Baseline Biological Surveys Technical Report for the South County Properties

Measure M2 Freeway Environmental Mitigation Program Acquisition Properties Evaluation in Orange County, California

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1.0 INTRODUCTION

This Biological Technical Report has been prepared to support California Environmental Quality Act (CEQA) documentation and resource management planning for the Measure M2 Freeway Environmental Mitigation Program (EMP) Acquisition Properties Evaluation Project. The EMP project includes five separate Orange County Transit Authority (OCTA) acquisition properties (Hayashi, Ferber Ranch, O'Neill Oaks, Hafen, and Saddle Creek South), located in unincorporated Orange County, California (Exhibit 1). Due to the regional separation between the Hayashi property (located in northeast Orange County) and the remaining four properties (located in southeast Orange County), this report only covers the four properties in southeast Orange County (hereinafter collectively referred to as the "south county properties"). A separate Biological Technical Report has been prepared for the Hayashi property.

This information has been reported in accordance with accepted scientific and technical standards that are consistent with the requirements of the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW[1]).

1.1 BACKGROUND

1.1.1 Project Description

In 2006, Orange County voters approved the renewal of Measure M, effectively extending the half-cent sales tax in the County from April 2011 to March 2041. Renewed Measure M (or Measure M2) will continue to provide funding for transportation projects and programs in the County, including select freeway and roadway improvements, transit programs, and two environmental programs.

OCTA's M2 Freeway EMP provides comprehensive mitigation to offset the environmental impacts of the 13 Measure M2-funded freeway projects. The EMP is spearheaded by the Environmental Oversight Committee (EOC), which is made up of OCTA Board members and representatives from the California Department of Transportation (Caltrans), resource agencies, environmental groups, and the public.

Instead of mitigating the natural resource impacts of Measure M2 freeway projects on a project-by-project basis, the EMP presents a comprehensive mitigation approach that not only replaces habitat, but also provides the opportunity to improve the overall functions and value of sensitive biological resources throughout Orange County. Working collaboratively with the resource and regulatory agencies, OCTA ultimately decided that creation of a Natural Community Conservation Plan (NCCP)/Habitat Conservation Plan (HCP) and programmatic wetland permitting would best serve as the main implementation tools for the EMP.

As one of the key components of the conservation strategy for the NCCP/HCP and wetlands permitting, OCTA has undertaken a systematic approach to identifying and acquiring habitat preserves to meet the goals and objectives of these mitigation plans. A formal conservation assessment was completed by Conservation Biology Institute (CBI) for Orange County that resulted in the identification of Priority Conservation Areas (PCA), which included candidate parcels and properties that could be considered for open space purposes. OCTA soliticated willing sellers and evaluated each property using standardized criteria and a prioritization process to rank properties for purchase. Properties for acquisition were selected based on conservation values, policy considerations, mitigation credits, mitigation plan review, and

[1] The California Department of Fish and Game (CDFG) changed its name to the California Department of Fish and Wildlife (CDFW) effective January 1, 2013.

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Regional Location

Exhibit 1

Measure M2 Acquisition Properties/Ferber Ranch, O'Neill Oaks, Hafen, and Saddle Creek South Properties

N W E S

6 3 0 6 Miles

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adoption and real estate value/economics. The results of the M2 acquisition/restoration/ management criteria evaluation for the south county properties are included in Attachment A.

The south county properties were selected and acquired in 2011. Baseline biological surveys were completed in 2012 with the following goals:

- A general biological assessment of the Preserve was completed to serve as a basis to identify biological threats and to assist in making fundamental property management decisions. Information on the overall condition of the properties will guide the development of a site-specific Resource Management Plan (RMP).
- Comprehensive surveys of vegetation types and jurisdictional resources were completed to provide detailed knowledge of the natural habitat and a quantification of habitat type credits within the Preserve.
- Focused surveys of Covered Species and their habitats were completed to establish a baseline of the Preserve status and conditions. Results of future biological monitoring will be compared to the baseline results to evaluate habitat trends.

