional small eucalyptus trees became established along Dye Road and they have now grown to moderate tree size. A line of eucalyptus trees also grows on the northeast corner of Holly Oaks County Park along Southern Oak Road. It appears on 0.29 acre and seems the remnant of a larger line of eucalyptus trees that existed in 1994 but were removed to make room for Southern Oak Road and the entry point for the Holly Oaks County Park equestrian ring. This vegetation is classified as Eucalyptus woodland under the Holland/Oberbauer classification system and is categorized as Tier IV under the Subarea Plan (County of San Diego 1997).

Fremont Cottonwood – Mulefat Association (3.5.1)

This vegetation classification is represented in a reduced form as a thin line of trees at Holly Oaks County Park covering 0.19 acre. While Holly Oaks County Park has been extensively disturbed over the years, a shallow drainage flows across the site from the southeast corner and up through the middle. Using the Google Earth historic imagery feature, it is interesting to note that, prior to 2002, the area where this vegetation currently exists was open grassy habitat. The first trees appeared directly adjacent to Southern Oak Road between 1996 and 2002 and have since spread northward. The current configuration of trees along that drainage is a recent phenomenon and represents the largest grove of trees that has existed there at least since the early 1990s. The establishment of this small strip of trees occurred during the same time period when the land to

the east was converted from farmland to developed land. It would be difficult to estimate if these trees are only present because of the runoff from the urban lands adjacent to Holly Oaks County Park. This vegetation is classified as southern cottonwood-willow riparian forest under the Holland/Oberbauer classification system and is categorized as Tier I under the Subarea Plan (County of San Diego 1997).

Coast Live Oak-Arroyo Willow Association (3.6.3)

This is the classic riparian oak woodland habitat that occurs in drainage areas. It consists of vegetation that is dominated by coast live oak (*Quercus agrifolia*) and arroyo willow (*Salix lasiolepis*). The arroyo willows are scattered in this vegetation classification with the oaks making up the predominant cover. In many cases, the trees form a closed canopy with branches from adjacent trees coming into contact. On Barnett Ranch Preserve, this vegetation occurs along the drainage that runs parallel to San Vicente Road on the northeast side of the Preserve and covers 4.91 acres. On Luelf Pond Preserve, it occurs on 4.43 acres along the main drainage through the site along the northern boundary. In this case, water occurs in the creek for extended periods beneath the trees, depending upon the amount of rainfall from the preceding rainy season. This vegetation is classified as southern coast live riparian forest under the Holland/Oberbauer classification system and is categorized as Tier I under the Subarea Plan (County of San Diego 1997).

Coast Live Oak-Poison Oak-Grass Association (3.6.4)

The Coast Live Oak-Poison Oak-Grass Association (*Quercus agrifolia/Toxicodendron diversilobum* association) is dominated by coast live oak in association with poison oak. On Barnett Ranch Preserve, this is an important vegetation growing in extensive groves parallel to San Vicente Road on both the north and south sides of the road. Another location for this vegetation on Barnett Ranch Preserve is within a cluster of oaks near the end of the Barnett Ranch-Rattlesnake Trail. In total, it comprises 31.86 acres on Barnett Ranch Preserve. It also is well represented on Luelf Pond Preserve. It grows on the edges of the drainage that runs through the Preserve to the east and also in a shallow canyon in the western half and southern third of the Preserve. On Luelf Pond Preserve, it totals 12.97 acres. However, the density and extent of the woodland in this area have been visibly reduced by the Cedar Fire and the enduring drought. A number of large oaks have fallen and are not being replaced through natural recruitment. A very small amount (0.12 acre) of this vegetation exists on Holly Oaks County Park where a couple of individual trees grow on the southern perimeter. A number of very small trees have been planted in the northern portion of the Park. This vegetation is classified as southern coast live riparian forest under the Holland/Oberbauer classification system and is categorized as Tier I under the Subarea Plan (County of San Diego 1997).

Engelmann Oak-Coast Live Oak-Poison Oak-Grass Association (3.7.2)

Typically, Engelmann Oak-Coast Live Oak-Poison Oak-Grass Association (*Quercus engelmannii-Quercus agrifolia-Toxicodendron diversilobum*-Grass Association) is found in rolling landscapes and the upper portions of canyons. On Barnett Ranch Preserve, it is found on the north-facing slope on the southern side of the Preserve, growing in patches in the midst of chamise and mission manzanita but near coast live oak trees. In total, it comprises a relatively small area of only 0.32 acre. Two individual Engelmann oak trees have been found on Luelf Pond Preserve, but they exist within the Coast Live Oak-Poison Oak-Grass Association. This vegetation is classified as Engelmann oak woodland under the Holland/Oberbauer classification system and is categorized as Tier I vegetation under the Subarea Plan (County of San Diego 1997).

Goodding's Black Willow Association (3.8.1)

Goodding's Black Willow Association (*Salix gooddingii* Association) is the dominant species in this vegetation often mixed with other willows and occasionally cottonwoods. At Holly Oaks County Park, it is found in two areas represented by a small grouping of trees and one large tree in the middle of the Park (0.13 acre). The small grouping of trees that grows along the northern boundary adjacent to Dye Road appears to have become established shortly before 2002 based on the Google Earth historic imagery. On the other hand, the large tree in the middle of the Park appears to have been present in 1994 and is visible in the oldest photo on the Google Earth historic photo feature. This vegetation is classified as southern riparian woodland under the Holland/Oberbauer classification system and is categorized as Tier II vegetation under the Subarea Plan (County of San Diego 1997).

4.1.5 Other

Agriculture

Agriculture has been mapped on Barnett Ranch Preserve. It is located in the area around a large house that is surrounded on three sides by Barnett Ranch Preserve. It is unclear whether the agriculture actually occurs in the Preserve or if it is in private property. DPR should verify the Preserve boundaries in this location. Based on the current Preserve boundary, 4.6 acres of grape vineyard agriculture has been included in the acreage of the Barnett Ranch Preserve vegetation. Agricultural land and the other classifications listed below fall into the Tier IV vegetation category under the Subarea Plan (San Diego County 1997) and do not require any mitigation if impacted.

Cactus

A small (0.04 acre) linear hedge strip of mission prickly-pear (*Opuntia ficus-indica*) grows along the western boundary of Holly Oaks County Park. It may be an indicator of an older homestead that existed on the Park in that area.

Disturbed

Each of the Properties has areas identified as disturbed land that have been previously manipulated via grading to create utility access routes, trails, and staging areas. The disturbed land totals 10.75 acres on Barnett Ranch Preserve. On Luelf Pond Preserve, the total disturbed habitat from foot trails is 1.03 acres. It is a small number because there is only one main trail through the woodland along the north side of the Preserve and a side trail to the south, up to the top of the ridge. For Holly Oaks County Park, the total disturbed habitat of 5.51 acres includes trails and pathways that pass through and loop through the Park as well as an equestrian riding ring, training area and parking area.

Developed

Barnett Ranch Preserve has an area identified as developed land that has been previously graded and paved to create a road (i.e. Deviney Lane) along the northern boundary of the Preserve that provides access to a private property. The developed land totals 2.93 acres.

Olive

Two olive trees exist on Holly Oaks County Park as remnants of the earlier uses on the property. They constitute 0.02 acre in size.

4.2 PLANTS

Each of the Properties was surveyed in 2018 to identify plant species that are present. A total of 222, 202, and 76 species of plants were detected, respectively, for Barnett Ranch Preserve, Luelf Pond Preserve, and Holly Oaks County Park. Of these, 42 species identified at Barnett Ranch Preserve, 39 identified at Luelf Pond Preserve, and 45 species identified at Holly Oaks County Park are considered non-native. The Properties are located in the central portion of San Diego County in what is primarily grassland, chaparral, and transitional coastal sage scrub chaparral habitat. The soils are derived from granitic rock, which is one of the more widespread rock types and unusual soils that often support numerous species of rare plants but are generally lacking on the Properties. Even without extensive unique habitat and soil characteristics, special-status

species of plants would be expected to occur on the Properties. Four plants with special status, delicate clarkia, Engelmann oak, mesa spike-moss, and San Diego sunflower (*Bahiopsis laciniata*), were detected on the Properties and are discussed below and shown in Figures 12a and 12b.

4.2.1 Special-Status Plant Species Detected

Delicate Clarkia (*Clarkia delicata*)
CRPR 1B.2, County List A

Delicate clarkia is an annual herb with showy pink and white four-petal flowers in the Onagraceae. It flowers from late April to mid-May after the grasses in its surroundings have dried to a contrasting golden color. It is predominantly found around oak woodlands and grassy openings among large growth shrubs on north-facing slopes. Delicate clarkia is found only in central and southern San Diego County and approximately 30 miles south of the border in northwestern Baja California. On Luelf Pond Preserve, it was found quite commonly in the woodlands south of the stream course and in scattered locations in the woodlands of the center part of the Preserve (Figure 12a). On Barnett Ranch Preserve, it was found predominantly on the northwestern portion and a few spots on the southwestern ridge (Figure 12b). Two locations that were identified in the Helix (2004b) report were not relocated and were identified in Figure 12b as potential locations. Its numbers were quite high and it was highly visible into mid-May in spite of the 2018 rainfall season being well below average.

Engelmann Oak (*Quercus engelmannii*)
CRPR 4.2, County List D

Engelmann oak is a perennial deciduous tree that grows 16 to 26 feet high in oak woodlands or grassland habitats. Engelmann oak often occurs with coast live oak, in savannah-like habitats with annual grasses, or in areas where white sage (*Salvia apiana*) occurs. However, it also occurs intermixed with coast live oak (*Quercus agrifolia*). It is a drought-tolerant oak and will regrow new leaves following rain after going dormant under extreme dry conditions. Engelmann oak is predominantly found in the foothills of San Diego County but also extends up into Los Angeles and southwestern San Bernardino Counties. In Baja California, it has only been found in areas not far from the border with the United States. Reiser (1994) indicates that Engelmann oak is relatively stable in Southern California, but reproduction has been limited as a result of cattle grazing and herbivory by small mammals and deer. The introduction of feral pig (*Sus scrofa*) and wild turkey (*Meleagris gallopavo*) in San Diego County further caused problems with oak reproduction, since both introduced species consume acorns. Engelmann oak is known to hybridize with scrub oak (*Quercus berberidifolia*) (Baldwin et al. 2012).

Two trees were found in the oak woodland that grows in the canyon on the southern central portion of Luelf Pond Preserve (Figure 12a). Small clusters of Engelmann oaks were found on the north-facing slope in the southwestern quadrant of the Barnett Ranch Preserve as well as within the northeast portion of the Preserve on both the north and south sides of San Vicente Road (Figure 12b).

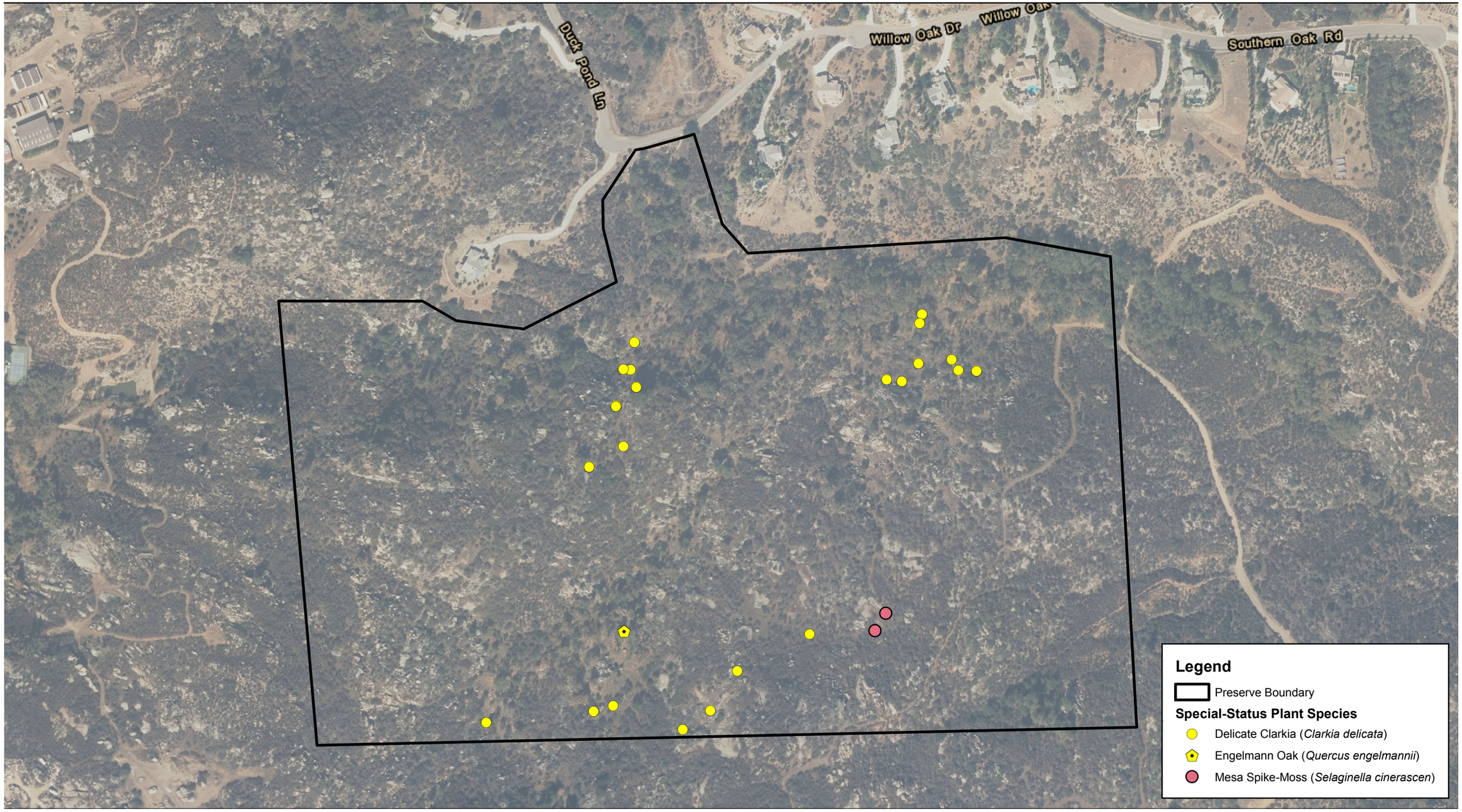
Mesa Spike-Moss (*Selaginella cinerascens*)
CRPR 4.1, County List D

Mesa spike-moss is a perennial herb that grows in a thin mat on the surface of the soil. It appears dry and dead for much of the year; however, following a rain, it will turn green and start growing within a very short period of time. It is found on soils that lack any sort of disturbance and is an indicator of how pristine a site may be. Soils in areas where it occurs often have a gentle slope and a crust-like surface composed of lichens, moss, and cyanobacteria. Mesa spike-moss is often found on the coastal mesas in areas that support vernal pools. It occurs from Orange County into northwestern Baja California and has suffered tremendous decline due to development and disturbance of the coastal mesas.

It was reported as occurring near the northwestern boundary of Barnett Ranch Preserve, in an area that contains large rock slabs. However, in the past, that location appears to have been heavily grazed and was likely trampled extensively. After careful examination of the rock slabs and any nearby soil with what appeared to be intact soil crusts, mesa spike-moss was not identified in those locations. However, it was found on the southern and northeastern portions of Barnett Ranch Preserve. On Luelf Pond Preserve, it was found on rock slabs in the southeast third of the Preserve (Figure 12a).

San Diego Sunflower (*Bahiopsis laciniata*)
CRPR 4.3, S4 G4 County List D

San Diego sunflower is a perennial shrub with arrow point-shaped leaves. It generates bright yellow sunflower-shaped flowers during spring and, after adequate rainfall seasons, its presence may be indicated by coloring entire hillsides yellow. San Diego sunflower grows from central San Diego County in the foothills south into northern Baja California. It occurs at on south-facing slopes in coastal sage scrub.



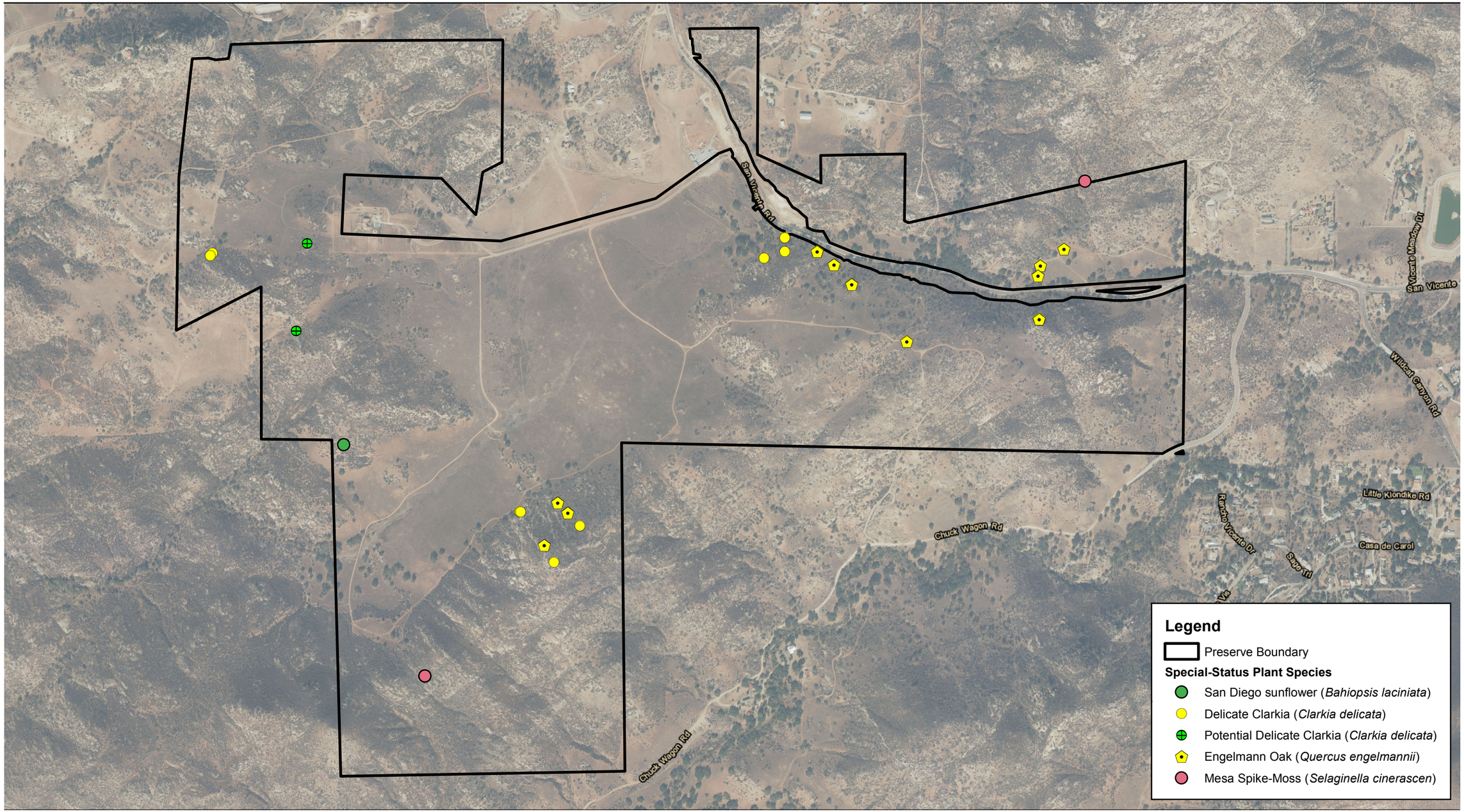
Source: SANDAG 2014

300 150 0 300 Feet

Scale: 1:3,600; 1 inch = 300 feet

Figure 12a
Special-Status Plant Species Locations
Luelf Pond Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\SensPlants_Luelf.mxd, 4/1/2019, paul.moreno



Source: SANDAG 2014

900 450 0 900 Feet

Scale: 1:10,800; 1 inch = 900 feet

Figure 12b
Special-Status Plant Species Locations
Barnett Ranch Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\SensPlants_Barnett.mxd, 4/1/2019, paul.moreno

On Barnett Ranch Preserve, it was found in an area where a graded pad was created between 1996 and 2002. This species was undoubtedly planted as part of the slope revegetation for the pad area. The entire pad has since become recovered with native shrubs including California buckwheat (*Eriogonum fasciculatum*). Although this species is considered sensitive within the County, it was likely planted intentionally and is not naturally occurring within Barnett Ranch Preserve; therefore, it is also considered a non-native species to the Preserve.

4.2.2 Special-Status Plant Species with High Potential to Occur

Based on the vegetation communities occurring on the Properties, elevation, soils, and distribution of species within the vicinity, two rare plants have high potential to occur within the Properties and were carefully searched for but not detected. Details on life history, habitat occurring on the Properties, rationale for potential to occur, and sensitivity status for species with low and moderate potential to occur on each Property are detailed in Appendix B.

Deane's milkvetch (*Astragalus deanei*) and rush chaparral-star (*Xanthisma junceum*) have a high potential to occur at both Barnett Ranch Preserve and Luelf Pond Preserve. No rare plants were identified with a high potential to occur at Holly Oaks County Park.

Deane's Milkvetch (*Astragalus deanei*)
CRPR 1B.1, County List A

Deane's milkvetch is a perennial herb that grows in scattered locations on gentle or steep slopes in openings in the shrub vegetation. It is found on soils derived from granitic rock such as the soils on Barnett Ranch Preserve and Luelf Pond Preserve. It is characterized by pointed inflated fruit pods. Deane's milkvetch is endemic to central and southern San Diego County. It has been found two and a half miles to the east of the Barnett Ranch Preserve. Potential habitat exists along the southern boundary of the major grassland into the adjacent uplands as well as the western portion of the Barnett Ranch Preserve. On Luelf Pond Preserve, its potential habitat exists on the slopes near the stream bottom through the site. The Holly Oaks County Park does not support potential habitat for Deane's milkvetch.

Rush Chaparral-Star (*Xanthisma junceum*)
CRPR 4.3, County List D

Rush chaparral-star is a perennial herb that grows in a variety of locations on the edge of chaparral and sage scrub habitats. It has small bright yellow flowers that appear during summer after much of the surrounding vegetation has dried for the season. It has been found less than a mile to the south of the Barnett Ranch Preserve. Potential habitat exists on the southern and western hills of

the Barnett Ranch Preserve. On Leulf Pond Preserve, potential habitat exists on the slopes in the southern portion of the Preserve. The Holly Oaks County Park does not support potential habitat for rush chaparral-star.

4.2.3 Invasive Non-native Plants

A total of 42, 39 and 45 invasive non-native plant species were detected respectively on Barnett Ranch Preserve, Luelf Pond Preserve, and Holly Oaks County Park during botanical surveys in spring, summer, and fall 2018. Invasive non-native plants are present throughout the Properties, but the greatest numbers are found along roads and trails and around grassy areas and areas mapped as non-native grassland. The non-native annual plant species found on the Properties have been established in this region for many years.

A number of the invasive non-native species, although invasive, are not considered a high priority for mapping and removal. For example, perennial veld-grass (*Ehrharta calycina*) is a highly invasive species that has spread throughout the southern portion of Barnett Ranch Preserve and Luelf Pond Preserve. It has dominated some areas and has undoubtedly affected the native vegetation in the areas where it grows. However, it would not be possible to remove it from the site because it is so prevalent on those Properties. In addition, olive tree (*Olea europaea*) and mission cactus (*Opuntia ficus-indica*) were detected, but do not have high priority for removal because they are not spreading and may be interesting to keep due to their historic nature. Olive tree is found in a few locations on the Properties. It may represent a historical perspective for the Properties and it does not appear to be spreading. Mission cactus is growing in an area of Holly Oaks County Park that may also represent a historic feature and is not apparently spreading.

Removing invasive non-native plants on the Properties without controlling the source populations would only temporarily control their populations. Additionally, many of the species have become "naturalized" in Southern California. Invasive non-native plant species with high priority for removal were selected based on their invasive potential and ability for management (California Invasive Plant Council 2018). Of the invasive non-native plants detected on the Properties in 2018, there are seven species with high priority for removal from the Properties that are listed in Table 6 and discussed in the sections below. The invasive non-native plants listed in Table 6 are mapped and displayed in Figures 13a – 13c.

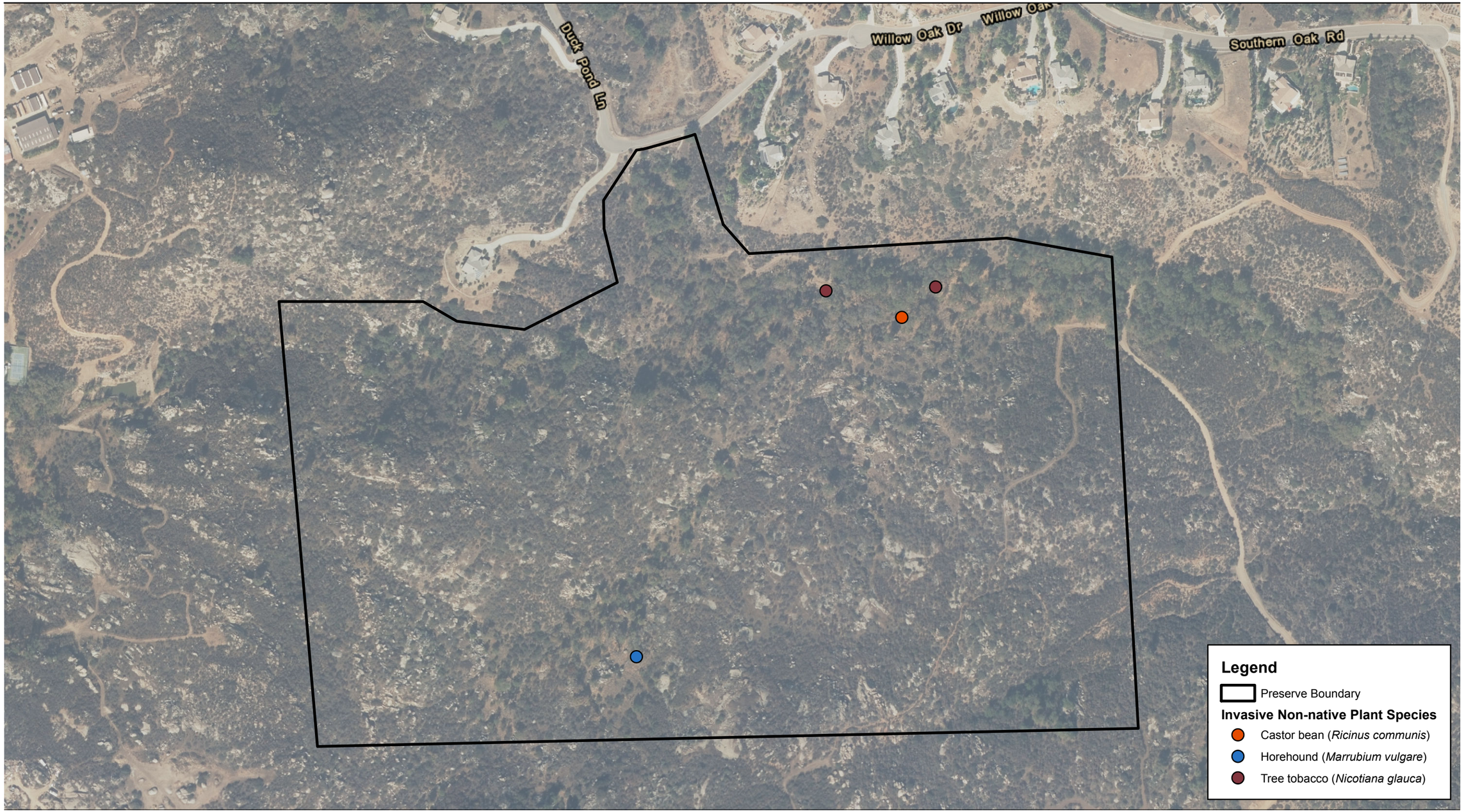
Source: SANDAG 2014

275 137.5 0 275 Feet

Scale: 1:3,300; 1 inch = 275 feet

Figure 13a
Invasive Non-native Plant Species Locations
Holly Oaks County Park

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\InvasivePlants_Holly.mxd, 5/28/2019, paul.moreno



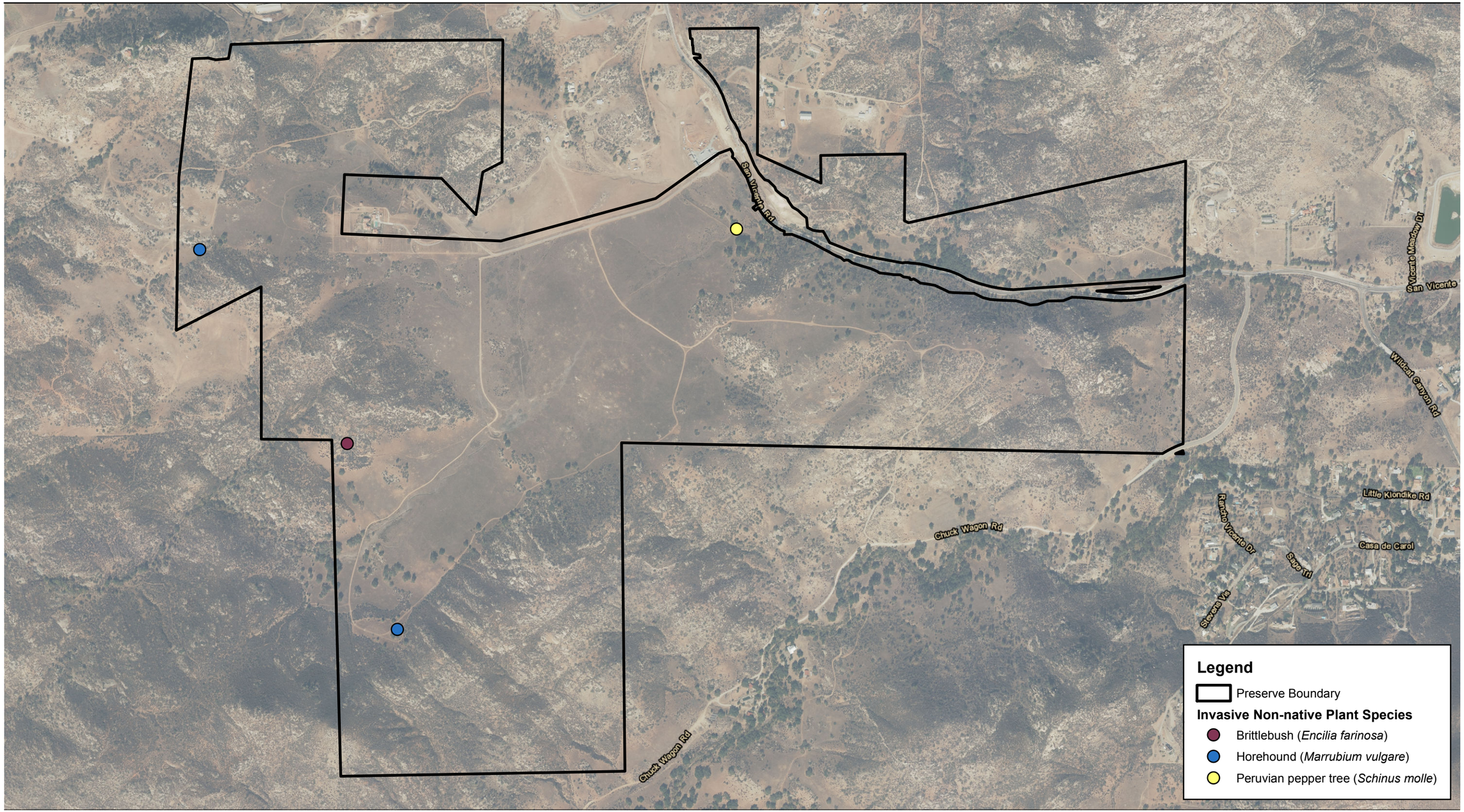
Source: SANDAG 2014

300 150 0 300 Feet

Scale: 1:3,600; 1 inch = 300 feet

Figure 13b
Invasive Non-native Plant Species Locations
Luelf Pond Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\InvasivePlants_Luelf.mxd, 5/28/2019, paul.moreno



Source: SANDAG 2014

900 450 0 900 Feet

Scale: 1:10,800; 1 inch = 900 feet

Figure 13c
Invasive Non-native Plant Species Locations
Barnett Ranch Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\InvasivePlants_Barnett.mxd, 5/28/2019, paul.moreno

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Table 6. Invasive Non-native Plant Species with High Priority for Removal on the Properties[1,2]

Common Name	Scientific Name	Cal-IPC Rating[3]
African Fountain Grass	*Cenchrus setaceus*	Moderate
Stinkwort	*Dittrichia graveolens*	Moderate
Brittlebush	*Encelia farinosa*	Not rated
Blue Gum	*Eucalyptus globulus*	Limited
Fennel	*Foeniculum vulgare*	Moderate
Horehound	*Marrubium vulgare*	Limited
Tree Tobacco	*Nicotiana glauca*	Moderate
Castor Bean	*Ricinus communis*	Limited
Peruvian Pepper Tree	*Schinus molle*	Limited

[1] Species are included in this table due to their potential for being invasive and the possibility that they could feasibly be removed from the Properties since they currently remain in low enough numbers.

[2] A few olive trees (*Olea europea*) occur on the Properties. They are not exhibiting signs of expansion. County Department of Parks and Recreation may decide if there is a desire to keep them for their historic value. Similarly, mission cactus (*Opuntia ficus-indica*) may be considered a historic feature on Holly Oaks County Park.

[3] Source: Cal-IPC Invasive Plant Inventory Database, updated June 2012. Overall rating listed for southwest region, factoring impact, invasiveness, distribution, and documentation level.

Inventory Categories:

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 statewide 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.

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

Two additional species native to San Diego County have been planted on part of Barnett Ranch Preserve. Brittlebush (*Encelia farinosa*) is typically a desert species in San Diego County but it has been planted on cut slopes to serve as a vegetation cover. On Barnett Ranch Preserve, it was apparently planted on a graded pad in the southwest portion of the site and appears to possibly be spreading. San Diego sunflower, which is considered a sensitive species as described above, was also planted in the same area as the brittlebush. It does occur naturally approximately 6 miles to the south. In this case, it is recommended, but not as a high priority, that the brittlebush be removed because it does not occur in San Diego County on the west side of the mountains. However, because San Diego sunflower naturally occurs so close, it is recommended to leave it to continue to grow. A comprehensive list of all invasive non-native plants detected and their removal/management priority is found in Section 5.4 (Invasive Non-native Species Removal and Control).

Several non-native species have been assessed by the San Diego Monitoring and Management Program (SDMMP 2018) and are found on the Properties. These include castor bean (*Ricinus communis*), African fountain grass (*Cenchrus setaceus*), Italian thistle (*Carduus pycnocephalus*),

perennial veldt grass (*Ehrharta calycina*), Peruvian pepper tree (*Schinus molle*), blue gum (*Eucalyptus globulus*), stinkwort (*Dittrichia gravelolens*), tree tobacco (*Nicotiana glauca*), and horehound (*Marrubium vulgare*). A few of the species are recommended for removal and a few are not recommended for removal because they are already so widespread on the Properties. The recommendations for individual invasive non-native plant species are listed in Table 6.

African Fountain Grass (*Cenchrus setaceus*)

African fountain grass is an invasive non-native plant species that originally spread due to plantings for erosion control and ornamental uses but it has expanded into natural habitats as well. It has a pinkish color and feathery inflorescences that grow a few feet tall. It will invade native habitats in the absence of disturbance. On the Properties, it occurs in a few scattered locations on the east side of Holly Oaks County Park near the side of Southern Oak Road (Figure 13a). It was not detected on Barnett Ranch Preserve or Luelf Pond Preserve. It will require spraying with Roundup and mechanical removal during winter months to remove it before it flowers and disperses seed. While it is common in a number of other locations of San Diego County where it would be difficult to remove it, the population on Holly Oaks County Park is small enough and restricted in area that population control or eradication efforts would be feasible.

Stinkwort (*Dittrichia graveolens*)

Stinkwort is a tarweed-like plant from southern Europe. It has been rapidly expanding in California since 1995 (DiTomaso et al. 2013). It may cause contact dermatitis and has been implicated in livestock deaths due to the pappus bristles puncturing the small intestine. It has a strong, somewhat disagreeable odor and sticky foliage. It has a relatively shallow root system and can be controlled by hoeing or pulling. Seeds may last 3 years in the soil. It has been a problem in Australia for many years and treatments have been tested there. Mowing may provide partial control but would need to be low and repeated. It can be controlled with 2,4-D with 0.95 to 1.9 pounds per acre, Aminopyralid+2,4-D, *Forefront HL* 1.5 to 2.1 pints product/acre, Amionopyralid+triclopyr (*Capstone*) 4 to 6 pt product/acre, Dicamba 2 to 4 pt product/acre and Triclopyr (Garlon 4 Ultra) 2 to 4 pt product/acre (0.75 to 1.5 lb. acid equivalent/acre) (DiTomaso et al 2013). One plant was found on Holly Oaks County Park in the northeastern portion in an early stage of flowering and was removed by hand (Figure 13a). Whether a source population exists nearby for this invasive non-native plant is unknown, but it likely exists in the area. If possible, it would be important to treat that population as well as monitor Holly Oaks County Park to ensure the species does not reappear.

Brittlebush (*Encelia farinosa*)

As mentioned above, while brittlebush is a native plant, it grows on the desert side of the mountains in San Diego County. It does not naturally occur within 25 miles of the Properties; however, in the past it has been used as an ornamental in various locations on the coastal side of the mountains. It was planted on the edge of a graded pad on Barnett Ranch Preserve (Figure 13c) and appears to be reproducing and possibly spreading. In the interest of maintaining the native habitat at Barnett Ranch Preserve, this species should be removed using garden tools and the area of occurrence should be rechecked in subsequent seasons. Removal should not be difficult due to its current limited distribution.

Blue Gum (*Eucalyptus globulus*)

Blue gum grows on Barnett Ranch Preserve in the northwestern portion, adjacent to a house and vineyard (Figure 13c). It burned in the 2003 Cedar Fire and a number of the trees have died and fallen. It forms a relatively compact grove of trees but is significantly smaller than prior to the fire. It could be removed by cutting but does not appear to be spreading. Blue gum also grows in a small area of Holly Oaks County Park (Figure 13a). It is part of a small line of trees that extends off-site and it too could be removed by cutting. However, blue gum in that area could also be maintained as a feature of the Park since it is not apparently spreading. Blue gum is identified as Eucalyptus woodland on the corresponding Property vegetation maps (Figures 10a and 10c).

Fennel (*Foeniculum vulgare*)

Fennel is an invasive non-native plant species in grasslands where they receive a little more moisture than their surroundings along drainage areas and road sides, as well as riparian areas. It is from the Mediterranean region and has spread to a wide variety of locations world-wide. It can be removed by hand while removing the large root base. It can be treated best with Triclopyr (*Garlon 3A, Garlon 4 and Ultra*) at a rate of 1 to 2 quarts product/acre. Glyphosate (Roundup, Accord XRT II) with 5 pints product/acre can also be used (DiTomaso et al. 2013). Fennel was found in a limited area on the east side of Holly Oaks County Park adjacent to Southern Oak Road (Figure 13a).