1.2 PROJECT LOCATION AND PHYSICAL ENVIRONMENTAL SETTING

1.2.1 Property Locations

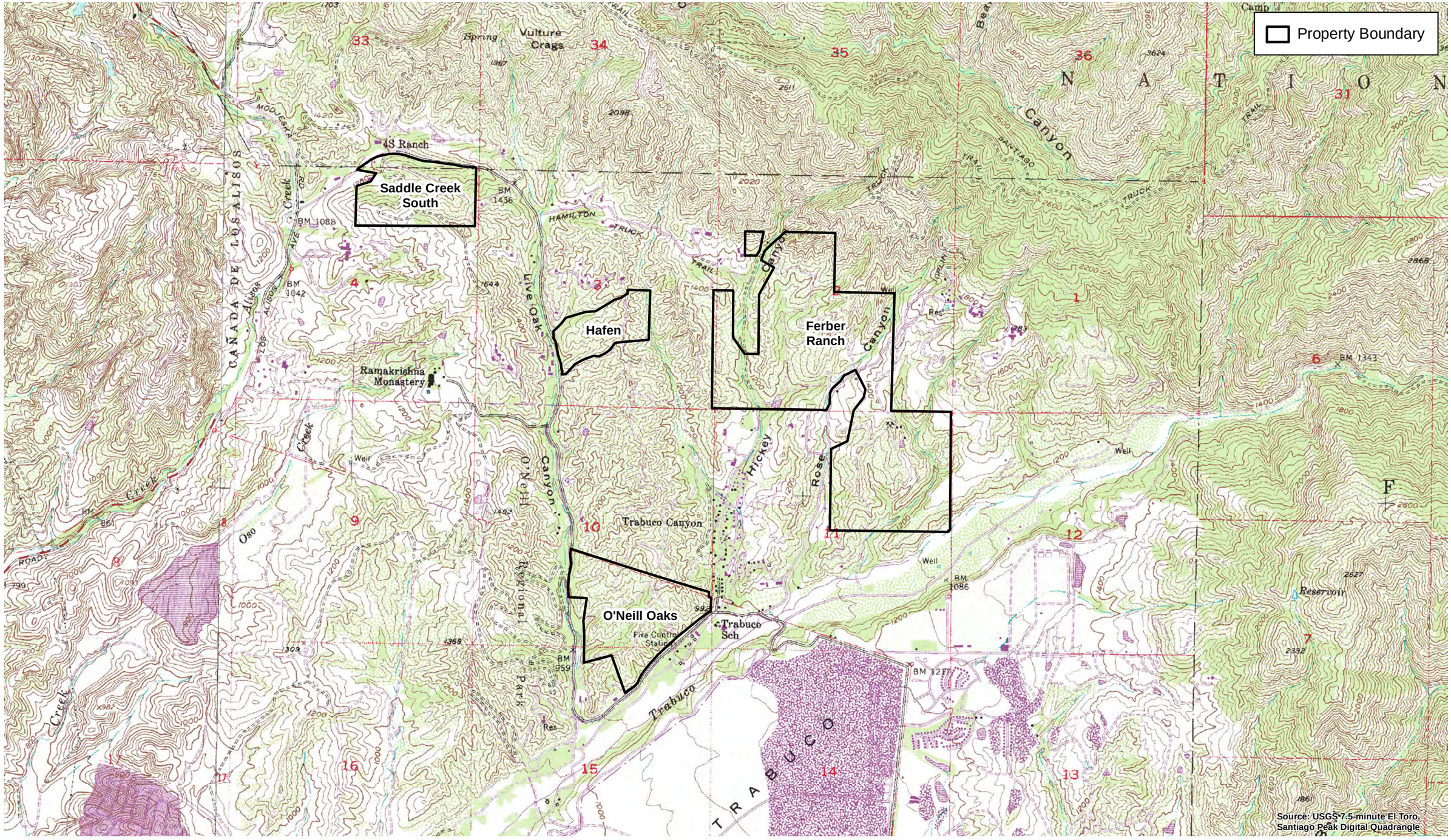
The south county properties are generally located in the community of Trabuco Canyon in unincorporated Orange County, California. All four properties are located on the U.S. Geological Survey's (USGS') Santiago Peak 7.5-minute topographic quadrangle (Exhibit 2).

Ferber Ranch

The approximate 399-acre Ferber Ranch property extends to the north and east of the terminus of Trabuco Oaks Drive; Rose Canyon Road crosses the middle of the property. The southern boundary of the property is approximately one mile north of Trabuco Canyon Road. A small parcel at the northwestern corner of the property is separated from the main body of the property by Hickey Spur. The property is located at Township 6 South, Range 7 West, Section 3. Elevation on this property ranges from approximately 1,110 to 1,800 feet above mean sea level (msl). Several ephemeral drainages that flow in a southerly direction are located on this property. Three of these—Hickey Creek, Rose Canyon Creek, and an unnamed stream—appear on the USGS quadrangle as blueline streams. Soil types mapped on Ferber Ranch consist of Alo clay (15 to 30 percent slopes; 30 to 50 percent slopes), Alo variant clay (15 to 30 percent slopes), Blasingame stony loam (9 to 30 percent slopes), Bosanko clay (15 to 30 percent slopes), Calleguas clay loam (50 to 75 percent slopes, eroded), Capistrano sandy loam (2 to 9 percent slopes; 9 to 15 percent slopes), Cieneba sandy loam (30 to 75 percent slopes, eroded), Exchequer-rock outcrop complex (30 to 75 percent slopes), Modjeska gravelly loam (15 to 30 percent slopes), Myford sandy loam (2 to 9 percent slopes; 9 to 15 percent slopes; 15 to 30 percent slopes), riverwash, rock outcrop-Cieneba complex (30 to 75 percent slopes), Soboba cobbly loamy sand (0 to 15 percent slopes), Soper loam (30 to 50 percent slopes), and Yorba gravelly sandy loam (9 to 15 percent slopes) (Exhibit 3).