Horehound (*Marrubium vulgare*)

Horehound is an invasive non-native plant species from the Mediterranean and northern Africa. It grows in a variety of habitats; in particular, in low areas where soil moisture is higher than adjacent uplands. It was found in locations at both Luelf Pond Preserve and Barnett Ranch Preserve (Figures 13b and 13c). Because it was found in a limited number of locations and is easily treated, this

species is considered a priority for removal. Removal can be performed by manual pulling or hoeing. It can be controlled with Triclopyr (*Garlon 3A, Garlon 4 and Ultra*) at a rate of 2.5 pints per acre.

Tree tobacco (*Nicotiana glauca*)

Tree tobacco is a native to South America and it grows on roadside and drainages throughout western San Diego County. It has a foul odor and produces milky white juice when stems are damaged. It occurs in a limited area on Luelf Pond Preserve in a low area along the stream course that trends through the Preserve (Figure 13b). The numbers appear small enough to be removed by hand and any new growth could be treated with Garlon 3A, Garlon 4 solutions, Glyphosate. It can also be applied to cut stumps at a 50 percent solution. Solutions of Imazapyr (Arsenal, Habitat, Stalker, Chopper, Polaris) can also be used to treat the plant (DiTomaso et al. 2013).

Castor Bean (*Ricinus communis*)

Castor bean is a broad-leaved shrub that can grow to a small tree size. It grows in locations with moisture near the soil surface but is also drought tolerant. It can cause contact dermatitis and can poison animals if seeds or leaves become mixed with feed. Limited numbers can be removed by digging and pulling when small. Roots may resprout from cut plants. Treatment may include 2,4-D and Triclopyr, Glyphosate and Hexazinone. However, only a few plants were found near the drainage of Luelf Pond Preserve (Figure 13b). They could be mechanically removed and controlled with repeat inspection to ensure that resprouts do not occur.

Peruvian Pepper Tree (*Schinus molle*)

Peruvian pepper tree has been commonly planted throughout Southern California. It has also volunteered itself in areas along drainages and lowlands with enough moisture to support it. The species is not typically a strong invader of habitats; however, it will readily resprout following a fire and will maintain itself for many decades. Treatment of cut stumps with Glyphosate (Roundup) might be necessary to prevent regrowth of cut trees. Peruvian pepper was detected in one location on Barnett Ranch Preserve south of the intersection of Deviney Lane and San Vicente Road (Figure 13c).

4.3 WILDLIFE

A total of 194 wildlife species were detected and/or observed during surveys conducted in winter, spring, summer, and fall 2018. Of the 194 species detected, 104, 132, and 153 were detected at Holly Oaks County Park, Luelf Pond Preserve, and Barnett Ranch Preserve, respectively. Species

include 30 invertebrates, three amphibians, 21 reptiles, 104 birds, and 37 mammals. Of the 194 wildlife species, 34 species are considered special-status wildlife species and 10 are also covered under the MSCP. A comprehensive list of wildlife species detected on the Properties is included in Appendix D.

4.3.1 Butterflies

Sixteen butterfly species were detected during general butterfly surveys with seven additional species recorded incidentally during general avian and drift fence surveys. Most of the butterfly species detected are relatively common throughout San Diego County and no special-status butterfly species were detected. Overall, butterfly numbers were lower than expected at the Properties, likely due to drought conditions. Numbers ranged from one to three detections per species during general butterfly surveys. The most commonly detected butterfly species across all Properties was the Acmon blue (*Icaricia acmon acmon*), with a total of 10 detections.

The potential for two special-status species, Quino checkerspot butterfly and Hermes copper, to occur within the Properties is low due to the limited suitable habitat and low abundance of host plants on the Properties. Various Quino checkerspot butterfly host plants and nectar sources were detected at Barnett Ranch Preserve during floristic surveys and include dot-seed plantain (*Plantago erecta*), Coulter's snapdragon (*Antirrhinum coulterianum*), and purple owl's clover (*Castilleja exserta*). However, host plant and nectar source populations were low and habitat quality was considered marginal. The host plant required for Hermes copper, spiny red-berry (*Rhamnus crocea*), was not detected at any of the three Properties. Butterfly survey results are broken down by individual Property below and the full list of butterfly and moth species detected at the Properties is provided in Appendix D.

<u>Holly Oaks County Park</u>

Six species of butterfly were detected during butterfly surveys at Holly Oaks County Park and three additional species were detected incidentally during general avian surveys. The most commonly detected butterfly included Acmon blue and checkered white (*Pontia protodice*), each recorded two times. Holly Oaks County Park was the Property with the lowest species richness (nine species) and lowest number of detections (15 observations). Very few flowering plants were documented within the non-native grassland that composes the majority of Holly Oaks County Park, and hence very few nectar sources are present.

<u>Luelf Pond Preserve</u>

Six species of butterfly were detected during general butterfly surveys and seven additional species were detected incidentally during general avian and drift fence surveys on Luelf Pond Preserve. In total, there were 23 butterfly detections at Luelf Pond Preserve and detections of each species were

low. Each of the six species recorded during general butterfly surveys was only detected once. Incidental detections of Behr's metalmark (*Apodemia mormo virgulti*) and funereal duskywing (*Erynnis funeralis*) each occurred three times, making them the most commonly detected species at Luelf Pond Preserve. Several annual and perennial nectar sources were located in low density within the southern mixed chaparral and coastal sage-chaparral transition vegetation at Luelf Pond Preserve. The north-facing aspect of Luelf Pond Preserve retained soil moisture longer into the summer, which likely accounted for more nectar sources and greater butterfly diversity than Holly Oaks County Park.

Barnett Ranch Preserve

Thirteen species of butterfly were detected during butterfly surveys and one additional species was detected incidentally during general avian surveys. Number of detections during general butterfly surveys and those recorded incidentally were relatively uniform amongst species; numbers were low and ranged only from one to two recorded observations per species. Barnett Ranch Preserve was the Property with the highest species richness (14 species) and highest number of detections (26 observations). Overall, low numbers of nectar sources and few north-sloping areas to retain moisture were present, but the varied vegetation types and larger size of Barnett Ranch Preserve likely accounted for the increased diversity compared to the other Properties.

4.3.2 Herpetofauna

Amphibians

Three amphibian species were captured and detected during drift fence surveys: Baja California treefrog (*Pseudacris hypochondriaca*), western spadefoot (*Spea hammondii*), and western toad (*Anaxyrus boreas*). Additionally, both Baja California treefrog and western toad were detected incidentally during other focused surveys and garden slender salamander (*Batrachoseps major*) was identified during a bat survey. Amphibians require a water source to lay their eggs and allow their larvae to develop before metamorphosis to adults and are dependent on specific resources associated with aquatic habitats. The number of recorded detections was relatively low and is likely attributed to the drought and limited permanent water sources throughout the Properties, specifically at Holly Oaks County Park and Luelf Pond Preserve. Although both Properties have potential to provide seasonal water sources, Barnett Ranch Preserve is the only Property with a permanent, although small, water source (stock pond) on-site. Drought conditions during the winter of 2017/2018 may have contributed to the limited amount of above-ground activity and reduced the breeding potential for amphibians. One special-status amphibian species, western spadefoot, was detected during surveys and is discussed in detail in Section 4.3.5 and shown in Figure 14c. Results are broken down by individual property below and a list of amphibian species detected at the Properties is provided in Appendix D.

Holly Oaks County Park

The Baja California treefrog was documented on one occurrence during general butterfly surveys. A very shallow drainage extends from the southeastern corner of the property through its middle to an undercrossing at Dye Road on the northern boundary which may occasionally provide a temporary and/or seasonal water source. However, the lack of permanent water source and associated riparian vegetation at Holly Oaks County Park were likely the leading factors contributing to the low amphibian activity. Additionally Holly Oaks County Park is surrounded by residential parcels with limited native vegetation remaining. Therefore, the property is isolated from nearby source populations of amphibians.

Luelf Pond Preserve

One western toad was detected incidentally during the second round of drift fence surveys and Baja California treefrogs were documented during general avian, general butterfly, and bat surveys. Western toads are common in mature oak woodland habitats with adjacent upland vegetation such as Luelf Pond Preserve. Although there is no permanent source of water on-site, a small creek bed runs east to west across the site that fills seasonally with water and is dependent on annual rainfall events. Baja California tree frogs were detected within the creek bed during multiple surveys. In addition, the established riparian habitat throughout portions of Luelf Pond Preserve is suitable habitat for a number of other amphibians, such as arboreal salamander (*Aneides lugubris*), garden slender salamander, and California treefrog (*Pseudacris cadaverina*). Although none were observed, there is also a small ponded area adjacent to the Preserve on the north (opposite) side of Duck Pond Lane that has potential to support western spadefoot and contains breeding habitat for other species.

Barnett Ranch Preserve

The Baja California treefrog, western spadefoot, and western toad were captured within box funnel traps during drift fence surveys at the Barnett Ranch Preserve. These species were also detected during other biological surveys. Historically, Barnett Ranch Preserve was used for cattle grazing and, to this day, a small stock pond remains near the center of the Property. Baja California treefrog, western toad, and western spadefoot tadpoles were detected within the pond indicating successful breeding occurred in 2018. This small stock pond appears to be a semi- permanent water source that remains filled to a varying degree year-round (with the exception of periods of extreme and prolonged drought conditions) and therefore likely serves as important breeding and rearing habitat for amphibians. The 2016–2017 rainfall season was above average and likely created conditions for successful toad breeding due to the length in which breeding pools such as the stock pond and the drainage to the west of the pond likely remained filled. This was supported by the capture of several year-old western spadefoots in Herp Arrays 7 and 8 located approximately 0.2 mile and 0.3 mile away, respectively.

Reptiles

A total of 15 reptile species were captured during drift fence surveys (Table 7). This includes six lizard species and nine snake species, all of which totaled 124 reptile captures. Eight additional detections were recorded incidentally during drift fence surveys but were not technically "captures" since they were detected outside of the box funnel traps. Four of these species were not identified during trapping efforts: Coronado skink (*Plestiodon skiltonianus interparietalis*), two-striped gartersnake (*Thamnophis hammondii*), granite night lizard (*Xantusia henshawi*), and granite spiny lizard (*Sceloporus orcutti*). Lizard and snake species were comparable in number and each accounted for approximately 50 percent of the drift fence captures. The locations of special-status reptile species are shown in Figures 14a – 14c and discussed in further detail in Section 4.3.5.

As previously discussed, the extended drought may influence lizard and snake species abundance and movement patterns, and may cause lower species detection rates. Most herpetofauna species have low capture rates, and it may take 10 to 12 weeks of sampling per year for several years to detect all herpetofauna species on a given site (Fisher et al. 2008). Low rainfall in previous years may have led to lower reproductive rates for some species and, hence, even lower detection rates.

Holly Oaks County Park

Two herp arrays were installed at Holly Oaks County Park, Herp Arrays 1 and 2 (Figure 9a). The most common lizard species captured within Holly Oaks County Park was western fence lizard (*Sceloporus occidentalis*). Holly Oaks County Park had the lowest species richness of the three Properties with two snake and three lizard species captured during trapping efforts (Table 7). San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), the only special-status species captured, is discussed in further detail in Section 4.3.5 (Figure 14a). Herp Array 2 had over twice as many captures as Herp Array 1, which may be due in part to the varying vegetation at each site. Herp Array 1 was placed within an isolated patch of California buckwheat habitat and Herp Array 2 was located within a strip of southern riparian woodland. The southern riparian woodland habitat likely provided more cover and higher soil moisture, conditions both generally preferred by reptile species.

Table 7. Reptile Drift Fence Captures at the Properties (April–May 2018)

Common Name	Scientific Name	Special-Status Listing[1]	Holly Oaks County Park		Luelf Pond Preserve		Barnett Ranch Preserve								Total Number of Captures
			Herp Array												
			1	2	3	4	5	6	7	8	9	10	11	12	
Amphibians															
Baja California Treefrog	*Pseudacris hypochondriaca*	None	-	-	-	-	-	-	1	-	1	1	-	-	**3**
Western Spadefoot	*Spea hammondii*	State: SSC County: Group 2	-	-	-	-	-	-	3	1	-	-	-	-	**4**
Western Toad	*Anaxyrus boreas*	None	-	-	-	-	-	-	-	2	-	-	-	-	**2**
Lizards															
San Diegan Tiger Whiptail	*Aspidoscelis tigris stejnegeri*	State: SSC County: Group 2	2	-	1	-	-	-	-	-	-	-	-	-	**3**
Southern Alligator Lizard	*Elgaria multicarinata*	None	-	3	-	-	-	-	-	-	-	1	-	-	**4**
Western Fence Lizard	*Sceloporus occidentalis*	None	7	21	1	1	4	1	1	-	-	-	-	4	**40**
Western Side-blotched Lizard	*Uta stansburiana elegans*	None	-	-	-	1	-	-	-	-	-	-	-	1	**2**
Blainville's Horned Lizard	*Phrynosoma blainvillii*	State: SSC County: Group 2 MSCP: Covered	-	-	-	1	-	-	-	-	-	-	-	-	**1**
Belding's Orange-throated Whiptail	*Aspidoscelis hyperythra beldingi*	State: WL County: Group 2 MSCP: Covered	-	-	-	-	3	1	3	-	-	1	1	3	**12**
Snakes															
California Kingsnake	*Lampropeltis californiae*	None	2	1	2	-	1	-	-	-	-	2	-	-	**8**
Gopher Snake	*Pituophis catenifer*	None	-	2	3	-	-	1	-	-	1	-	-	-	**7**
California Striped Racer	*Coluber lateralis lateralis*	None	-	-	1	1	2	1	3	6	5	5	3	-	**27**
Rosy Boa	*Lichanura orcutti*	County: Group 2	-	-	-	1	-	-	-	-	-	-	-	-	**1**
Southwestern Speckled Rattlesnake	*Crotalus mitchellii pyrrhus*	None	-	-	-	3	-	-	-	-	-	-	-	-	**3**
Southern Pacific Rattlesnake	*Crotalus oreganus helleri*	None	-	-	-	-	4	-	-	1	2	-	1	1	**9**
Red Racer	*Coluber flagellum piceus*	None	-	-	-	-	-	2	-	-	-	-	1	-	**3**
Coast patch-nosed snake	*Salvadora hexalepis virgultea*	State: SSC Country: Group 2	-	-	-	-	-	-	-	-	1	-	-	-	**1**
Long-nosed Snake	*Rhinocheilus lecontei*	None	-	-	-	-	-	-	-	-	-	-	3	-	**3**
Total Number of Captures			***11***	***27***	***8***	***8***	***14***	***6***	***11***	***10***	***10***	***10***	***9***	***9***	***133***

[1] State Status Abbreviations: CT: Candidate Threatened; CE: Candidate Endangered; FP: Fully Protected; SSC: Species of Special Concern; WL: Watch List (CDFW 2019a)

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Luelf Pond Preserve

Two herp arrays were installed at Luelf Pond Preserve, labeled Herp Arrays 3 and 4 (Figure 9b). Capture numbers were relatively uniform across all nine species detected and included four lizard and five snake species (Table 7). Southwestern speckled rattlesnake (*Crotalus mitchellii pyrrhus*) and gopher snake (*Pituophis catenifer*) were the most commonly captured species at Luelf Pond Preserve. Rosy boa (*Lichanura orcutti*) was only captured at Luelf Pond Preserve. Four special-status species were detected; these are Blainville's horned lizard (*Phrynosoma blainvillii*), San Diegan tiger whiptail, rosy boa, and two-striped gartersnake. All special-status species are discussed in further detail in Section 4.3.5 and shown in Figure 14b.

Barnett Ranch Preserve

Eight herp arrays were installed in various habitat types throughout Barnett Ranch Preserve, labeled Herp Arrays 5 through 12 (Figure 9c). Four lizard and seven snake species were captured during drift fence surveys (Table 7). The most frequently captured species at Barnett Ranch Preserve was the California striped racer (*Coluber lateralis lateralis)*. Barnett Ranch Preserve had the highest reptile species richness of all three Properties. There were four species unique to Barnett Ranch Preserve: orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), long-nosed snake (*Rhinocheilus lecontei*), and red racer (*Coluber flagellum piceus*). Three additional incidentally detected species also unique to Barnett Ranch Preserve were Coronado skink (*Plestiodon skiltonianus interparietalis*), granite night lizard (*Xantusia henshawi*), and red diamond rattlesnake (*Crotalus ruber*). Special-status species include orange-throated whiptail, Coronado skink, coast patch-nosed snake, two-striped gartersnake, and red diamond rattlesnake. All special-status species are discussed in further detail in Section 4.3.5 and shown in Figure 14c.

4.3.3 Birds

A total of 101species of birds were detected during general avian surveys across all three Properties (Table 8). One additional species, grasshopper sparrow (*Ammodramus savannarum*), was observed incidentally. The locations of all 13 special-status avian species detected are shown in Figures 14a – 14c. Special-status avian species detected during surveys are discussed in detail in Section 4.3.5.

The majority of avian species detected were landbirds as there is very limited standing water available for waterbirds throughout the Properties. Raptors, sparrows, warblers, flycatchers, and blackbirds were all well represented. Six species were detected during nocturnal surveys.

Table 8. General Avian Survey Results

Common Name by Family	Scientific Name	Special-status Listing[1]	Holly Oaks County Park				Luelf Pond Preserve				Barnett Ranch Preserve			
			Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Accipitridae														
Cooper's Hawk	*Accipiter cooperii*	State: WL (nesting) County: Group 1 MSCP: Covered		X					X		X			
Golden Eagle	*Aquila chrysaetos*	State: FP, WL (nesting and wintering) County: Group 1 MSCP: Covered							X	X	X		X	X
Red-shouldered Hawk	*Buteo lineatus*	County: Group 1	X	X		X		X	X	X				
Red-tailed Hawk	*Buteo jamaicensis*	None	X	X	X	X	X	X	X	X	X	X	X	X
Swainson's Hawk	*Buteo swainsoni*	State: Threatened County: Group 1 MSCP: Covered		X										
Aegithalidae														
Bushtit	*Psaltriparus minimus*	None	X	X			X	X	X	X	X	X	X	X
Anatidae														
Mallard	*Anas platyrhynchos*	None		X				X				X		
Apodidae														
Vaux's Swift	*Chaetura vauxi*	None										X		
White-throated Swift	*Aeronautes saxatalis*	None			X		X	X				X		
Ardeidae														
Black-crowned Night-Heron[2]	*Nycticorax nycticorax*	None		X										
Great Blue Heron	*Ardea herodias*	County: Group 2			X									

Table 8. General Avian Survey Results

Common Name by Family	Scientific Name	Special-status Listing[1]	Holly Oaks County Park				Luelf Pond Preserve				Barnett Ranch Preserve			
			Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Bombycillidae														
Cedar Waxwing	*Bombycilla cedrorum*	None		X										
Caprimulgidae														
Common Poorwill[2]	*Phalaenoptilus nuttallii*	None						X				X	X	
White-throated Swift	*Aeronautes saxatalis*	None											X	
Cardinalidae														
Black-headed Grosbeak	*Pheucticus melanocephalus*	None		X				X	X			X		
Blue Grosbeak	*Passerina caerulea*	None		X				X	X			X	X	
Lazuli Bunting	*Passerina amoena*	None						X				X		
Western Tanager	*Piranga ludoviciana*	None		X						X				X
Cathartidae														
Turkey Vulture	*Cathartes aura*	County: Group 1	X	X	X	X	X	X	X	X		X		
Charadriidae														
Killdeer	*Charadrius vociferus*	None						X						
Columbidae														
Eurasian Collared-Dove	*Streptopelia decaocto*	None	X	X								X		
Mourning Dove	*Zenaida macroura*	None	X	X			X	X	X		X	X	X	X
Rock Pigeon	*Columba livia*	None		X										
Corvidae														
American Crow	*Corvus brachyrhynchos*	None	X	X	X	X		X	X		X			X
California Scrub-Jay	*Aphelocoma californica*	None			X		X	X	X	X	X	X	X	X
Common Raven	*Corvus corax*	None	X	X		X	X	X	X	X	X	X	X	X
Cuculidae														
Greater Roadrunner	*Geococcyx californianus*	None	X	X				X	X			X	X	X

Table 8. General Avian Survey Results

Common Name by Family	Scientific Name	Special-status Listing[1]	Holly Oaks County Park				Luelf Pond Preserve				Barnett Ranch Preserve			
			Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Emberizidae														
California Towhee	*Melozone crissalis*	None	X	X	X		X	X	X	X	X	X	X	X
Golden-crowned Sparrow	*Zonotrichia atricapilla*	None						X						
Lark Sparrow	*Chondestes grammacus*	None	X	X							X	X	X	X
Lincoln's Sparrow	*Melospiza lincolnii*	None	X	X								X		
Savannah Sparrow	*Passerculus sandwichensis*	None	X	X							X	X		
Song Sparrow	*Melospiza melodia*	None					X	X	X	X		X	X	X
Southern California Rufous-crowned Sparrow	*Aimophila ruficeps canescens*	State: WL County: Group 1 MSCP: Covered									X	X	X	X
Spotted Towhee	*Pipilo maculatus*	None					X	X	X	X	X	X	X	X
Vesper Sparrow	*Pooecetes gramineus*	None									X			
White-crowned Sparrow	*Zonotrichia leucophrys*	None	X	X			X	X			X	X		
Falconidae														
American Kestrel	*Falco sparverius*	None		X	X						X	X	X	X
Fringillidae														
House Finch	*Haemorhous mexicanus*	None	X	X	X	X		X	X	X	X	X	X	X
Lawrence's Goldfinch	*Spinus lawrencei*	None						X	X		X			
Lesser Goldfinch	*Spinus psaltria*	None		X	X	X	X	X	X	X	X	X	X	X
Hirundinidae														
Barn Swallow	*Hirundo rustica*	None		X	X					X		X		
Cliff Swallow	*Petrochelidon pyrrhonota*	None		X	X		X		X		X	X	X	
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	None	X								X		X	
Violet-green Swallow	*Tachycineta thalassina*	None		X				X				X		

Table 8. General Avian Survey Results

Common Name by Family	Scientific Name	Special-status Listing[1]	Holly Oaks County Park				Luelf Pond Preserve				Barnett Ranch Preserve			
			Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Icteridae														
Brewer's Blackbird	*Euphagus cyanocephalus*	None				X								
Brown-headed Cowbird	*Molothrus ater*	None		X				X	X			X	X	
Bullock's Oriole	*Icterus bullockii*	None		X								X	X	
Hooded Oriole	*Icterus cucullatus*	None			X				X					
Tricolored Blackbird	*Agelaius tricolor*	State: CE and SSC County: Group 1 MSCP: Covered		X										
Western Meadowlark	*Sturnella neglecta*	None									X	X	X	X
Laniidae														
Loggerhead Shrike	*Lanius ludovicianus*	State: SSC (nesting) County: Group 1											X	X
Mimidae														
California Thrasher	*Toxostoma redivivum*	None	X				X	X	X	X	X	X	X	X
Northern Mockingbird	*Mimus polyglottos*	None	X	X							X	X	X	
Motacillidae														
American Pipit	*Anthus rubrescens*	None										X		
Odontophoridae														
California Quail	*Callipepla californica*	None					X	X	X	X	X	X	X	X
Paridae														
Oak Titmouse	*Baeolophus inornatus*	None						X	X	X	X	X	X	X
Parulidae														
Black-throated Gray Warbler	*Setophaga nigrescens*	None				X		X				X		X
Macgillivray's Warbler	*Geothlypis tolmiei*	None						X						
Nashville Warbler	*Oreothlypis ruficapilla*	None						X				X		

Table 8. General Avian Survey Results

Common Name by Family	Scientific Name	Special-status Listing[1]	Holly Oaks County Park				Luelf Pond Preserve				Barnett Ranch Preserve			
			Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Orange-crowned Warbler	*Oreothlypis celata*	None		X		X	X	X						X
Townsend's Warbler	*Setophaga townsendi*	None						X				X		
Wilson's Warbler	*Cardellina pusilla*	None				X		X		X		X		X
Yellow Warbler	*Setophaga petechia brewsteri*	State: SSC County: Group 2		X				X						
Yellow-rumped Warbler	*Setophaga coronata*	None	X	X			X	X			X	X		X
Passeridae														
House Sparrow	*Passer domesticus*	None		X										
Picidae														
Acorn Woodpecker	*Melanerpes formicivorus*	None		X	X		X	X	X	X	X	X	X	X
Northern Flicker	*Colaptes auratus*	None					X	X	X		X	X		X
Nuttall's Woodpecker	*Picoides nuttallii*	None	X	X		X	X	X	X	X	X	X	X	X
Red-breasted Sapsucker	*Sphyrapicus ruber*	None									X			
Polioptilidae														
Blue-gray Gnatcatcher	*Polioptila caerulea*	None					X	X	X		X	X		X
Ptilogonatidae														
Phainopepla	*Phainopepla nitens*	None		X				X	X			X	X	
Regulidae														
Ruby-crowned Kinglet	*Regulus calendula*	None					X	X						
Sittidae														
White-breasted Nuthatch	*Sitta carolinensis*	None					X	X	X	X	X	X	X	
Strigidae														
Great Horned Owl[2]	*Bubo virginianus*	None						X				X	X	
Western Screech-Owl[2]	*Megascops kennicottii*	None						X				X	X	
Sturnidae														
European Starling	*Sturnus vulgaris*	None	X	X	X	X	X	X		X		X		X

Table 8. General Avian Survey Results

Common Name by Family	Scientific Name	Special-status Listing[1]	Holly Oaks County Park				Luelf Pond Preserve				Barnett Ranch Preserve			
			Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Sylviidae														
Wrentit	*Chamaea fasciata*	None					X	X	X	X	X	X	X	X
Trochilidae														
Anna's Hummingbird	*Calypte anna*	None	X	X	X		X	X	X	X	X	X	X	X
Black-chinned Hummingbird	*Archilochus alexandri*	None							X	X		X		
Costa's Hummingbird	*Calypte costae*	None						X	X	X		X		
Rufous/Allen's Hummingbird	*Selasphorus rufus/sasin*	None							X					
Troglodytidae														
Bewick's Wren	*Thryomanes bewickii*	None	X				X	X	X	X	X	X	X	X
Canyon Wren	*Catherpes mexicanus*	None						X		X	X	X	X	X
House Wren	*Troglodytes aedon*	None	X	X		X	X	X	X			X	X	
Rock Wren	*Salpinctes obsoletus*	None									X			X
Turdidae														
Hermit Thrush	*Catharus guttatus*	None						X						
Mountain Bluebird	*Sialia currucoides*	None									X			
Swainson's Thrush	*Catharus ustulatus*	None		X				X						
Western Bluebird	*Sialia mexicana*	County: Group 2 MSCP: Covered		X	X		X				X		X	
Tyrannidae														
Ash-throated Flycatcher	*Myiarchus cinerascens*	None			X			X	X			X	X	
Black Phoebe	*Sayornis nigricans*	None		X				X	X			X	X	X
Cassin's Kingbird	*Tyrannus vociferans*	None	X	X	X	X			X		X	X	X	
Hammond's Flycatcher	*Empidonax hammondii*	None						X						
Pacific-slope Flycatcher	*Empidonax difficilis*	None				X		X	X					X
Say's Phoebe	*Sayornis saya*	None	X	X		X					X	X	X	X

Table 8. General Avian Survey Results

Common Name by Family	Scientific Name	Special-status Listing[1]	Holly Oaks County Park				Luelf Pond Preserve				Barnett Ranch Preserve			
			Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Western Kingbird	*Tyrannus verticalis*	None	X	X				X	X			X	X	
Western Wood-Pewee	*Contopus sordidulus*	None						X						
Tytonidae														
Barn Owl[2]	*Tyto alba*	County: Group 2	X	X	X									
Vireonidae														
Hutton's Vireo	*Vireo huttoni*	None						X	X		X	X	X	
Warbling Vireo	*Vireo gilvus*	None						X				X		
Number of Species			**28**	**50**	**20**	**17**	**29**	**63**	**44**	**28**	**43**	**65**	**46**	**39**

[1] State Status Abbreviations: CT: Candidate Threatened; CE: Candidate Endangered; FP: Fully Protected; SSC: Species of Special Concern; WL: Watch List (CDFW 2019a)
[2] Bird species detected during nocturnal surveys

Holly Oaks County Park

A total 62 species of bird were detected during general avian surveys at Holly Oaks County Park. Three additional species were observed incidentally during other survey efforts: common poorwill, California quail (*Callipepla californica*), and northern flicker (*Colaptes auratus*).The most common species observed were birds commonly seen in suburban environments. The following species were present in all seasons: American crow (*Corvus brachyrhynchos*), lesser goldfinch (*Spinus psaltria*), house finch (*Haemorhous mexicanus*), European starling (*Sturnus vulgaris*), and Cassin's kingbird (*Tyrannus vociferans*). Very little good avian breeding habitat is present on this Property, but a variety of migrant birds were detected during migration including four species of swallow, two species of oriole, five species of warbler, and three species of Cardinalids. The grassland habitat is suitable for wintering sparrows and, as expected, survey efforts detected Lincoln's, white-crowned, and savannah sparrows on-site. Raptors were also commonly encountered with turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), and red-shouldered hawk (*Buteo lineatus*) encountered during most visits. Seven special-status species were detected: Cooper's hawk (*Accipiter cooperii*), great blue heron (*Ardea herodias*), red-shouldered hawk (*Buteo lineatus*), Swainson's hawk (*Buteo swainsoni*), turkey vulture (*Cathartes aura*), tricolored blackbird (*Agelaius tricolor*), and yellow warbler (*Setophaga petechia*

brewsteri) (Figure 14a). Two species were detected during nocturnal surveys: black-crowned night heron (*Nycticorax nycticorax*) and barn owl (*Tyto alba*).

Luelf Pond Preserve

A total of 73 species of bird were detected during general avian surveys at Luelf Pond Preserve. Two additional species, southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) and barn owl, were observed incidentally during other survey efforts; both are special-status species (Figure 14b). The most common species were birds commonly encountered in association with oak woodland and chaparral habitats. Species detected in every season were red-tailed hawk, bushtit (*Psaltriparus minimus*), turkey vulture, California scrub-jay (*Aphelocoma californica*), common raven (*Corvus corax*), California towhee (*Melozone crissalis*), spotted towhee (*Pipilo maculatus*), song sparrow (*Melospiza melodia*), lesser goldfinch, California quail, California thrasher (Toxostoma redivivum), Nuttall's woodpecker (*Picoides nuttallii*), acorn woodpecker (*Melanerpes formicivorus*), white-breasted nuthatch (*Sitta carolinensis*), wrentit (*Chamaea fasciata*), Anna's hummingbird (*Calypte anna*), and Bewick's wren (*Thryomanes bewickii*). These species were augmented by migratory breeding birds in the spring and summer such as black-headed grosbeak (*Pheucticus melanocephalus*), blue grosbeak (*Passerina caerulea*), lazuli bunting (*Passerina amoena*), phainopepla (*Phainopepla nitens*), ash-throated flycatcher (*Myiarchus cinerascens*), Pacific-slope flycatcher (*Empidonax difficilis*), western kingbird (*Tyrannus verticalis*), and western wood-pewee (*Contopus sordidulus*). Five special-status species were detected during general avian surveys: Cooper's hawk, golden eagle, red-shouldered hawk, turkey vulture, and yellow warbler (Figure 14b). Three species were detected during nocturnal surveys: great horned owl, western screech owl, and common poorwill.

Barnett Ranch Preserve

A total of 80 bird species were detected during general avian surveys at Barnett Ranch Preserve. Two additional species were observed incidentally during other survey efforts and include grasshopper sparrow and red-shouldered hawk. The most common species were birds encountered in association with oak woodland, chaparral, and grassland habitats. The following species were detected in all seasons: red-tailed hawk, bushtit, mourning dove, California scrub-jay, common raven, California towhee, lark sparrow, southern California rufous-crowned sparrow, spotted towhee, American kestrel, lesser goldfinch, house finch, western meadowlark, California thrasher, California quail, oak titmouse, acorn woodpecker, Nuttall's woodpecker, wrentit, Anna's hummingbird, Bewick's wren, canyon wren, and Say's phoebe. These species were augmented by migratory breeding birds such as black-headed grosbeak, blue grosbeak, lazuli bunting, Bullock's oriole (*Icterus bullockii*), phainopepla, black-chinned hummingbird (*Archilochus alexandri*), ash-throated flycatcher, and western kingbird. Six special-status species were detected: Cooper's hawk, golden eagle, turkey vulture, western bluebird, southern California rufous-crowned sparrow, and loggerhead shrike (Figure 14c). Four species were detected during nocturnal surveys:

great horned owl, western screech-owl, common poorwill, and lesser nighthawk (*Chordeiles acutipennis*).

4.3.4 Mammals

Small Mammals

Twelve small mammal species were captured during small mammal trapping efforts from April 24 through April 28, 2018, and an additional two small mammal species were captured incidentally during drift fence surveys. Through combined trapping efforts, 14 small mammal species were captured within the Properties. A total of 150 traps were set throughout all three Properties and 245 captures occurred. Some of these small mammals were likely the same individual going into the traps on consecutive nights, but animals were not marked so it was not possible to determine if individuals were being recaptured. For 4 consecutive nights of trapping, 150 traps were used for a total of 600 "trap nights," defined as one trap set for one night. Consistent with previous small mammal and focused SKR trapping efforts conducted in 2001 and 2003, no SKR were captured at any of the three Properties (Helix 2004b). Table 9 summarizes the species of small mammals captured per small mammal trapping line at each individual Property. Special-status small mammal species detected during surveys are further discussed in detail in Section 4.3.5.

Holly Oaks County Park

Nine small mammal captures across the 80 trap nights (i.e., 20 traps by 4 nights) yielded an approximate 11 percent trap-night success rate. No small mammals were captured in trap line 1, which was set in an open area of low rocks that contained a low amount of vegetative cover but was surrounded by dense non-native grass. Small mammal species may have been unable to find the traps due to the dense surrounding non-native grass. Holly Oaks County Park is composed primarily of non-native vegetation, particularly non-native grasses that create a dense layer of thatch and vegetation along the ground that is difficult for small mammals to navigate through. Trap line 2 was placed within a narrow strip of California buckwheat surrounded by non-native grassland. Four small mammal species were captured in trap line 2 over the 4-night survey effort. The northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*) was the most frequently captured species, followed by the western harvest mouse (*Reithrodontomys megalotis)*. Holly Oaks County Park was the only Property where house mice (*Mus musculus*) were captured. This is likely because Holly Oaks County Park is in a residential neighborhood surrounded by homes. The trap line locations are shown in Figure 9a, and the location of one special-status small mammal species captured, the northwestern San Diego pocket mouse, is shown in Figure 14a.

Table 9. Results of Small Mammal Trapping at the Properties

Common Name	Scientific Name	Special-Status Listing[1]	Holly Oaks County Park		Luelf Pond Preserve		Barnett Ranch Preserve					Total Number of Captures
			Trap Line [2]									
			1	2	3	4	5	6	7	8	9	
Brush mouse	*Peromyscus boylii*	None	0	0	0	0	0	0	1	0	38	**39**
Cactus mouse	*Peromyscus eremicus*	None	0	0	0	0	0	9	10	0	0	**19**
California mouse	*Peromyscus californicus*	None	0	0	2	0	0	0	9	2	8	**21**
Deer mouse	*Peromyscus maniculatus*	None	0	0	0	0	12	5	1	8	1	**27**
Dulzura kangaroo rat	*Dipodomys simulans*	None	0	1	0	5	4	26	16	26	0	**78**
Dulzura pocket mouse	*Chaetodipus californicus femoralis*	State: SSC County: Group 2	0	0	3	0	0	0	0	0	0	**3**
House mouse	*Mus musculus*	None	0	1	0	0	0	0	0	0	0	**1**
Large-eared woodrat	*Neotoma macrotis*	None	0	0	0	0	0	0	0	0	1	**1**
Northwestern San Diego pocket mouse	*Chaetodipus fallax fallax*	State: SSC County: Group 2	0	5	0	0	6	8	19	8	0	**46**
San Diego desert woodrat	*Neotoma bryanti intermedia*	State: SSC County: Group 2	0	0	0	0	0	1	7	0	0	**8**
Western harvest mouse	*Reithrodontomys megalotis*	None	0	2	0	0	0	0	0	0	0	**2**
Total Number of Captures			***0***	***9***	***5***	***5***	***22***	***49***	***63***	***44***	***48***	***245***

[1] State Status Abbreviations: CT: Candidate Threatened; CE: Candidate Endangered; FP: Fully Protected; SSC: Species of Special Concern; WL: Watch List (CDFW 2019a)
[2] Traps lines 1 through 4 contained 10 traps each; trap line 5 contained 30 traps; and trap lines 6 through 9 contained 20 traps each.

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In addition to the small mammals captured in Sherman live traps at Holly Oaks County Park, seven small mammal species were captured incidentally during drift fence surveys; four of which were not captured in the Sherman live traps. Therefore, a total of seven different small mammal species were recorded specifically at Holly Oaks County Park throughout the combined survey effort. Table 10 summarizes small mammals captured during drift fence surveys. Additional species captured during drift fence surveys but not during small mammal trapping are likely a result of the drift fence surveys spanning a much greater length of time (2 weeks in April and May) than small mammal trapping (4 days in April). In addition, Botta's pocket gopher (*Thomomys bottae*) and California vole (*Microtus californicus*) were not captured during small mammal trapping (but were captured during drift fence surveys at Holly Oaks County Park) likely because both species feed on vegetation and are not attracted to Sherman live traps baited with birdseed. Therefore, the drift fence surveys augmented small mammal trapping throughout all three Properties, and allowed for an increased sampling timeframe and different method to capture small mammal species.

Luelf Pond Preserve

Ten small mammal captures across 80 trap nights (i.e., 20 traps by 4 nights) yielded a 13 percent trap-night success rate. Three different species of small mammals were captured in the Sherman live traps over the 4-night survey effort at Luelf Pond Preserve. The Dulzura kangaroo rat (*Dipodomys simulans*) was the most frequently captured species. The trap line locations are shown in Figure 9b, and the location of one special-status small mammal species captured, Dulzura pocket mouse (*Chaetodipus californicus femoralis*), is shown in Figure 14b.

In addition to the small mammals captured in Sherman live traps at Luelf Pond Preserve, seven small mammal species were incidentally captured during drift fence surveys; four of which were not captured in the Sherman live traps. Therefore, a total of seven different small mammal species were recorded specifically at Luelf Pond Preserve during combined survey efforts. Table 10 summarizes small mammals captured during drift fence surveys. Capture rates were generally lower than expected at Luelf Pond Preserve despite the mature highly structured vegetation and multiple habitat types. Several small mammal species that were expected to occur, based on the habitat trapped, were not captured and include woodrat species (*Neotoma* species) and brush mouse (*Peromyscus boylii*). These species likely occur within Luelf Pond Preserve but at low densities.

Barnett Ranch Preserve

There were 226 small mammal captures across the 440 trap nights (i.e., 110 traps by 4 nights) for an approximate 51 percent trap-night success rate. Eight different small mammal species were captured in the Sherman live traps over the 4-night survey effort at Barnett Ranch Preserve. Dulzura kangaroo rat was the most commonly captured species, followed by northwestern San Diego pocket mouse. Brush mouse, large-eared woodrat (*Neotoma macrotis*), and San Diego

woodrat (*Neotoma bryanti intermedia*) were only captured at Barnett Ranch Preserve. Trap line locations are shown in Figure 9c, and the location of two special-status small mammal species captured, northwestern San Diego pocket mouse and San Diego desert woodrat, are shown in Figure 14c.

In addition to the small mammals captured in Sherman live traps at Barnett Ranch Preserve, nine small mammal species were incidentally captured during drift fence surveys; two of which were not captured in the Sherman live traps. Therefore, a total of 11 different small mammal species were captured specifically at Barnett Ranch Preserve during combined survey efforts, making it the property with the highest small mammal species richness. This is likely due to the highly varied habitat types within Barnett Ranch Preserve and its larger size. Table 10 summarizes small mammals captured during drift fence surveys.