O'Neill Oaks

The approximate 119-acre O'Neill Oaks property occurs north of the point where Live Oak Canyon Road becomes Trabuco Canyon Road. This property is located at Township 6 South, Range 7 West, Section 10. Elevation on this property ranges from approximately 950 to 1,250 feet above msl. Three ephemeral drainages that flow in a westerly direction are located in



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Local Vicinity

Exhibit 2

Measure M2 Acquisition Properties/Ferber Ranch, O'Neill Oaks, Hafen, and Saddle Creek South Properties

N W E S

2,000 1,000 0 2,000 Feet

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Property Boundary

Soil Types

- 101 - ALO CLAY, 15 TO 30 PERCENT SLOPES
- 102 - ALO CLAY, 30 TO 50 PERCENT SLOPES
- 104 - ALO VARIANT CLAY, 15 TO 30 PERCENT SLOPES
- 112 - BALCOM CLAY LOAM, 15 TO 30 PERCENT SLOPES
- 113 - BALCOM CLAY LOAM, 30 TO 50 PERCENT SLOPES
- 117 - BLASINGAME STONY LOAM, 9 TO 30 PERCENT SLOPES
- 127 - BOSANKO CLAY, 15 TO 30 PERCENT SLOPES
- 133 - BOTELLA CLAY LOAM, 9 TO 15 PERCENT SLOPES
- 134 - CALLEGUAS CLAY LOAM, 50 TO 75 PERCENT SLOPES, ERODED
- 135 - CAPISTRANO SANDY LOAM, 2 TO 9 PERCENT SLOPES
- 136 - CAPISTRANO SANDY LOAM, 9 TO 15 PERCENT SLOPES
- 142 - CIENEBA SANDY LOAM, 30 TO 75 PERCENT SLOPES, ERODED
- 152 - EXCHEQUER-ROCK OUTCROP COMPLEX, 30 TO 75 PERCENT SLOPES
- 154 - GABINO GRAVELLY CLAY LOAM, 15 TO 50 PERCENT SLOPES
- 171 - MODJESKA GRAVELLY LOAM, 15 TO 30 PERCENT SLOPES
- 173 - MYFORD SANDY LOAM, 2 TO 9 PERCENT SLOPES
- 175 - MYFORD SANDY LOAM, 9 TO 15 PERCENT SLOPES
- 176 - MYFORD SANDY LOAM, 15 TO 30 PERCENT SLOPES
- 191 - RIVERWASH
- 192 - ROCK OUTCROP-CIENEBA COMPLEX, 30 TO 75 PERCENT SLOPES
- 198 - SOBOBA COBBLY LOAMY SAND, 0 TO 15 PERCENT SLOPES
- 200 - SOPER LOAM, 30 TO 50 PERCENT SLOPES
- 207 - SORRENTO LOAM, 2 TO 9 PERCENT SLOPES
- 222 - YORBA GRAVELLY SANDY LOAM, 9 TO 15 PERCENT SLOPES
- 223 - YORBA GRAVELLY SANDY LOAM, 15 TO 30 PERCENT SLOPES

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Soil Types

Exhibit 3

Measure M2 Acquisition Properties/Ferber Ranch, O'Neill Oaks, Hafen, and Saddle Creek South Properties

N W E S

1,500 750 0 1,500 Feet

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the western half of the site and several small, southeast-flowing ephemeral drainages occur along the southeastern boundary of the site. Soil types mapped on the O'Neill Oaks property consist of Botella clay loam (9 to 15 percent slopes), Cieneba sandy loam (30 to 75 percent slopes, eroded), Soboba cobbly loamy sand (0 to 15 percent slopes), and Yorba gravelly sandy loam (15 to 30 percent slopes) (Exhibit 3).

Hafen

The approximate 48-acre Hafen property is immediately adjacent to the east side of Live Oak Canyon Road, north of its intersection with Shelter Canyon Road. This property is located at Township 6 South, Range 7 West, Section 3. Elevation on this property ranges from approximately 1,190 to 1,450 feet above msl. Two ephemeral drainages that flow in a westerly direction are located in the western half of this property. A larger ephemeral drainage is located along the eastern boundary of the property and appears on the USGS quadrangle as a blueline stream; several small ephemeral drainages flow into this drainage from within the property limits. Soil types mapped on the Hafen property consist of Botella clay loam (9 to 15 percent slopes), Cieneba sandy loam (30 to 75 percent slopes, eroded), and Soboba cobbly loamy sand (0 to 15 percent slopes) (Exhibit 3).