Medium and Large Mammals

Wildlife Cameras

Eight wildlife cameras were installed at the Properties and set to run continuously from March 21 through June 27, 2018, for a total of 94 days of operation (Figures 9a – 9c). The cameras were removed from the Properties on June 27. In general, the cameras mostly functioned correctly throughout the survey period and there were minimal signs of vandalism. The camera at Luelf Pond Preserve was frequently inspected by people utilizing the walking trail adjacent to the camera station and at one point was pulled down the trunk of the tree and left hanging at the base approximately 6 inches from the ground. In one instance, overgrown vegetation and strong wind events resulted in wildlife camera 6 at Barnett Ranch Preserve taking excessive photographs of vegetation moving back and forth within the viewshed, triggering the camera repeatedly. In this case, the battery power for the camera was drained prior to the end of the survey due to the frequency in which pictures were taken and the high number of photos recorded. This resulted in 40 fewer days of camera operation at this specific survey station. Camera results are broken down by individual property below, and wildlife species detected at the wildlife cameras are listed in descending order based on the total number of photographs collected.

Holly Oaks County Park

Coyote (*Canis latrans*) and one bird species (common raven [*Corvus corax*]).

Luelf Pond Preserve

Coyote, bobcat (*Lynx rufus*), opossum (*Didelphimorphia*), mountain lion (*Puma concolor*), and striped skunk (*Mephitis mephitis*).

Table 10. Small Mammals Captured during Drift Fence Surveys at the Properties

Common Name	Scientific Name	Special-Status Listing[1]	Holly Oaks County Park		Luelf Pond Preserve		Barnett Ranch Preserve								Total Number of Captures
			Herp Array												
			1	2	3	4	5	6	7	8	9	10	11	12	
Botta's pocket gopher	*Thomomys bottae*	None	1									1			**2**
Cactus mouse	*Peromyscus eremicus*	None				3	1	2							**6**
California mouse	*Peromyscus californicus*	None			7			7	9	1		1	3	6	**34**
California vole	*Microtus californicus*	None	1	1		1									**3**
Deer mouse	*Peromyscus maniculatus*	None		1		2	3	3	6	8	2		8		**33**
Dulzura kangaroo rat	*Dipodomys simulans*	None			1		7	10	12	3	3	1	6	2	**45**
Dulzura pocket mouse	*Chaetodipus californicus femoralis*	State: SSC County: Group 2	3			6	7	4	2	1	2	1			**26**
House mouse	*Mus musculus*	None		8											**8**
Large-eared woodrat	*Neotoma macrotis*	None									1				**1**
Northwestern San Diego pocket mouse	*Chaetodipus fallax fallax*	State: SSC County: Group 2	4				2	3	1	4	3	9		3	**29**
San Diego desert woodrat	*Neotoma bryanti intermedia*	State: SSC County: Group 2									1		5		**6**
Western harvest mouse	*Reithrodontomys megalotis*	None	7	9	1										**17**
Total Number of Captures			***16***	***19***	***9***	***12***	***20***	***29***	***30***	***17***	***12***	***13***	***22***	***11***	***210***

[1] State Status Abbreviations: CT: Candidate Threatened; CE: Candidate Endangered; FP: Fully Protected; SSC: Species of Special Concern; WL: Watch List (CDFW 2019a)

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Barnett Ranch Preserve

Coyote, Audubon's cottontail (*Sylvilagus audubonii*), bobcat, California ground squirrel (*Otospermophilus beecheyi*), striped skunk, mule deer, gray fox (*Urocyon cinereoargenteus*), and various bird species (mallard [*Anas platyrhynchos*], California quail [*Callipepla californica*], red-tailed hawk, common raven, and greater roadrunner [*Geococcyx californianus*]).

Table 11 details the number of photographs taken per wildlife camera per species at each individual Property. It is important to note that, while the number of photographs per species per camera is useful to show the locations where various wildlife species were detected, the number of photographs taken is not meant to provide an index or estimate of relative abundance. Photos are taken continuously until an individual leaves the field of view. For example, species such as the Audubon's cottontail are very active and if they are foraging in front of a wildlife camera, the camera will continue to take photos of the same individual cottontail, until the cottontail exits the camera's field-of-view. It is likely that the cameras detected some of the same individuals moving around the Properties.

Mountain lion and mule deer were the only special-status wildlife species detected on cameras at Luelf Pond and Barnett Ranch Preserves. One mountain lion was photographed in May on the Luelf Pond Preserve wildlife camera walking along the main trail shortly after midnight (Figure 14b). The camera captured six photos of the mountain lion inspecting and rubbing against the scent lure before continuing west down the trail and disappearing out of sight. No other mountain lions were detected; however, mountain lion scat was observed incidentally in the easternmost corner of Barnett Ranch Preserve. Multiple mule deer does (i.e., females) were detected on wildlife camera 5 at Barnett Ranch Preserve; however, no bucks (i.e., males) were captured on any wildlife cameras. Incidental mule deer detections were also noted at Luelf Pond Preserve; however, mule deer movement and activity were not captured on camera.

Species expected to occur on the Properties but not detected on the wildlife cameras include spotted skunk (*Spilogale gracilis*), raccoon (*Procyon lotor*), and ring-tailed cat (*Bassariscus astutus*). Spotted skunk are generally found along riparian corridors but can inhabit a wide variety of vegetation communities. All three Properties have areas of various riparian habitat; therefore, it is assumed spotted skunks may occasionally move through the Properties, specifically Luelf Pond Preserve and Barnett Ranch Preserve, where riparian habitat is more prevalent. Raccoons are common throughout San Diego County; however, they tend to be more prevalent near water sources and/or areas with high human activity where trash and other food sources are easily accessible. This species likely inhabits portions of the Properties and travels through on occasion while foraging. Ring-tailed cat was previously detected within oak woodland habitat at Barnett Ranch Preserve during historical surveys conducted between 2001 and 2003 (Helix 2004b). This

Table 11. Wildlife Species Photographs Taken at Wildlife Camera Stations[1]

Common Name	Scientific Name	Special-Status Listing[2]	Holly Oaks County Park	Luelf Pond Preserve	Barnett Ranch Preserve						Total
			Wildlife Camera Station ID (Number of Photographs Taken)								
			1	2	3	4	5	6	7	8	
Coyote	*Canis latrans*	None	122	137	111	47	73	40	815	348	1,693
Audubon's cottontail	*Sylvilagus audubonii*	None	0	36	6	0	0	3	0	17	62
Bobcat	*Lynx rufus*	None	0	0	10	3	0	6	2	0	21
California ground squirrel	*Spermophilus beecheyi*	None	0	1	0	0	0	0	3	6	10
Striped skunk	*Mephitis mephitis*	None	0	0	0	0	5	0	0	0	5
Mule deer	*Odocoileus hemionus*	County: Group 2 MSCP: Covered	0	0	0	0	2	0	1	0	3
Virginia opossum	*Didelphis virginiana*	None	0	9	0	0	0	0	0	0	9
Gray fox	*Urocyon cinereoargenteus*	None	0	6	0	0	0	0	0	0	6
Mountain lion	*Puma concolor*	County: Group 2 MSCP: Covered	0	36	6	0	0	3	0	17	62

[1] Cameras in operation for 94 days with the exception of Wildlife Camera 6, which only operated for 54 days due to a battery malfunction.
[2] State Status Abbreviations: CT: Candidate Threatened; CE: Candidate Endangered; FP: Fully Protected; SSC: Species of Special Concern; WL: Watch List (CDFW 2019a)

species is generally nocturnal in nature and prefers wooded, riparian habitats. Several cameras were placed within areas identified as suitable habitat; however, the species was not photographed during the survey period. Ring-tailed cat may inhabit portions of the Properties at both the Barnett Ranch Preserve and Luelf Pond Preserve; however, population numbers are likely low.

In addition to the wildlife species captured on cameras, multiple photographs of hikers, mountain bikers, equestrians, domestic dogs, and off-highway vehicles were recorded on various wildlife cameras. The camera at Luelf Pond Preserve was placed along the main trail through the Preserve and had a high number of human-related photos, indicating that the public trail is heavily used for recreational activities. Luelf Pond Preserve is adjacent to a large residential area, which likely contributes to its frequent use. Luelf Pond Preserve appears to be a popular walking route amongst the neighborhood residents. Fewer human-related photographs were obtained at Holly Oaks County Park although the camera was placed along a main trail. None of the cameras at Barnett Ranch Preserve were placed directly along trails, but several cameras captured human activity, especially around the stock pond. The camera overlooking the stock pond at Barnett Ranch Preserve routinely photographed humans, dogs, and equestrians walking around the pond, and dogs swimming in the pond.

Bats

Collectively, the three Properties support a fair diversity of bats (13 of 22 species in San Diego County). The three Properties contain a variety of habitat features used by bats, including an abundance of exposed rocky habitat for crevice and cave roosting opportunities, various large riparian trees and oaks that could support both roosting and foraging needs of bats, both upland scrub and wetland vegetation for foraging, and an open water source (stock pond) at Barnett Ranch Preserve for drinking and foraging. While the three Properties are separate, they are likely close enough to one another to serve as a fairly contiguous landscape for mobile animals such as bats. Results from the habitat assessment and passive and active surveys at all three Properties are described in greater detail below.

Roost Searches

While no suitable man-made roosting structures were present on any of the three Properties, a number of natural features exist at both Luelf Pond Preserve and Barnett Ranch Preserve that warranted roost search investigations that were possible to conduct during the day while setting up and retrieving passive AnaBats. No potential suitable roosting sites were identified at Holly Oaks; therefore, roosting potential at Holly Oaks County Park is not further discussed in the following text. Potential roosting sites at both Luelf Pond Preserve and Barnett Ranch Preserve are described in further detail below.

Luelf Pond Preserve

Two dead snags were identified on Luelf Pond Preserve that warranted roost searches and were observed during the walking active survey before darkness. No bats were observed exiting these trees.

Barnett Ranch Preserve

The most significant and obvious potential bat roost was a natural boulder cave on Barnett Ranch Preserve at its north end across San Vicente Road. An abundance of exposed rocky outcrops were present on Barnett Ranch Preserve that could serve as day roosts for various crevice and cave roosting bats; some were reasonably accessible and were inspected as best as possible for day roosting bats and/or bat "sign" (i.e., bat urine staining, bat guano, culled insect parts). No bats or bat sign was found associated with the various rocky outcrops; however, a high number of bat calls of various rock crevice roosting species, such as the pocketed-free tailed bat (*Nyctinomops femorosaccus*) and canyon bat (*Parastrellus hesperus*), were often recorded early in the evening suggesting these species possibly roost somewhere on or adjacent to the Preserve.

Active and Passive Surveys

Holly Oaks County Park

Ten bat species were detected during a combination of passive and active surveys on Holly Oaks County Park (Table 12-1). Of the 10 bats, six are considered special-status species; these are pocketed free-tailed bat, Townsend's big-eared bat (*Corynorhinus townsendii*), western mastiff bat (*Eumops perotis*), yuma myotis (*Myotis yumanensis*), western small-footed myotis (*Myotis ciliolabrum*), and western red bat (*Lasiurus blossevillii*) (Figure 14a). Special-status bat species detected during surveys are further discussed in Section 4.3.5.

Active Surveys

During the summer active survey conducted on August 8, 2018, seven of the 10 bat species detected were recorded with the active AnaBat. Over 30 canyon bats were observed visually (confirmed acoustically) emanating from the rocky outcrops on private land immediately adjacent to the southwest corner of Holly Oaks County Park. Most of these bats were seen foraging while flying toward the north, possibly en route to visit the Ramona Municipal Water District's ponds located adjacent to Ramona Grasslands Preserve or to forage elsewhere. A single western mastiff bat was heard flying overhead from north to south fairly early in the evening.

Table 12-1. Results of Holly Oaks County Park Passive and Active Bat Surveys

Common Name	Scientific Name	Special-Status Listing[1]	Passive Anabats[2]						Active Survey
			Spring (March 19–21, 2018)		*Summer (July 17–19, 2018)*		*Fall (Sep 10–12, 2018)*		*Aug 8, 2018*
			No. of calls	Relative activity (%)	No. of calls	Relative activity (%)	No. of calls	Relative activity (%)	Detected
Big brown bat	*Eptesicus fuscus*	None	5	5.4	50	14.5	65	30.7	X
Canyon bat	*Parastrellus hepserus*	None	nd	0.0	61	17.6	33	15.6	X
Hoary bat	*Lasiurus cinereus*	None	20	21.7	nd	0.0	1	0.5	
Mexican free-tailed bat	*Tadarida brasiliensis*	None	2	2.2	161	46.5	27	12.7	X
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	State: SSC County: Group 2	42	45.7	43	12.4	24	11.3	X
Townsend's big-eared bat	*Corynorhinus townsendii*	State: SSC County: Group 2	3	3.3	1	0.3	2	0.9	
Western mastiff bat	*Eumops perotis*	State: SSC County: Group 2	nd	0.0	2	0.6	5	2.4	X
Western red bat	*Lasiurus blossevillii*	State: SSC County: Group 2	12	13.0	nd	0.0	1	0.5	X
Western small-footed myotis	*Myotis ciliolabrum*	County: Group 2	nd	0.0	1	0.3	3	1.4	
Yuma myotis	*Myotis yumanensis*	County: Group 2	8	8.7	27	7.8	51	24.1	X
		Total =	*92*		*346*		*212*		
		ACPN[2] =	*30.7*		*57.7*		*35.3*		

[1]State Status Abbreviations: CT: Candidate Threatened; CE: Candidate Endangered; FP: Fully Protected; SSC: Species of Special Concern; WL: Watch List (CDFW 2019a)
[2] nd = not detected; ACPN = Anabat calls per night (Spring = 1 anabat x 3 nights, Summer & Fall = 2 anabats x 3 nights)

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Passive Surveys

All 10 bat species were detected with the passive AnaBats. Bat activity was greatest in the summer with 57.7 recorded AnaBat calls per night (ACPN). Less activity was measured in the spring (30.7 ACPN) and fall (35.3 ACPN). All 10 species were detected during the fall, eight were detected in the summer, and seven were detected during the spring. The migratory hoary bat (*Lasiurus cinereus*) was detected during the spring and fall but absent during the summer as expected. The species most active during the spring was the pocketed free-tailed bat (45.7 percent of calls), in summer the Mexican free-tailed bat (*Tadarida brasiliensis*- 46.5 percent of calls), and in fall the big brown bat (*Eptesicus fuscus* – 32.2 percent of calls).

Luelf Pond Preserve

Twelve bat species were detected during a combination of passive and active surveys on Luelf Pond Preserve (Table 12-2). Of the 12 bats, seven are considered special-status species; these are western yellow bat (*Lasiurus xanthinus*), pocketed free-tailed bat, Townsend's big-eared bat, western mastiff bat, western red bat, western small-footed myotis, and Yuma myotis (Figure 14b). Special-status bat species detected during surveys are further discussed in detail in Section 4.3.5.

Luelf Pond Preserve was the most productive Property from a foraging bat perspective. This was evident based on the high levels of foraging recorded by the passive Anabats as well as the high levels of foraging by western mastiff bats that were heard during the active survey. This Preserve is characterized by a variety of healthy vegetation types including large oaks and riparian trees, large amounts of scrubby vegetation, wetland and riparian vegetation, and presence of water in the creek for part of the year, all of which are contained within a topographically diverse landscape ideal for bats.

Active Surveys

During the active survey in summer conducted on August 22, 2018, seven of the 12 bat species were recorded with the active Anabat. The survey began along the main trail up on the scrubby ridge at the southeast part of the Preserve. Here numerous canyon bats were observed (confirmed acoustically) foraging about the area early in the evening. Shortly after sunset, numerous western mastiff bats were heard coming undoubtedly from a roost location somewhere west/northwest of the Preserve; they were actively foraging above the scrubby ridge at a relatively low altitude while commuting toward the east-southeast.

Passive Surveys

All 12 bat species were detected with the passive Anabats. Bat activity was greatest in the summer (100.2 ACPN) with less activity measured in the spring (12.2 ACPN) and fall (18.3 ACPN). The migratory hoary bat was detected during the spring but was absent during the summer and fall.

The species most active during the spring was the Yuma myotis (27.4 percent of calls), in summer the Mexican free-tailed bat (37.8 percent of calls), and in fall the canyon bat (32.2 percent of calls).

Barnett Ranch Preserve

Twelve bat species were detected during a combination of passive and active surveys on Barnett Ranch Preserve (Table 12-3). Of the 12 bats, six are considered special-status species; these are pocketed free-tailed bat, Townsend's big-eared bat, western mastiff bat, western small-footed myotis, Yuma myotis, and western yellow bat (Figure 14c). Special-status bat species detected during surveys are further discussed in detail in Section 4.3.5.

A notable mention was the absence of any pallid bat (*Antrozous pallidus*) detections. This species of state and local conservation concern is known to roost in a man-made structure on private land in eastern Ramona approximately 6 miles northeast of Barnett Ranch Preserve. This should be within their expected foraging distance but none were found here or on the two other Properties. Barnett Ranch Preserve appears to have suitable habitat for this terrestrial foraging species in the form of rock crevice roosting opportunities, sparsely vegetated low-gradient grasslands, an open water source, and oaks and riparian vegetation, but the many years of grazing may have degraded the landscape to being unfavorable for the species.

Active Surveys

During the active survey in summer conducted on July 12, 2018, five bats were captured in mist nets, including three adult post-lactating female canyon bats and two Yuma myotis, indicating breeding activity for this specific species either on-site or nearby. No bats were captured during the fall active survey conducted on September 25. No mastiff bats were heard during the active surveys.

Passive Surveys

All 12 bat species were detected with the passive Anabats. Bat activity was greatest in the summer (51.9 ACPN) with slightly less activity measured in the spring (45.1 ACPN), but was considerably less during the fall survey period (22.7 ACPN). All 12 bats were found during the spring, 11 during the summer, and only seven species during the fall. As expected, the migratory hoary bat was found in spring and fall, but was absent in the summer. The species most active during the spring was the pocketed free-tailed bat (40.8 percent of calls), in summer the Mexican free-tailed bat (26.7 percent of calls), and in fall the canyon bat (32.2 percent of calls).

Table 12-2. Results of Luelf Pond Preserve Passive and Active Bat Surveys

Common Name	Scientific Name	Special-Status Listing[1]	Passive Anabats[2]						Active Survey
			Spring (March 19–21, 2018)		*Summer (July 17–19, 2018)*		*Fall (Sep 10–12, 2018)*		*Aug 22, 2018*
			No. of calls	Relative activity (%)	No. of calls	Relative activity (%)	No. of calls	Relative activity (%)	Detected
Big brown bat	*Eptesicus fuscus*	None	nd	0.0	301	33.4	26	11.8	X
California myotis	*Myotis californicus*	None	6	8.2	2	0.2	2	0.9	
Canyon bat	*Parastrellus hepserus*	None	1	1.4	64	7.1	55	25.0	X
Hoary bat	*Lasiurus cinereus*	None	18	24.7	nd	0.0	nd	0.0	
Mexican free-tailed bat	*Tadarida brasiliensis*	None	3	4.1	341	37.8	49	22.3	X
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	State: SSC County: Group 2	19	26.0	49	5.4	29	13.2	X
Townsend's big-eared bat	*Corynorhinus townsendii*	State: SSC County: Group 2	1	1.4	nd	0.0	nd	0.0	
Western mastiff bat	*Eumops perotis*	State: SSC County: Group 2	nd	0.0	2	0.2	nd	0.0	X
Western red bat	*Lasiurus blossevillii*	State: SSC County: Group 2	nd	0.0	10	1.1	1	0.5	
Western small-footed myotis	*Myotis ciliolabrum*	County: Group 2	5	6.8	62	6.9	28	12.7	X
Western yellow bat	*Lasiurus xanthinus*	State: SSC	nd	0.0	nd	0.0	2	0.9	
Yuma myotis	*Myotis yumanensis*	County: Group 2	20	27.4	71	7.9	28	12.7	X
		Total =	*73*		*902*		*220*		
		ACPN[2] =	*12.2*		*100.2*		*18.3*		

[1] State Status Abbreviations: CT: Candidate Threatened; CE: Candidate Endangered; FP: Fully Protected; SSC: Species of Special Concern; WL: Watch List (CDFW 2019a)

[2] nd = not detected; ACPN = Anabat calls per night (Spring = 2 anabat x 3 nights, Summer = 3 anabats x 3 nights, Fall = 4 anabats x 3 nights)

Table 12-3. Results of Barnett Ranch Preserve Passive and Active Bat Surveys

Common Name	Scientific Name	Special-Status Listing[1]	Passive Anabats[2]						Active Surveys	
			Spring (April 9–11, 2018)		*Summer (July 10–-12, 2018)*		*Fall (Sep 25–27, 2018)*		*July 12, Sep 25, 2018*	
			No. of calls	Relative activity (%)	No. of calls	Relative activity (%)	No. of calls	Relative activity (%)	Detected	Mist Net Captures
Big brown bat	*Eptesicus fuscus*	None	13	1.3	139	14.9	48	11.7		
California myotis	*Myotis californicus*	None	7	0.7	3	0.3	nd	0.0		
Canyon bat	*Parastrellus hepserus*	None	272	26.4	230	24.6	132	32.3	X	3 adult females
Hoary bat	*Lasiurus cinereus*	None	7	0.7	nd	0.0	16	3.9		
Mexican free-tailed bat	*Tadarida brasiliensis*	None	53	5.1	250	26.7	59	14.4	X	
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	State: SSC County: Group 2	421	40.8	117	12.5	101	24.7	X	
Townsend's big-eared bat	*Corynorhinus townsendii*	State: SSC County: Group 2	11	1.1	2	0.2	nd	0.0		
Western mastiff bat	*Eumops perotis*	State: SSC County: Group 2	1	0.1	1	0.1	nd	0.0		
Western small-footed myotis	*Myotis ciliolabrum*	County: Group 2	24	2.3	19	2.0	18	4.4		
Western yellow bat	*Lasiurus xanthinus*	State: SSC	nd	0.0	6	0.6	nd	0.0		
Western long-eared myotis	*Myotis evotis*	None	3	0.3	1	0.1	nd	0.0		
Yuma myotis	*Myotis yumanensis*	County: Group 2	220	21.3	167	17.9	35	8.6	X	1 adult male and 1 adult female
		Total =	*812*		*935*		*409*			
		ACPN[2] =	*45.1*		*51.9*		*22.7*			

[1] State Status Abbreviations: CT: Candidate Threatened; CE: Candidate Endangered; FP: Fully Protected; SSC: Species of Special Concern; WL: Watch List (CDFW 2019a)

[2] nd = not detected; ACPN = Anabat calls per night (Spring = 1 anabat x 3 nights, Summer & Fall = 2 anabats x 3 nights)

4.3.5 Special-Status Wildlife Observed

Thirty-four special-status wildlife species were observed or detected within the Properties during surveys in 2018 (Figures 14a – 14c). Ten of the detected species are also covered under the MSCP. No special-status butterfly species were detected. Special-status wildlife include nine reptile species, 13 bird species, and 12 mammal species. Life history, range description, and occurrence of these species within the Properties are discussed in further detail in the following sections.

4.3.5.1 Butterflies

No special-status butterfly species were observed during any surveys on the Properties. No special-status butterfly species were recorded on Barnett Ranch Preserve during the previous two baseline inventory studies (Helix 2004b; TAIC 2010).

4.3.5.2 Herpetofauna

Blainville's horned lizard *(Phrynosoma coronatum blainvillei)*
CDFW Species of Special Concern, County Group 2, MSCP Covered Species

Blainville's horned lizard is endemic to extreme southwestern California, from Los Angeles County into Baja California (Stebbins 2003). In San Diego County, it is relatively widespread and locally common from the coast to the western edge of the desert, but is more commonly detected in eastern San Diego County. Blainville's horned lizard is most often found on sandy or friable soil with a variety of habitats, from sage scrub and chaparral to coniferous and broadleaf woodlands (Stebbins 2003). Habitat requirements include open areas for sunning, bushes for cover, loose soil for rapid burrowing, and a supply of native ant species.

One Blainville's horned lizard was captured in Herp Array 4, located in the upland chaparral habitat of Luelf Pond Preserve. Additional incidental detections were made at Luelf Pond Preserve and Barnett Ranch Preserve (Figures 14b and 14c). This species likely inhabits most of the open chaparral and scrub habitats where they coincide with sandy or friable soils on both Luelf Pond Preserve and Barnett Ranch Preserve but is unlikely to inhabit Holly Oaks County Park due to lack of suitable habitat.

San Diegan tiger whiptail *(Aspidoscelis tigris stejnegeri)*
CDFW Species of Special Concern, County Group 2

San Diegan tiger whiptail is found in a variety of open habitats in California, including scrub, chaparral, woodland, and riparian areas. This subspecies is found in coastal Southern California,

mostly west of the Peninsular Ranges and south of the Transverse Ranges, and north into Ventura County.

San Diegan tiger whiptail was detected in the open chaparral and scrub habitat at all Properties during surveys in 2018. Three San Diegan tiger whiptails were captured at Herp Arrays 1 and 3 (Figures 14a and 14b). The species was also detected incidentally at Barnett Ranch Preserve (Figure 14c).

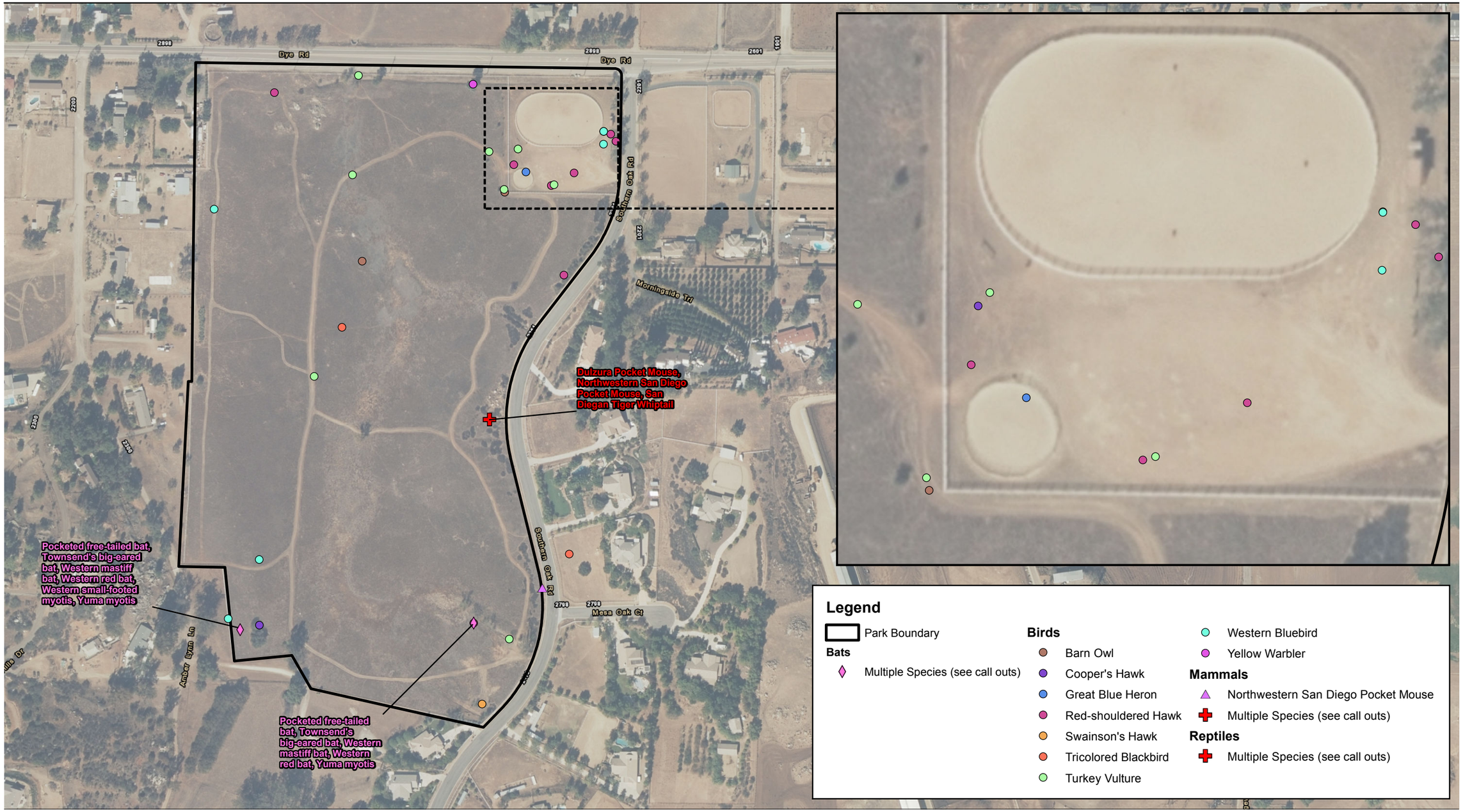
Belding's orange-throated whiptail *(Aspidoscelis hyperythra beldingi)*
CDFW Watch List, County Group 2, MSCP Covered Species

In California, Belding's orange-throated whiptail is found on the west side of the Peninsular Ranges between sea level and 3,000 feet in the southernmost counties (CDFG 1988). Belding's orange-throated whiptail inhabits washes, streams, terraces, and other sandy areas associated with perennial plants, open scrub, or coastal chaparral.

Belding's orange-throated whiptail was detected in the open chaparral and scrub habitat of Barnett Ranch Preserve during surveys in 2018. This species was not detected at Luelf Pond Preserve or Holly Oaks County Park; however, it has potential to occur within the open chaparral and scrub habitat at both Properties. During drift fence surveys at Barnett Ranch Preserve, the species was captured 12 times at Herp Arrays 5, 6, 7, 10, 11, and 12 (Figure 14c).

Coronado skink (*Eumeces skiltonianus interparietalis*)
CDFW Watch List, County Group 2

Coronado skink occurs in the western and southern portions of San Diego County and south into Baja California. It prefers moist areas where there is plenty of cover in the form of vegetated ground cover and other cover objects, such as rocks, leaf litter, and fallen tree limbs. The species occurs in woodlands, pine forests, chaparral, and coastal sage scrub with open sunny areas as well as rocky areas near streams.



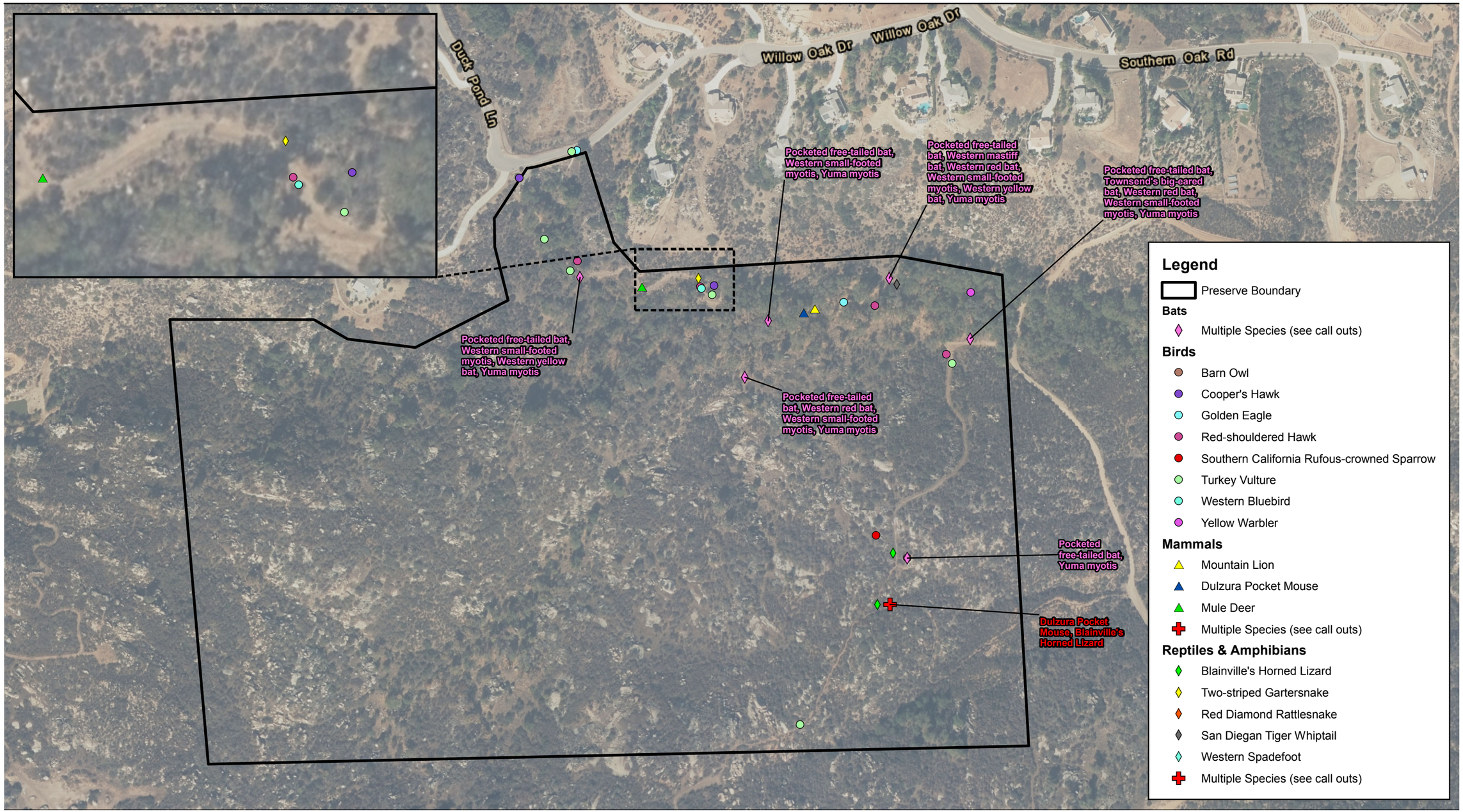
Source: SANDAG 2014

275 137.5 0 275 Feet

Scale: 1:3,300; 1 inch = 275 feet

Figure 14a
Special-Status Wildlife Species Locations
Holly Oaks County Park

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\AllSpeciesObs_Holly_classified.mxd, 4/1/2019, paul.moreno



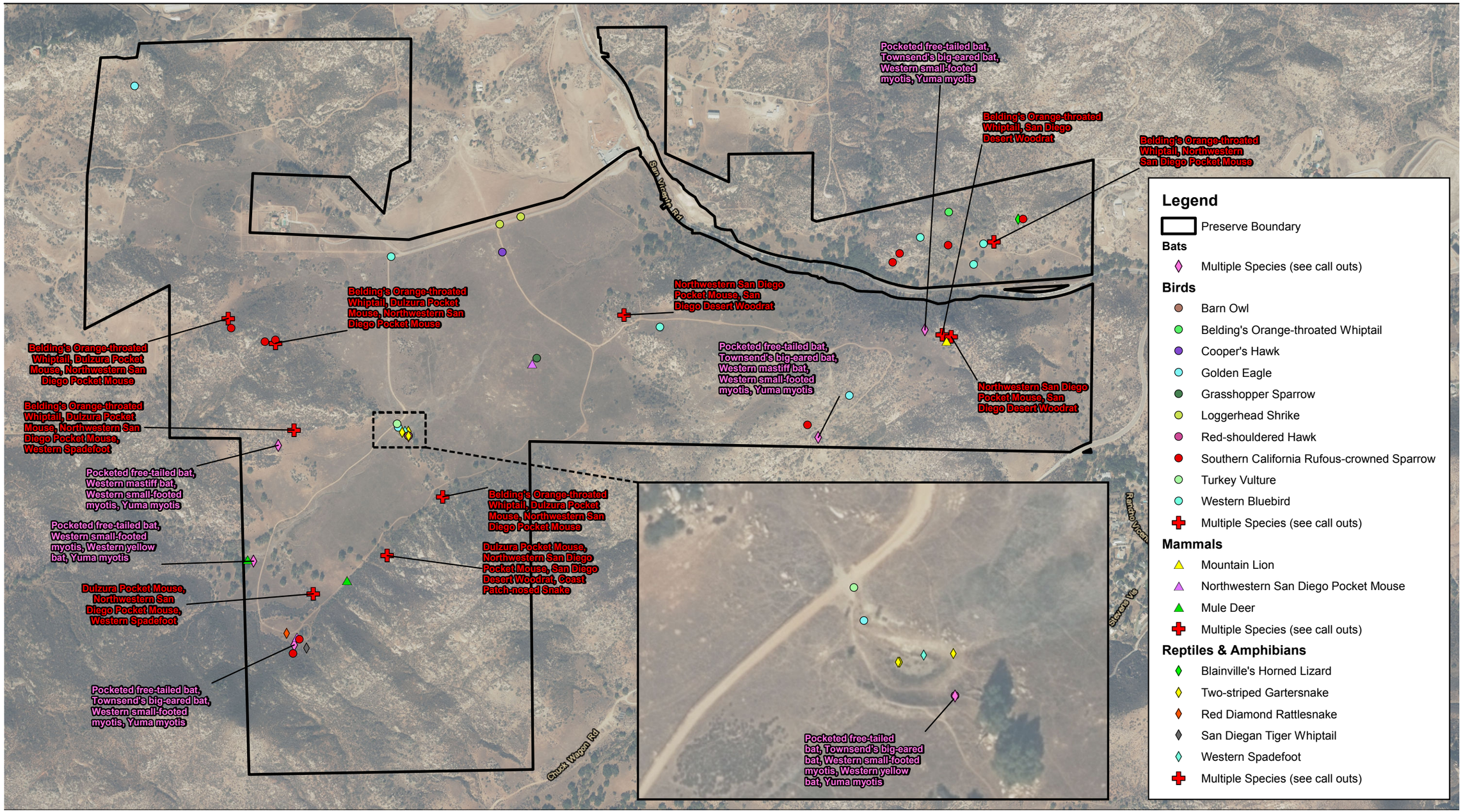
Source: SANDAG 2014

300 150 0 300 Feet

Scale: 1:3,600; 1 inch = 300 feet

Figure 14b
Special-Status Wildlife Species Locations
Luelf Pond Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\AllSpeciesObs_Luelf_classified.mxd, 4/1/2019, paul.moreno



Source: SANDAG 2014

900 450 0 900 Feet

Scale: 1:10,800; 1 inch = 900 feet

Figure 14c
Special-Status Wildlife Species Locations
Barnett Ranch Preserve

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\AllSpeciesObs_Barnet_classified.mxd, 4/1/2019, paul.moreno

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One adult Coronado skink was found incidentally underneath a horizontal rock slab in coastal sage-chaparral transition vegetation within Barnett Ranch Preserve in February 2018 (Figure 14c). The species is expected to occur at Luelf Pond Preserve due to the abundance of suitable habitat along the riparian corridor and adjacent upland vegetation. There is a low potential for Coronado skink at Holly Oaks County Park due to the lack of suitable habitat.

Coast patch-nosed snake (*Salvadora hexalepis virgultea*)
CDFW Species of Special Concern, County Group 2

Coast patch-nosed snake occurs in California from the northern Carrizo Plains in San Luis Obispo County, south through the coastal zone, south and west of the deserts, and into coastal northern Baja California up to 7,000 feet in elevation (Marlow 2005). It occurs in semi-arid brushy areas within chaparral, desert scrub, washes, and sandy flats and rocky areas (Marlow 2005). This species seems to require at least a low shrub structure of minimum density; it is not found in habitats lacking this habitat characteristic (Jennings and Hayes 1994).