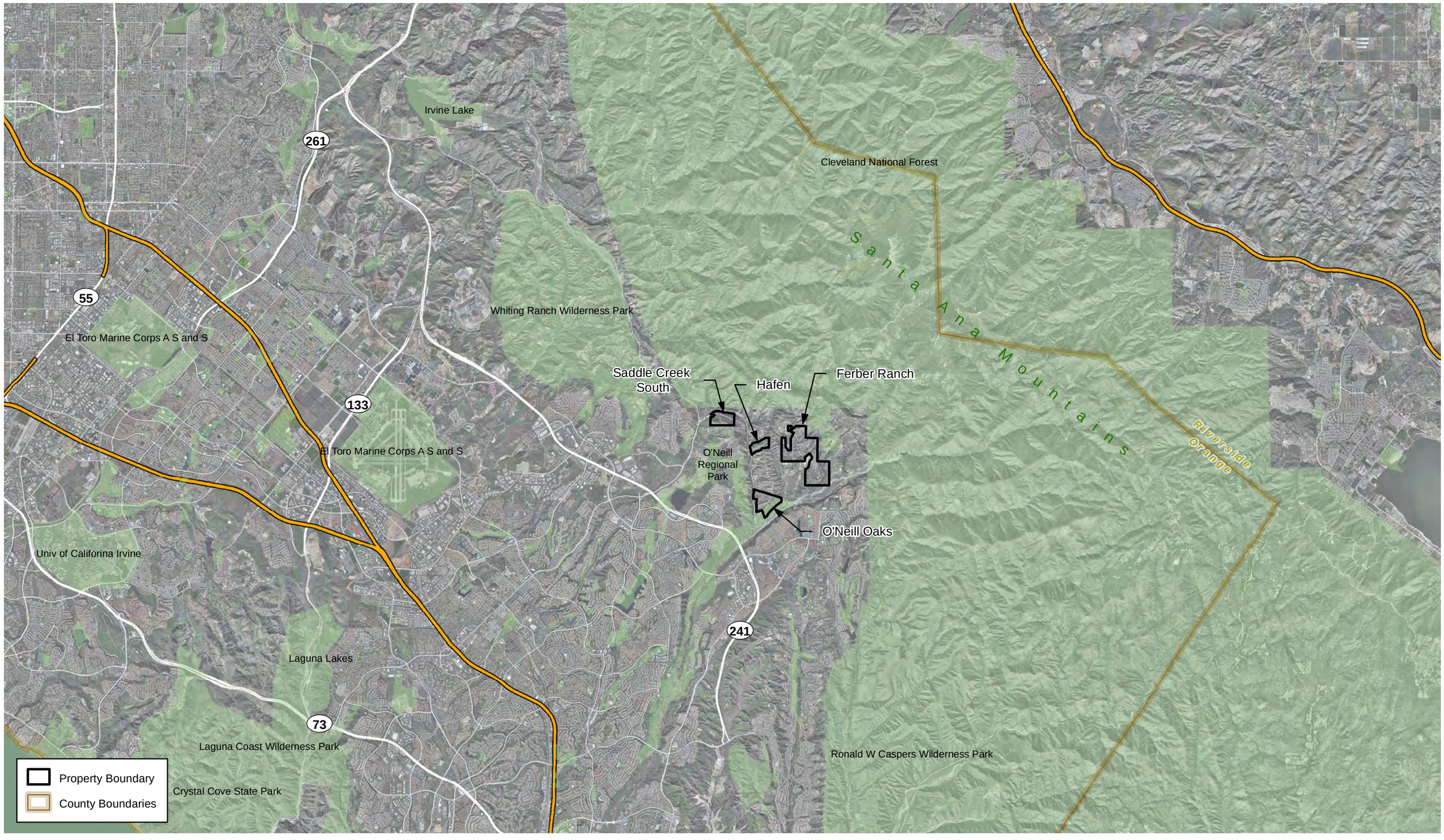
Saddle Creek South

The approximate 84-acre Saddle Creek South property is immediately adjacent to the south side of Live Oak Canyon Road, approximately 0.3 mile from its intersection with El Toro Road/Santiago Canyon Road. This property is located at Township 6 South, Range 7 West, Section 4. Elevation on this property ranges from approximately 1,160 to 1,600 feet above msl. Two principal ephemeral drainages that flow in a westerly direction occur on the property: one adjacent to Live Oak Canyon Road and the other in the center of the property. Soil types mapped on the Saddle Creek South property consist of Alo clay (15 to 30 percent slopes; 30 to 50 percent slopes), Balcom clay loam (15 to 30 percent slopes; 30 to 50 percent slopes), Botella clay loam (9 to 15 percent slopes), Calleguas clay loam (50 to 75 percent slopes, eroded), Cieneba sandy loam (30 to 75 percent slopes, eroded), and Sorrento loam (2 to 9 percent slopes) (Exhibit 3).

1.2.2 Regional Environmental Setting

The south county properties are located in the cismontane foothills of the Santa Ana Mountains. They are located between the large blocks of undeveloped land of O'Neill Regional Park to the west and the Cleveland National Forest to the east (Exhibit 4). This area is part of a 31-mile swath of continuous wildllife habitat that spans from the National Forest in the south to the west end of the Puente Hills, above Whittier Narrows, in the north. This represents the "last major natural open space resource connecting Los Angeles, Orange, San Bernardino, and Riverside Counties" (Los Angeles County et al. 2003). Specifically, the properties occur near the intersection of Trabuco Canyon with Live Oak Canyon, Hickey Canyon, and Rose Canyon. These canyons are part of the San Juan Hydrologic Unit of the Aliso-San Onofre Watershed.