One adult coast patch-nosed snake was captured during drift fence surveys at Barnett Ranch Preserve at Herp Array 9 (Figure 14c). This species likely inhabits most of the open chaparral and scrub habitats where they coincide with sandy or friable soils on Barnett Ranch Preserve and Luelf Pond Preserve, but has low potential of occurring at Holly Oaks County Park due to the absence of those habitat types.

Red diamond rattlesnake (*Crotalus ruber*)
CDFW Species of Special Concern, County Group 2

Red diamond rattlesnake occurs in California from coastal San Diego to the eastern slopes of the mountains, north to San Bernardino County, and south to Baja California up to 3,000 feet in elevation (CDFG 1988). It inhabits woodland, arid desert, and chaparral in dense vegetation and rocky areas. This species specializes on mammalian prey including woodrats, kangaroo rats, pocket mice, and deer mice.

One juvenile northern red diamond rattlesnake was detected incidentally at Barnett Ranch Preserve but was not detected at Luelf Pond Preserve or Holly Oaks County Park (Figure 14c). This species likely inhabits most of the open chaparral and scrub habitats where they coincide with large rock/boulder areas on Barnett Ranch Preserve and Luelf Pond Preserve, but has low potential of occurring at Holly Oaks County Park due to the absence of those habitat types.

Two-striped garter snake (*Thamnophis hammondii*)
CDFW Species of Special Concern, County Group 1

Two-striped garter snake occurs in California from the southeastern slopes of the Diablo Range south along the coast to the Mexican border up to 8,000 feet in elevation (CDFG 1988). Two-striped garter snake occurs in aquatic habitats, preferring rocky streams with protected pools, cattle ponds, marshes, vernal pools, and other shallow bodies of water lacking large aquatic predators. This species primarily preys upon fish, fish eggs, and amphibians (including tadpoles).

Two-striped garter snake was frequently observed within the stock pond at Barnett Ranch Preserve. It was also observed incidentally at Luelf Pond Preserve near the perennial stream along the northeast boundary of the Property (Figures 14b and 14c). This species has low potential to occur along the shallow drainage at Holly Oaks County Park due to the marginal quality of the habitat located on-site and lack of permanent water.

Western spadefoot (*Spea hammondii*)
CDFW Species of Special Concern, County Group 2

Western spadefoot primarily occurs in grassland and sage scrub habitat, with some occurrence in oak woodlands and riparian areas. Upland habitat is required for feeding and constructing burrows for dry-season dormancy. Western spadefoot utilizes seasonal wetlands for reproduction and metamorphosis. This species breeds in seasonal wetlands such as vernal pool and can also be found in creeks, drainages, and stock ponds.

Western spadefoot was captured on three occasions in Herp Arrays 7 and 8 at Barnett Ranch Preserve and observed incidentally along the edge of the stock pond (Figure 14c). One large western spadefoot tadpole was detected within the stock pond, indicating successful breeding occurred in 2018. Although none were observed at Luelf Pond Preserve, the small ponded area on the opposite side of Duck Pond Lane has the potential to support western spadefoot, which could then disperse into the Preserve. Western spadefoot has a low potential to occur at Holly Oaks County Park due to the lack of water sources that could provide suitable breeding habitat, and appropriate adjacent upland aestivation habitat.

Rosy boa (*Lichanura orcutti*)
County Group 2
Rosy boa occurs in California, Arizona, and both the Sonoran and Baja regions of Mexico. The rosy boa is commonly found in dry, rocky brushlands and arid habitats, sometimes near intermittent streams. Habitat requirements include vegetation or rocky outcrops suitable for shelter. Specifically, granite outcroppings are the most common geologic association inhabited by

the rosy boa. The rosy boa spends much of its time concealed beneath rocks and crevices to escape the natural elements and avoid predators. It eats a variety of small mammals, reptiles, and birds that it captures and kills by constriction. Rosy boa was captured during 2001 survey efforts prior to the 2003 Cedar Fire (Helix 2004b). The species was not captured during 2009 surveys (TAIC 2010).

One rosy boa was captured in Herp Array 4 in the upland chaparral habitat of Luelf Pond Preserve (Figure 14b). Herp Array 4 was located in mature chaparral with granite rock outcrops nearby. No other detections were recorded at either of the other two Properties. The rosy boa has high potential to occur within the rocky, chaparral habitat at Barnett Ranch Preserve but is less likely to occur at Holly Oaks County Park due to the lack of rocky outcroppings and chaparral habitat located on-site.

4.3.5.3 Birds

Barn owl (*Tyto alba*)
County Group 2

Barn owl is a common, yearlong resident to California (CDFG 1988). It occurs in open habitats including wetlands, chaparral, grassland, and riparian from sea level to 5,500 feet in elevation. It forages on mice, rats, squirrels, insects, reptiles, amphibians, and small birds. It nests on ledges and crevices of structures including man-made structures and cliffs, as well as in the skirts of large palms and in large tree cavities. Monogamous pairs retain the same home range throughout the year.

Barn owls were detected during general avian surveys at Holly Oaks County Park and at all three Properties incidentally during bat surveys (Figures 14a – 14c). Barn owls are likely frequently moving throughout the Properties due to the plentiful foraging habitat located within all three. Although limited man-made structures are located on the Properties suitable for nesting, areas of rocky outcroppings and large oaks with potential nest cavities occur at Luelf Pond Preserve and Barnett Ranch Preserve that have potential to support nesting activities as well as an abundance of man-made structures in residential areas surrounding the Properties.

Cooper's hawk (*Accipiter cooperii*)
CDFW Watch List, County Group 1, MSCP Covered Species

Cooper's hawk occurs in wooded portions of California including live oak, riparian deciduous, and other forested habitat (CDFG 1988). It generally nests in deciduous trees 20 to 50 feet above the ground within riparian habitat, where it also commonly forages. This species is mostly a

yearlong resident in San Diego County and forages on small birds, mammals, reptiles, and amphibians.

Cooper's hawks were frequently observed at all three Properties during general avian surveys and occasionally during other various survey efforts incidentally (Figures 14a – 14c). Cooper's hawks likely utilize all three Properties to forage and potentially nest in areas of riparian or wooded habitat within Luelf Pond Preserve and Barnett Ranch Preserve; however, no nests were observed during 2018 surveys.

Grasshopper sparrow (*Ammodramus savannarum*)
CDFW Species of Special Concern, County Group 1

Grasshopper sparrow occurs in open grasslands with scattered shrubs (CDFG 1988). It occurs from Mendocino County and Trinity County, south to San Diego County up to 5,000 feet in elevation. This species forages primarily on insects and grass and forb seeds. It nests in a grass-lined bowl in the ground.

One grasshopper sparrow was detected incidentally at Barnett Ranch Preserve (Figure 14c). The large expanse of open grassland at Barnett Ranch Preserve likely serves as quality nesting and foraging habitat for the species; however, no nests were observed. The grasshopper sparrow was detected at the end of April 2018 and may have been migrating through the area since it was not detected again on subsequent surveys. Grasshopper sparrows may occasionally inhabit the open grassland landscape at Holly Oaks County Park; however, this is not as likely due to the lower quality (mainly non-native grassland) and isolated nature of habitat on-site. Occurrences at Luelf Pond Preserve are not as likely; however, this species could be detected traveling through the Preserve during migration.

Golden eagle (*Aquila chrysaetos*)
CDFW fully protected species and watch list, County Group 1, MSCP Covered Species

Golden eagle occurs in grasslands, deserts, open areas of mountains, woodland-brushlands, and forested habitats (CDFG 1988). They prefer areas near cliffs or tall forests for nesting. They maintain large territories, primarily in areas of no or low human development, like farmland. This species occurs throughout California, except the Central Valley, up to 11,500 feet in elevation. They forage primarily on lagomorphs and rodents. Golden eagles are year-round residents in San Diego County, with an increase in wintering birds from more northern latitudes.

Golden eagles were observed during general avian surveys at Luelf Pond Preserve and at Barnett Ranch Preserve (Figures 14b and 14c). Much of the state land adjacent to Luelf Pond Preserve and

Barnett Ranch Preserve is relatively rural and undeveloped. The open nature of the landscape likely attracts golden eagles, a species that typically avoids areas of high human activity. An active golden eagle territory is known to occur at Cañada de San Vicente Ecological Reserve and U.S. Geological Survey data has documented the species flying over the Properties (Tracey et al. 2016; 2017). Historically, golden eagle pairs have nested in nearby Kimball Valley, San Vicente Reservoir, and on the Palisades rock formation west of Dos Picos Park (TAIC 2010).

Loggerhead shrike (*Lanius ludovicianus*)
CDFW Species of Special Concern, County Group 1

Loggerhead shrike occurs throughout California in lowlands and foothills (CDFG 1988). It prefers open habitats with scattered shrubs, fences, utility lines, and other perches. This species forages primarily on insects, small birds, mammals, amphibians, and reptiles. They nest on stable branches in densely vegetated trees about 1.3 to 50 feet above the ground. Within San Diego County, loggerhead shrikes occur year-round as resident breeders with an influx of additional overwintering birds.

Loggerhead shrikes were detected on multiple occasions at Barnett Ranch Preserve (Figure 14c); likely due to the large expanse of open habitat located on-site, as well as the abundance of fencing and utility lines along the northern Preserve boundary suitable for perching. The species has a potential to nest within Barnett Ranch Preserve due to suitable grassland and adjacent scrub communities. Although none were detected at Holly Oaks County Park, the grassland habitat and perimeter fencing likely attracts the species on occasion. Loggerhead shrike detections at Luelf Pond Preserve are unlikely due to a lack of suitable grassland habitat.

Red-shouldered hawk (*Buteo lineatus*)
County Group 1

Red-shouldered hawk occurs along coastal California up to 5,000 feet in elevation (CDFG 1988). They are a yearlong resident and prefer woodlands and low-elevation riparian woodlands. They forage along wetlands for small mammals, snakes, lizards, amphibians, birds, and invertebrates. This species generally nests in dense riparian habitat, in large trees.

Red-shouldered hawks were commonly detected throughout the Properties during both general avian surveys as well as incidentally during other surveys (Figures 14a – 14c). The riparian habitat located at Luelf Pond Preserve and areas of oak woodland at Barnett Ranch Preserve are favorable habitat types for red-shouldered hawks and likely support nesting activities during the breeding season; however, no nests were observed during 2018 surveys. Red-shouldered hawks were

commonly observed flying over Holly Oaks County Park while foraging; however, nesting activities are less likely due to the lack of expansive riparian and woodland habitat on-site.

Swainson's hawk (*Buteo swainsoni*)
California Endangered Species Act (CESA) Threatened, County Group 1, MSCP Covered Species

Swainson's hawks breed within the western half of the United States and within California breed primarily from the Antelope Valley north into the Central Valley and farther north and east in California. The species currently does not breed within San Diego County. Every fall, Swainson's hawks make an impressive migration from their breeding grounds south into the southern part of Argentina, and do the reverse migration every spring. They feed primarily on small rodents; voles; and insects such as caterpillars, grasshoppers, etc. They are a species of wide-open habitats including plains, grasslands, prairies, desert scrublands, and low-growing agricultural areas. Swainson's hawks are state listed as threatened on their nesting grounds.

One Swainson's hawk was detected migrating over Holly Oaks County Park in April during a general avian survey (Figure 14a). During migration, this species could possibly be found foraging throughout the open grassland habitat located within Holly Oaks County Park and Barnett Ranch Preserve. Although Luelf Pond Preserve lacks their preferred foraging habitat, occurrences are still possible as Swainson's hawks are migrating through the area and passing over.

Tri-colored blackbird (*Agelaius tricolor*)
CESA Candidate Endangered, CDFW Species of Special Concern, County Group 1, MSCP Covered Species

Tri-colored blackbird occurs within freshwater marshes, croplands, lakeshores, and parks (CDFG 1988). This species is endemic to California and occurs sporadically in Oregon, northwestern Baja California, and western Nevada. This species forages primarily on insects and spiders. It typically nests in cattails, willows, blackberry, and tall herbs. They are colonial nesters with a minimum of about 50 pairs in one area. Within the Ramona area during winter, tri-colored blackbirds occur around active dairies and open grassland areas where cattle are present, such as along Rangeland Road. During winter the species uses grasslands and pastures for foraging. No suitable breeding habitat exists for tri-colored blackbirds at any of the Properties.

Tri-colored blackbirds were observed flying over Holly Oaks County Park during general avian surveys (Figure 14a). Tricolored blackbirds are found year-round in the Ramona area; however, no suitable breeding habitat is present within any of the Properties and there is a low potential for foraging within Holly Oaks County Park.

Yellow warbler (*Dendroica petechia*)
CDFW Species of Special Concern, County Group 2

Yellow warbler occurs throughout California in Del Norte County, east to Modoc plateau, south along the coast to Ventura County, and in Southern California up to 8,000 feet in elevation (CDFG 1988). They also occur in the eastern part of the state in Lake Tahoe. They forage primarily on insects and spiders in riparian woodlands, montane chaparral, ponderosa pine, and mixed conifer habitat. They nest above ground in a deciduous sapling or shrub 2 to 16 feet above ground. Yellow warblers occur as summer breeders throughout San Diego County primarily in areas of mulefat and willow scrub. However, they have been known to breed in riparian areas dominated by oak woodland.

Yellow warblers were detected within areas of riparian habitat at Holly Oaks County Park and Luelf Pond Preserve (Figures 14a and 14b) but were not singing on territory within either Property and were therefore likely only migrants. Although yellow warblers were not detected at Barnett Ranch Preserve, they likely migrate through and occasionally utilize woodland areas; however, little suitable nesting habitat is present.

Turkey vulture *(Cathartes aura)*
County Group 1

Turkey vulture is a highly migratory species, but San Diego County lies within the overlap zone of the winter and summer ranges of this species. Thus, the turkey vulture is present within San Diego County year-round. Turkey vultures are wide-ranging birds that can cover large areas while searching for carrion in a variety of habitats. This species nests in secluded rocky outcroppings, away from human activity. Many areas of San Diego County have suitable rocky substrates for nesting, but often these are not used for nesting due to frequent human disturbance.

This species was observed on multiple occasions flying over the Properties (Figures 14a – 14c). Areas of rocky outcroppings at Barnett Ranch Preserve have potential to support nesting activities; however, no nesting activity was observed during survey efforts. Much of the adjacent habitat located south of the Properties is relatively undeveloped with less human activity. Turkey vultures may potentially nest in the adjacent landscape and utilize the nearby Properties while foraging.

Southern California rufous-crowned sparrow *(Aimophila ruficeps canescens)*
CDFW Watch List, County Group 1, MSCP Covered Species

Southern California rufous-crowned sparrow is a year-round resident species in San Diego County. This species prefers steep grassy or rocky slopes with open scrub at elevations from sea level to

approximately 2,000 feet. Most of the species' population occurs in coastal sage scrub, although it can occupy other coastal scrub habitats. This bird forages and nests on the ground, usually near vegetative cover. Southern California rufous-crowned sparrow is not migratory, but territory size may increase during the post-breeding season. Southern California rufous-crowned sparrow maintains year- round territories.

Southern California rufous-crowned sparrows were commonly detected in multiple locations throughout Luelf Pond Preserve and Barnett Ranch Preserve (Figures 14b and 14c). This species was commonly heard along the slopes of steep hillsides, and generally favored the rockier, more open chaparral and sage scrub habitats. Both Preserves provide suitable nesting and foraging habitat for southern California rufous-crowned sparrows. Occurrences at Holly Oaks County Park are unlikely due to the relatively flat landscape and lack of preferred chaparral and sage scrub habitat on-site.

Western bluebird (*Sialia mexicana*)
County Group 2, MSCP Covered Species

Western bluebird occurs in open coniferous, deciduous, and riparian woodlands, and grasslands and agricultural areas with adjacent nesting cavities. Western bluebird is a secondary cavity nester, typically nesting in cavities excavated by woodpeckers, but also man-made nest boxes. It forages on insects, fruit, berries, and seeds; therefore, both suitable nest cavities and prey base are necessary for successful nesting. This species breeds in the western half of the United States from Washington to Southern California and into Mexico. The resident breeding population in Southern California is augmented by additional wintering birds.

Western bluebirds were commonly observed within all three Properties (Figures 14a - 14c). No on-site nesting was observed; however, suitable nesting habitat occurs within the groves of large oak trees at Barnett Ranch Preserve and Luelf Pond Preserve and within the areas of southern riparian woodland habitat at Holly Oaks County Park. Nesting potential is low at Holly Oaks County Park due to the lack of trees with suitable nest cavities.

Great blue heron (*Ardea herodias*)
County Group 2

Great blue heron is a large wading bird frequently found near open water and wetlands throughout most of North America. Although mostly associated with bodies of water, the great blue heron can occasionally be seen flying over upland areas. This species feeds on a wide range of prey including crabs, aquatic insects, rodents, amphibians, reptiles, and occasionally small birds such as

ducklings. The great blue heron usually breeds in colonies, ranging between five and 500 nests per colony, close to lakes or other large bodies of water.

A great blue heron was observed flying over Holly Oaks County Park during a butterfly survey (Figure 14a). Although nesting activity is unlikely, this species has potential to migrate over or travel through all three Properties en route to large bodies of water nearby, such as the San Vicente Reservoir.

4.3.5.4 Mammals

Dulzura pocket mouse *(Chaetodipus californicus femoralis)*
CDFW Species of Special Concern, County Group 2

Dulzura pocket mouse is found in a variety of habitats year-round, including coastal scrub, chamise-redshank and montane chaparral, sagebrush, annual grassland, valley foothill hardwood, valley foothill hardwood-conifer, and montane hardwood habitats at elevations from sea level to 7,900 feet (Brylski 2005). Within San Diego County, the Dulzura pocket mouse is found in a variety of vegetation communities including coastal sage scrub, sagebrush, grassland, and various chaparral communities. The species prefers semi-open scrub habitats that provide cover and friable soils for burrows.

Within the Properties, this species was detected primarily in scrub and chaparral type habitats at all three Properties (Figures 14a – 14c). Vegetation communities such as Diegan coastal sage scrub, southern mixed chaparral, and coastal sage-chaparral transition that were semi-open along the ground (versus choked with non-native vegetation) with friable soils were some of the preferred habitat types. The species was often found along sloped terrain with granitic soils.

Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)
CDFW Species of Special Concern, County Group 2

Northwestern San Diego pocket mouse occurs from the eastern San Gabriel Mountains in the interior to near San Onofre on the coast (Lackey 1996), and south into Baja California. It is found in coastal scrub, chamise-redshank chaparral, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland habitats (Brylski 2005). The availability of shelter provided by rocky slopes or habitats may increase species abundance (Lackey 1996). The northwestern San Diego pocket mouse generally exhibits a strong microhabitat affinity for moderately gravelly and rocky substrates (Bleich 1973; Price and Waser 1984).

Within the Properties, this species was captured at Holly Oaks County Park (within flat-topped or California buckwheat scrub at Herp Array 2) and throughout Barnett Ranch Preserve within chaparral vegetation communities (Figures 14a and 14c). This species was not detected on Luelf Pond Preserve but has potential to occur due to the presence of suitable habitat on-site. There is a potential that the understory of the areas where trapping occurred at Luelf Pond Preserve was too dense for the species and the species is likely present in more open patches of chaparral within the Property.

San Diego desert woodrat (*Neotoma bryanti intermedia*)
CDFW Species of Special Concern, County Group 2

San Diego desert woodrat occurs in coastal California from San Luis Obispo south through the Transverse and Peninsular Ranges into Baja California. This species commonly inhabits mixed chaparral, Joshua tree woodlands, pinyon-juniper woodlands, sagebrush, and desert habitats (Zeiner et al. 1990). Nests are constructed with twigs, sticks, cactus parts, and rocks and are usually built against a rock crevice, at the base of creosote or cactus, or in the lower branches of trees (Brylski 2005).

Within the Properties, San Diego desert woodrats were captured at small mammal trapping locations 6 and 7 at Barnett Ranch Preserve and at drift fence surveys at Herp Arrays 9 and 11 (Figure 14c). The species was captured in chaparral habitat with granitic soils and nearby rocks. Based on the similarity of habitat where the species was captured at Barnett Ranch Preserve with the upland portion of Luelf Pond Preserve, the species likely occurs within Luelf Pond Preserve as well. Due to the lack of mixed chaparral habitat on-site at Holly Oaks County Park, the potential for San Diego desert woodrat is low.

Townsend's Big-eared Bat (*Corynorhinus townsendii*)
CDFW Species of Special Concern, County Group 2

Townsend's big-eared bat occurs primarily throughout the western portion of North America in a wide variety of habitats from coniferous forests, deserts, prairies, riparian communities, active agricultural areas, and coastal habitat types (Piaggio 2005). Its distribution is strongly related to the availability of caves, cave-like roosting habitat, abandoned mines, buildings, bridges, and other structures. This species has summer maternity colonies and winter hibernating colonies. Townsend's big-eared bat is a moth specialist and bats will travel large distances while foraging, including movements of over 90 miles during a single evening (Piaggio 2005). The species generally has large foraging distances and large home ranges.

This species was detected during passive acoustic bat surveys within all three Properties during spring, summer, and fall surveys (Figures 14a – 14c). Relative activity for this specific species was somewhat low compared to other bat species detected during survey efforts. This species was likely foraging and flying through the Properties en route to roosting habitat or nearby water sources.

Pocketed free-tailed bat (*Nyctinomops femorosaccus*)
CDFW Species of Special Concern, County Group 2

Pocketed free-tailed bat is rare in California and found in Riverside, San Diego, and Imperial Counties (Harris 2005). Habitats frequently used by this species include pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis (Harris 2005). The pocketed free-tailed bat prefers rock crevices in cliffs as roosting sites (Harris 2005). The status of this species in California is poorly known but appears rare (Harris 2005).

Pocketed free-tailed bat was commonly recorded at all three Properties during the spring, summer, and fall passive survey efforts (Figures 14a – 14c). In addition, it was recorded during all three active surveys at each Property as well. Given the high number of bat calls recorded early in the evening, this species likely roosts in rocky outcrops somewhere on Luelf Pond Preserve or Barnett Ranch Preserve or on land adjacent to the Properties.

Western yellow bat (*Lasiurus xanthinus*)
CDFW Species of Special Concern

Western yellow bat occurs year-round in Southern California and occurs mainly in valley foothill riparian, desert riparian, desert wash, and palm oasis habitat below 2,000 feet in elevation (Zeiner et al. 1990). Western yellow bats roost and feed in and around palm oases and adjacent riparian habitats. The species gives birth in June and July to a single litter averaging two young (Zeiner et al. 1990).

This species was detected during the fall passive survey at Luelf Pond Preserve and during summer passive survey at Barnett Ranch Preserve (Figures 14b and 14c). No detections were recorded during any of the survey efforts at Holly Oaks County Park and no detections were made during the active surveys at any of the three Properties. Given the lack of suitable roosting habitat for this species within the Properties, this species was likely migrating through.

Western red bat (*Lasiurus blossevillii*)
CDFW Species of Special Concern, County Group 2

Western red bat occurs in western Canada, western United States, western Mexico, and Central and South America (Harvey et al. 1999). There is little information on the distribution and relative abundance of this species in Southern California (Stephenson and Calcarone 1999). This bat is associated with large deciduous trees in riparian habitat and often occurs in streamside habitats dominated by cottonwood, oaks, sycamore, and walnut (Bolster 1998; Harvey et al. 1999). This species is primarily a solitary species that roosts in the foliage of trees and shrubs in habitats bordering forests, rivers, cultivated fields, and urban areas (Harvey et al. 1999). The western red bat forages over a wide variety of habitats including grasslands, shrublands, open woodlands and forests, and croplands (Harris 2005).

Within Holly Oaks County Park and Luelf Pond Preserve, western red bat was observed occasionally during spring, summer, and fall passive surveys. In addition, the species was detected during active surveys at Holly Oaks County Park (Figures 14a and 14b). There is suitable riparian habitat present within Luelf Pond Preserve where this species is more likely to roost and forage. The detections at Holly Oaks County Park were likely foraging bats or bats in transit to nearby riparian habitat. This species was not detected at Barnett Ranch Preserve.

Western mastiff bat (*Eumops perotis)*
CDFW Species of Special Concern, County Group 2

In California, western mastiff bat occurs in the southeastern San Joaquin Valley and coastal ranges to Southern California (CDFG 1988). They inhabit conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, desert scrub, and urban habitats. They forage on insects and roost in rock crevices, trees, tunnels, and high buildings. They are a year-round resident in California.

Western mastiff bat was detected at the three Properties during passive survey efforts during spring, summer, and fall. Active survey detections were only made at Holly Oaks County Park and Luelf Pond Preserve (Figures 14a – 14c). Based on the number of calls, the species does not appear to frequent the Properties but likely forages or moves through the Properties en route to water and food sources elsewhere.

Western small-footed myotis (*Myotis ciliolabrum)*
County Group 2

This bat species is found from coastal California south of Contra Costa County to the Mexican border and throughout the Central Valley, slopes of the Sierra Nevada, and desert habitats (Zeiner

et al. 1990). It prefers arid habitats with brushy uplands near water sources and inhabits caves, buildings, mines, bridges, and other crevices for roosting (Zeiner et al. 1990).

Western small-footed myotis was commonly detected during passive surveys within Luelf Pond Preserve and Barnett Ranch Preserve, but less frequently at Holly Oaks County Park (Figures 14a – 14c). Additional detections were made during active surveys at Luelf Pond Preserve. Based on the number of calls, the species may potentially be roosting in rocky crevices at Luelf Pond Preserve or Barnett Ranch Preserve or on adjacent land nearby.

Yuma myotis (*Myotis yumanensis)*
County Group 2

This species occurs throughout California in many habitat types, but it prefers open forests and woodlands with sources of water to forage over (Zeiner et al. 1990). It ranges from sea level to 11,000 feet in elevation, but is generally found below 8,000 feet and will roost in groups of several thousand within suitable structures such as caves, buildings, mines, and under bridges (Zeiner et al. 1990).

This species was commonly detected within all three Properties during spring, summer, and fall passive survey efforts, as well as during active surveys (Figures 14a – 14c). The common occurrence of this species indicates potential roosting activity either on the Properties or on adjacent land nearby.

Mule deer *(Odocoileus hemionus)*
County Group 2, MSCP Covered Species

Mule deer is a fairly common species in large areas of native vegetation within San Diego County. Mule deer tend to be more numerous in the foothills and mountain ranges in the eastern part of San Diego County. They have large home ranges and require areas with dense vegetation for cover and fresh water.

During the recent 2018 surveys, several female deer were captured on wildlife camera 5 at Barnett Ranch Preserve as they traveled through the oak woodland located on the west side of the Preserve (Figure 14c). A mule deer was incidentally detected at Luelf Pond Preserve in the evening while small mammal traps were being opened (Figures 14b). Although the number of detections were lower than expected (given the presence of suitable habitat and freshwater at Barnett Ranch Preserve), the presence of the species indicates that vegetation cover is recovering and mule deer are once again utilizing the habitat following the 2003 Cedar Fire. Mule deer likely forage, seek shelter, and move through Luelf Pond and Barnett Ranch Preserves year-round.

Mountain lion (*Puma concolor*)
County Group 2, MSCP Covered Species

Mountain lion is a reclusive ambush predator that prefers habitats with dense underbush and rocky areas for stalking. Although not frequently seen, mountain lions are common in the less developed and more rural areas of San Diego County. Mountain lions are territorial and territory size depends on terrain; vegetation; and abundance of prey, especially mule deer.

A mountain lion was recorded on wildlife camera 2, located at Luelf Pond Preserve (Figure 14b). Sign was observed at Barnett Ranch Preserve in the form of scat (Figure 14c). Mountain lions have wide home ranges and likely travel in and out of the two Preserves from the adjacent state land while hunting and looking for mates. Occurrences at Holly Oaks County Park are unlikely due to the surrounding developed residential areas and low amount of vegetation cover.

4.3.6 Special-Status Wildlife with High Potential to Occur

In addition to the special-status wildlife species documented during the field surveys, 21 special-status wildlife species have a high potential to occur on at least one of the Properties. Due to the variety of topography and habitat differences amongst the three Properties, each Property was considered independently when determining the level of occurrence for special-status wildlife species on each. Some of the species were already detected on some of the Properties, but may not have been detected on all, and hence have a high potential to occur on one or more of the Properties. The evaluation of their potential for occurrence was based on the elevation, soils, and vegetation communities present on each individual Property; known occurrences within adjacent lands; and the range and distribution of species within the vicinity of the Properties.

Special-status wildlife species that were not detected on the Properties during 2018 surveys but have a high potential to occur are presented below in Table 13. Additional species were considered for their potential to occur but did not have a high potential to occur within the Properties, and therefore are not listed in Table 13. For Barnett Ranch Preserve, several species that were historically detected during previous baseline surveys (Helix 2004b; TAIC 2010) but were not detected during surveys in 2018 are still considered to have a high potential to occur and are included in Table 13. A table of all special-status wildlife species evaluated for a potential to occur on the Properties is included in Appendix E.

Table 13. Special-Status Wildlife with High Potential to Occur within the Properties

Species	Status[1]	General Habitat	Potential for Occurrence within the Properties
Reptiles and Amphibians			
Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*)	State: WL County: Group 2 MSCP: Covered	Low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. Prefers washes and other sandy areas with patches of brush and rocks. Perennial plants necessary for termites, its major food.	Detected at Barnett Ranch Preserve and high potential at Luelf Pond Preserve since it contains suitable riparian and chaparral habitat with scattered patches of rocky terrain. Ample supply of decaying vegetation for termites to consume.
Coronado skink (*Eumeces skiltonianus interparietalis*)	State: WL County: Group 2	Scrub habitats with leaf litter and sandy substrates.	Detected at Barnett Ranch Preserve and high potential at Luelf Pond Preserve since it contains areas of dense leaf litter and friable soils suitable for this species.
Red diamond rattlesnake (*Crotalus ruber*)	CDFW: SSC County: Group 2	Coastal sage scrub and grasslands. Occurs in rocky areas and dense vegetation with rodent burrows, cracks in rocks, or surface cover objects.	Detected at Barnett Ranch Preserve and high potential at Luelf Pond Preserve since it contains suitable chaparral habitat with areas of rock outcrops.
Rosy boa (*Lichanura orcutti*)	County: Group 2	Scrub habitats with rock outcrops. Once common on the coast, now typically found in inland locations.	Detected at Luelf Pond Preserve and high potential at Barnett Ranch Preserve since it contains suitable chaparral habitat with areas of rock outcrops. This species was detected at Barnett Ranch Preserve during previous survey efforts prior to the 2003 Cedar Fire (Helix 2004b).
San Diego ring-necked snake (*Diadophis punctatus similis*)	County: Group 2	Prefers moist habitats, including wet meadows, rocky hillsides, gardens, grassland, chaparral, mixed coniferous woods, and woodlands.	Luelf Pond Preserve and Barnett Ranch Preserve: These Properties contain suitable oak woodland and chaparral habitats with sufficient leaf litter and sandy soils.
Western spadefoot (*Spea hammondii*)	CDFW: SSC County: Group 2	Sandy or gravelly soil in grasslands, open chaparral and pine-oak woodlands, coastal sage scrub; vernal pools or freshwater marshes are essential for breeding.	Detected at Barnett Ranch Preserve. High potential at Luelf Pond Preserve due to suitable aestivation habitat and suitable breeding habitat adjacent to the Preserve in a small ponded area across Duck Pond Lane.
Southern California legless lizard (*Anniella stebbinsi*)	CDFW: SSC County: Group 2	Occurs in moist warm loose soil with plant cover. Moisture is essential. Found in beach dunes, pine-oak woodlands, chaparral, desert scrub, washes, and stream terraces.	Luelf Pond Preserve and Barnett Ranch Preserve: There is suitable habitat for this species within sandy soils in oak woodlands on both Properties. The species was previously detected on Barnett Ranch Preserve in 2001, prior to the 2003 Cedar Fire (Helix 2004b).

Table 13. Special-Status Wildlife with High Potential to Occur within the Properties

Species	Status[1]	General Habitat	Potential for Occurrence within the Properties
Birds			
Bell's sparrow (*Artemisiospiza belli*)	CDFW: WL County: Group 1	Coastal sage scrub and sparse chaparral, typically in large unfragmented blocks in inland locales.	Luelf Pond Preserve and Barnett Ranch Preserve: The Properties contain suitable breeding habitat for this species.
California horned lark (*Eremophila alpestris actia*)	State: WL County: Group 2	The species breeds in open grassy and semi-open habitats where it forages on the ground. This species breeds in areas with low to no vegetative growth.	Barnett Ranch Preserve: Large expanses of open grassland habitat suitable for foraging and breeding. This species has been previously detected at Barnett Ranch Preserve (Helix 2004b).
Great blue heron (*Ardea herodias*)	County: Group 2	The species breeds in tall trees adjacent to water where abundant food sources are present. Often considered a bird around coastal area or large bodies of water. In the Ramona area, the species is seen in grasslands eating Botta's pocket gophers (*Thomomys bottae*).	Detected flying over Holly Oak County Park and has a high potential to occur on Barnett Ranch Preserve where suitable foraging habitat is present in non-native grasslands.
Golden eagle (*Aquila chrysaetos*)	CDFW: FP, WL (Nesting and Wintering) MSCP: Covered	Nests on cliff ledges and trees on steep slopes. Hunts for prey in nearby grasslands, sage scrub, or broken chaparral. Requires very large territories and is sensitive to human disturbance at both foraging and breeding habitats.	Detected at Barnett Ranch Preserve and Luelf Pond Preserve and high potential at Holly Oaks County Park. Holly Oaks County Park contains suitable foraging habitat for this species and golden eagles were detected flying over the other Properties. An active golden eagle territory is known to occur at Cañada de San Vicente Ecological Reserve and U.S. Geological Survey data has documented the species flying over the Properties (Tracey et al. 2016; 2017).
Loggerhead shrike (*Lanius ludovicianus*)	State: SSC (Nesting) County: Group 1	This species is a resident breeder, and there is an increase in their numbers during winter. The species prefers open habitats, with scattered shrubs for perching and nesting.	Detected at Barnett Ranch Preserve and high potential at Holly Oaks County Park due to suitable open, grassland habitat for perching and foraging; however, no suitable breeding habitat is present.
Long-eared owl (*Asio otus*)	State: SSC (Nesting) County: Group 1	Sporadic nester within San Diego County in the nests of other raptor species in dense woodland habitats.	Luelf Pond Preserve and Barnett Ranch Preserve: The Properties contain suitable breeding and foraging habitat within oak woodlands for this species.

Table 13. Special-Status Wildlife with High Potential to Occur within the Properties

Species	Status[1]	General Habitat	Potential for Occurrence within the Properties
Northern harrier (*Circus hudsonius*)	State: SSC (Nesting) County: Group 1 MSCP: Covered	A resident breeder within San Diego County in grassland, marsh, and scrubby habitats. It tends to prefer flat areas with dense low-growing vegetation for nesting and foraging. Tends to prefer nesting and foraging along the coastal slope and inland valleys.	Holly Oaks County Park and Barnett Ranch Preserve: The flat landscape and grassland habitat throughout much of the Properties provide suitable foraging habitat for the species. The species generally nests in marshy habitats with adjacent scrub, which is lacking in the Properties.
Prairie falcon (*Falco mexicanus*)	State: WL (Nesting) County: Group 1	A resident breeder within San Diego County in cliff and rocky habitat. Forages widely, but prefers arid areas with open vegetation. Is routinely detected during winter months along Rangeland Road by the Ramona Airport.	Barnett Ranch Preserve: Large expanses of open grassland habitat suitable for foraging but no suitable nesting habitat nearby. This species has been previously detected at Barnett Ranch Preserve (Helix 2004b).
Sharp-shinned hawk (*Accipiter striatus*)	State: WL (Nesting) County: Group 1	A winter visitor, distributed over the coastal slope of San Diego County. The habitat of this species encompasses a variety of vegetation communities and land covers. It requires a certain amount of dense cover, but this can be localized and scattered through relatively open country.	Luelf Pond Preserve and Barnett Ranch Preserve: The Properties contains suitable foraging habitat for this species. This species was previously detected at Barnett Ranch Preserve (Helix 2004b).
Swainson's Hawk (*Buteo swainsoni*)	State: Threatened County: Group 1 MSCP: Covered	The species does not breed in San Diego County and is a regular spring and fall migrant. They forage in open grasslands and plains on mice, gophers, squirrels, rabbits, amphibians, reptiles, and large arthropods.	Detected flying over Holly Oaks County Park and high potential to fly over Luelf Pond Preserve and forage within Barnett Ranch Preserve. This species likely passes through the Properties during migration periods.
Western burrowing owl (*Athene cunicularia hypugaea*)	State: SSC (Burrow sites and some Wintering sites) County: Group 1 MSCP: Covered	Grasslands, open scrublands, and margins of agriculture fields with burrows. Subterranean nester, dependent upon burrowing mammals, especially California ground squirrel (*Otospermophilus beecheyi*).	Barnett Ranch Preserve: The open grassland habitat throughout much of the interior of the Property is suitable breeding and foraging habitat for this species.

Table 13. Special-Status Wildlife with High Potential to Occur within the Properties

Species	Status[1]	General Habitat	Potential for Occurrence within the Properties
White-tailed kite (*Elanus leucurus*)	State: FP, SSC (Nesting) County: Group 1	Widespread over the coastal slope of San Diego County preferring riparian woodlands, oak groves, or sycamore groves adjacent to grasslands. Can be an irruptive species where some years they are common in the County, and other years they are almost absent.	Barnett Ranch Preserve: Areas of oak woodland surrounding grassland habitat provide suitable nesting and foraging opportunities for this species. This species has been previously detected at Barnett Ranch Preserve (Helix 2004b).
Mammals			
Pallid bat (*Antrozous pallidus*)	CDFW: SSC County: Group 2	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect species from high temperatures.	Luelf Pond Preserve and Barnett Ranch Preserve: The Properties contain suitable foraging habitat for this species. This species is known to roost in a man-made structure on private land in eastern Ramona approximately 6 miles northeast of Barnett Ranch Preserve.
Western red bat (*Lasiurus blossevillii*)	CDFW: SSC County: Group 2	Chaparral; live oaks; and arid, rocky regions. Requires downward-opening crevices.	Detected at Luelf Pond Preserve and Holly Oaks County Park and high potential to occur at Barnett Ranch Preserve due to suitable foraging and roosting habitat.
Western yellow bat (*Lasiurus xanthinus*)	State: SSC	Associated with thorny vegetation on the Mexican Plateau and found in desert regions of the southwestern United States, particularly in association with palms.	Detected at Luelf Pond Preserve and Barnett Ranch Preserve and high potential to occur at Holly Oaks County Park due to suitable foraging habitat.
Northwestern San Diego Pocket mouse (*Chaetodipus fallax fallax*)	State: SSC County: Group 2	Sagebrush scrub, annual grassland, chaparral, and desert scrubs. Sandy, herbaceous areas, usually in association with rocks or coarse gravel.	Detected at Holly Oaks County Park and Barnett Ranch Preserve and high potential at Luelf Pond Preserve. The Property contains suitable chaparral habitat for this species.
San Diego desert woodrat (*Neotoma lepida intermedia*)	CDFW: SSC County: Group 2	Sagebrush scrub, annual grassland, chaparral, and desert scrubs, often with cactus patches, rock outcrops, or rock piles.	Detected at Barnett Ranch Preserve and high potential to occur at Luelf Pond Preserve due to presence of suitable rocky chaparral habitat.
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	CDFW: SSC County: Group 2	Grasslands, open scrub habitats, disturbed areas, and agricultural fields.	Barnett Ranch Preserve: The Property contains suitable habitat for this species and was previously detected at Barnett Ranch Preserve during past survey efforts prior to the 2003 Cedar Fire (Helix 2004b).