The properties are all within the Foothill/Trabuco Specific Plan area. The purpose of the Foothill/Trabuco Specific Plan was to "set forth goals, policies, land use district regulations, development guidelines, and implementation programs in order to preserve the area's rural character and to guide future development in the Foothill/Trabuco area" (Orange County 1991). The Specific Plan identifies significant regional resources, such as wildlife corridors, oak woodlands, and streambeds in the planning area. Multiple designated wildlife corridors cross the Ferber Ranch property and a wildlife corridor, located along Live Oak Canyon Road, runs along the western edge of the O'Neill Oaks and Hafen properties. All of the properties contain



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Regional Environmental Setting

Exhibit 4

Measure M2 Acquisition Properties/Ferber Ranch, O'Neill Oaks, Hafen, and Saddle Creek South Properties

N W E S

10,000 5,000 0 10,000 Feet

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designated oak woodlands. Designated streambeds cross the Ferber Ranch property and run along the western edge of the O'Neill Oaks and Hafen properties.

1.2.3 Fire History

Traditionally, the fire season in Southern California is from May through September (OCFA 2007). In the past, fires were started by lightning and typically moved down slopes due to falling brands and coals; they only occasionally formed the hot runs on steep slopes that are typical of today's fires (Howard 1992). This fire regime resulted in a mosaic of numerous small burns. New fires were limited by recently burned regions with very little fuel; dead wood and other fuels could not accumulate for long.

Mediterranean shrub communities, including those types found on the properties, are resilient to wildfires at a frequency range of every 20 to 50 years (Keeley 1986). Many plant species associated with chaparral and scrub communities exhibit characteristics that constitute adaptations to fire. One of the effects of fire on native habitats is the opportunity for new growth and reproduction. Without fire, a mature chaparral stand may become senile, where growth and reproduction are reduced (Schoenherr 1992). Mature chaparral is highly flammable after 30 to 60 years without fire (Howard 1992). A new fire will then typically burn hot and high into the canopy, killing much of the aboveground biomass. These canopy fires facilitate seed establishment by removing shrub cover and eliminating competitors. In the first few years after a fire, herbs and herbaceous shrubs—such as deerweed (*Acmispon glaber* [*Lotus scoparius*]), lupines (*Lupinus* spp.), paintbrushes (*Castilleja* spp.), and phacelias (*Phacelia* spp.)—are abundant. Because chaparral fires burn nitrogenous compounds in plant tissues and detritus, there is a large loss of nitrogen from the ecosystem. This allows species equipped with nitrogen-fixing bacteria to grow quickly after a fire.

While herbaceous species are establishing, the previously dominant chaparral species are also returning. Many chaparral species rely on fire to release and germinate seeds. Others resprout from roots or buds at the base of the stem. As the shrub canopy closes, whether due to resprouting of individuals burned by the fire or due to seedling growth, these herbaceous species decrease in importance.

Although natural fires are a part of chaparral and scrub communities, both unnatural increases and decreases in fire frequency can have a negative impact. Now, most wildfires are started by humans, either through arson or accidents (Schoenherr 1992). In the past 15 years, Orange County has experienced its most devastating wildfires from October through April (OCFA 2007). Drought conditions contribute to an increase in dead fuels; drier and more explosive fuels; and more intense fire behavior. In addition, sustained Santa Ana Winds increase the speed of fire and magnify the effects on the available fuel bed. Santa Ana Winds are strong, warm, and dry winds that flow down into the valleys when stable; during these conditions, high pressure air is forced across and then down the lee-side slopes of a mountain range. The descending air is warmed and dried, which produces critical fire weather conditions.

Anthropogenic increases in fire frequency can change the natural resilience of chaparral and coastal sage scrub communities. In general, when an area burns too often for the community to mature, native plants may not be able to maintain dominance. Ruderal species, including annual grasses and invasive forbs, often thrive in post-fire conditions. As a result, fires often promote the spread of non-native species into native habitats, including chaparral and scrub communities. In turn, this high degree of non-native grass and forb cover can lead to more frequent fire return intervals (e.g., intervals of less than eight years have been reported) (Minnich and Dezzani 1998).

A decrease in fire frequency may also hinder reproduction of fire-adapted species. In the past, government agencies tried to prevent and stop the spread of wildfires through a policy of fire suppression. These efforts were found to be unsuccessful; they occasionally resulted in larger and more catastrophic fires. While they are less frequent, unnaturally large fires may burn so hot and intense that even the seeds of fire-adapted plants are destroyed.

Over the past 60 years, Orange County has experienced a number of major wildland fires (OCFA 2008). According to the Orange County Fire Authority (OCFA), this area has experienced 25 separate wildland fires since 1980, resulting in a total of 82,734 acres burned (OCFA 2008). The OCFA has identified Trabuco Canyon as being at high risk of a conflagration-type fire (i.e., large and destructive) due to construction of homes, lack of fuel modification protecting the community, and type of fuel and topography (OCFA 2007). The California Department of Forestry and Fire Protection (CAL FIRE) has also tracked significant fire events on the south county properties. Ferber Ranch experienced an unnamed fire in 1919 (319.6 acres burned on site), the Nelson Fire in 1970 (12.5 acres burned on site), and the Indian Fire in 1980 (96.0 acres burned on site). The Nelson Fire also burned 55.1 acres on the O'Neill Oaks property. The unnamed 1919 fire and the Nelson Fire burned 45.4 acres and 0.3 acres on the Hafen property, respectively. The unnamed 1919 fire and the Santiago Fire of 2007 burned 79.3 and 0.3 acres of the Saddle Creek South property, respectively (CAL FIRE 2011).

1.2.4 Climate

Southern California experiences a Mediterranean climate characterized by mild, rainy winters and hot, dry summers. There can also be dramatic differences in rainfall from year to year. Consequently, the vegetation types in the Southern California area consist of drought-tolerant, woody shrubs and trees and annual, fall/winter-sprouting grasses.

The temperature in Southern California is moderated by the coastal influence of the Pacific Ocean, which creates mild conditions throughout most of the year. The stable atmosphere creates cloudless conditions, producing dry summers and a subtropical climate with many days of sunshine (Ritter 2006). The most distinguishing characteristic of a Mediterranean climate is its seasonal precipitation. In Southern California, precipitation is characterized by brief, intense storms generally between November and March. It is not unusual for a majority of the annual precipitation to fall during a few storms over a close span of time. Rainfall patterns are subject to extreme variations from year to year and longer-term wet and dry cycles.

In the region, the average daily temperature in the summer, as measured in July from 1961 to 1990, is 71.6 degrees Fahrenheit (°F), and the average daily temperature in the winter, as measured in January from 1961 to 1990, is 54.5°F (U.S. Bureau of Labor Statistics et al. 2009). The region receives an average of 11.8 inches of rain a year (U.S. Bureau of Labor Statistics et al. 2009).

1.2.5 Anthropogenic Uses of the Property

According to the U.S. Forest Service (USFS), the area was inhabited by the Kumeyaay, Luiseño, Cahuilla, and Cupeño Native Americans, who would burn the brushlands along the coast and in the mountains. Juan Rodriguez Cabrillo arrived in 1542, but the land did not undergo significant change until the establishment of the California missions by Junipero Serra and a ranching culture. Trabuco Canyon was named in 1769 during a Spanish expedition led by Gaspar de Portolá. In 1846, the area became "Rancho Trabuco" under a Mexican land grant. Then, in the early 1900s, Trabuco Canyon was the site of a failed tin mine. Over this time, the landscape was altered by overgrazing, the invasion of exotic plant species, vegetation clearing, and widespread fire (USFS 2013).

Ferber Ranch

A review of historic aerial photographs of the property shows that, in general, vegetation communities have not significantly altered since 1946. Evidence of grazing is visible at that time. Low density development along Rose Canyon Road is present in aerial photographs as early as 1946, though development along Trabuco Oaks Drive has occurred since 1953.

The property currently experiences equestrian use and horses and their sign were observed throughout the property during the 2012 biological surveys. The dirt trails on the property are also used by hikers and likely mountain bikers.

An old structure, built between 1946 and 1953, was observed near the center of the property, with an adjacent planting of ornamental gum trees (*Eucalyptus* sp.). A can/bottle scatter (see photograph) was observed near the canyon in the southern portion of the property. In addition, a radio antenna is present adjacent to a dirt road in the northern portion of the property.

O'Neill Oaks

A review of historic aerial photographs of the property shows that, in general, vegetation communities have not significantly altered since 1938. Buildings or otherwise significant structures are not identified in the historic aerials. The first dirt roads on the property were graded between 1938 and 1946. Additional roads in the northern portion of the property were graded by 1953, but these are largely overgrown at present.

While not formally used for cattle grazing at this time, cattle are known to cross the property boundary and were observed during the 2012 biological surveys. Fencing is present on the property.

Hafen

A review of historic aerial photographs of the property shows that, in general, vegetation communities have not been altered significantly since 1946. Buildings or otherwise significant structures are not identified in the historic aerials. Low density residential development is present immediately north and south of the property, with the latest house built within the past two years. An unpaved road on the property was graded some time between 1953 and 1975, though it is now largely overgrown. Evidence of grazing is not present on this property.

Saddle Creek South

A review of historic aerial photographs of the property shows that, in general, vegetation communities have not significantly altered since 1946. Buildings or otherwise significant structures are not identified in the historic aerials. Residential development in the immediate area (e.g., Portola Hills) was absent until the late 1980s and early 1990s.

While not formally used for cattle grazing at this time, the southern portion of the site appears grazed, and evidence of cattle was observed during the 2012 biological surveys. Old ranch buildings and wooden utility poles are present on the property.