Table 13. Special-Status Wildlife with High Potential to Occur within the Properties

Species	Status[1]	General Habitat	Potential for Occurrence within the Properties
Ringtail (*Bassariscus astutus*)	County: Group 2	Found in riparian habitat and in brush stands of moist forest and shrub habitats. Also occurs in rocky desert environments. Mostly nocturnal habits; generally inactive during daytime hours.	Barnett Ranch Preserve: The Property contains suitable oak woodland habitat for this species and it was previously detected at Barnett Ranch Preserve during past survey efforts prior to the 2003 Cedar Fire (Helix 2004b).
American badger (*Taxidea taxus*)	State: SSC County: Group 2 MSCP: Covered	Shrub, forest, and herbaceous habitats, with friable soils, often associated with vast tracts of grassland areas but species also occurs in grassy canyons. Needs sufficient food and friable soils. Preys on burrowing rodents, especially California ground squirrels.	Barnett Ranch Preserve: The Property contains areas of open grassland and a suitable prey base (California ground squirrels). Surveys conducted in 2014 by the U.S. Geological Survey found American badger burrows at Barnett Ranch Preserve (Brehme et al. 2015).

[1] Federal: U.S. Fish and Wildlife Service (USFWS)
State: California Department of Fish and Wildlife (CDFW)
Species of Special Concern (SSC)
Fully Protected (FP)
Watch List Species (WL)
Other County Designations:
Group 1= Animals of high sensitivity (listed or specific natural history requirements)
Group 2= Animals declining, but not in immediate threat of extinction or extirpation
MSCP Covered: The species is included on the South County Multiple Species Conservation Plan covered species list (County of San Diego 1997)

4.3.7 Invasive Species

No invasive invertebrates or herpetofauna were detected on the Properties. House mouse, a non-native small mammal species was detected at Holly Oaks County Park. Brown-headed cowbirds (*Molothrus ater*) and European starlings (*Sturnus vulgaris*), both non-native species, were detected at all three Properties. Holly Oaks had the highest number of brown-headed cowbird and European starling detections due to the nearby agricultural practices along Dye Road; however, neither species appears to be negatively impacting the native passerine populations present at the three Properties.

4.4 WILDLIFE MOVEMENT

In general, wildlife species are likely to use habitat in the Properties for local movements related to home range activities (foraging for food or water, defending territories, searching for mates, breeding areas, or cover). As indicated by the presence of the species detected during surveys, the

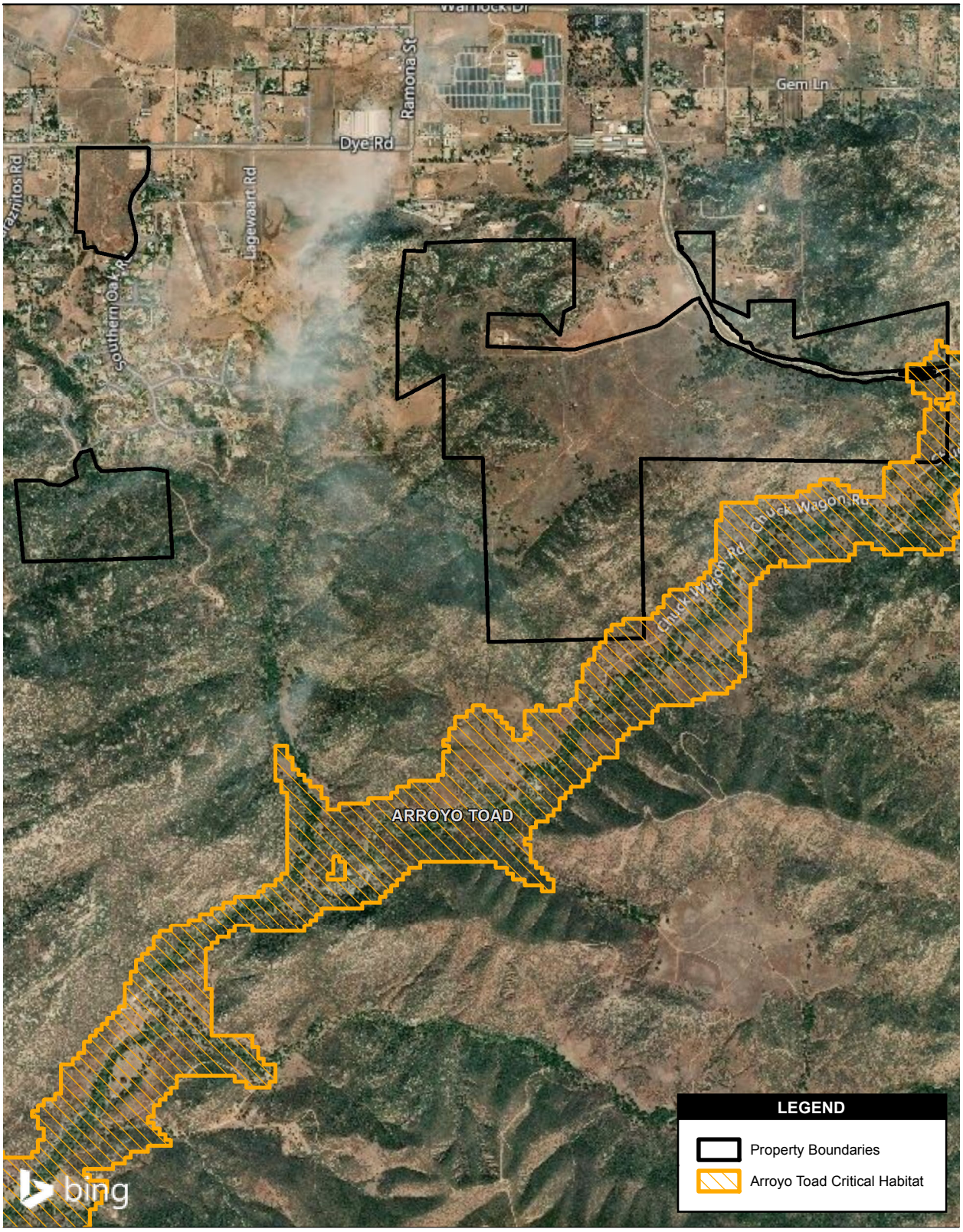
Properties are part of the home range of many species, which may use them at different times of the year depending on available resources. Large mammals such as mule deer, coyotes, bobcats, mountain lion, and other mammals were observed moving through the Properties. Mule deer and other large mammals require fresh water and, since permanent sources are lacking within Holly Oaks County Park and Luelf Pond Preserve, many large mammals may be transiting through the Properties and using them for temporary forage and cover. The stock pond at Barnett Ranch Preserve serves as a small but permanent water source; however, additional nearby sources of water are located south of the Properties around San Vicente Creek, which flows along Chuck Wagon Road southwest to San Vicente Reservoir. Some bat species may transition through the Properties while traveling to permanent sources of water at Barnett Ranch Preserve and San Vicente Reservoir.

Regionally, the Properties are mostly contiguous with a "core biological area" in the Subarea Plan (County of San Diego 1997). "Core biological areas" have high concentrations of sensitive biological resources in large, unfragmented areas of undeveloped habitat. This core biological area is an important block of natural habitat that connects inland portions of San Diego County with the Cleveland National Forest to the east and eventually the desert regions around the Salton Sea. The Properties are also considered part of a regional wildlife corridor known as the San Diego Foothills Corridor within the South Coast Ecoregion which links Ramona, San Vicente Reservoir, and Lakeside (Penrod et al. 2001).

The Properties occur within the Pacific Flyway, a major north-south migration route for birds that travel between breeding areas in North America and winter locations in South America. Various avian species pass through the Properties during migration and may use the Properties as migratory stopover habitat. The thick riparian vegetation within Luelf Pond Preserve has the potential to concentrate or funnel avian species during migration. Based on the avian surveys conducted during the spring of 2018, no major waves or pushes of avian species were detected through the Properties; however, surveys were infrequent and may have missed large pulses of birds. Additionally, most songbird species migrate at night, and therefore would not have been detected if they migrated through the Properties during the night.

4.5 CRITICAL HABITAT

USFWS-designated critical habitat for arroyo toad (*Anaxyrus californicus*) in Subunit 17d runs along San Vicente Creek southeast of and adjacent to Barnett Ranch Preserve and overlaps with approximately 22 acres of the Preserve (Figure 15). The portion of critical habitat that overlaps Barnett Ranch Preserve is potential aestivation habitat for arroyo toad. However, arroyo toads are unlikely to aestivate within Barnett Ranch Preserve since the majority of aestivating toads do



Source: USFWS 2011

2,500 1,250 0 2,500 Feet

1:30,000 1 inch = 2,500 feet

Figure 15
Critical Habitat

Path: P:\2013\60278233_DPR_2012\06GIS\6.1_Maps\TO_65\Bio\Baseline Biodiversity\CriticalHabitat.mxd, 11/8/2018, augellop

so in the floodplain of their breeding habitat. Habitat utilization studies documented arroyo toads burrowing within sandy or loamy substrates with no associated canopy cover, or within mulefat scrub or arroyo willow patches (Ramirez 2007). A majority of toads that were tracked burrowed adjacent to the active channel or on sandy terraces within riparian habitat located within flood-prone areas; however, toads also used uplands habitats (Ramirez 2007). Another study by Mitrovich et al. (2011) found that radio-tracked arroyo toads selected channel and terrace stream habitats, and largely avoided surrounding scrub, grassland, and forest. The portion of critical habitat that coincides with Barnett Ranch Preserve lacks gravelly washes, streams, and river banks, which compose typical breeding and aestivation habitat. No USFWS-designated critical habitat occurs on Holly Oaks County Park or Luelf Pond Preserve.

5.0 CONCLUSIONS AND MANAGEMENT RECOMMENDATIONS

Surveys conducted in 2018 documented 14 vegetation group-level classifications, alliances, associations, or semi-natural stands as described in the VCM (Sproul et al. 2011). Approximately 287 plant species and 194 wildlife species were observed or detected within the Properties during surveys, including 30 invertebrates, three amphibians, 21 reptiles, 104 birds, and 37 mammals. Four special-status plant species and 34 special-status species wildlife species, of which 10 are covered under the MSCP, were detected or observed within the Properties.

This chapter provides resource-specific conclusions and management recommendations for the vegetation communities, plants, and wildlife species detected during the 2018 field surveys. These recommendations are based on the results of the baseline biological diversity surveys and management and monitoring guidelines associated with both the MSCP (County of San Diego 1997) and the Barnett Ranch Open Space Preserve Area-Specific Management Directives (Helix 2004a).

5.1 VEGETATION COMMUNITIES/HABITAT

Vegetation on the Properties has been classified into 14 different categories, including woodland, chaparral, scrub, and grassland habitats.

The upland habitats on Barnett Ranch Preserve and Luelf Pond Preserve are relatively undisturbed though the presence of the perennial veldt grass is somewhat problematic on Barnett Ranch Preserve. The grassy valley in Barnett Ranch Preserve supports a number of invasive non-native plant species but it also contains habitat and wildflower patches of the fascicled tarplant (*Deinandra fasciculate*). Holly Oaks County Park, however, contains a high number of invasive non-native plant species, but it still contributes to the overall value of grasslands and increasing riparian habitat in that portion of the Ramona Valley. Mortality of oak trees on Luelf Pond Preserve and to a lesser extent on Barnett Ranch Preserve appears the result of a combination of the effect of the 2003 Cedar Fire and ongoing drought. Invasive species (goldspotted oak borer [*Agrilus auroguttatus*] and feral pigs) were not detected on the Properties, but would be a primary concern for management if they were to reach the Properties in the future. The feral pig population in San Diego County has been reduced to a low enough number that they are not expected to become a problem in the future.

Fire has reoccurred on the Properties since 1913, but the Properties appear to be recovering well from the most recent Cedar Fire of 2003. Invasive non-native plant species treatment

recommendations are discussed in Section 5.4, and fire management recommendations are discussed in Section 5.6.

Since the vegetation is still recovering from the fire that occurred in 2003, it would be beneficial to help prevent recurrence of fires for at least another decade. The oak woodlands may be the most sensitive to recurrence of fires at this time, and the trees should be monitored every 2 years for infestation of goldspotted oak borer.

5.2 PLANTS

The surveys in 2018 identified four special-status plant species: delicate clarkia, Engelmann oak, mesa spike-moss, and the San Diego sunflower that was planted at the site of an old graded pad on Barnett Ranch Preserve near the central part of the western boundary. Although the San Diego sunflower is considered a sensitive species its presence is the result of a planted population and it will not be discussed further. Delicate clarkia and mesa spike-moss are relatively resistant to fires and readily recolonize an area after a fire. Potential threats to their existence in a preserve would be caused by human activity in areas where these plants occur, which could easily be avoided by prohibiting people from those areas, and by invasive non-native plants. The primary threat to the limited Engelmann oak occurrence on Luelf Pond and Barnett Ranch Preserves would be unnatural fire frequency. Future fires occurring too frequently, coupled with further extended drought, may impact the species. A fire periodicity that mimics the frequency of the past 100 years, once every approximately 20 to 40 years on any particular portion of the Properties, would not pose a problem for the trees. If pigs, though they may be close to eradication now, and turkeys threaten the Properties in the future, they will pose a negative impact to oaks due to their consumption of acorns as a major food source.

Specific management recommendations include the following:

- Remove high-priority invasive non-native plant species;
- Decide if olive and mission cactus at Holly Oaks County Park are of historic value. If not, they should be removed.
- Conduct follow-up rare plant surveys during a normal or above average rainfall year to determine if special-status plant species with high potential to occur are present on the Properties. Two previous delicate clarkia locations that were identified in the Helix (2004b) report, but were not relocated, should be specifically monitored for recurrence during follow-up rare plant surveys.

5.3 WILDLIFE

The surveys in 2018 identified 34 special-status wildlife species, 10 of which are covered under the MSCP. Specific management recommendations are provided below for invertebrates, herpetofauna, birds, and mammals.

Butterflies

No special-status butterfly species were detected within the Properties. Various species of host plants and nectar sources required for Quino checkerspot butterfly were detected at Barnett Ranch Preserve during floristic surveys; however, none of the species were considered abundant. This may have been a result of poor winter rains and prolonged drought conditions. The host plant required for Hermes copper, spiny red-berry, was not detected at any of the three Properties and therefore Hermes copper is not anticipated to occur. The following specific management recommendation is based on the general field observations during surveys in 2018. The following should be implemented on Barnett Ranch Preserve to encourage Quino checkerspot butterfly (which is known to occur less than 1 mile south of Barnett Ranch Preserve) host plant recruitment:

- Consider invasive non-native plant removal around host plant locations at Barnett Ranch Preserve. Host plants include dot-seed plantain (*Plantago erecta*), purple owl's flower (*Castilleja exserta*), and Coulter's snapdragon (*Antirrhinum coulterianum*). Locations for invasive non-native plant control should include areas where host plants occur and near annual nectar sources.

Herpetofauna

Nine special-status herpetofauna species were detected within the Properties: Belding's orange-throated whiptail, San Diegan tiger whiptail, Coronado skink, western spadefoot, two-striped gartersnake, Blainville's horned lizard, rosy boa, coast patch-nosed snake, and red diamond rattlesnake. Blainville's horned lizard and Belding's orange-throated whiptail are also covered under the MSCP. Based on the presence of these species and the potential for additional special-status species with high probability of occurring on the Properties, the following specific management actions are recommended:

- Control of invasive non-native plant species identified in Section 5.4.1 that prohibit herpetofauna from dispersal so as to encourage movement patterns throughout the Properties.

- Maintenance of populations of native ant species for Blainville's horned lizard by surveying for populations of invasive Argentine ants (*Linepithema humile*). Argentine ants were not detected within the Properties in 2018. Argentine ants can be found within 200 to 250 meters from the edge of urban habitat (Suarez et al. 1998; Bolger 2007)and it's possible they can be found in areas of the Preserve immediately adjacent to residential homes with watered lawns and irrigated landscapes (such as adjacent to the vineyard on the north side of Barnett Ranch Preserve). Monitoring should focus on identifying locations where artificially supplied water from surrounding residences may be harboring Argentine ants. If Argentine ants are detected within any of the three Properties (specifically, Barnett Ranch Preserve), the source and extent of the Argentine ants invasion should be investigated to determine if any efforts should be made to control Argentine ants on the Properties. Research suggests that the inability of Argentine ants to invade the interior habitat of large unfragmented blocks will allow native ants to persist if unfragmented areas are maintained (Bolger 2007). Therefore, it is possible they may not pose a problem to native species on the Barnett Ranch Preserve and Luelf Pond Preserve if they remain unfragmented. AECOM is unaware of efforts to control or eradicate Argentine ants within native habitat and experts would need to be contacted this determined to be necessary.

- Wildlife camera 6 and biologists conducting surveys regularly detected/observed hikers and equestrians off trail at the stock pond at Barnett Ranch Preserve. Equestrian use should be discouraged so as not to trample and destroy nearby rodent burrows that potentially serve as important overwintering sites used by two-striped garter snakes (Thomson et al. 2016). Trail users also often brought dogs that would frequently enter the water. Signage and/or barriers should be placed along the trail to discourage trail users from entering habitat within 500 meters of the stock pond to protect special-status species such as western spadefoot and two-striped garter snake from human activities and associated disturbance (Thomson et al. 2016) (see Section 5.8.1 for details). Monitor the status of the stock pond at Barnett Ranch Preserve and re-fill to the natural waterline (i.e. the perimeter edge of the surrounding vegetation growth) as necessary to help increase the likelihood of western spadefoot breeding.

- Utilize vegetation trimmings during trail maintenance as brush piles to increase soil moisture and increase coverage for herpetofauna species (such as two-striped gartersnakes and Coronado skink) within the more open and exposed grassland habitat at Barnett Ranch Preserve and Holly Oaks County Park. The two-striped garter snake has a willingness to use artificial habitats and shelters and would benefit greatly from supplemental coverage provided in the form of brush piles (Thomson et al. 2016). This may also include placement of brush piles around the stock pond at Barnett Ranch Preserve to provide cover and protection for recently metamorphed amphibians.

Birds

Thirteen special-status bird species were detected within the Properties: golden eagle, yellow warbler, turkey vulture, Swainson's hawk, southern California rufous-crowned sparrow, red-shouldered hawk, tricolored blackbird, loggerhead shrike, grasshopper sparrow, Cooper's hawk, barn owl, western bluebird, and great blue heron. Cooper's hawk, Swainson's hawk, western bluebird, California rufous-crowned sparrow, tricolored blackbird, and golden eagle are also covered under the MSCP. Based on the presence of the 13 special-status bird species, and the potential for additional special-status species with high probability to occur on the Properties, the following specific management actions are recommended:

- Restrict public access from suitable raptor nesting locations including oak woodlands and rocky outcroppings by installing appropriate signage and additional public outreach information provided at kiosks at Luelf Pond Preserve and Barnett Ranch Preserve (Helix 2004a). Off-trail use through oak woodland habitat was recorded several times on wildlife camera 5, located at Barnett Ranch Preserve.
- The abundance of California ground squirrels, burrows, and expanse of rolling grassland habitat on Barnett Ranch Preserve offers suitable ecological conditions capable of supporting a western burrowing owl population. Consider creation of artificial burrows to support special-status species, such as western burrowing owl (*Athene cunicularia hypugaea*), at the Preserve.
- Remove invasive non-native plant species identified in Section 5.4.1 that are present in the central portion of Barnett Ranch Preserve and consider planting native grasses and coastal sage scrub to increase the suitability of the habitat for special-status species detected on site including including grasshopper sparrow and southern California rufous-crowned sparrow. Planting native grasses and coastal sage scrub will also improve foraging habitat for the MSCP-covered golden eagle (Tremor et al 2017).
- Efforts should be made to reduce the potential for fires moving through the Properties (see Section 5.6) so that elimination of oak trees and native coastal sage scrub habitat suitable for special-status species such as western bluebird and southern California rufous-crowned sparrow does not occur (Tremor et al 2017).

Mammals

Eleven special-status mammal species were detected within the Properties: Dulzura pocket mouse, northwestern San Diego pocket mouse, San Diego desert woodrat, pocketed free-tailed bat, Townsend's big-eared bat, western red bat, western mastiff bat, western yellow bat, Yuma myotis,

mountain lion, and mule deer. Mule deer and mountain lion are also covered by the MSCP. Based on the presence of the special-status mammal species, and the potential for additional species with high probability to occur on the Properties, the following specific management actions are recommended:

- Consider installation of bat boxes within the coast live oak woodland at each property, especially for tree roosting species such as Townsend's big-eared bat, western red bat, and other tree roosting bats that were detected during surveys.
- Since the vegetation at Holly Oaks County Park is primarily non-native grassland with little vegetation structure, consider placement of brush piles to provide structure for small mammals to find shelter around coast live oak trees and around the small strip of southern riparian woodland in the southeast corner.
- Consider installation of raptor perch poles throughout the open grassland habitat at Barnett Ranch Preserve to encourage raptor foraging. The California ground squirrel population is very high and could be reduced by increasing raptor foraging opportunities through implementation of this inexpensive method.
- Efforts should be made to reduce the potential for fires moving through the Properties (see Section 5.6) so that habitat connectivity and shrub cover is retained for large mammal species such as mule deer and mountain lion. Mountain lions tend to avoid grasslands and areas with sparse cover; both of which generally follow fire events (Tremor et al 2017).
- Many of the seasonal streams on the three Properties were dry throughout the various survey efforts. The availability of a year-round water source likely affects the abundance of mammals on site. Monitor the status of the stock pond at Barnett Ranch Preserve and re-fill to the natural waterline (i.e. the perimeter edge of the surrounding vegetation growth) as necessary in order to help maintain resident populations of mammals.
- Off-trail equestrian activity within the grassland habitat at Barnett Ranch Preserve should be discouraged so as not to trample and destroy rodent burrows.

Critical Habitat

Although a small area of Barnett Ranch Preserve overlaps with adjacent arroyo toad critical habitat, the current nature of the landscape is not conducive to supporting aestivation or breeding arroyo toad. Therefore, management recommendations are not provided.

5.4 INVASIVE NON-NATIVE PLANT AND ANIMAL SPECIES REMOVAL AND CONTROL

The removal of invasive non-native plant and wildlife species is recommended to enhance habitat quality for native plants and wildlife. Non-native wildlife species can outcompete native wildlife species for limited resources such as water, food, space, and in some cases nesting cavities for birds. Invasive non-native plant species often have adaptations that allow them to germinate faster than native species, grow taller and faster, and thereby outcompete native species. Over time, this can lead to changes in the habitat quality for wildlife species such as a reduced native seed bank that small mammal species require, reduced nectar sources that are essential for special-status butterfly species, altered fire regime, and altered soil characteristics.

5.4.1 Invasive Non-native Plants

Sixty-five invasive non-native plant species were detected within the Properties. Of these 65, 12 species have been targeted with high or moderate priority for removal (Table 14). Priority for removal recommendations were made by AECOM based on the level of invasiveness of the species, the negative effects that it has on the environment, and whether or not it appears that the populations on the Properties are small enough that they would be feasible to remove. Cal-IPC ratings, which based on invasiveness and how severe the impact of the species is throughout the state, were also taken into consideration. Cal-IPC ratings do not make direct recommendations for priority for removal, though their highly rated species would be considered candidates for treatment for removal based on the specific site conditions on the Property. Species designated as high priority are recommended for immediate removal; moderate species should be removed after high-priority species are under control; and low-priority species should be removed after moderate species are under control. Two species, olive and mission cactus may be remnant ornamentals with historic value. Olive trees were located on the southwest edge of Barnett Ranch Preserve and on the southwest and central west portion of Holly Oaks County Park. Mission cactus is also growing along the central west portion of Holly Oaks County Park If it is determined that their historic value is low, they also could be removed. The olive trees may serve as roosting sites for bats, which would support allowing them to remain.

Table 14. Priorities for Removal or Management of Invasive Non-native Plant Species

Common Name	Scientific Name	Barnett Ranch Preserve	Luelf Pond Preserve	Holly Oaks County Park	Removal/Management Priority
Stinkwort	*Dittrichia graveolens*			X	High
Blue gum	*Eucalyptus globulus*	X		X	High
Fennel	*Foeniculum vulgare*			X	High

Table 14. Priorities for Removal or Management of Invasive Non-native Plant Species

Common Name	Scientific Name	Barnett Ranch Preserve	Luelf Pond Preserve	Holly Oaks County Park	Removal/Management Priority
Tree tobacco	*Nicotiana glauca*		X		High
Peruvian pepper tree	*Schinus molle*	X			High
African fountain grass	*Cenchrus setaceus*			X	Moderate
Brittlebush	*Encelia farinosa*	X			Moderate
Perennial veldt grass	*Ehrharta calycina*	X	X		Moderate
Horehound	*Marrubium vulgare*	X	X		Moderate
Natal grass	*Melinis repens*	X			Moderate
Mission cactus	*Opuntia ficus-indica*			X	Moderate
Puncture vine	*Tribulus terrestris*			X	Moderate
Italian thistle	*Carduus pycnocephalus*	X	X	X	Low
Tocalote	*Centaurea melitensis*	X	X	X	Low
Field bind weed	*Convolvulus arvensis*	X	X		Low
Flax-leaf fleabane	*Erigeron bonariensis*	X	X	X	Low
Olive	*Olea europaea*	X	X	X	Low
Prickly Russian-thistle, tumbleweed	*Salsola tragus*	X		X	Low
Cereal wheat	*Triticum aestivum*			X	Low
White tumbleweed	*Amaranthus albus*	X		X	None
Australian saltbush	*Atriplex semibaccata*	X			None
Slender wild oat	*Avena barbata*	X	X		None
Wild oat	*Avena fatua*	X	X	X	None
San Diego sunflower	*Bahiopsis laciniata*	X			None
Black mustard	*Brassica nigra*	X	X	X	None
Ripgut grass	*Bromus diandrus*	X	X	X	None
Soft chess	*Bromus hordeaceus*	X	X	X	None
Red brome	*Bromus madritensis* var. *rubens*	X	X	X	None
Mouse-ear chickweed	*Cerastium glomeratum*	X	X		None
Lamb's quarters	*Chenopodium album*			X	None
Nettle-leaf goosefoot	*Chenopodium murale*		X	X	None
Bull thistle	*Cirsium vulgare*	X	X	X	None
Long-beak filaree	*Erodium botrys*	X	X	X	None
Red-stem filaree	*Erodium cicutarium*	X	X	X	None
Spotted spurge	*Euphorbia maculata*			X	None
Rat-tail fescue	*Festuca myuros*		X	X	None

Table 14. Priorities for Removal or Management of Invasive Non-native Plant Species

Common Name	Scientific Name	Barnett Ranch Preserve	Luelf Pond Preserve	Holly Oaks County Park	Removal/Management Priority
Perennial rye grass	*Festuca perennis*		X	X	None
Crete hedypnois	*Hedypnois cretica*			X	None
Bristly ox-tongue	*Helminthotheca echioides*		X		None
Short-pod mustard	*Hirschfeldia incana*	X	X	X	None
Hare barley	*Hordeum murinum* ssp. *leporinum*			X	None
Smooth cat-ear	*Hypochaeris glabra*	X	X	X	None
Prickly lettuce	*Lactuca serriola*	X	X	X	None
Golden-top	*Lamarckia aurea*		X		None
Narrow-leaf cottonrose	*Logfia gallica*	X	X	X	None
Scarlet pimpernel	*Lysimachia arvensis*	X	X	X	None
Grass poly	*Lythrum hyssopifolia*			X	None
Common pineapple-weed	*Matricaria discoidea*			X	None
California burclover	*Medicago polymorpha*	X	X		None
Indian sweetclover	*Melilotus indicus*	X	X		None
Four-leaf allseed	*Polycarpon tetraphyllum*			X	None
Common knotweed	*Polygonum aviculare* ssp. *depressum*			X	None
Annual beard grass	*Polypogon monspeliensis*	X		X	None
Fragrant everlasting cudweed	*Pseudognaphalium luteoalbum*	X			None
Wild radish	*Raphanus sativa*			X	None
Curly dock	*Rumex crispus*	X	X	X	None
Mediterranean schismus	*Schismus barbatus*	X	X		None
Common groundsel	*Senecio vulgaris*	X			None
Common catchflly	*Silene gallica*	X			None
London rocket	*Sisymbrium irio*				
Prickly sow thistle	*Sonchus asper* subsp. *asper*	X			None
Stickwort	*Spergula arvensis* ssp. *arvensis*		X	X	None
Common Chickweed	*Stellaria media*	X	X	X	None
Dwarf nettle	*Urtica urens*	X			None
Hairy vetch	*Vicia villosa*		X	X	None

The appropriate removal method should be tailored to the individual species and should be determined based on several variables. Such variables include seasonal timing of the removal, severity of species invasion, presence of sensitive and native species, and proximity to a water source (County of San Diego 1997; Helix 2004a).

Widespread and prevalent invasive non-native plant species that have become naturalized are not a priority for removal, as removal strategies may be ineffective and expensive. Invasive non-native plant species not targeted for removal, such as perennial veldt grass, however, should continue to be monitored periodically and controlled to prevent spreading from their current range. Prickly Russian thistle should be monitored on Barnett Ranch Preserve and Holly Oaks County Park. During some seasons, it may have explosive population growth. It would be important to reduce the vegetative growth (prior to setting seed) during seasons of expansive growth, though it would not be possible to eradicate it.

5.4.2 Invasive Non-native Wildlife

Brown-headed cowbirds and European starlings were detected at all three Properties. Brown-headed cowbirds are nest parasites for multiple species, and European starlings exclude tree nesting species from access to suitable nesting locations. Therefore, both species are detrimental to special-status species found within the Properties (such as western bluebirds that require nest cavities for breeding). While it is difficult to manage populations of both species due to the intensity of trapping necessary, it may be useful to create additional nesting locations for species dependent on tree cavities. Western bluebirds will nest in man-made nest boxes, and the installation of several nest boxes on oak tree trunks would provide additional nest sites for that species. Several groups such as the Boy Scouts of America or local Audubon Society chapters may be interested in creating nest boxes for sensitive species use.

Oak trees in the region have been affected by goldspotted oak borer (*Agrilus coxalis*) and, although this species was not detected on the Properties, its potential presence in the future should be monitored. This species has caused extensive mortality to oaks in woodlands, favoring mature trees. It prefers coast live oak and California black oak (*Q. kelloggii*), but has rarely been documented on Engelmann oak. The additional planting of coast live oak trees (from goldspotted oak borer-free sources) is essential to protect the existing coast live oak trees and expand the woodland.

5.5 RESTORATION OPPORTUNITIES

The Properties are primarily composed of high-quality native vegetation that is naturally recovering after the 2003 Cedar Fire. Disturbed habitat is mainly associated with the few trails that

occur within the Properties. A graded pad that existed on Barnett Ranch Preserve in 2002 is now nearly completely covered with regrowth of native vegetation. It does not appear that the number and area of trails are excessive in the case of preserves that are the size of these properties. There has been the loss of some old oak trees from the Cedar Fire and subsequent drought seasons on Luelf Pond Preserve, as indicated by dead trunks on the ground. The density of trees has not changed greatly so that natural reestablishment of a vegetation balance would serve the area as well. Restoration in these areas might involve removal or spot burning of the downed wood. Restoration opportunities could include control of the invasive non-native plant species targeted for removal (Table 14) with passive revegetation.

5.6 FIRE MANAGEMENT

The Properties are dominated by upland chaparral-type vegetation communities. Upland areas are susceptible to burns, particularly as the vegetation ages and drought conditions continue. The primary concern for impacts is from increased presence of invasive non-native plant species. Currently, the shrub vegetation is becoming reestablished in areas that were burned and where invasive non-native plant species have spread since the 2003 Cedar Fire. The situation is favorable for shrub recovery and reduction of invasive non-native plant species. The overall outlook for the vegetation is positive; however, the presence of the perennial veldt grass is problematic and periodic monitoring, every 2 or 3 years, would indicate if action needs to be taken to reduce its presence or prevent it from expanding.

Because of the natural layout of the Properties, they are vulnerable to wildfire from external sources, which would be difficult to control due to the rolling topography of the terrain. Specific fire control measures, such as mowing, spot-burning, or vegetation thinning, might be considered for the perimeter to reduce the potential for fires moving through the area. Management recommendations to prevent and/or prepare for a wildfire event include providing emergency fire access, providing fire agencies with information that is important for managing the landscape, preventing illegal access and trespass, increasing public education to reduce potential for ignition, and continuing to suppress wildfires.

5.7 WILDLIFE LINKAGES AND CORRIDORS

Regionally, the Properties are located within the San Diego County (South County) MSCP and draft North County MSCP plan area (Figure 3). They are within a major habitat and linkage area that extends into eastern San Diego County. The Properties are in the southern edge of the major Ramona Valley with Holly Oaks County Park an actual portion of the valley. Luelf Pond Preserve is part of the hill system to the south and Barnett Ranch Preserve is an offshoot valley to the south of Ramona Valley. The majority of Barnett Ranch Preserve has been identified in the Subarea Plan

as part of a PAMA and has been preserved as a result of its importance for connectivity. This PAMA extends to the southwest to Marine Corps Air Station Miramar and beyond and east to the Cuyamaca Mountains and beyond. While not directly within the PAMA, Luelf Pond Preserve is adjacent to the PAMA and is on the northern edge of a large block of habitat that includes Barnett Ranch Preserve. While Holly Oaks County Park has not been included in the PAMA, it does connect to the Ramona Grasslands that exist across Dye Road and to the north in an area proposed to be covered in the North County MSCP plan. Conservation of habitat within the Properties would allow wildlife to continue to move between the Properties and throughout the PAMA. Additionally, the recommendations in Sections 5.1 through 5.6 will also ensure that habitat on the Properties is viable for local and regional movement.

Some of the hindrances to avian movement include San Diego Gas and Electric (SDG&E) transmission towers that traverse the northern and southern part of Barnett Ranch Preserve in an east-to-west direction. These transmission towers carry high voltage electrical lines and are located perpendicular to the main direction of avian movement, as birds fly north or south through Barnett Ranch Preserve. Therefore, birds migrating through the Properties have the potential to collide with the electrical lines.

Additionally, San Vicente Road bisects Barnett Ranch Preserve and, since the road parallels and cuts through oak woodland, the potential for wildlife species to be killed on the road is increased since species often travel along riparian corridors. Currently, no designated wildlife undercrossings (or directional fencing to funnel wildlife towards undercrossings) are present along San Vicente Road where it bisects Barnett Ranch Preserve.

5.8 ADDITIONAL MANAGEMENT RECOMMENDATIONS

5.8.1 Public Access

The following sections describe public access issues observed during biological surveys and provide management recommendations for the Properties. Restricting public access to approved trails would minimize human-associated risks such as habitat destruction and impacts to native and/or sensitive plants or wildlife. Future planned trails or public facilities should go through the California Environmental Quality Act process as needed to avoid impacts to sensitive biological resources.

Trails and Access Roads

The Properties prohibit public access by any public vehicles; however, there is a dirt road encircling much of Barnett Ranch Preserve and trails wide enough at both Holly Oaks County Park

and Luelf Pond Preserve for driving a vehicle. Gates at the entrances to all three Properties should remain locked during non-operational hours. and the area adjacent to the gates checked to ensure vehicles cannot pass around the gates. Communication with the private landowner residing adjacent to Barnett Ranch Preserve should continue in order to ensure the gate along the road intersecting the Preserve and leading to their home remains in working order.

Hikers, equestrians, and mountain bikers were commonly observed throughout Barnett Ranch Preserve and Luelf Pond Preserve during surveys, and an occasional hiker or equestrian was observed at Holly Oaks County Park. A network of narrow, but established, horse trails were observed throughout the interior grassland of Barnett Ranch Preserve and surrounding the stock pond but are not part of the approved trail system at that Property. Use of unauthorized trails should be discouraged through signage and patrols encouraging equestrians to remain on designated trails (County of San Diego 1997). Unauthorized trails should be blocked off with natural elements, such as boulders or vegetation plantings (e.g., cactus), or fenced off with signage to prohibit traffic and to allow passive habitat restoration to take place (Helix 2004a).

Fencing and Gates

The public should be encouraged to stay on established and approved trails to prevent disturbances near rocky outcrops and oak woodland areas suitable for raptor nesting (Helix 2004a). Trail users were detected off trail by wildlife camera 5, which was adjacent to oak woodlands along the western edge of Rattlesnake Trail on Barnett Ranch Preserve. Off-trail use in oak woodlands could disturb raptors that may use the trees as potential nesting habitat. Split rail fencing could be installed along the western edge of Rattlesnake Trail as it passes by the oak woodland habitat within the southwest portion of the Preserve to discourage off-trail hiking through the habitat (Figure 8c).

Access should also be restricted surrounding the stock pond, which is used by two special-status wildlife species, two-striped garter snake and western spadefoot, at Barnett Ranch Preserve. Trail users were frequently detected off trail by the wildlife cameras at location 6 near the stock pond. Off-trail use at the stock pond may have both direct and indirect impacts as western spadefoot toadlets may be stepped on or captured by trail users, and disturbance could make them susceptible to predators. Two-striped garter snakes utilizing this pond likely forage on the abundant Baja California treefrogs and western toads present at the pond in various life stages (e.g., tadpoles and metamorphs), and disturbance of those species could impact their prey base.

Split-rail fencing should be considered along the portion of trail that goes past the stock pond to encourage the public to remain on the approved trail (Figure 8c). There is a wide gap in the existing fence that allows trail users to easily access the stock pond. Split-rail fencing should be placed

between the pond and benches to discourage people from wandering around the pond. This would help prevent dogs from entering the water and trail users from impacting the two-striped garter snake and western spadefoot that inhabit the pond.

Signage and Education

Interpretive signs should be placed along authorized trails at all three Properties and monitored to ensure they remain in good condition (Helix 2004a). Educational signage should be placed along the fence line adjacent to the stock pond to educate the public on the importance of staying out of habitat for sensitive species that use the pond and to remind hikers and equestrians that dogs must remain on leash at all times. Additional advisories should be posted at trailhead kiosks to increase public awareness and provide the phone number for rangers in case unauthorized activities are observed.

Illegal Off-Road Vehicle Activity

The portion of Barnett Ranch Preserve on the northeast side of San Vicente Road had evidence of semi-frequent off-road vehicle activity. Off-road vehicle use was captured several times between March 21 and June 27 during which time a wildlife camera was operating at that location. The utility access route intersecting that portion of Barnett Ranch Preserve appears to continue unobstructed toward various private properties to the north. There is no apparent gate along the northern boundary that prohibits access. Installing additional gates or fencing would restrict access and potentially reduce off-road-vehicle activity; however, communication with SDG&E would be needed to ensure the power lines crossing through the Property are still accessible (Figure 8c). Restricting off-road-vehicle activity would prevent special-status species susceptible to trampling, such as Blainville's horned lizard, from being run over and potentially killed (Thomson et al. 2016). In addition, wildlife movement may be negatively impacted and deterred by the noise effects associated with frequent off-road-vehicle activity.

Off-road-vehicle activity was not observed at Holly Oaks County Park or Luelf Pond Preserve during the survey effort. The lack of off-road-vehicle observations at Holly Oaks County Park and Luelf Pond Preserve may be due in large part to the locked gates at the entrances of each, perimeter fencing around each Property, and the limited trail systems in which one could travel. Multiple mountain bikers were observed on the wildlife cameras within the Barnett Ranch Preserve and Luelf Pond Preserve, and in some areas, appear to be contributing to trail erosion. Luelf Pond Preserve, specifically, has evidence of erosion along sections of the trail as it turns south and leads upslope. Erosion should be monitored by DPR staff to ensure it does not degrade habitat. Erosion prevention treatments should be added on the trails where necessary based on existing erosion effects.