2.0 SURVEY METHODOLOGIES

This section describes the methodology used to conduct the literature review; perform general biological surveys and vegetation mapping, focused biological surveys, jurisdictional delineations, and California Rapid Assessment Method (CRAM) analyses; and assess the properties' potential to support special status species. A cumulative list of all plant and wildlife species observed on each property is included as Attachments A-1 and A-2, respectively.

2.1 LITERATURE REVIEW

BonTerra Consulting conducted a literature search to identify special status plants, wildlife, and habitats known to occur in the vicinity of the south county properties. This search included a review of the USGS' Black Star Canyon, Cañada Gobernadora, El Toro, and Santiago Peak quadrangles in the California Native Plant Society's (CNPS') Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2012) and the California Natural Diversity Database (CNDDB) (CDFG 2012a). In addition, a species list was obtained from the USFWS' Information, Planning, and Conservation System (IPaC) for the properties.

2.2 VEGETATION MAPPING AND GENERAL SURVEYS

BonTerra Consulting Biologists David Hughes and Allison Rudalevige conducted general surveys to describe and map the vegetation types on the properties on May 25 and July 17, 2012 (Ferber Ranch); May 30, 2012 (O'Neill Oaks); May 31, 2012 (Hafen); and May 31, 2012 (Saddle Creek South). Nomenclature for vegetation types generally follows *A Manual of California Vegetation* (Sawyer et al. 2009). Areas designated as a "sub-association" of a vegetation type contain a relatively high percentage of a particular species (e.g., chaparral nolina [*Nolina cismontana*] or coast prickly pear [*Opuntia littoralis*]), but the species composition is not formally recognized as an Alliance[2] or Association[3] in Sawyer et al. (2009). Vegetation was mapped in the field on an aerial photograph at a scale of 1 inch equals 200 feet (1″=200′).

The general surveys included an evaluation of the potential of each property to support special-status plant and wildlife species, with special focus on M2 NCCP/HCP Covered Species. Covered Species include intermediate mariposa lily (*Calochortus weedii* var. *intermedius*), southern tarplant (*Centromadia parryi* ssp. *australis* [*Hemizonia p.* ssp. *a.*]), many-stemmed dudleya (*Dudleya multicaulis*), arroyo chub (*Gila orcutti*), coast horned lizard (*Phrynosoma blainvillii*), Belding's orangethroat whiptail (*Aspidoscelis hyperythra* [*Cnemidophorus h.*]), Pacific [western] pond turtle (*Actinemys marmorata* [*Emys m.*]), southwestern willow flycatcher (*Empidonax traillii extimus*), least Bells vireo (*Vireo bellii pusillus*), coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), coastal California gnatcatcher (*Polioptila californica californica*), pallid bat (*Antrozous pallidus*), long-eared myotis (*Myotis evotis*), small footed myotis (*Myotis ciliolabrum*), Yuma myotis (*Myotis yumanensis*), big free-tailed bat (*Nyctinomops macrotis*), bobcat (*Lynx rufus*), and mountain lion (*Puma concolor* [*Felis c.*]). Suitable habitat and/or observed individuals were documented in field notes and with global positioning system (GPS) units and a CNDDB form was filled out for each occurrence.

[2] Alliance is "a classification unit of vegetation, containing one or more associations and defined by one or more diagnostic species, often of high cover, in the uppermost layer or the layer with the highest canopy cover" (Sawyer et al. 2009).

[3] Association is "a vegetation classification unit defined by a diagnostic species, a characteristic range of species composition, physiognomy, and distinctive habitat conditions" (Sawyer et al. 2009).

During field surveys, natural or physical resources were identified (mapped and included in field notes) that "preserve, restore and enhance aquatic, riparian and terrestrial natural communities and ecosystems that support Covered Species" (OCTA 2010). Resources that provide valuable enhancement, restoration, or preservation opportunities (e.g., significant stands of non-native species requiring eradication; presence of rock outcroppings that provide niche areas for unusual plants, bats, ringtails [*Bassariscus astutus*], or other species; nesting cavities; large mammal burrows; avian rookeries/roosts; and dens) were mapped and documented in field notes. This may include significant stands of invasive plant species based on the California Invasive Plant Council (Cal-IPC) Inventory. Anthropogenic influences/structures on the properties (i.e., cell towers, water towers, abandoned vehicles and/or "dumped" trash or debris) were also documented. GPS devices were utilized for recording all point locations.

Plant species were identified in the field or collected for subsequent identification using keys in Baldwin et al. (2012), Munz (1974), Abrams (1923, 1944 1951), and Abrams and Ferris (1960). Taxonomy follows Baldwin et al. (2012) and current scientific data (e.g., scientific journals) for scientific and common names. Active searches for reptiles and amphibians included lifting, overturning, and carefully replacing rocks and debris. Birds were identified by visual and auditory recognition. Surveys for mammals were conducted during the day and included searching for and identifying diagnostic sign, including scat, footprints, burrows, and trails. Taxonomy and nomenclature for wildlife generally follows Crother (2008) for amphibians and reptiles, American Ornithologists' Union (AOU 2011) for birds, and Baker et al. (2003) for mammals. All species observed were recorded in field notes and are included in Attachment B.