Litter/Trash Removal

When performing surveys, litter and trash were not prevalent on the Properties. No illegal dumping areas were located during the surveys. Scattered pieces of trash from landowner activities (evidence of target practice) were observed in the northwest corner of Barnett Ranch Preserve adjacent to the private residence and should be removed. Regular monitoring and management of the Properties would detect increases of littering in the area, and then a strategy could be implemented to control the problem (County of San Diego 1997; Helix 2004a). If littering increases, organized volunteer cleanup days could help manage trash issues.

5.8.2 Hydrological Management

Hydrologic features on the Properties support a variety of wildlife and native plant species. On Barnett Ranch Preserve, coast live oak-arroyo willow association indicates an area that must occasionally support water flow, within a narrow stream channel. A small pond that is frequently dry exists near the center of the western portion of Barnett Ranch Preserve. Re-filling the pond to its natural waterline (i.e., the perimeter edge of the surrounding vegetation growth) during periods of drought and low rainfall may prevent invasive non-native plant species from establishing within the pond footprint and help maintain resident populations of mammals by offering a dependable water source. Luelf Pond Preserve also supports a stream channel flowing east to west through the site. However, these hydrologic features are particularly subject to the establishment of invasive non-native plant species due to their moist conditions. The management of these features may involve monitoring for establishment of and removal of invasive non-native plant species.

5.8.3 Emergency and Safety Issues

The primary emergency and safety issue associated with the Properties is threat of wildfires. Fire management was discussed in detail in Section 5.6. An emergency response plan should be implemented, and emergency contact information should be placed on signs throughout authorized access trails.

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APPENDIX A

PLANTS SPECIES DETECTED ON THE PROPERTIES

Appendix A
Plant Species Detected on the Properties

Scientific name	Common name	Status (Federal/State/ County, MSCP Plan)	Holly Oaks County Park	Luelf Pond Preserve	Barnett Ranch Preserve
Vascular Species – Dicots					
ADOXACEAE - Muskroot Family					
Sambucus nigra subsp. *caerulea*	Blue elderberry	None/None/None	X	X	X
AMARANTHACEAE - Amaranth Family					
**Amaranthus albus*	White tumbleweed	None/None/None	X		X
ANACARDIACEAE - Sumac or Cashew Family					
Malosma laurina	Laurel sumac	None/None/None		X	X
Rhus aromatica var. *aromatica*	Skunkbrush	None/None/None		X	X
Rhus ovata	Sugar bush	None/None/None		X	X
**Schinus molle*	Peruvian pepper tree	None/None/None			X
Toxicodendron diversilobum	Western poison oak	None/None/None		X	X
APIACEAE - Carrot Family					
Apiastrum angustifolium	Mock-Parsley	None/None/None		X	X
Bowlesia incana	American bowlesia	None/None/None			X
**Foeniculum vulgare*	Fennel	None/None/None	X		
Daucus pusillus	Rattlesnake weed	None/None/None		X	X
Lomatium dasycarpum ssp. *dasycarpum*	Wooly-fruit lomatium	None/None/None			X
Sanicula arguta	sharp-tooth sanicle			X	
Sanicula crassicaulis	Pacific sanicle	None/None/None		X	X
APOCYNACEAE - Dogbane Family					
Asclepias californica	California milkweed	None/None/None	X		X
Asclepias fascicularis	Narrow-leaf milkweed	None/None/None		X	X
ASTERACEAE - Sunflower Family					
Achyrachaena mollis	Blow-wives	None/None/None			X
Acourtia microcephala	Sacapellote	None/None/None		X	X
Ambrosia psilostachya	Western ragweed	None/None/None	X	X	X
Artemisia californica	California sagebrush	None/None/None	X	X	X
Artemisia douglasiana	Douglas mugwort	None/None/None		X	
Artemisia dracunculus	Tarragon	None/None/None		X	X
Baccharis pilularis subsp. *consanguinea*	Chaparral Broom	None/None/None		X	X
Baccharis salicifolia	Mule fat	None/None/None	X	X	X
Baccharis sarothroides	Broom baccharis	None/None/None		X	X
**Bahiopsis laciniata*	San Diego sunflower	None/None/CRPR: List 4.3 S4 G4 County List D		X	X
Brickellia californica	California brickellbush	None/None/None		X	X
**Carduus pycnocephalus*	Italian Thistle	None/None/None	X	X	X
**Centaurea melitensis*	Tocalote	None/None/None	X	X	X
Chaenactis artemisiifolia	White pincushion	None/None/None		X	X
Chaenactis glabriuscula var. *glabriuscula*	Yellow pincushion	None/None/None		X	X
Cirsium occidentale var. *californicum*	California thistle	None/None/None		X	X
**Cirsium vulgare*	Bull thistle	None/None/None	X		X
Corethrogyne filaginifolia var. *filaginifolia*	California sand-aster	None/None/None	X	X	X
Deinandra fasciculata	Fascicled tarweed	None/None/None	X	X	X
**Dittrichia graveolens*	Stinkwort	None/None/None	X		
Encelia californica	California encelia	None/None/None			X
**Encelia farinosa*	Brittlebush	None/None/None			X
**Erigeron bonariensis*	Flax-Leaf Fleabane	None/None/None	X	X	X
Erigeron canadensis	Horseweed	None/None/None	X	X	X
Erigeron foliosus var. foliosus	Leafy Daisy	None/None/None		X	X
Eriophyllum confertiflorum var. *confertiflorum*	Golden yarrow	None/None/None		X	X
Gnaphalium palustre	Lowland cudweed	None/None/None			X
Gutierrezia californica	California matchweed	None/None/None		X	X
Gutierrezia sarothrae	Broom matchweed	None/None/None			X
Hazardia squarrosa var. *grindelioides*	Saw toothed goldenbush	None/None/None		X	X
Helianthus annuus	Western sunflower	None/None/None		X	X
**Helminthotheca echioides*	Bristly ox-tongue	None/None/None		X	
**Hedypnois cretica*	Crete hedypnois	None/None/None	X		
Heterotheca grandiflora	Telegraph Weed	None/None/None	X		X
**Hypochaeris glabra*	Smooth cat's ear	None/None/None	X	X	X
Isocoma menziesii var. *menziesii*	Spreading goldenbush	None/None/None		X	X

Scientific name	Common name	Status (Federal/State/ County, MSCP Plan)	Holly Oaks County Park	Luelf Pond Preserve	Barnett Ranch Preserve
**Lactuca serriola*	Prickly Lettuce	None/None/None	X	X	X
Lasthenia gracilis	Common goldfields	None/None/None			X
Logfia filaginoides	California cottonrose	None/None/None		X	X
**Logfia gallica*	Narrow-leaf cottonrose	None/None/None	X	X	X
**Matricaria discoidea*	Common pineapple-weed	None/None/None	X		
Osmadenia tenella	Osmadenia	None/None/None		X	X
Pseudognaphalium biolettii	Bicolor Cudweed	None/None/None		X	X
Pseudognaphalium californicum	California everlasting	None/None/None	X	X	X
**Pseudognaphalium luteoalbum*	Fragrant everlasting cudweed	None/None/None	X		X
Pseudognaphalium microcephalum	White everlasting	None/None/None	X		
Pseudognaphalium stramineum	Cotton-batting plant	None/None/None		X	X
Rafinesquia californica	California chicory	None/None/None		X	
**Senecio vulgaris*	Common groundsel	None/None/None			X
Solidago velutina ssp. *californica*	California goldenrod	None/None/None		X	X
**Sonchus asper* subsp. *asper*	Prickly sow thistle	None/None/None		X	X
Stebbinsoseris heterocarpa	Grassland stebbinsoseris	None/None/None			X
Stephanomeria exigua subsp. *exigua*	Small Wreath Plant	None/None/None		X	X
Stephanomeria diegensis	San Diego Wreath-Plant	None/None/None	X	X	X
Stephanomeria virgata ssp. *virgata*	Virgate wreath-plant	None/None/None			X
Stylocline gnaphaloides	Everlasting nest-straw	None/None/None		X	X
Uropappus lindleyi	Silver puffs	None/None/None			X
Xanthium strumarium	Cocklebur	None/None/None		X	
BORAGINACEAE - Borage Family					
Amsinckia menziesii var. *intermedia*	Rigid fiddleneck	None/None/None		X	X
Cryptantha intermedia var. *intermedia*	Nievitas cryptantha	None/None/None	X	X	X
Emmenanthe penduliflora	Whispering bells	None/None/None			X
Eriodictyon trichocalyx var. *trichocalyx*	Yerba santa	None/None/None		X	X
Eucrypta chrysanthemifolia var. *chrysanthemifolia*	Common eucrypta	None/None/None		X	X
Johnstonella micromeres	Minute-Flower Johnstonella	None/None/None		X	X
Nemophila menziesii var. *menziesii*	Baby blue eyes	None/None/None		X	
Pectocarya linearis ssp. *ferocula*	Slender combseed	None/None/None			X
Phacelia cicutaria var. *hispida*	Caterpillar phacelia	None/None/None		X	X
Phacelia distans	Wild-heliotrope	None/None/None			X
Phacelia parryi	Parry's phacelia	None/None/None		X	X
Pholistoma racemosum	San Diego fiesta flower	None/None/None		X	X
Plagiobothrys canescens	Valley popcornflower	None/None/None			X
Plagiobothrys collinus var. *fulvescens*	Rough popcornflower	None/None/None			X
Plagiobothrys collinus var. *californicus*	California popcornflower	None/None/None		X	
BRASSICACEAE - Mustard Family					
Athysanus pusillus	Dwarf athysanus	None/None/None			X
**Brassica nigra*	Mustard	None/None/None	X	X	X
**Hirschfeldia incana*	Short-pod mustard	None/None/None	X	X	X
Lepidium nitidum	Shining peppergrass	None/None/None			X
Nasturtium officinale	Water cress	None/None/None		X	X
**Raphanus sativus*	Wild radish	None/None/None	X		
**Sisymbrium irio*	London rocket	None/None/None		X	
Thysanocarpus laciniatus	Notch fringepod	None/None/None		X	X
CAPRIFOLIACEAE - Honeysuckle Family					
Lonicera subspicata var. *denudata*	Johnston's honeysuckle	None/None/None		X	X
CACTACEAE - Cactus family					
**Opuntia ficus-indica*	Mission Cactus	None/None/None	X		
CARYOPHYLLACEAE - Pink Family					
**Cerastium glomeratum*	Mouse-Ear Chickweed	None/None/None		X	X
Polycarpon depressum	California polycarp	None/None/None		X	
Polycarpon tetraphyllum	Four-leaf allseed	None/None/None	X		
**Silene gallica*	Common catchflly	None/None/None			X
Silene laciniata	Southern pink	None/None/None		X	
**Spergula arvensis* ssp. *arvensis*	Stickwort	None/None/None	X	X	
Spergularia macrotheca var. *leucantha*	Large-flower sand-spurrey	None/None/None		X	
**Stellaria media*	Common Chickweed	None/None/None		X	X
CHENOPODIACEAE - Goosefoot Family					
Atriplex canescens	Four-winged saltbush	None/None/None	X		
**Atriplex semibaccata*	Australian saltbush	None/None/None	X		X
**Chenopodium album*	Lamb's quarters	None/None/None	X		
Chenopodium californicum	California Goosefoot	None/None/None		X	X

Scientific name	Common name	Status (Federal/State/ County, MSCP Plan)	Holly Oaks County Park	Luelf Pond Preserve	Barnett Ranch Preserve
**Chenopodium murale*	Nettle-Leaf Goosefoot	None/None/None	X	X	
**Salsola tragus*	Prickly Russian-Thistle, Tumbleweed	None/None/None	X		X
CISTACEAE - Rock-rose Family					
Crocanthemum aldersonii	Peak rush-rose	None/None/None		X	X
CONVOLVULACEAE - Morning Glory Family					
Calystegia macrostegia subsp. *arida*	San Diego morning-glory	None/None/None		X	X
**Convolvulus arvensis*	Field Bind weed	None/None/None		X	X
Cuscuta californica var. *californica*	Chaparral Dodder	None/None/None		X	X
CRASSULACEAE - Stonecrop Family					
Crassula connata	Pygmyweed	None/None/None		X	X
Dudleya edulis	Ladies' fingers	None/None/None			X
Dudleya pulverulenta	Chalk-lettuce	None/None/None		X	X
CUCURBITACEAE - Gourd Family					
Marah macrocarpa	Wild-cucumber	None/None/None		X	X
ERICACEAE - Heath Family					
Arctostaphylos glauca	Big-berry manzanita	None/None/None		X	
Xylococcus bicolor	Mission manzanita	None/None/None		X	X
EUPHORBIACEAE - Spurge Family					
Croton setiger	Doveweed	None/None/None	X	X	X
**Euphorbia maculata*	Spotted spurge	None/None/None	X	X	
Euphorbia polycarpa	Desert sand mat	None/None/None		X	X
**Ricinus communis*	Castor bean	None/None/None		X	
FABACEAE - Legume Family					
Acmispon americanus var. *americanus*	Spanish-Clover	None/None/None	X	X	X
Acmispon argophyllus var. *argophyllus*	Silver-leaf lotus	None/None/None		X	X
Acmispon glaber var. *glaber*	Coastal Deerweed	None/None/None	X	X	X
Acmispon micranthus	Grab lotus	None/None/None		X	
Acmispon strigosus	Strigose lotus	None/None/None	X	X	X
Lathyrus vestitus var. *alefeldii*	San Diego sweet pea	None/None/None			X
Lupinus bicolor	Miniature lupine	None/None/None	X	X	X
Lupinus hirsutissimus	Stinging lupine	None/None/None		X	X
Lupinus succulentus	Arroyo lupine	None/None/None			X
Lupinus truncatus	Collar Lupine	None/None/None		X	X
**Medicago polymorpha*	California burclover	None/None/None		X	X
**Melilotus indicus*	Indian sweetclover	None/None/None		X	X
Trifolium gracilentum	Pin-Point clover	None/None/None		X	X
Trifolium hirtum	Rose clover	None/None/None	X		
Vicia ludoviciana var. *ludoviciana*	Deer pea vetch	None/None/None			X
**Vicia villosa*	Harry vetch	None/None/None	X	X	
FAGACEAE - Oak Family					
Quercus xacutidens	Torrey's scrub oak	None/None/None		X	X
Quercus agrifolia var. agrifolia	Coast live oak	None/None/None	X	X	X
Quercus engelmannii	Engelmann oak	None/None/ CRPR: List 4.2 S3 G3 County List D		X	X
GENTIANACEAE - Gentian Family					
Zeltnera venusta	Canchalagua	None/None/None		X	
GERANIACEAE - Cranesbill Family					
**Erodium botrys*	Long-beak filaree	None/None/None	X	X	X
**Erodium cicutarium*	Red-stem filaree	None/None/None	X	X	X
Geranium carolinianum	Carolina geranium	None/None/None		X	
GROSSULARIACEAE - Gooseberry Family					
Ribes indecorum	White flowering currant	None/None/None		X	X
LAMIACEAE - Mint Family					
**Marrubium vulgare*	Horehound	None/None/None		X	X
Salvia apiana	White sage	None/None/None		X	X
Salvia columbariae	Chia	None/None/None			X
Stachys stebbinsii	Stebbins's Hedge-Nettle	None/None/None		X	X
Trichostema lanceolatum	Vinegar weed	None/None/None	X		X
LYTHRACEAE - Loosestrife Family					
**Lythrum hyssopifolia*	Grass polly	None/None/None	X		
MALVACEAE - Mallow Family					
Malacothamnus fasciculatus	Chaparral bushmallow	None/None/None		X	X
Sidalcea sparsifolia	Checker-bloom	None/None/None		X	X
MONTIACEAE - Miner's Lettuce Family					
Claytonia perfoliata subsp. *mexicana* perfoliata	Mexican Miner's-Lettuce	None/None/None		X	X

Scientific name	Common name	Status (Federal/State/ County, MSCP Plan)	Holly Oaks County Park	Luelf Pond Preserve	Barnett Ranch Preserve
MYRSINACEAE - Myrsine Family					
**Lysimachia arvensis*	Scarlet pimpernel	None/None/None	X	X	X
MYRTACEAE - Myrtle Family					
**Eucalyptus globulus*	blue gum	None/None/None	X		X
NYCTAGINACEAE - Four O'clock Family					
Mirabilis laevis var. *crassifolia*	Coastal wishbone plant	None/None/None		X	X
OLEACEA					
**Olea europaea*	Olive	None/None/None	X	X	X
ONAGRACEAE - Willowherb Family					
Camissoniopsis bistorta	California sun cup	None/None/None			X
Camissoniopsis robusta	Robust sun cup	None/None/None		X	X
Clarkia delicata	Delicate clarkia	None/None/ CRPR: List 1B.2 S3 G3 County List A		X	X
Clarkia epilobioides	White clarkia	None/None/None		X	X
Clarkia purpurea ssp. *quadrivulnera*	Four-spot clarkia	None/None/None		X	X
Epilobium brachycarpum	Tall willow herb/Summer cotton weed	None/None/None	X		
Epilobium canum ssp. *canum*	California fuchsia	None/None/None			X
Eulobus californicus	False mustard	None/None/None		X	X
OROBANCHACEAE - Broom-rape Family					
Cordylanthus rigidus subsp. *brevibracteatus*	Stiff-Branch Bird's Beak	None/None/None		X	
PAEONIACEAE - Peony Family					
Paeonia californica	California Peony	None/None/None		X	X
PAPAVERACEAE - Poppy Family					
Eschscholzia californica	California poppy	None/None/None	X		X
PHRYMACEAE - Lopseed Family					
Diplacus Xaustralis	Bush Monkey Flower	None/None/None		X	X
Diplacus brevipes	Slope semiphore	None/None/None			X
Diplacus puniceus	Coast monkey flower	None/None/None		X	X
Erythranthe cardinalis	Scarlet monkey flower	None/None/None		X	
Erythranthe guttata	Seep monkey flower	None/None/None		X	
PLANTAGINACEAE - Plantain Family					
Antirrhinum coulterianum	Coulter's snapdragon	None/None/None			X
Antirrhinum nuttallianum subsp. *nuttallianum*	Nuttall's snapdragon	None/None/None		X	X
Castilleja exserta	purple owl's clover	None/None/None			X
Collinsia heterophylla var. *heterophylla*	Chinese houses	None/None/None		X	X
Keckiella antirrhinoides	Yellow bush Penstemon	None/None/None		X	X
Penstemon spectabilis	Showy penstemon	None/None/None			X
Plantago erecta	Dot-seed plantain	None/None/None			X
POLEMONIACEAE - Phlox Family					
Allophyllum glutinosum	Blue false gilia	None/None/None		X	
Eriastrum filifolilum	Thread-leaf woolly-star	None/None/None		X	X
Eriastrum sapphirinum ssp. *dasyanthum*	Many-flower woolly-star	None/None/None			X
Gilia angelensis	Grassland gilia	None/None/None		X	X
Gilia achilleifolia ssp. *abrotanifolia*	Ball gilia	None/None/None		X	X
Linanthus dianthiflorus	Farinose ground pink	None/None/None			X
Navarretia hamata subsp. *hamata*	Hooked skunkweed	None/None/None		X	X
POLYGONACEAE - Buckwheat Family					
Chorizanthe fimbriata	Fringed spineflower	None/None/None			X
Chorizanthe procumbens	Prostrate spineflower	None/None/None			X
Chorizanthe staticoides	Turkish rugging	None/None/None			X
Eriogonum fasciculatum var. *fasciculatum*	Coast California Buckwheat	None/None/None		X	X
Eriogonum fasciculatum ssp. *foliolosum*	Inland California buckwheat	None/None/None	X		X
Eriogonum gracile	Slender buckwheat	None/None/None			X
Lastarriaea coriacea	Lastarriaea	None/None/None			X
**Polygonum aviculare* ssp. *depressum*	Common knotweed	None/None/None	X		
Pterostegia drymarioides	Granny's hairnet	None/None/None		X	X
**Rumex crispus*	Curly Dock	None/None/None	X	X	X
RANUNCULACEAE - Ranunculus Family					
Clematis pauciflora	Ropevine clematis	None/None/None		X	X
Delphinium parryi ssp. *parryi*	Parry's larkspur	None/None/None		X	X
Delphinium cardinale	Scarlet larkspur				X

Scientific name	Common name	Status (Federal/State/ County, MSCP Plan)	Holly Oaks County Park	Luelf Pond Preserve	Barnett Ranch Preserve
Ranunculus californicus	California buttercup	None/None/None			X
Thalictrum fendleri var. *fendleri*	Fendler's meadow-rue	None/None/None		X	X
RHAMNACEAE - Buckthorn Family					
Ceanothus leucodermis	Chaparral whitethorn	None/None/None		X	X
Ceanothus oliganthus var. *orcuttii*	Orcutt's hairy ceanothus	None/None/None		X	
Ceanothus tomentosus	Ramona ceanothus; Ramona-lilac; woolly-leaved ceanothus	None/None/None			X
Rhamnus ilicifolia	Holly-leaf redberry	None/None/None		X	X
ROSACEAE - Rose Family					
Adenostoma fasciculatum var. *fasciculatum*	Chamise	None/None/None		X	X
Cercocarpus minutifolius	San Diego mountain-mahogany	None/None/None		X	
Drymocallis glandulosa var. *glandulosa*	Sticky cinquefoil	None/None/None		X	
Heteromeles arbutifolia	Toyon	None/None/None		X	
Prunus ilicifolia	Islay, Holly-Leaf Cherry	None/None/None		X	X
RUBIACEAE - Madder Family					
Galium angustifolium var. *angustifolium*	Narrow-leaf bedstraw	None/None/None		X	X
Galium aparine	Common bedstraw	None/None/None		X	X
SALICACEAE - Willow Family					
Populus fremontii	Western cottonwood	None/None/None	X		
Salix gooddingii	Goodding's black willow	None/None/None	X	X	
Salix laevigata	Red willow	None/None/None	X	X	
Salix laseolepis	Arroyo willow	None/None/None	X	X	X
SAXIFRAGACEAE - Saxifrage Family					
Jepsonia parryi	Coast jepsonia	None/None/None		X	
RUTACEAE - Rue or Citrus Family					
Cneoridium dumosum	Coast spice bush	None/None/None			X
SAURURACEAE - Lizard's Tail Family					
Anemopsis californica	Yerba mansa	None/None/None			X
SCROPHULARIACEAE - Figwort Family					
Scrophularia californica	California bee plant	None/None/None		X	X
SOLANACEAE - Nightshade Family					
Datura wrightii	Western Jimson weed	None/None/None		X	X
**Nicotiana glauca*	Tree Tobacco	None/None/None		X	
Physalis crassifolia	Greene's ground cherry	None/None/None			X
Solanum americanum	White Nightshade	None/None/None		X	X
Solanum parishii	Parish's Nightshade	None/None/None		X	X
Urticaceae - Nettle family					
Parietaria hespera var. *californica*	California pellitory	None/None/None		X	
Urtica dioica ssp. *holosericea*	Stinging nettle	None/None/None			X
**Urtica urens*	*dwarf nettle	None/None/None			X
Violaceae - Violet family					
Voila pedunculata	Johnny jump-up	None/None/None			X
Viscaceae - Mistletoe family					
Phoradendron leucarpum ssp. *tomentosum*	Oak mistletoe	None/None/None			X
Zygophyllaceae - Caltrop Family					
**Tribulus terrestris*	Puncture vine	None/None/None	X		
Vascular Species – Ferns and Pines					
DRYOPTERIDACEAE - Wood Fern Family					
Dryopteris arguta	California wood fern	None/None/None		X	
POLYPODIACEAE – Polypody Family					
Polypodium californicum	California polypody	None/None/None		X	X
PTERIDACEAE - Maidenhair Fern Family					
Aspidotis californica	California lace fern	None/None/None		X	
Myriopteris clevelandii	Cleveland's lip fern	None/None/None		X	X
Myriopteris newberryi	California cotton fern	None/None/None		X	X
Pellaea andromedifolia var. *andromedifolia*	Coffee fern	None/None/None			X
Pellaea mucronata var. *mucronata*	Bird's foot fern	None/None/None		X	X
Pentagramma triangularis subsp. *triangularis*	California goldback fern	None/None/None		X	X
Pentagramma triangularis ssp. *viscosa*	Sticky silverback fern	None/None/None			X

Scientific name	Common name	Status (Federal/State/ County, MSCP Plan)	Holly Oaks County Park	Luelf Pond Preserve	Barnett Ranch Preserve
SELAGINELLACEAE - Spike-moss family					
Selaginella bigelovii	Bigelow's spike-moss	None/None/None		X	X
Selaginella cinerascens	Mesa spike moss	None/None/ CRPR: List 4.1 S3 G3G4 County List D		X	X
Vascular Species - Monocots					
AGAVACEAE - Century Plant Family					
Chlorogalum parviflorum	Small-flower soap-plant	None/None/None			X
Hesperoyucca whipplei	Chaparral candle	None/None/None		X	X
CYPERACEAE - Sedge Family					
Cyperus eragrostis	Tall flatsedge	None/None/None		X	X
Cyperus esculentus	Yellow nutsedge	None/None/None		X	
Eleocharis acicularis	Needle spike-rush	None/None/None		X	X
Eleocharis macrostachya	Pale spike-rush	None/None/None		X	
JUNCACEAE - Rush Family					
Juncus bufonius	Toad rush	None/None/None		X	
Juncus mexicanus	Mexican Rush	None/None/None	X	X	X
Juncus xiphioides	Iris-leaf rush	None/None/None		X	X
LILIACEAE - Lily Family					
Calochortus splendens	Splendid mariposa lily	None/None/None		X	X
Calochortus weedii var. *weedii*	Weed's mariposa lily	None/None/None		X	X
POACEAE - Grass Family					
**Avena barbata*	Slender wild oat	None/None/None		X	X
**Avena fatua*	Wild oat	None/None/None	X	X	X
**Bromus diandrus*	Ripgut grass	None/None/None	X	X	X
**Bromus hordeaceus*	Soft chess	None/None/None	X	X	X
**Bromus madritensis* var. *rubens*	Red brome	None/None/None	X	X	X
**Cenchrus setaceus*	African fountain grass	None/None/None	X		
Distichlis spicata	saltgrass	None/None/None	X	X	X
**Ehrharta calycina*	Perennial veldt grass	None/None/None		X	X
**Festuca myuros*	Rat-Tail Fescue	None/None/None	X	X	
Festuca octoflora	Tufted fescue	None/None/None		X	
**Festuca perennis*	Perennial rye grass	None/None/None	X	X	
**Hordeum murinum* ssp. *leporinum*	Hare barley	None/None/None	X		
**Lamarckia aurea*	Golden-top	None/None/None	X	X	
Melica imperfecta	Coast Range Melic	None/None/None		X	X
**Melinis repens*	Natal grass	None/None/None			X
Muhlenbergia microsperma	Little-seed muhly	None/None/None		X	X
Muhlenbergia rigens	Deergrass	None/None/None		X	
Panicum acuminatum var. *fasciculatum*	Western panic grass	None/None/None		X	
**Polypogon monspeliensis*	Annual beard grass	None/None/None	X		X
**Schismus barbatus*	Mediterranean schismus	None/None/None		X	X
Stipa coronata	Giant stipa	None/None/None		X	
Stipa lepida	Foothill needle-grass	None/None/None		X	
Stipa pulchra	Purple Needle-Grass	None/None/None		X	X
**Triticum aestivum*	Cereal wheat	None/None/None	X		
THEMIDACEAE - Brodiaea Family					
Dichelostemma capitatum subsp. *capitatum*	Blue dicks, School Bells	None/None/None		X	X
TYPHACEAE - Cattail Family					
Typha latifolia	Broad-leaf cattail	None/None/None		X	X

*Signifies species nonnative for the Property.
287 species total
66 non-native species

APPENDIX B

SPECIAL-STATUS PLANT SPECIES EVALUATED FOR POTENTIAL TO OCCUR ON THE PROPERTIES

Appendix B
Special-Status Plant Species Evaluated for Potential to Occur on Barnett Ranch Preserve, Holly Oaks County Park, and Luelf Pond Preserve

Common Name	Scientific Name	Status[1]	General Habitat Description	Microhabitat Description	Habitat Present/ Absent	Potential for Occurrence at Holly Oaks County Park	Potential for Occurrence at Luelf Pond Preserve	Potential for Occurrence at Barnett Ranch Preserve
Plants								
Deane's milkvetch	*Astragalus deanei*	CRPR 1B.1 S1 G1, County List A	Openings in coastal sage scrub and chaparral Elevation 150 meters to 750 meters Flowers March through May	The species occurs on slopes and low areas in openings in chaparral and coastal sage scrub. It occurs on soils derived from granitic and metasedimentary rock.	Habitat for the species occurs on the Preserve.	**Not expected**. The Property contains no suitable habitat for this species.	**High potential to occur.** Suitable habitat exists and it has been found 3 miles to the east (SDNHM 2018).	**High potential to occur.** Suitable habitat exists and it has been found 2.5 miles to the east (SDNHM 2018).
Encinitas baccharis	*Baccharis vanessae*	USFWS: Threatened CDFW: Endangered CRPR: List 1B.1 S1 G1 County List A MSCP covered narrow endemic	Sandstone, maritime chaparral, and cismontane woodland Elevation 60 to 720 meters Perennial deciduous shrub Blooms August through November	The species is found in low-growing chaparral, Corralitos loamy sand, and Cieneba rocky coarse sandy loam.	Habitat for the species exists on the Preserve in rocky southern ridge areas.	**Not expected**. The Property contains no suitable habitat for this species.	**Moderate potential to occur**. Potentially suitable habitat is present on the southern ridges of the Preserve. Encinitas baccharis is known from approximately 4 miles west of the Preserve on Mount Woodson.	**Moderate potential to occur**. Suitable habitat is present on the southern ridges of the Preserve. Encinitas baccharis is known from approximately 5 miles west of the Preserve.
San Diego Sunflower	*Bahiopsis laciniata*	CRPR: List 4.3 S4 G4 County List D	Coastal sage scrub habitat on south facing slopes on normal granitic, gabbro and metavolcanic soils. Elevation from near sea level to roughly 1,000 meters. Perennial shrub Blooms from February to August	The species is normally found in coastal sage scrub habitat, particularly on south facing slopes. This plant has been used in revegetation and landscaping throughout coastal San Diego County.	The species has been found on the Preserve in an area where a pad was graded just prior to 2002, apparently in anticipation of the construction of a house.	**Not expected**. The Property contains no suitable habitat for this species.	**Not expected**. The Property contains no suitable habitat for this species.	**Exists on-site** but were undoubtedly planted and not naturally occurring.
Southern Tarplant	*Centromadia parryi australis*	CRPR: List 1B.1 S2 G3T2 County List A	Open valley grassland habitats. Elevation from near sea level to roughly 450 meters. Annual herb Blooms from June to October	The species is found in open grassland areas especially where soil moisture is higher during the winter rainy season such as along river valleys or vernal pool areas.	Habitat exists for the species in the middle of the Preserve.	**Moderate potential to occur.** Occurs on the north side of the Ramona Grasslands 2.5 miles to the northwest of the Preserve. Distribution on-site may depend on the size of the grassland habitat, level of past disturbance, and proximity to the main population.	**Not expected**. The Property contains no suitable habitat for this species.	**Moderate potential to occur.** Occurs on the north side of the Ramona Grasslands 2.5 miles to the northwest of the Preserve. Distribution on-site may depend on the size of the grassland habitat, level of past disturbance, and proximity to the main population. During the mid-1990s, significant portions of the site were cultivated, which would have disturbed this plant's occurrences if it existed on-site.

Common Name	Scientific Name	Status[1]	General Habitat Description	Microhabitat Description	Habitat Present/ Absent	Potential for Occurrence at Holly Oaks County Park	Potential for Occurrence at Luelf Pond Preserve	Potential for Occurrence at Barnett Ranch Preserve
Lakeside ceanothus	*Ceanothus cyaneus*	CRPR List 1B.2 S2 G2 County List A	Chaparral hillsides on north facing slopes and ridge tops. The distribution is very confined to central San Diego County. Elevation generally from near 150 meters to 600 meters. Perennial Shrub Blooms from April to June	Deep soil locations as well as some rocky locations. Its habitat is much more widespread than it is. The limiting factors for its distribution are not well known.	Habitat is present on the site, especially on the north slope of the southern ridges.	**Not expected**. The Property contains no suitable habitat for this species.	**Moderate potential to occur.** Known from 1.25 miles west and 2 miles southeast of the site. The steep north-facing slope on the southern part of the site seems to be suitable habitat but species was not found after thorough examination.	**Moderate potential to occur.** Known from 1 mile south of the site. The diversity of *Ceanothus* on the site is very low and it seems that *Ceanothus leucodermis* is the dominant species. It is possible that 2003 Cedar Fire affected the *Ceanothus* species on the site.
Delicate clarkia	*Clarkia delicata*	CRPR: List 1B.2 S3 G3 County List A	Gabbroic soils, chaparral, and cismontane woodland Elevation 235 to 1,000 meters Annual herb Blooms April through June	The species is found on the periphery of oak woodlands and cismontane chaparral. It is found in vernally mesic situations.	Habitat for the species occurs on the Preserve in oak woodland and chaparral.	**Not expected**. The Property contains no suitable habitat for this species.	**Present on-site.** This species has been found in a relatively large number of locations on the edge of woodlands and large shrublands where they meet grass-covered north-facing slopes.	**Present on-site.** This species has been found in a number of locations on the edge of woodlands and large shrublands where they meet grass covered north facing slopes.
San Miguel savory	*Clinopodium chandleri*	CNPS 1B.2, S2 G2 MSCP covered County List A	Coastal sage scrub and chaparral on north-facing slopes Elevation up to 1,000 meters Small perennial shrub Blooms March through July	The species grows on north slopes sometimes beneath other shrubs and is detectable by odor.	Suitable habitat exists on the north slopes of Preserve.	**Not expected**. The Property contains no suitable habitat for this species.	**Moderate potential to occur.** The species has been found 2.5 miles to the south of the Preserve. It usually occurs on gabbro, metavolcanic, or metasedimentary rock substrates but has been found on regular granitic rock such as the rock on the Preserve.	**Moderate potential to occur.** The species has been found 2.5 miles to the southwest of the Preserve. It usually occurs on gabbro, metavolcanic, or metasedimentary rock substrates but has been found on regular granitic rock such as the rock on the Preserve.
Small-flowered morninglory	*Convolvulus simulans*	CRPR: List 4.2 S4 G4 County List D	Clay habitat in grasslands and openings in coastal sage scrub. Elevation range from near 45 meters to 600 meters in elevation. Small prostrate annual Blooms April to June	The species grows in nearly bare soil areas consisting of clay with little other plant growth.	Small patches of potentially suitable habitat exist on the Preserve.	**Low to moderate potential to occur.** The species has been found roughly 1.25 miles northwest in the Ramona Grasslands area where it grows on clay soil patches. The habitat on-site that is marginally suitable may be too small and isolated to support a species such as this, which has specific soil requirements.	**Not expected**. The Property contains no suitable habitat for this species.	**Moderate potential to occur.** The species has been found roughly 2.5 miles northwest in the Ramona Grasslands area where it grows on clay soil patches. The habitat on-site that is potentially suitable may be too small and isolated to support a species such as this, which has specific soil requirements.
Palmer's grapplinghook	*Harpagonella palmeri*	CRPR: List 4.2 S3 G4 County List D	Clay habitat, chaparral, coastal scrub, and valley and foothill grassland Elevation 20 to 955 meters Annual herb Blooms March through May	The species occurs on clay vertisols with open grassy slopes and open Diegan sage scrub.	Small patches of potentially suitable habitat exist on the Preserve.	**Low to moderate potential to occur.** Though it has been found within 2.5 miles to the south, the habitat on-site that is potentially suitable may be too small and isolated to support a species such as this, which has specific soil requirements.	**Low potential to occur.** Though it has been found within a mile to the south of the Preserve, the habitat on-site that is potentially suitable may be too small and isolated to support a species such as this, which has specific soil requirements.	**Low to moderate potential to occur.** Though it has been found within 0.75 mile to the south, the habitat on-site that is potentially suitable may be too small and isolated to support a species such as this, which has specific soil requirements.

Common Name	Scientific Name	Status[1]	General Habitat Description	Microhabitat Description	Habitat Present/ Absent	Potential for Occurrence at Holly Oaks County Park	Potential for Occurrence at Luelf Pond Preserve	Potential for Occurrence at Barnett Ranch Preserve
Ramona horkelia	*Horkelia truncata*	CRPR: List 1B.3 S3 G3 County List A	Clay and gabbroic habitat Elevation 400 to 1,300 meters Perennial herb Blooms May through June	The species occurs in chamise chaparral. Soil gabbro, frequently on ridge tops.	The Preserve generally lacks the necessary soils for this species.	**Not expected**. The Property contains no suitable habitat for this species.	**Low potential to occur**. The Preserve lacks the more unusual soil types often associated with this species as well as the higher elevation ridge and hilltop habitat that seems preferred by this species.	**Low potential to occur**. The Preserve lacks the more unusual soil types often associated with this species as well as the higher elevation ridge and hilltop habitat that seems preferred by this species.
Heart-leaved pitcher sage	*Lepechinia cardiophylla*	CNPS 1B.2 S2S3 G3 MSCP Covered narrow endemic County List A	Chaparral elevation 300 to 700 meters Perennial Shrub Blooms April through July	The species occurs in openings in chaparral associated with unusual rock types such as metasedimentary rock.	Hills and ridges in openings in chaparral on north slopes	**Not expected**. The Property contains no suitable habitat for this species.	**Low potential to occur**. Preserve lacks unusual rock types such as gabbro or metasedimentary rock that exist where it occurs elsewhere.	**Low potential to occur**. Preserve lacks unusual rock types such as gabbro or metasedimentary rock that exist where it occurs elsewhere.
Robinson's pepper-grass	*Lepidium virginicum* var. *robinsonii*	CRPR: List 4.3 S3 G5T3 County List A	Chaparral and coastal scrub Elevation 1 to 885 meters Annual herb Blooms February through July	The species occurs in openings in chaparral and coastal sage scrub, usually found in foothill elevations. Sites are dry with exposed locales.	Suitable habitat for this species exists within the Preserve.	**Not expected**. The Property contains no suitable habitat for this species.	**Moderate potential to occur**. Suitable habitat occurs on the Preserve and the species occurs in other locations that are similar to the Preserve. Known location approximately 4 miles to the northwest.	**Moderate potential to occur**. Suitable habitat occurs on the Preserve and the species occurs in other locations that are similar to the Preserve. Known location approximately 4 miles to the northwest.
Felt-leaf monardella	*Monardella hypoleuca* ssp. *lanata*	CRPR: List 1B.2 S3 G4T3 County List A	Chaparral Elevation 300 to 1,575 meters Perennial rhizomatous herb Blooms June through August	The species occurs in chaparral understory usually under stands of chamise in xeric situations. Soils include San Miguel-Exchequer rocky silt loams.	Suitable habitat for this species exists within the Preserve.	**Not expected**. The Property contains no suitable habitat for this species.	**Moderate potential to occur**. One plant was reported from the eastern portion of Barnett Ranch Preserve by an earlier survey. It could occur on southern ridge of Preserve.	**Moderate potential to occur**. One plant was reported from the eastern portion of Preserve by an earlier survey in an area that could be suitable but does not match the typical habitat. That area was thoroughly examined without success.
California adder's tongue fern	*Ophioglossum californicum*	CRPR: List 4.2 S4 G4 County List D	Openings in chaparral Elevation 60 to 450 meters Perennial rhizomatous herb Emerges February through April	The species usually occurs in openings under shrubs and areas that sustain moisture a bit longer than the surroundings. It generally does not grow in weedy areas and requires land that has not been disturbed such as by grazing animals	Potentially suitable habitat for this species appears limited in areas that have limited weedy presence.	**Not expected**. The Property contains no suitable habitat for this species.	**Low potential to occur**. It has been found 2.5 miles to the southwest. The Preserve seems to be outside the interior fringe of the range for the species.	**Moderate potential to occur.** It has been found 3 miles to the southwest. The Preserve seems to be outside the interior fringe of the range for the species.
Engelmann oak	*Quercus engelmannii*	CRPR: List 4.2 S3 G3 County List D	Oak woodland, chaparral, and grasslands Elevation less than 1,300 meters Moderate sized tree Flowers April through May	The species occurs in drainages and north-facing slopes in heavy chaparral and oak woodland. Also rolling hills with grass or white sage (*Salvia apiana*).	Suitable habitat for this species exists within the Preserve.	**Not expected**. The Property contains no suitable habitat for this species.	**Present on-site.** A single mature and one smaller Engelmann oak have been found on the Property.	**Present.** Individual Engelmann oaks were found in scattered locations in the southern section of the Preserve and along the eastern portion south of San Vicente Road.

Common Name	Scientific Name	Status[1]	General Habitat Description	Microhabitat Description	Habitat Present/ Absent	Potential for Occurrence at Holly Oaks County Park	Potential for Occurrence at Luelf Pond Preserve	Potential for Occurrence at Barnett Ranch Preserve
Fish's milkwort	*Rhinotropis cornuta* var. *fishiae*	CRPR:List 4.3 S3.3 G5T4 County List D	Chaparral habitat usually on gabbro or metavolcanic soil types. Elevation 90 to 1,270 meters Slender perennial shrub to 2.5 meters tall Flowers May through August	Microhabitat varies between more mesic north facing canyon slopes to ridge and peak tops on gabbro and metavolcanic soil types. It is not a common plant but it occurs in a variety of locations in San Diego County.	Ridge and peak top habitat potentially suitable for this plant occurs on the southwestern portion of the Preserve.	**Not expected**. The Property contains no suitable habitat for this species.	**Moderate potential to occur.** Potentially suitable habitat exists but the plant has a distribution that can only be partially explained by the soil and rock types. Its presence on the Preserve would not be unexpected but it has not been found elsewhere in locations that also would seem suitable.	**Moderate potential to occur.** Potentially suitable habitat exists but the plant has a distribution that can only be partially explained by the soil and rock types. Its presence on the Preserve would not be unexpected but it has not been found elsewhere in locations that also would seem suitable.
Mesa spike-moss	*Selaginella cinerascens*	CRPR: List 4.1 S3 G3G4 County List D	Flat soils and areas around rock slabs, also mesas around vernal pools. Elevation less than 550 meters Prostrate herbaceous perennial that dries to a gray coloration. Present all year but green only after rains.	Undisturbed soils with cryptogamic crusts on flat mesas and adjacent to rock slabs.	Suitable habitat for this species exists within a few locations on the Preserve.	**Low potential to occur.** Areas that could potentially support this species appear too disturbed to be able to support it.	**Present.** Occurs on rock slab locations in the south-central portion of the Preserve.	**Present.** Was reported for the northwest edge of the Preserve. Careful examination of that area was not able to reconfirm its presence; however, it was found on the southwestern and northeastern portions of the Preserve.
Parry's tetracoccus	*Tetracoccus dioicus*	CRPR: List 1B.2 S2 G3? County List A	Mostly found on gabbro derived soils but may still occur on granodiorite. Elevation less than 1,000 meters. Perennial shrub to 2 meters or more Flowers April and May	Mixed in which chaparral on slopes and ridges.	Because gabbro has not been found on the Preserve, this is not as likely to occur on-site.	**Not expected**. The Property contains no suitable habitat for this species.	**Low potential to occur.** Species has been found 3 miles to the east of the Preserve on gabbro derived soil and potentially other unusual soils. However, these unusual soils appear lacking from the Preserve and their absence would reduce the probability of the species occurring there.	**Low potential to occur.** Species has been found 1 mile to the east of the Preserve on gabbro derived soil and potentially other unusual soils. However, these unusual soils appear lacking from the Preserve and their absence would reduce the probability of the species occurring there.
Rush chaparral-star	*Xanthisma junceum*	CRPR: List 4.3 S4 G5 County List D	Dry slopes in chaparral and coastal sage scrub Elevation less than 1,000 meters Low perennial shrub less than 1 meter tall. Flowers May through October	Openings in the edges of chaparral and coastal sage scrub habitat.	Suitable habitat for this species exists within the Preserve.	**Not expected**. The Property contains no suitable habitat for this species.	**High potential to occur.** Species has been found within 1.5 miles south of the Preserve. Except for when it is in flower, it is very cryptic and difficult to identify.	**High potential to occur.** Species has been found within 1 mile south of the Preserve. Except for when it is in flower, it is very cryptic and difficult to identify.

[1]Definitions for sensitivity categories are as follows:

Federal U.S. Fish and Wildlife Service (USFWS)
State California Department of Fish and Wildlife (CDFW)
MSCP = Multiple Species Conservation Program
County Designations:

County List A	Plants rare, threatened, or endangered in California and elsewhere
County List B	Plants rare, threatened, or endangered in California but common elsewhere
County List C	Plants which may be rare, but need more information to determine their true rarity status
County List D	Plants of limited distribution and are uncommon, but not presently rare or endangered
MSCP covered:	Included on the County Multiple Species Conservation Program covered plant species list (1998)

CNPS and California Rare Plant Rank (CRPR):

1B: Plants rare, threatened, or endangered in California and elsewhere
2: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants more information is needed – a review list
4: Plants of limited distribution – a watch list

CRPR Threat Ranks:

0.1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat);

0.2 = Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat);
0.3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

State Ranking

The *state rank* (S-rank) is a reflection of the overall status of an element throughout its range within the State of California. Both Global and State ranks represent a letter+number score that reflects a combination of Rarity, Threat and Trend factors, with weighting being heavier on Rarity than the other two.
S1 = Critically Imperiled — Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.
S2 = Imperiled — Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.
S3 = Vulnerable — Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4 = Apparently Secure — Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5 = Secure — Common, widespread, and abundant in the state.

Global Ranking

The *global rank* (G-rank) is a reflection of the overall status of an element throughout its global range. Both Global and State ranks represent a letter+number score that reflects a combination of Rarity, Threat and Trend factors, with weighting being heavier on Rarity than the other two.

Species or Natural Community Level
G1 = Critically Imperiled — At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
G2 = Imperiled — At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
G3 = Vulnerable — At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
G4 = Apparently Secure — Uncommon but not rare; some cause for long-term concern due to declines or other factors.
G5 = Demonstrably Secure — Common; widespread and abundant.

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APPENDIX C

NON-NATIVE PLANT SPECIES DETECTED ON THE PROPERTIES

Appendix C
Combined Non-Native Plant Species Detected on the Properties

Scientific Name	Common Name	Cal IPC/USDA Introduced, Invasive, and Noxious	Barnett Ranch	Luelf Pond	Holly Oaks	Removal Management Priority
Vascular Species – Dicots						
AMARANTHACEAE - Amaranth Family						
**Amaranthus albus*	White tumbleweed	Not Listed/Not Listed	X		X	None
ANACARDIACEAE - Sumac or Cashew Family						
**Schinus molle*	Peruvian pepper tree	Limited/Not Listed Mapped	X			High
APIACEAE - Carrot Family						
**Foeniculum vulgare*	Fennel	Moderate/Not Listed			X	High
ASTERACEAE - Sunflower Family						
**Bahiopsis laciniata*	San Diego sunflower	Not Listed/Not Listed	X			Low
**Carduus pycnocephalus*	Italian Thistle	Moderate/Listed	X	X	X	Low
**Centaurea melitensis*	Tocalote	Moderate/Not Listed	X	X	X	Low
**Cirsium vulgare*	Bull thistle	Moderate/Not Listed	X		X	None
**Dittrichia graveolens*	Stinkwort	Moderate/Not Listed			X	High
**Encelia farinosa*	Brittlebush	Not Listed/Not Listed	X			Moderate
**Erigeron bonariensis*	Flax-Leaf Fleabane	Not Listed/Not Listed	X		X	Low
**Hedypnois cretica*	Crete hedypnois	Not Listed/Not Listed			X	None
**Helminthotheca echioides*	Bristly ox-tongue			X		
**Hypochaeris glabra*	Smooth cat's ear	Limited/Not Listed	X	X	X	None
**Lactuca serriola*	Prickly Lettuce	Not Listed/Not Listed	X	X	X	None
**Logfia gallica*	Narrow-leaf cottonrose	Not Listed/Not Listed	X	X	X	None
**Matricaria discoidea*	Common pineapple-weed	Not Listed/Not Listed			X	None
**Pseudognaphalium luteoalbum*	Fragrant everlasting cudweed	Not Listed/Not Listed	X		X	None
**Senecio vulgaris*	Common groundsel	Not Listed/Not Listed	X			None
**Sonchus asper* subsp. *asper*	Prickly sow thistle	Not Listed/Not Listed	X			None
BRASSICACEAE - Mustard Family						
**Brassica nigra*	Mustard	Moderate/Not Listed	X	X	X	None
**Hirschfeldia incana*	Short-pod mustard	Moderate/Not Listed	X	X	X	None
**Raphanus sativa*	Wild radish	Limited/Not Listed			X	None
**Sisymbrium irio*	London rocket	Limited/Not Listed		X		None
CACTACEAE - Cactus family						
**Opuntia ficus-indica*	Mission Cactus	Not Listed/Not Listed			X	Moderate
CARYOPHYLLACEAE - Pink Family						
**Cerastium glomeratum*	Mouse-Ear Chickweed	Not Listed/Not Listed	X	X		None
**Polycarpon tetraphyllum*	Four-leaf allseed	Not Listed/Not Listed			X	None
**Silene gallica*	Common catchflly	Not Listed/Not Listed	X			None
**Spergula arvensis* ssp. *arvensis*	Stickwort	Not Listed/Not Listed		X	X	None

Scientific Name	Common Name	Cal IPC/USDA Introduced, Invasive, and Noxious	Barnett Ranch	Luelf Pond	Holly Oaks	Removal Management Priority
**Stellaria media*	Common Chickweed	Not Listed/Not Listed	X	X	X	None
CHENOPODIACEAE - Goosefoot Family						
**Atriplex semibaccata*	Australian saltbush	Moderate/Not Listed	X			None
**Chenopodium album*	Lamb's quarters	Not Listed/Not Listed			X	
**Chenopodium murale*	Nettle-leaf goosefoot	Not Listed/Not Listed		X	X	
**Salsola tragus*	Prickly Russian-Thistle, Tumbleweed	Limited/ Listed	X		X	Low
CONVOLVULACEAE - Morning Glory Family						
**Convolvulus arvensis*	Field Bind weed	Not Listed/ Listed	X	X		Low
EUPHORBIACEAE - Spurge Family						
**Euphorbia maculata*	Spotted spurge	Not Listed/Not Listed			X	None
FABACEAE - Legume Family						
**Medicago polymorpha*	California burclover	Limited/Not Listed	X	X		None
**Melilotus indicus*	Indian sweetclover	Not Listed/Not Listed	X	X		None
**Vicia villosa*	Harry vetch	Not Listed/Not Listed		X	X	None
GERANIACEAE - Cranesbill Family						
**Erodium botrys*	Long-beak filaree	Not Listed/Not Listed	X	X	X	None
**Erodium cicutarium*	Red-stem filaree	Limited/Not Listed	X	X	X	None
LAMIACEAE - Mint Family						
**Marrubium vulgare*	Horehound	Limited/Not Listed Mapped	X	X		Moderate
LYTHRACEAE - Loosestrife Family						
**Lythrum hyssopifolia*	Grass polly	Moderate/Not Listed			X	None
MYRSINACEAE - Myrsine Family						
**Lysimachia arvensis*	Scarlet pimpernel	Not Listed/Not Listed	X	X	X	None
MYRTACEAE - Myrtle Family						
**Eucalyptus globulus*	blue gum	Limited/Not Listed Mapped	X		X	High
OLEACEA - Olive Family						
**Olea europaea*	Olive	Limited/Not Listed Mapped	X	X	X	Low
POLYGONACEAE - Buckwheat Family						
**Polygonum aviculare* ssp. *depressum*	Common knotweed	Not Listed/Not Listed			X	None
**Rumex crispus*	Curly Dock	Limited/Not Listed	X	X	X	Low
SOLANACEAE - Nightshade Family						
**Nicotiana glauca*	Tree Tobacco	Moderate/Not Listed		X		High
Urticaceae - Nettle family						
**Urtica urens*	Dwarf nettle	Not Listed/Not Listed	X			None
ZYGOPHYLLACEAE - Caltrop Family						
**Tribulus terrestris*	Puncture vine	Limited/Listed			X	Moderate
Vascular Species - Monocots						
POACEAE - Grass Family						
**Avena barbata*	Slender wild oat	Moderate/Not Listed	X	X		None
**Avena fatua*	Wild oat	Moderate/Not Listed	X	X	X	None
**Bromus diandrus*	Ripgut grass	Moderate/Not Listed	X	X	X	None
**Bromus hordeaceus*	Soft chess	Limited/Not Listed	X	X	X	None

Scientific Name	Common Name	Cal IPC/USDA Introduced, Invasive, and Noxious	Barnett Ranch	Luelf Pond	Holly Oaks	Removal Management Priority
**Bromus madritensis* var. *rubens*	Red brome	High/Not Listed	X	X	X	None
**Cenchrus setaceus*	African fountain grass	Moderate/Not Listed but several others are			X	Moderate
**Ehrharta calycina*	Perennial veldt grass	High/Not Listed Mapped some	X	X		Moderate
**Festuca myuros*	Rat-Tail Fescue	Moderate/Not Listed		X	X	None
**Festuca perennis*	Perennial rye grass	Moderate/Not Listed		X	X	None
**Hordeum murinum* ssp. *leporinum*	Hare barley	Moderate/Not Listed			X	None
**Lamarckia aurea*	Golden-top	Not Listed/Not Listed		X		None
**Melinis repens*	Natal grass	Not Listed/ USDA	X			Moderate
**Polypogon monspeliensis*	Annual beard grass	Limited/Not Listed	X		X	None
**Schismus barbatus*	Mediterranean schismus	Limited/Not Listed	X	X		None
**Triticum aestivum*	Cereal wheat	Not Listed/Not Listed			X	Low

*Signifies species nonnative for the Property.

APPENDIX D

WILDLIFE SPECIES OBSERVED AND/OR DETECTED ON THE PROPERTIES

Appendix D
Wildlife Species Observed and/or Detected on the Properties

Common Name	Scientific Name	Order	Family	Status (Federal/State/ County Group, MSCP Covered[1]	Holly Oaks County Park	Luelf Pond Preserve	Barnett Ranch Preserve
Birds							
Cooper's Hawk	*Accipiter cooperii*	Accipitriformes	Accipitridae	None/WL/County Group 1/Covered	X	X	X
Golden Eagle	*Aquila chrysaetos*	Accipitriformes	Accipitridae	None/FP, WL/County Group 1/Covered		X	X
Red-tailed Hawk	*Buteo jamaicensis*	Accipitriformes	Accipitridae	None/None/None	X	X	X
Red-shouldered Hawk	*Buteo lineatus*	Accipitriformes	Accipitridae	None/None/County Group 1	X	X	X
Swainson's Hawk	*Buteo swainsoni*	Accipitriformes	Accipitridae	None/Threatened/County Group 1/Covered	X		
Turkey Vulture	*Cathartes aura*	Accipitriformes	Cathartidae	None/None/County Group 1	X	X	X
Mallard	*Anas platyrhynchos*	Anseriformes	Anatidae	None/None/None	X	X	X
White-throated Swift	*Aeronautes saxatalis*	Apodiformes	Apodidae	None/None/None	X	X	X
Vaux's Swift	*Chaetura vauxi*	Apodiformes	Apodidae	None/None/None			X
Black-chinned Hummingbird	*Archilochus alexandri*	Apodiformes	Trochilidae	None/None/None		X	X
Anna's Hummingbird	*Calypte anna*	Apodiformes	Trochilidae	None/None/None	X	X	X
Costa's Hummingbird	*Calypte costae*	Apodiformes	Trochilidae	None/None/None		X	X
Rufous/Allen's Hummingbird	*Selasphorus rufus/sasin*	Apodiformes	Trochilidae	None/None/None		X	
Lesser Nighthawk	*Chordeiles acutipennis*	Caprimulgiformes	Caprimulgidae	None/None/None			X
Common Poorwill	*Phalaenoptilus nuttallii*	Caprimulgiformes	Caprimulgidae	None/None/None	X	X	X
Killdeer	*Charadrius vociferus*	Charadriiformes	Charadriidae	None/None/None		X	
Rock Pigeon	*Columba livia*	Columbiformes	Columbidae	None/None/None	X		
Eurasian Collared-Dove	*Streptopelia decaocto*	Columbiformes	Columbidae	None/None/None	X		X
Mourning Dove	*Zenaida macroura*	Columbiformes	Columbidae	None/None/None	X	X	X
Greater Roadrunner	*Geococcyx californianus*	Cuculiformes	Cuculidae	None/None/None	X	X	X
American Kestrel	*Falco sparverius*	Falconiformes	Falconidae	None/None/None	X		X
California Quail	*Callipepla californica*	Galliformes	Odontophoridae	None/None/None	X	X	X
Wild Turkey	*Meleagris gallopavo*	Galliformes	Phasianidae	None/None/None			X
Bushtit	*Psaltriparus minimus*	Passeriformes	Aegithalidae	None/None/None	X	X	X
Cedar Waxwing	*Bombycilla cedrorum*	Passeriformes	Bombycillidae	None/None/None	X		
Lazuli Bunting	*Passerina amoena*	Passeriformes	Cardinalidae	None/None/None		X	X
Blue Grosbeak	*Passerina caerulea*	Passeriformes	Cardinalidae	None/None/None	X	X	X
Black-headed Grosbeak	*Pheucticus melanocephalus*	Passeriformes	Cardinalidae	None/None/None	X	X	X
Western Tanager	*Piranga ludoviciana*	Passeriformes	Cardinalidae	None/None/None	X	X	X
California Scrub-Jay	*Aphelocoma californica*	Passeriformes	Corvidae	None/None/None	X	X	X
American Crow	*Corvus brachyrhynchos*	Passeriformes	Corvidae	None/None/None	X	X	X
Common Raven	*Corvus corax*	Passeriformes	Corvidae	None/None/None	X	X	X
Southern California Rufous-crowned Sparrow	*Aimophila ruficeps canescens*	Passeriformes	Emberizidae	None/WL/County Group 1/Covered		X	X
Grasshopper Sparrow	*Ammodramus savannarum*	Passeriformes	Emberizidae	None/SSC/County Group 1			X
Lark Sparrow	*Chondestes grammacus*	Passeriformes	Emberizidae	None/None/None	X		X
Lincoln's Sparrow	*Melospiza lincolnii*	Passeriformes	Emberizidae	None/None/None	X		X

Common Name	Scientific Name	Order	Family	Status (Federal/State/ County Group, MSCP Covered[1]	Holly Oaks County Park	Luelf Pond Preserve	Barnett Ranch Preserve
Song Sparrow	*Melospiza melodia*	Passeriformes	Emberizidae	None/None/None		X	X
California Towhee	*Melozone crissalis*	Passeriformes	Emberizidae	None/None/None	X	X	X
Savannah Sparrow	*Passerculus sandwichensis*	Passeriformes	Emberizidae	None/None/None	X		X
Spotted Towhee	*Pipilo maculatus*	Passeriformes	Emberizidae	None/None/None		X	X
Vesper Sparrow	*Pooecetes gramineus*	Passeriformes	Emberizidae	None/None/None			X
Golden-crowned Sparrow	*Zonotrichia atricapilla*	Passeriformes	Emberizidae	None/None/None		X	
White-crowned Sparrow	*Zonotrichia leucophrys*	Passeriformes	Emberizidae	None/None/None	X	X	X
House Finch	*Haemorhous mexicanus*	Passeriformes	Fringillidae	None/None/None	X	X	X
Lawrence's Goldfinch	*Spinus lawrencei*	Passeriformes	Fringillidae	None/None/None		X	X
Lesser Goldfinch	*Spinus psaltria*	Passeriformes	Fringillidae	None/None/None	X	X	X
Barn Swallow	*Hirundo rustica*	Passeriformes	Hirundinidae	None/None/None	X	X	X
Cliff Swallow	*Petrochelidon pyrrhonota*	Passeriformes	Hirundinidae	None/None/None	X	X	X
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Passeriformes	Hirundinidae	None/None/None	X		X
Violet-green Swallow	*Tachycineta thalassina*	Passeriformes	Hirundinidae	None/None/None	X	X	X
Tricolored Blackbird	*Agelaius tricolor*	Passeriformes	Icteridae	None/CE, SSC/County Group 1/Covered	X		
Brewer's Blackbird	*Euphagus cyanocephalus*	Passeriformes	Icteridae	None/None/None	X		
Bullock's Oriole	*Icterus bullockii*	Passeriformes	Icteridae	None/None/None	X		X
Hooded Oriole	*Icterus cucullatus*	Passeriformes	Icteridae	None/None/None	X	X	
Brown-headed Cowbird	*Molothrus ater*	Passeriformes	Icteridae	None/None/None	X	X	X
Western Meadowlark	*Sturnella neglecta*	Passeriformes	Icteridae	None/None/None			X
Loggerhead Shrike	*Lanius ludovicianus*	Passeriformes	Laniidae	None/SSC/County Group 1			X
Northern Mockingbird	*Mimus polyglottos*	Passeriformes	Mimidae	None/None/None	X		X
California Thrasher	*Toxostoma redivivum*	Passeriformes	Mimidae	None/None/None	X	X	X
American Pipit	*Anthus rubrescens*	Passeriformes	Motacillidae	None/None/None			X
Oak Titmouse	*Baeolophus inornatus*	Passeriformes	Paridae	None/None/None		X	X
Wilson's Warbler	*Cardellina pusilla*	Passeriformes	Parulidae	None/None/None	X	X	X
MacGillivray's Warbler	*Geothlypis tolmiei*	Passeriformes	Parulidae	None/None/None		X	
Orange-crowned Warbler	*Oreothlypis celata*	Passeriformes	Parulidae	None/None/None	X	X	X
Nashville Warbler	*Oreothlypis ruficapilla*	Passeriformes	Parulidae	None/None/None		X	X
Yellow-rumped Warbler	*Setophaga coronata*	Passeriformes	Parulidae	None/None/None	X	X	X
Black-throated Gray Warbler	*Setophaga nigrescens*	Passeriformes	Parulidae	None/None/None	X	X	X
Yellow Warbler	*Setophaga petechia brewsteri*	Passeriformes	Parulidae	None/SSC/County Group 2	X	X	
Townsend's Warbler	*Setophaga townsendi*	Passeriformes	Parulidae	None/None/None		X	X
House Sparrow	*Passer domesticus*	Passeriformes	Passeridae	None/None/None	X		
Blue-gray Gnatcatcher	*Polioptila caerulea*	Passeriformes	Polioptilidae	None/None/None		X	X
Phainopepla	*Phainopepla nitens*	Passeriformes	Ptilogonatidae	None/None/None	X	X	X
Ruby-crowned Kinglet	*Regulus calendula*	Passeriformes	Regulidae	None/None/None		X	
White-breasted Nuthatch	*Sitta carolinensis*	Passeriformes	Sittidae	None/None/None		X	X
European Starling	*Sturnus vulgaris*	Passeriformes	Sturnidae	None/None/None	X	X	X
Wrentit	*Chamaea fasciata*	Passeriformes	Sylviidae	None/None/None		X	X

Common Name	Scientific Name	Order	Family	Status (Federal/State/ County Group, MSCP Covered[1]	Holly Oaks County Park	Luelf Pond Preserve	Barnett Ranch Preserve
Canyon Wren	*Catherpes mexicanus*	Passeriformes	Troglodytidae	None/None/None		X	X
Rock Wren	*Salpinctes obsoletus*	Passeriformes	Troglodytidae	None/None/None			X
Bewick's Wren	*Thryomanes bewickii*	Passeriformes	Troglodytidae	None/None/None	X	X	X
House Wren	*Troglodytes aedon*	Passeriformes	Troglodytidae	None/None/None	X	X	X
Hermit Thrush	*Catharus guttatus*	Passeriformes	Turdidae	None/None/None		X	
Swainson's Thrush	*Catharus ustulatus*	Passeriformes	Turdidae	None/None/None	X	X	
Mountain Bluebird	*Sialia currucoides*	Passeriformes	Turdidae	None/None/None			X
Western Bluebird	*Sialia mexicana*	Passeriformes	Turdidae	None/None/County Group 2/Covered	X	X	X
Western Wood-Pewee	*Contopus sordidulus*	Passeriformes	Tyrannidae	None/None/None		X	X
Pacific-slope Flycatcher	*Empidonax difficilis*	Passeriformes	Tyrannidae	None/None/None	X	X	X
Hammond's Flycatcher	*Empidonax hammondii*	Passeriformes	Tyrannidae	None/None/None		X	
Ash-throated Flycatcher	*Myiarchus cinerascens*	Passeriformes	Tyrannidae	None/None/None	X	X	X
Black Phoebe	*Sayornis nigricans*	Passeriformes	Tyrannidae	None/None/None	X	X	X
Say's Phoebe	*Sayornis saya*	Passeriformes	Tyrannidae	None/None/None	X		X
Western Kingbird	*Tyrannus verticalis*	Passeriformes	Tyrannidae	None/None/None	X	X	X
Cassin's Kingbird	*Tyrannus vociferans*	Passeriformes	Tyrannidae	None/None/None	X	X	X
Warbling Vireo	*Vireo gilvus*	Passeriformes	Vireonidae	None/None/None		X	X
Hutton's Vireo	*Vireo huttoni*	Passeriformes	Vireonidae	None/None/None		X	X
Great Egret	*Ardea alba*	Pelecaniformes	Ardeidae	None/None/None	X		
Great Blue Heron	*Ardea herodias*	Pelecaniformes	Ardeidae	None/None/County Group 2	X		
Black-crowned Night-Heron	*Nycticorax nycticorax*	Pelecaniformes	Ardeidae	None/None/None	X		
Northern Flicker	*Colaptes auratus*	Piciformes	Picidae	None/None/None	X	X	X
Acorn Woodpecker	*Melanerpes formicivorus*	Piciformes	Picidae	None/None/None	X	X	X
Nuttall's Woodpecker	*Picoides nuttallii*	Piciformes	Picidae	None/None/None	X	X	X
Red-breasted Sapsucker	*Sphyrapicus ruber*	Piciformes	Picidae	None/None/None			X
Great Horned Owl	*Bubo virginianus*	Strigiformes	Strigidae	None/None/None		X	X
Western Screech-Owl	*Megascops kennicottii*	Strigiformes	Strigidae	None/None/None		X	X
Barn Owl	*Tyto alba*	Strigiformes	Tytonidae	None/None/County Group 2	X	X	X
Invertebrates							
Tarantula Hawk	*Hemipepsis/Pepsis sp.*	Hymenoptera	Pompilidae	None/None/None	X		
Funereal Duskywing	*Erynnis funeralis*	Lepidoptera	Hesperiidae	None/None/None		X	X
Woodland Skipper	*Ochlodes sylvanoides*	Lepidoptera	Hesperiidae	None/None/None		X	
Sandhill skipper	*Polites sabuleti*	Lepidoptera	Hesperiidae	None/None/None	X		
Brown Elfin	*Callophrys augustinus*	Lepidoptera	Lycaenidae	None/None/None	X		X
Perplexing (Bramble) Hairstreak	*Callophrys perplexus*	Lepidoptera	Lycaenidae	None/None/None			X
Bernardino Blue	*Euphilotes bernardino*	Lepidoptera	Lycaenidae	None/None/None	X	X	X
Ceraunus Blue	*Hemiargus ceraunus*	Lepidoptera	Lycaenidae	None/None/None			X
Acmon Blue	*Icaricia acmon acmon*	Lepidoptera	Lycaenidae	None/None/None	X	X	X
Marine Blue	*Leptotes marina*	Lepidoptera	Lycaenidae	None/None/None	X		
Gray Hairstreak	*Strymon melinus*	Lepidoptera	Lycaenidae	None/None/None	X		X

Common Name	Scientific Name	Order	Family	Status (Federal/State/ County Group, MSCP Covered[1]	Holly Oaks County Park	Luelf Pond Preserve	Barnett Ranch Preserve
California Sister	*Adelpha californica*	Lepidoptera	Nymphalidae	None/None/None		X	
Gabb's Checkerspot	*Chlosyne gabbii*	Lepidoptera	Nymphalidae	None/None/None		X	
Common Buckeye	*Junonia coenia*	Lepidoptera	Nymphalidae	None/None/None			X
Mourning Cloak	*Nymphalis antiopa*	Lepidoptera	Nymphalidae	None/None/None		X	
Red Admiral	*Vanessa atalanta*	Lepidoptera	Nymphalidae	None/None/None			X
Pale Swallowtail	*Papilio eurymedon*	Lepidoptera	Papilionidae	None/None/None		X	
Western Tiger Swallowtail	*Papilio rutulus*	Lepidoptera	Papilionidae	None/None/None		X	
Sara Orangetip	*Anthocharis sara sara*	Lepidoptera	Pieridae	None/None/None		X	X
Orange Sulphur	*Colias eurytheme*	Lepidoptera	Pieridae	None/None/None	X		X
Sleepy Orange	*Eurema nicippe*	Lepidoptera	Pieridae	None/None/None	X		
Cloudless (Senna) Sulphur	*Phoebus sennae marcellina*	Lepidoptera	Pieridae	None/None/None		X	
Checkered White	*Pontia protodice*	Lepidoptera	Pieridae	None/None/None	X	X	X
White sp.	*Pontia* sp.	Lepidoptera	Pieridae	None/None/None			X
Behr's Metalmark	*Apodemia mormo virgulti*	Lepidoptera	Riodinidae	None/None/None		X	X
Giant Darner	*Anax walsinghami*	Odonata	Aeshnidae	None/None/None	X	X	
Familiar Bluet	*Enallagma civile*	Odonata	Coenagrionidae	None/None/None			X
Flame Skimmer	*Libellula saturata*	Odonata	Libellulidae	None/None/None			X
Variegated Meadowhawk	*Sympetrum corruptum*	Odonata	Libellulidae	None/None/None		X	
Thalassica Grasshopper	*Trimerotropis thalassica*	Orthoptera	Acrididae	None/None/None			X
Reptiles and Amphibians							
Western Toad	*Anaxyrus boreas*	Anura	Bufonidae	None/None/None		X	X
Baja California Treefrog	*Pseudacris hypochondriaca*	Anura	Hylidae	None/None/None	X	X	X
Western Spadefoot	*Spea hammondii*	Anura	Scaphiopodidae	None/SSC/County Group 2			X
Southern Alligator Lizard	*Elgaria multicarinata*	Squamata	Anguidae	None/None/None	X		X
Rosy Boa	*Lichanura orcutti*	Squamata	Boidae	None/None/County Group 2		X	
Red Racer	*Coluber flagellum piceus*	Squamata	Colubridae	None/None/None			X
California Striped Racer	*Coluber lateralis lateralis*	Squamata	Colubridae	None/None/None		X	X
California Kingsnake	*Lampropeltis californiae*	Squamata	Colubridae	None/None/None	X	X	X
Gopher snake	*Pituophis catenifer*	Squamata	Colubridae	None/None/None	X	X	X
Long-nosed Snake	*Rhinocheilus lecontei*	Squamata	Colubridae	None/None/None			X
Coast Patch-nosed Snake	*Salvadora hexalepis virgultea*	Squamata	Colubridae	None/SSC/County Group 2			X
Two-striped Gartersnake	*Thamnophis hammondii*	Squamata	Natricidae	None/SSC/County Group 1		X	X
Blainville's Horned Lizard	*Phrynosoma blainvillii*	Squamata	Phrynosomatidae	None/SSC/County Group 2/Covered		X	X
Western Fence Lizard	*Sceloporus occidentalis*	Squamata	Phrynosomatidae	None/None/None	X	X	X
Granite Spiny Lizard	*Sceloporus orcutti*	Squamata	Phrynosomatidae	None/None/None		X	X
Western Side-blotched Lizard	*Uta stansburiana elegans*	Squamata	Phrynosomatidae	None/None/None		X	X
Coronado skink	*Plestiodon skiltonianus interparietalis*	Squamata	Scincidae	None/WL/ County Group 2			X
Belding's Orange-throated Whiptail	*Aspidoscelis hyperythra beldingi*	Squamata	Teiidae	None/WL/County Group 2/Covered			X
San Diegan Tiger Whiptail	*Aspidoscelis tigris stejnegeri*	Squamata	Teiidae	None/SSC/County Group 2	X	X	X

Common Name	Scientific Name	Order	Family	Status (Federal/State/ County Group, MSCP Covered[1]	Holly Oaks County Park	Luelf Pond Preserve	Barnett Ranch Preserve
Southwestern Speckled Rattlesnake	*Crotalus mitchellii pyrrhus*	Squamata	Viperidae	None/None/None		X	
Southern Pacific Rattlesnake	*Crotalus oreganus helleri*	Squamata	Viperidae	None/None/None			X
Red Diamond Rattlesnake	*Crotalus ruber*	Squamata	Viperidae	None/SSC/County Group 2			X
Granite Night Lizard	*Xantusia henshawi*	Squamata	Xantusiidae	None/None/None			X
Garden Slender salamander	*Batrachoseps major major*	Urodela	Plethodontidae	None/None/None		X	
Mammals							
Mule Deer	*Odocoileus hemionus*	Artiodactyla	Cervidae	None/County Group 2/Covered		X	X
Coyote	*Canis latrans*	Carnivora	Canidae	None/None/None	X	X	X
Gray fox	*Urocyon cinereoargenteus*	Carnivora	Canidae	None/None/None		X	X
Bobcat	*Lynx rufus*	Carnivora	Felidae	None/None/None		X	X
Mountain lion	*Puma concolor*	Carnivora	Felidae	None/None/County Group 2/Covered		X	X
Striped skunk	*Mephitis mephitis*	Carnivora	Mephitidae	None/None/None		X	X
Long-tailed Weasel	*Mustela frenata*	Carnivora	Mustelidae	None/None/None	X		X
Western mastiff bat	*Eumops perotis*	Chiroptera	Molossidae	None/SSC/County Group 2	X	X	X
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	Chiroptera	Molossidae	None/SSC/County Group 2	X	X	X
Mexican free-tailed bat	*Tadarida brasiliensis*	Chiroptera	Molossidae	None/None/None	X	X	X
Townsend's big-eared bat	*Corynorhinus townsendii*	Chiroptera	Vespertilionidae	None/SSC/County Group 2	X	X	X
Big brown bat	*Eptesicus fuscus*	Chiroptera	Vespertilionidae	None/None/None	X	X	X
Western red bat	*Lasiurus blossevillii*	Chiroptera	Vespertilionidae	None/SSC/County Group 2	X	X	
Hoary bat	*Lasiurus cinereus*	Chiroptera	Vespertilionidae	None/None/None	X	X	X
Western yellow bat	*Lasiurus xanthinus*	Chiroptera	Vespertilionidae	None/SSC/None		X	X
California myotis	*Myotis californicus*	Chiroptera	Vespertilionidae	None/None/None		X	X
Western small-footed myotis	*Myotis ciliolabrum*	Chiroptera	Vespertilionidae	None/None/County Group 2	X	X	X
Western long-eared myotis	*Myotis evotis*	Chiroptera	Vespertilionidae	None/None/None			X
Yuma myotis	*Myotis yumanensis*	Chiroptera	Vespertilionidae	None/None/County Group 2	X	X	X
Canyon bat	*Parastrellus hesperus*	Chiroptera	Vespertilionidae	None/None/None	X	X	X
Virginia opossum	*Didelphis virginiana*	Didelphimorphia	Didelphidae	None/None/None		X	
Desert Cottontail	*Sylvilagus audubonii*	Lagomorpha	Leporidae	None/None/None	X	X	X
Brush Rabbit	*Sylvilagus bachmani*	Lagomorpha	Leporidae	None/None/None		X	
Botta's Pocket Gopher	*Thomomys bottae*	Rodentia	Geomyidae	None/None/None	X		X
Dulzura Pocket Mouse	*Chaetodipus californicus femoralis*	Rodentia	Heteromyidae	None/SSC/County Group 2	X	X	X
Northwestern San Diego Pocket Mouse	*Chaetodipus fallax fallax*	Rodentia	Heteromyidae	None/SSC/County Group 2	X		X
Dulzura Kangaroo Rat	*Dipodomys simulans*	Rodentia	Heteromyidae	None/None/None		X	X
California Vole	*Microtus californicus*	Rodentia	Muridae	None/None/None	X	X	
House Mouse	*Mus musculus*	Rodentia	Muridae	None/None/None	X		
San Diego Desert Woodrat	*Neotoma bryanti intermedia*	Rodentia	Muridae	None/SSC/County Group 2			X
Large-eared Woodrat	*Neotoma macrotis*	Rodentia	Muridae	None/None/None			X
Brush Mouse	*Peromyscus boylii*	Rodentia	Muridae	None/None/None			X
California Mouse	*Peromyscus californicus*	Rodentia	Muridae	None/None/None		X	X
Cactus Mouse	*Peromyscus eremicus*	Rodentia	Muridae	None/None/None		X	X

Common Name	Scientific Name	Order	Family	Status (Federal/State/ County Group, MSCP Covered[1]	Holly Oaks County Park	Luelf Pond Preserve	Barnett Ranch Preserve
Deer Mouse	*Peromyscus maniculatus*	Rodentia	Muridae	None/None/None	X	X	X
Western Harvest Mouse	*Reithrodontomys megalotis*	Rodentia	Muridae	None/None/None	X	X	
California Ground Squirrel	*Spermophilus beecheyi*	Rodentia	Sciuridae	None/None/None	X	X	X

[1] [t]State Status Abbreviations: CT: Candidate Threatened; FP: Fully Protected; SSC: Species of Special Concern; WL: Watch List

Literature Cited

California Department of Fish and Wildlife (CDFW). 2018. Special Animals List. Natural Diversity Database. October, Periodic Publication. 51 pp.

APPENDIX E

SPECIAL-STATUS WILDLIFE SPECIES EVALUATED FOR POTENTIAL TO OCCUR ON THE PROPERTIES

Appendix E
Special-Status Wildlife Species Evaluated for Potential to Occur on the Properties

Scientific Name	Common Name	Status[1]	General Habitat	Potential for Occurrence at Holly Oaks County Park[2]	Potential for Occurrence at Luelf Pond Preserve[2]	Potential for Occurrence at Barnett Ranch Preserve[2]
INVERTEBRATES						
Branchinecta sandiegonensis	San Diego fairy shrimp	Federal: Endangered County: Group 1 MSCP: Covered	Vernal pools and seasonal depressions, restricted to mesas and other areas with suitable soils.	**Not expected**. The Property contains no suitable habitat (vernal pools) for this species.	**Not expected**. The Property contains no suitable habitat (vernal pools) for this species.	**Moderate**. The Property contains a stock pond and ephemeral drainage that provides suitable habitat for the species; however, surveys have not been conducted to determine presence or absence. San Diego fairy shrimp occur in Ramona approximately2.5 miles north of Barnett Ranch Preserve.
Euphydryas editha quino	Quino checkerspot butterfly	Federal: Endangered County: Group 1	Larvae feed on several host plants including dot-seed plantain (*Plantago erecta*), woolly plantain (*Plantago patagonica*), southern Chinese houses (*Collinsia conclor*), purple owl's clover (*Castilleja exserta*), and others. Adults nectar on a variety of flowering annuals including cryptantha species (*Cryptantha* sp.), linanthus (*Linanthus* sp.). Populations occur in semi-open Diegan coastal sage scrub, various chaparral types, and open ridgelines and hilltops.	**Not expected**. The Property contains no suitable habitat for this species.	**Low.** The Property contains limited suitable habitat for this species and no host plants were detected.	**Moderate**. Potential suitable habitat occurs within the Property. Various host plants and nectar sources were identified on-site but were not in abundance. There is a historical record of this species from March 2009, approximately 0.5 mile south within the CDFW-managed Rancho La Cañada de San Vicente Ecological Reserve (TAIC 2010).
Lycaena hermes	Hermes copper butterfly	Federal: Candidate County: Group 1	Hermes copper butterfly larvae utilize spiny redberry (*Rhamnus crocea*) as a foodplant and the distribution of the Hermes copper is closely tied to the distribution of redberry, typically occurring in chaparral or coastal sage scrub. Adults visit flowers, especially those of flat-top buckwheat (*Eriogonum fasciculatum*).	**Not expected.** The Property contains no suitable habitat for this species.	**Low.** Although there is chaparral habitat located on-site, the host plant, spiny redberry, was not detected within the Preserve.	**Low.** Although there is chaparral habitat located on-site, the host plant, spiny redberry, was not detected within the Preserve.
Streptocephalus woottoni	Riverside fairy shrimp	Federal: Endangered County: Group 1 MSCP: Covered	Vernal pools and seasonal depressions, restricted to mesas and other areas with suitable soils.	**Not expected**. The Property lies outside the known geographic range for this species and no suitable habitat is present.	**Not expected**. The Property lies outside the known geographic range for this species and no suitable habitat is present	**Not expected**. Even though there is suitable habitat present in the stock pond, the Property lies outside the known geographic range for this species.
AMPHIBIANS						
Anaxyrus californicus	Arroyo toad	Federal: Endangered State: SSC County: Group 1 MSCP: Covered	Gravelly or sandy washes, stream and river banks, and arroyos. Also upland habitat near washes and streams such as sage scrub, mixed chaparral, Joshua tree woodland, and sagebrush habitats.	**Not expected**. The Property contains no suitable habitat for this species and the species does not occur nearby.	**Low potential.** The Property lacks the gravelly sandbars preferred by this species.	**Low potential.** The Property lacks the gravelly sandbars preferred by this species.
Spea hammondii	western spadefoot	State: SSC County: Group 2	Sandy or gravelly soil in grasslands, open chaparral and pine-oak woodlands, coastal sage scrub; vernal pools or freshwater marshes are essential for breeding.	**Not expected**. The Property contains no suitable habitat for this species.	**High potential**. There is suitable aestivation habitat for this species within the Property, but no suitable breeding habitat or potentially ponded areas are present within the Preserve boundaries. A small pond across Duck Pond Lane could potentially support breeding activity.	**Present**. Detected within Barnett Ranch Preserve during drift fence surveys in 2018. The presence of tadpoles in the stock pond indicates successful breeding in 2018.
REPTILES						
Anniella stebbinsi	Southern California legless lizard (formerly silvery legless lizard)	State: SSC County: Group 2	Occurs in moist warm loose soil with plant cover. Moisture is essential. Found in beach dunes, pine-oak woodlands, chaparral, desert scrub, washes, and stream terraces.	**Low potential.** The Property contains isolated patches of marginally suitable habitat for this species.	**High potential**. The Property contains suitable habitat patches for this species within sandy and loose gravels in southern coast live oak riparian forest and coast live oak woodland.	**High potential**. The Property contains suitable habitat patches for this species in oak woodlands. The species was previously detected during surveys in 2001 in coast live oak woodland (Helix 2004).
Arizona elegans occidentalis	California glossy snake	CDFW: SSC	Inhabits arid scrub, rocky washes, grasslands, and chaparral. Generally hides underground during the day in rocks and burrows and hunts at night, seeking out sleeping diurnal lizards and other small prey items.	**Low potential.** The Property contains isolated patches of marginally suitable habitat for this species.	**Moderate potential**. The Property contains areas of suitable habitat for this species.	**Moderate potential**. The Property contains areas of suitable habitat for this species.

Scientific Name	Common Name	Status[1]	General Habitat	Potential for Occurrence at Holly Oaks County Park[2]	Potential for Occurrence at Luelf Pond Preserve[2]	Potential for Occurrence at Barnett Ranch Preserve[2]
Aspidoscelis hyperythra beldingi	Belding's orange-throated whiptail	State: WL County: Group 2 MSCP: Covered	Low-elevation coastal scrub, chaparral, and valley-foothill hardwood habitats. Prefers washes and other sandy areas with patches of brush and rocks. Perennial plants necessary for its major food-termites.	**Moderate potential**. The Property contains isolated patches of marginally suitable habitat for this species.	**High potential**. The Property contains suitable chaparral habitat with scattered patches of rocky terrain. Abundant food sources are available within the Property.	**Present**. Detected throughout the Preserve during drift fence surveys in 2018.
Aspidoscelis tigris stejnegeri	San Diegan tiger whiptail	State: SSC County: Group 2	Open areas in grasslands, scrublands, and woodlands.	**Present**. Detected throughout the Property during drift fence surveys in 2018.	**Present**. Detected throughout the Property during drift fence surveys in 2018.	**Present**. Detected throughout the Property during surveys in 2018.
Clemmys marmorata pallida	southwestern pond turtle	State: SSC County: Group 1 MSCP: Covered	Ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater.	**Not expected.** The Property lacks suitable permanent or long-standing ponds on-site or nearby.	**Not expected.** The Property lacks suitable permanent or long-standing ponds on-site or nearby.	**Low potential.** The Preserve lacks permanent ponded water with pools, fish, and adjacent sandy areas for breeding.
Coleonyx variegatus abbottii	San Diego banded gecko	County: Group 1	Occurs in arid areas including creosote flats, sagebrush desert, pinion-juniper woods, and chaparral. Prefers rocky areas but may occur in rock-free areas such as sand dunes.	**Low potential.** The Property contains minimal to no suitable habitat for this species.	**Moderate potential.** The Property contains suitable chaparral habitat with areas of rock outcrops.	**Moderate potential.** The Property contains suitable chaparral habitat with areas of rock outcrops; however, the species has not been detected during previous survey efforts (Helix 2004; TAIC 2010).
Crotalus ruber	red diamond rattlesnake	State: SSC County: Group 2	Coastal sage scrub and grasslands. Occurs in rocky areas and dense vegetation with rodent burrows, cracks in rocks, or surface cover objects.	**Low potential**. The Property contains minimal to no suitable habitat for this species.	**High potential.** The Property contains suitable chaparral habitat with areas of rock outcrops.	**Present**. Detected within Barnett Ranch Preserve incidentally during drift fence surveys in 2018.
Diadophis punctatus similis	San Diego ring-necked snake	County: Group 2	Prefers moist habitats, including wet meadows, rocky hillsides, gardens, grassland, chaparral, mixed coniferous woods, and woodlands.	**Low potential**. The Property contains minimal to no suitable habitat for this species.	**High potential**. The Property contains suitable habitat for the species.	**High potential**. The Property contains suitable habitat for the species although it has not been detected during historical surveys (Helix 2004; TAIC 2010).
Eumeces skiltonianus interparietalis	Coronado skink	State: WL County: Group 2	Scrub habitats with leaf litter and sandy substrates. Found underneath rock slabs, woody debris, and downed vegetation within wooded habitats.	**Moderate potential**. The Property contains marginally suitable habitat for the species.	**High potential**. The Property contains areas of dense leaf litter, suitable for this species.	**Present.** Detected during surveys in 2018.
Lichanura orcutti	rosy boa	County: Group 2	Scrub habitats with rock outcrops. Once common on the coast, now typically found in inland locations.	**Low potential**. The Property contains minimal to no suitable habitat for this species.	**Present**. Detected during drift fence surveys in 2018.	**High potential.** The Property contains suitable chaparral habitat with areas of rock outcrops. This species was detected during previous survey efforts prior to the 2003 Cedar Fire (Helix 2004).
Phrynosoma blainvillei	Blainville's horned lizard	State: SSC County: Group 2 MSCP: Covered	Coastal sage scrub and chaparral in arid and semi-arid climate conditions. Prefers friable, rocky, or shallow sandy soils.	**Low potential**. The Property contains minimal to no suitable habitat for this species.	**Present**. Detected during drift fence surveys in 2018.	**Present**. Detected incidentally during surveys in 2018.
Salvadora hexalepis virgultea	coast patch-nosed snake	State: SSC County: Group 2	Grasslands, scrublands, and woodlands with sandy soils and leaf litter.	**Low potential**. The Property contains minimal to no suitable habitat for this species.	**Moderate potential**. The Property contains marginally suitable habitat for the species.	**Present**. Detected during surveys in 2018.
Thamnophis hammondii	two-striped garter snake	State: SSC County: Group 1	Aquatic habitats, preferably rocky streams with protected pools, cattle ponds, marshes, vernal pools, and other shallow bodies of water lacking large aquatic predators.	**Low potential**. The Property contains minimal to no suitable habitat for this species.	**Present**. Detected incidentally during surveys in 2018.	**Present**. Detected incidentally during surveys in 2018.
BIRDS						
Accipiter cooperii	Cooper's hawk	State: WL (Nesting) County: Group 1 MSCP: Covered	Usually found nesting in oak woodlands, but occasionally in willow or eucalyptus woodlands.	**Present**. Detected during surveys in 2018.	**Present**. Detected during surveys in 2018.	**Present**. Detected during surveys in 2018.
Accipiter striatus	sharp-shinned hawk	State: WL (Nesting) County: Group 1	A winter visitor, distributed over the coastal slope of San Diego County. The habitat of this species encompasses a variety of vegetation communities and land covers. It requires a certain amount of dense cover, but this can be localized and scattered through relatively open country.	**Moderate potential**. The Property contains marginally suitable habitat for the species.	**High potential.** The Property contains suitable habitat for this species to forage during the winter.	**High potential.** The Property contains suitable foraging habitat for this species during winter. This species was previously detected at Barnett Ranch Preserve (Helix 2004).
Agelaius tricolor	tricolored blackbird	State: CE and SSC County: Group 1 MSCP: Covered	Breeds colonially within freshwater marshes with cattails and other emergent vegetation. Winters in open grasslands often in association with cattle. Also occurs at active dairies and other locations where grain may occur.	**Present**. Detected flying over the Property during general avian surveys in 2018.	**Low potential.** There is no suitable breeding habitat within the Property or nearby.	**Low potential.** There is no suitable breeding habitat within the Property or nearby; however, there is a potential the species may forage on the Property due to presence of cattle grazing adjacent to Barnett Ranch Preserve.

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Aimophila ruficeps canescens	southern California rufous-crowned sparrow	State: WL County: Group 1 MSCP: Covered	Coastal sage scrub and sparse mixed chaparral, often in steep or rocky terrain.	**Not expected**. The Property contains minimal to no suitable habitat for the species.	**Present**. Detected during general avian surveys in 2018.	**Present**. Detected during general avian surveys in 2018.
Ammodramus savannarum	grasshopper sparrow	State: SSC (Nesting) County: Group 1	This species prefers open, low-growing grassland habitat interspersed with small shrubs. Open, low-growing Diegan coastal sage scrub with mixed grasses is also suitable.	**Moderate potential.** The grassland habitat is not interspersed with many shrubs; however, the open landscape is still considered suitable for the species.	**Low potential.** No suitable nesting habitat occurs within the Property; however, the species may occasionally forage or fly over the Property.	**Present**. Detected incidentally during surveys in 2018.
Aquila chrysaetos	golden eagle	State: FP, WL (Nesting and Wintering) County: Group 1 MSCP: Covered	Nests on cliff ledges and trees on steep slopes. Hunts for prey in nearby grasslands, sage scrub, or broken chaparral. Requires very large territories.	**High potential**. An active golden eagle territory is known to occur at Cañada de San Vicente Ecological Reserve and U.S. Geological Survey data has documented the species flying over the Properties (Tracey et al. 2016; 2017).	**Present**. Detected flying overhead during general avian surveys in 2018.	**Present**. Detected flying overhead during general avian surveys in 2018.
Ardea herodias	Great blue heron	County: Group 2	The species breeds in tall trees adjacent to water where abundant food sources are present. Often considered a bird around coastal area or large bodies of water. In the Ramona area, the species is seen in grasslands eating Botta's pocket gophers (*Thomomys bottae*) and other small mammals, reptiles, and amphibians.	**Present**. Detected during general avian surveys flying over in 2018.	**Low potential.** Limited suitable foraging habitat along the creek.	**High potential.** Suitable foraging habitat in nonnative grassland is present. No breeding habitat is present.
Artemisiospiza belli	Bell's sparrow	State: WL County: Group 1	Coastal sage scrub and sparse chaparral, typically in large unfragmented blocks in inland locales.	**Not expected.** No suitable nesting habitat occurs within the Property.	**High potential**. The Property contains suitable breeding habitat for this species.	**High potential**. The Property contains suitable breeding habitat for this species. The species has not been detected previously during surveys (Helix 2004; TAIC 2010).
Asio otus	long-eared owl	State: SSC (Nesting) County: Group 1	Sporadic nester within San Diego County in the nests of other raptor species in dense woodland habitats.	**Not expected.** No suitable nesting habitat occurs within the Property.	**High potential**. The Property contains suitable breeding and foraging habitat for this species.	**High potential**. The Property contains suitable breeding and foraging habitat for this species. The species has not been detected previously during surveys (Helix 2004; TAIC 2010).
Athene cunicularia hypugaea	western burrowing owl	State: SSC (Burrow sites and some Wintering sites) County: Group 1 MSCP: Covered	Grasslands, open scrublands, and margins of agriculture fields with burrows. Subterranean nester, dependent upon burrowing mammals, especially California ground squirrel.	**Moderate potential.** The open grassland habitat throughout much of the interior of the Property is suitable breeding and foraging habitat for this species.	**Low potential.** The Property lacks the characteristic open, grassland habitat preferred by this species.	**High potential**. The open grassland habitat throughout much of the interior of the Property is suitable breeding and foraging habitat for this species. The species has not been detected previously during surveys (Helix 2004; TAIC 2010).
Buteo lineatus	red-shouldered hawk	County: Group 1	Occurs mainly in swamp, riverine, riparian, and forest habitats. They use the same nesting site from year to year, often placed in a large sycamore, oak tree, or palm tree. This species is common within suburban and rural areas in San Diego County with suitable tall trees and adjacent riparian areas for foraging.	**Present**. Detected during surveys in 2018.	**Present**. Detected during surveys in 2018.	**Present**. Detected during surveys in 2018.
Buteo swainsoni	Swainson's hawk	State: Threatened County: Group 1 MSCP: Covered	Occurs throughout California, yearlong. The species migrate to southern and central California in September and October, and northern California in March through May. They forage in open grasslands and plains on mice, gophers, squirrels, rabbits, amphibians, reptiles, and large arthropods. It nests in scattered groves of trees.	**Present**. Detected during surveys in 2018.	**High potential.** This species likely passes through the Property during migration periods.	**High potential.** This species likely passes through the Property during migration periods. The species has not been detected previously during surveys (Helix 2004; TAIC 2010).
Buteo regalis	Ferruginous hawk	State: WL County: Group 1 MSCP: Covered	Species only occurs in San Diego County as a winter resident mainly from October through March. It forages heavily on Botta's pocket gophers and other small mammals in grassland habitats from the coast to the desert.	**Moderate potential.** The open grassland habitat throughout much of the interior of the Property is suitable foraging habitat for this species.	**Low potential.** The Property lacks the characteristic open, grassland habitat preferred by this species.	**Moderate potential.** The open grassland habitat throughout much of the interior of the Property is suitable foraging habitat for this species. The species has not been detected previously during surveys (Helix 2004; TAIC 2010).

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Campylorhynchus brunneicapillus sandiegensis	coastal (San Diego) cactus wren	State: SSC County: Group 1 MSCP: Covered	Coastal sage scrub with abundant mature cactus patches that provide vertical structure for their nests.	**Not expected.** Although there are areas of mature nonnative cactus on the Property, the residential and developed nature of the surrounding landscape make it unlikely this species would occur.	**Not expected.** The Property lacks large patches of native cactus that this species requires for nesting.	**Not expected.** The Property lacks large patches of native cactus that this species requires for nesting. However, the species was detected off-site near a residential home during previous surveys (Helix 2004).
Cathartes aura	turkey vulture	County: Group 1	Forages aerially above virtually any vegetation type or terrain, except dense human development. Secluded cliff ledge or rock fissure in remote, rugged terrain required for nesting. Native or non-native tree groves in lowlands often used as winter roosts.	**Present**. Detected flying over the Property during surveys in 2018. No suitable nesting habitat is present.	**Present**. Detected flying over the Property during surveys in 2018. Suitable nesting habitat is limited.	**Present**. Detected flying over the Property during surveys in 2018. Suitable nesting habitat is present.
Circus hudsonius	northern harrier	State: SSC (Nesting) County: Group 1 MSCP: Covered	A resident breeder within San Diego County in grassland, marsh, and scrubby habitats. It tends to prefer flat areas with dense low-growing vegetation for nesting and foraging. Tends to prefer nesting and foraging along the coastal slope and inland valleys.	**High potential.** The flat landscape and grassland habitat dominating the Property provides suitable foraging habitat for the species. Nesting is not expected.	**Moderate potential.** There is limited foraging habitat within the Property; however, the species may pass through the Property. Nesting is not expected	**High potential.** The flat landscape and grassland habitat throughout much of the Property provides suitable foraging and nesting habitat for the species.
Contopus cooperi	olive-sided flycatcher	State: SSC County: Group 2	Breeds in openings and edges of dense coniferous forests. Found in a variety of habitats during migration.	**Low potential**. The species may migrate though the Property, but no suitable breeding habitat is present.	**Low potential**. The species may migrate though the Property, but no suitable breeding habitat is present.	**Low potential**. The species may migrate though the Property, but no suitable breeding habitat is present.
Dendroica petechia brewsteri	yellow warbler	State: SSC County: Group 2	Mature riparian woodlands consisting of cottonwood, willow, alder, and ash trees. Restricted to this increasingly patchy habitat.	**Present**. Detected on migration during surveys in 2018. Suitable breeding habitat is not present.	**Present**. Detected on migration during surveys in 2018. Limited suitable breeding habitat is present.	**Moderate potential**. Select areas within the Property contain limited suitable breeding habitat.
Elanus leucurus	white-tailed kite	State: FP, SSC (Nesting) County: Group 1	Widespread over the coastal slope of San Diego County preferring riparian woodlands, oak groves, or sycamore groves adjacent to grasslands. The species is an irruptive breeder with some years white-tailed kites are almost completely absent from San Diego County and other years the species is more common.	**Moderate potential**. The Property contains patches of suitable foraging habitat for this species. Suitable nesting habitat is generally absent.	**Moderate potential**. The Property contains limited patches of suitable foraging and nesting habitat for this species.	**High potential.** Areas of oak groves surrounding the grassland habitat provide suitable nesting and foraging opportunities for this species. This species has been previously detected (Helix 2004).
Empidonax traillii extimus	southwestern willow flycatcher	Federal: Endangered State: Endangered County: Group 1 MSCP: Covered	Restricted to a few colonies in riparian woodlands scattered throughout the southwestern United States. Riparian forests are integral to this species' persistence.	**Low potential**. May migrate through; however, no suitable breeding habitat is present.	**Low potential**. May migrate through; however, no suitable breeding habitat is present.	**Low potential**. May migrate through; however, no suitable breeding habitat is present.
Eremophila alpestris actia	California horned lark	State: WL County: Group 2	The species breeds in open grassy and semi-open habitats where it forages on the ground. This species breeds in areas with low to no vegetative growth.	**Moderate potential**. The grassland habitat provides suitable foraging opportunities; however, the vegetation groundcover throughout the Property is likely too thick to provide suitable breeding habitat.	**Low potential**. Limited suitable habitat foraging habitat. No suitable breeding habitat is present.	**High potential.** Large expanses of open grassland habitat suitable for foraging and breeding. This species has been previously detected (Helix 2004).
Falco columbarius	merlin	State: WL (Wintering) County: Group 2	This species only winters in San Diego County and forages for birds in a variety of habitats from open grassy areas, to wooded areas, agricultural areas, and other locations where prey species congregate.	**Moderate potential**. The species may occasionally forage or fly over the Property.	**Moderate potential**. The species may occasionally forage or fly over the Property.	**Moderate potential**. The species may occasionally forage or fly over the Property.
Falco mexicanus	prairie falcon	State: WL (Nesting) County: Group 1	A resident breeder within San Diego County in cliff and rocky habitat. Forages widely, but prefers open, grassland landscapes. The species is routinely detected during winter months along Rangeland Road by the Ramona Airport.	**Moderate potential.** No suitable nesting habitat occurs within the Property; however, the species may occasionally forage or fly over the Property.	**Moderate potential.** No suitable nesting habitat occurs within the Property; however, the species may occasionally forage or fly over the Property.	**High potential.** Large expanses of open grassland habitat suitable for foraging. This species has been previously detected (Helix 2004).

Scientific Name	Common Name	Status[1]	General Habitat	Potential for Occurrence at Holly Oaks County Park[2]	Potential for Occurrence at Luelf Pond Preserve[2]	Potential for Occurrence at Barnett Ranch Preserve[2]
Haliaeetus leucocephalus	bald eagle	Federal: Delisted State: Endangered, FP (Nesting and Wintering) County: Group 1 MSCP: Covered	Bald eagles breed across the United States and from Alaska to south Florida. They breed primarily in tall, mature trees in proximity to bodies of water. They consume a wide variety of prey items from fish, waterbirds, carrion, to ground squirrels. The species is now a regular visitor to wetland areas within Southern California and multiple pairs breed within San Diego County. During the winter months there is an additional influx of bald eagles into the County. The closest bald eagle nest is located along Rangeland Road west of the Ramona Municipal Airport approximately 4 miles to the north of the Properties.	**Low potential.** No suitable nesting habitat; however, the species may rarely forage within the Property.	**Low potential.** No suitable nesting habitat, however, the species may rarely forage within the Property.	**Low potential.** No suitable nesting habitat; however, the species may rarely forage within the Property.
Icteria virens	yellow-breasted chat	State: SSC County: Group 1	Riparian woodland, with dense undergrowth.	**Low potential**. No suitable riparian habitat exists on the Property; however, the species may occur as a migrant.	**Moderate potential**. Some areas of suitable riparian habitat exist on the Property and the species may also occur as a migrant.	**Moderate potential**. Some areas of suitable riparian habitat exist on the Property and the species may also occur as a migrant.
Lanius ludovicianus	loggerhead shrike	State: SSC (Nesting) County: Group 1	This species is both a resident breeder, and there is an increase in their numbers during winter. The species prefers open habitats, with scattered shrubs for perching and nesting.	**High potential** Suitable open, grassland habitat for perching and foraging, but no suitable breeding habitat is present.	**Low potential**. The Property lacks the necessary open grassland habitat for nesting and foraging.	**Present**. Detected within the Property during surveys in 2018. Suitable breeding and wintering habitat is present.
Melanerpes lewis	Lewis' woodpecker	County: Group 1	The species only occurs in San Diego County as a winter visitor especially during high acorn production years. The species inhabits oak woodland areas where it caches acorns for use during the winter.	**Low potential**. No suitable oak woodland habitat exists on the Property; however, the species may occur as a migrant flying through.	**Moderate potential**. Areas of suitable oak woodland habitat exist on the Property and the species may occur as a winter resident or migrant.	**Moderate potential**. Areas of suitable oak woodland habitat exist on the Property and the species may occur as a winter resident or migrant.
Pandion haliaetus	osprey	State: WL (Nesting) County: Group 1	Primarily a winter visitor, and occasional resident breeder to lakes, rivers, estuaries, and other bodies of water containing fish within San Diego County. Known to occur around San Vicente Reservoir.	**Low potential**. There is no suitable habitat for this species within the Property; however, it may fly over during migration.	**Low potential**. There is no suitable habitat for this species within the Property; however, it may fly over during migration.	**Low potential**. There is no suitable habitat for this species within the Property; however, it may fly over during migration.
Polioptila californica californica	coastal California gnatcatcher	Federal: Threatened State: SSC County: Group 1 MSCP: Covered	Coastal sage scrub below 2,500 feet in elevation. Low, coastal sage scrub, in arid washes, on mesas and slopes. The species is increasingly rare with increased distance from the Pacific coast. The species is generally not found around Ramona.	**Low potential**. There is no suitable habitat for this species within the Property.	**Moderate potential.** Limited suitable habitat identified on-site.	**Moderate potential.** Some suitable habitat identified on-site; however, previous surveys conducted in 2001 and 2003 were negative (Helix 2004). Historically suitable habitat has primarily converted to grassland post 2003 Cedar Fire.
Pyrocephalus rubinus	Vermilion flycatcher	State: SSC County: Group 1	Occurs in somewhat open areas, and are found in trees or shrubs in savannah, scrub, agricultural areas, riparian woodlands, desert habitats, and near water. They nest in tree branches approximately six feet off the ground. The species currently breeds in the Ramona Grasslands around the Ramona Municipal Airport. During winter, there is an increase in the number of vermilion flycatchers in San Diego County.	**Moderate potential.** Some suitable habitat identified on-site. May pass through the Property while foraging or during migration.	**Moderate potential.** Some suitable habitat identified on-site. May pass through the Property while foraging or during migration.	**Moderate potential.** Some suitable habitat identified on-site. May pass through the Property while foraging or during migration.
Riparia riparia	Bank swallow	State: Threatened County: Group 1	Species only migrates through San Diego County and may be found in a variety of open habitats where insects may be located. May also be found foraging around and drinking from waterbodies.	**Moderate potential.** Species may forage over nonnative grassland and may pass through the Property during migration.	**Low potential**. There is no suitable habitat for this species within the Property; however, it may fly over during migration.	**Moderate potential.** Some suitable foraging habitat is present around the stock pond and adjacent grasslands. It may pass through the Property during migration.
Sialia mexicana	western bluebird	County: Group 2 MSCP: Covered	Frequents open woodlands for foraging, but requires suitable roosting and nesting cavities usually in snags. Availability of suitable nesting cavities in large trees may limit population density. Nests primarily in oak woodlands and riparian woodlands adjacent to grassland habitats.	**Present**. Detected within the Property during surveys in 2018. Suitable nesting and foraging habitat is present.	**Present**. Detected within the Property during surveys in 2018. Suitable nesting and foraging habitat is present.	**Present**. Detected within the Property during surveys in 2018. Suitable nesting and foraging habitat is present.
Tyto alba	barn owl	County: Group 2	Inhabit grasslands, deserts, marshes, agricultural fields, narrow forest strips, brushy fields, and suburbs and cities. They nest in tree cavities, caves, and in buildings.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.
Vireo bellii pusillus	least Bell's vireo	Federal: Endangered State: Endangered County: Group 1 MSCP: Covered	Willow and mulefat-dominated riparian forests and woodlands.	**Low potential**. No suitable riparian habitat exists on the Property; however, the species may occur as a migrant.	**Moderate potential.** Suitable breeding habitat is absent from the Property; however, the species may fly through during migration,	**Moderate potential.** Suitable breeding habitat is absent from the Property; however, the species may fly through during migration,

Scientific Name	Common Name	Status[1]	General Habitat	Potential for Occurrence at Holly Oaks County Park[2]	Potential for Occurrence at Luelf Pond Preserve[2]	Potential for Occurrence at Barnett Ranch Preserve[2]
MAMMALS						
Antrozous pallidus	pallid bat	State: SSC County: Group 2	Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect species from high temperatures.	**Moderate potential.** The species may occasionally fly through the Property during foraging periods; however; there is no suitable roosting habitat on-site.	**High potential.** The Property contains suitable foraging habitat and potential roosting habitat for this species.	**High potential.** The Property contains suitable foraging habitat for this species. This species is known to roost in a man-made structure on private land in eastern Ramona approximately 6 miles to the northeast.
Bassariscus astutus	Ringtail	County: Group 2	Found in riparian habitat and in brush stands of moist forest and shrub habitats. Also occurs in rocky desert environments. Mostly nocturnal habits; generally inactive during daytime hours.	**Not expected.** The Property lacks suitable habitat.	**Moderate potential.** Areas of suitable habitat such as rocky outcrops and coast live oak woodland are present.	**High potential.** Suitable habitat present. The species was previously detected prior to the 2003 Cedar Fire (Helix 2004).
Chaetodipus californicus femoralis	Dulzura pocket mouse	State: SSC County: Group 2	Within San Diego County, the Dulzura pocket mouse is found in a variety of vegetation communities including coastal sage scrub, sagebrush, grassland, and various chaparral communities. The species prefers semi-open scrub habitats that provide cover and friable soils for burrows.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	State: SSC County: Group 2	Sagebrush scrub, annual grassland, chaparral, and desert scrubs. Sandy, herbaceous areas, usually in association with rocks or coarse gravel.	**Present**. Detected within the Property during surveys in 2018.	**High potential.** The Property contains suitable habitat for this species.	**Present**. Detected within the Property during surveys in 2018.
Corynorhinus townsendii	Townsend's big-eared bat	State: SSC County: Group 2	Coniferous forests, deserts, prairies, riparian communities, active agricultural areas, and coastal habitats with caves and cave-like roosting habitat, mines, and abandoned buildings.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.
Dipodomys stephensi	Stephens' kangaroo rat	Federal: Endangered State: Threatened County: Group 1	Inhabits annual and perennial grassland habitats, but may occur in coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas. The closest population of Stephens' kangaroo rat occurs around the Ramona Municipal Airport and there is limited habitat connectivity with any of the Properties.	**Low potential.** The Property contains marginally suitable grassland habitat.	**Not expected.** The Property does not contain any suitable grassland habitat generally associated with the species.	**Moderate potential.** Marginally suitable habitat on-site; however, the species has not been captured during previous survey efforts (Helix 2004). No adjacent populations where the species could disperse from.
Eumops perotis californicus	western mastiff bat	State: SSC County: Group 2	Chaparral; live oaks; and arid, rocky regions. Requires downward-opening crevices.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.
Lasiurus blossevillii	western red bat	State: SSC County: Group 2	Feeds over grasslands, shrublands, open woodlands, forests, and croplands. Roosts primarily in trees and at times, shrubs, often in edge habitats along streams, fields, or urban areas.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.	**High potential.** Detected at Luelf Pond Preserve and Holly Oaks County Park. Suitable foraging and roosting habitat on-site.
Lasiurus xanthinus	western yellow bat	State: SSC	Associated with thorny vegetation on the Mexican Plateau and found in desert regions of the southwestern United States, particularly in association with palms. This migratory species breeds in desert fan palm oases and may occur in a variety of habitats during migration.	**High potential**. Detected nearby. Suitable foraging habitat on-site during migration.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	State: SSC County: Group 2	Grasslands, open scrub habitats, disturbed areas, and agricultural fields.	**Low potential.** The Property contains marginally suitable grassland habitat.	**Not expected.** The Property lacks suitable habitat for this species.	**High potential.** The Property contains suitable habitat for this species and it was previously detected prior to the 2003 Cedar Fire (Helix2004).
Myotis ciliolabrum	western small-footed myotis	County: Group 2	Inhabits deserts, semideserts, and desert mountains, and roosts in crevices and cracks in canyon walls, caves, mine tunnels, behind loose tree bark, or in abandoned houses.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.
Myotis evotis	long-eared myotis	County: Group 2	Uses mostly forested areas, especially with broken rock outcrops, also shrubland, meadows near tall timber, wooded streams, and reservoirs. Often roosts in buildings, hollow trees, mines, caves, fissures, etc.	**Not expected.** The Property does not contain suitable habitat for this species.	**Low potential.** The Property contains limited suitable habitat for this species.	**Low potential.** The Property contains limited suitable habitat for this species.
Myotis thysanodes	fringed myotis	State: SSC County: Group 2	Occurs in a variety of habitats from desert scrub to fir-pine associations. Oak and pinyon woodlands most commonly used. Roosts within caves, mines, and buildings.	**Not expected.** The Property does not contain suitable habitat for this species.	**Low potential.** The Property contains limited suitable habitat for this species.	**Low potential.** The Property contains limited suitable habitat for this species.
Myotis yumanensis	Yuma myotis	County: Group 2	Primarily an inhabitant of desert regions where it is most commonly encountered in lowland habitats near open water, where it prefers to forage.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.
Neotoma lepida intermedia	San Diego desert woodrat	State: SSC County: Group 2	Sagebrush scrub, annual grassland, chaparral, and desert scrubs, often with cactus patches, rock outcrops, or rock piles.	**Low potential.** The Property contains limited suitable habitat for this species.	**High potential.** The Property contains an abundance of suitable habitat for this species.	**Present**. Detected within the Property during surveys in 2018.

Scientific Name	Common Name	Status[1]	General Habitat	Potential for Occurrence at Holly Oaks County Park[2]	Potential for Occurrence at Luelf Pond Preserve[2]	Potential for Occurrence at Barnett Ranch Preserve[2]
Nyctinomops femorosaccus	pocketed free-tailed bat	State: SSC County: Group 2	Rugged cliffs, rocky outcrops, and slopes in desert shrub and pine oak forests.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.
Nyctinomops macrotis	big free-tailed bat	State: SSC County: Group 2	Low-lying arid areas in Southern California.	**Low potential.** The Property contains marginally suitable foraging habitat for this species.	**Moderate potential.** The Property contains some suitable habitat for this species.	**Moderate potential.** The Property contains some suitable habitat for this species.
Odocoileus hemionus	mule deer	County: Group 2 MSCP: Covered	Mountain forests, wooded hills, desert areas and in chaparral.	**Low potential**. Lack of suitable habitat; however, the species may occasionally pass through the site.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Detected within the Property during surveys in 2018.
Puma concolor	mountain lion	County: Group 2 MSCP: Covered	Rugged mountains, forests, deserts, and swamps with abundant prey (particularly mule deer).	**Low potential**. The surrounding developed and residential areas likely deter this species from entering the Property.	**Present**. Detected within the Property during surveys in 2018.	**Present**. Scat from this species was detected within the Property during surveys in 2018.
Taxidea taxus	American badger	State: SSC County: Group 2 MSCP: Covered	Shrub, forest, and herbaceous habitats, with friable soils, often associated with vast tracts of grassland areas but species also occurs in grassy canyons. Needs sufficient food and friable soils. Preys on burrowing rodents, especially California ground squirrels.	**Low potential**. The Property is likely to isolated and would not provide enough food sources to support this species.	**Low potential.** The Property contains limited suitable habitat for this species.	**High potential.** Suitable habitat and food sources for this species are present on-site; however, potential burrows were not detected during survey efforts in 2018. Surveys conducted in 2014 by the U.S. Geological Survey found American badger burrows at Barnett Ranch Preserve (Brehme et al 2015).

[1] State Status Abbreviations: CT: Candidate Threatened; CE: Candidate Endangered; FP: Fully Protected; SSC: Species of Special Concern; WL: Watch List (CDFW 2018a)
[2] Species potential for occurrence was based on AECOM field studies in 2018, a 1-mile radius CNDDB search around the Properties (CDFW 2018b),and previous biological surveys for the existing Barnett Ranch Preserve (Helix 2004; TAIC 2010).

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APPENDIX F

PHOTOGRAPHS

Appendix F
Photographs

F.1 Representative Photographs of Small Mammal Trapping Locations

Photograph of trapping location 8 at Barnett Ranch Preserve in coastal sage-chaparral transition habitat.

Photograph of trapping location 6 at Barnett Ranch Preserve in
Diegan coastal sage scrub: coastal form habitat.

Photograph of trapping location 3 at Luelf Pond Preserve in southern coast live oak riparian forest.

Photograph of trapping location 1 at Holly Oaks County Park in non-native grassland habitat.

F.2 Representative Photographs of Small Mammals Captured

Photograph of Dulzura pocket mouse (*Chaetodipus californicus femoralis*).

Photograph of northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*).

Photograph of San Diego desert woodrat (*Neotoma bryanti intermedia*).

Photograph of brush mouse (*Peromyscus boylii*).

F.3 Photographs of Wildlife Camera Locations

Photograph of camera station 1, along a public trail at Holly Oaks County Park.

Photograph of camera station 2, along a public trail at Luelf Pond Preserve.

Photograph of camera station 3 placed on a ridge at Barnett Ranch Preserve.

Photograph of camera station 4 strapped to a boulder in an open, non-native grassland area at Barnett Ranch Preserve.

Photograph of camera station 5 placed within coast live oak woodland habitat at Barnett Ranch Preserve.

Photograph of camera station 6 placed within non-native grassland habitat adjacent to the stock pond at Barnett Ranch Preserve.

Photograph of camera station 7 placed within coast live oak riparian forest habitat at Barnett Ranch Preserve.

Photograph of camera station 8 placed along a footpath at Barnett Ranch Preserve.

F.4 Representative Photographs of Wildlife Captured at Camera Stations

Photograph of a mountain lion (*Puma concolor*) at camera station 2 at Luelf Pond Preserve.

Photograph of a mule deer (*Odocoileus hemionus*) at camera station 5 at Barnett Ranch Preserve.

Photograph of a bobcat (*Lynx rufus*) at camera station 8 at Barnett Ranch Preserve.

F.5 Representative Photographs of Drift Fences and Box Funnel Traps

Photograph of Herp Array 6 at Barnett Ranch Preserve in chamise chaparral habitat.

Photograph of Herp Array 2 at Holly Oaks County Park showing PVC pipe, cover-board, and fence wings in southern riparian woodland habitat.

Photograph of Herp Array 4 at Barnett Ranch Preserve within southern mixed chaparral habitat.

Photograph of Herp Array 12 at Barnett Ranch Preserve in Diegan coastal sage-chaparral habitat.

F.6 Representative Photographs of Reptiles Captured

Photograph of Belding's orange-throated whiptail at Barnett Ranch Preserve (*Aspidoscelis hyperythra*).

Photograph of Blainville's horned lizard (*Phrynosoma blainvillii*) at Luelf Pond Preserve.

Photograph of coast patch-nosed snake (*Salvadora hexalepis virgultea*) at Barnett Ranch Preserve.

Photograph of rosy boa (*Lichanura trivirgata*) at Luelf Pond Preserve.

Photograph of San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*) at Luelf Pond Preserve.

Photograph of two-striped gartersnake (*Thamnophis hammondii*) at Barnett Ranch Preserve.

Photograph of western spadefoot (*Spea hammondii*) at Barnett Ranch Preserve.

F.7 Representative Photographs of Bat Survey Locations and Captures

Passive anabat station 1 at Barnett Ranch Preserve.

Mist netting station at Barnett Ranch Preserve.

Post lactating canyon bat (*Parastrellus Hesperus*) captured at Barnett Ranch Preserve.

Yuma myotis (*Myotis yumanensis*) captured at Barnett Ranch Preserve.

F.8 Representative Photographs of Avian Species

Photograph of a Swainson's hawk (*Buteo swainsoni*) at Holly Oaks County Park.

Photograph of a juvenile golden eagle (*Bubo virginianus*) at Barnett Ranch Preserve.

Photograph of a mature golden eagle at Barnett Ranch Preserve.