2.3 FOCUSED BIOLOGICAL SURVEYS

Focused biological surveys were conducted in 2012 for special status plant species, coastal California gnatcatcher, coastal cactus wren, southwestern willow flycatcher, least Bell's vireo, and bats.

2.3.1 Special Status Plant Species

Special status plant surveys were floristic in nature and were conducted following the Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFG 2009) and the CNPS' Botanical Survey Guidelines (CNPS 2001). Target species included the following Covered Species: intermediate mariposa lily, southern tarplant, and many-stemmed dudleya.

For special status plant surveys, rainfall received in the winter and spring determines the germination of many annual and perennial herb species. Rainfall data was retrieved from the California Data Exchange Center (CDEC) of the California Department of Water Resources (CDWR 2012). The Bell Canyon sensor (CDEC Station BEC), located approximately 7.4 to 9.7 miles from the properties, provides data for 2000 to 2011. The average precipitation for October to July was 12.69 inches. The precipitation between October 2011 and July 2012 was measured at 9.87 inches, which is 78 percent of average.

In years of low or unusual rainfall patterns, monitoring of reference populations is important in order to interpret survey results. Prior to conducting the field surveys, reference populations of target species were monitored to ensure that the scheduled surveys were comprehensive and conducted during the appropriate blooming period for these species. Intermediate mariposa lily was observed flowering in Trabuco Canyon on May 29, 2012. Southern tarplant was observed flowering in San Juan Capistrano on May 21, 2012. Many-stemmed dudleya was observed flowering in San Juan Capistrano on April 18, 2012. Although reference populations and regional rainfall amounts were monitored to ensure the scientific adequacy of these focused

surveys, there is always a minimal potential for false negative survey results as species could possibly be present on a site but may not be detectable at the time of the surveys.

The properties were surveyed for special status plant species by several BonTerra Consulting biologists (Table 1). Systematic walking surveys were conducted in all areas of suitable special status plant habitat. All plant species observed were recorded in field notes. Plant species were identified in the field or collected for later identification. Plants were identified to the taxonomic level necessary to determine whether or not they are a special status species. Plants were identified using taxonomic keys, descriptions, and illustrations in Baldwin et al. (2012). Any voucher specimens collected will be deposited with the herbarium at Rancho Santa Ana Botanic Gardens in Claremont, California. Taxonomy and nomenclature follows the Baldwin et al. (2012), Hickman (1993), and current scientific journals for scientific and common names.

TABLE 1
SUMMARY OF SURVEY DATA FOR
SPECIAL STATUS PLANT SURVEYS

Date of Survey (2012)	Location	Personnel
May 29	Ferber Ranch	R.L. Allen, F.M. Roberts, Jr.
May 30	Ferber Ranch	R.L. Allen, F.M. Roberts, Jr.
May 31	Ferber Ranch	R.L. Allen, F.M. Roberts, Jr.
June 1	Ferber Ranch	R.L. Allen, L.A. Messett
June 5	O'Neill Oaks	R.L. Allen, D.T. Hughes
June 6	Saddle Creek South	R.L. Allen, D.T. Hughes
June 7	Hafen	R.L. Allen, D.T. Hughes
June 19	Ferber Ranch	R.L. Allen, D.E. Bramlet
July 17	Ferber Ranch	R.L. Allen, A.D. Rudalevige, F.D. Maxon, M.J. Bancroft
July 18	Ferber Ranch	R.L. Allen, A.D. Rudalevige, F.D. Maxon, M.A. Johnston
July 24	O'Neill Oaks	R.L. Allen, M.J. Bancroft
July 24	Saddle Creek South	R.L. Allen, M.J. Bancroft
July 25	Hafen	R.L. Allen, F.D. Maxon
Source: BonTerra Consulting 2013b.		

2.3.2 Coastal California Gnatcatcher and Coastal Cactus Wren

Surveys for the coastal California gnatcatcher were conducted in accordance with the guidelines issued by the USFWS for areas participating in a NCCP (USFWS 1997). These guidelines stipulate that three surveys must be conducted in suitable habitats with at least one week between site visits; the surveys can be conducted year-round. All visits must take place during the morning hours, and no more than 100 acres of suitable habitat may be surveyed per visit. Because of the habitat similarities, gnatcatcher and cactus wren surveys were conducted simultaneously.

BonTerra Consulting Senior Biologist Lindsay Messett (USFWS Permit No. PRT-067064-2) conducted all surveys on the Ferber Ranch property and Biologist Michael Couffer (USFWS Permit No. TE-782703-8) conducted the surveys on the remaining properties. The surveys covered all potentially suitable habitats for the coastal California gnatcatcher and coastal cactus wren. A summary of the focused gnatcatcher/cactus wren survey dates and conditions is shown in Table 2 below.

TABLE 2
SUMMARY OF SURVEY DATA AND CONDITIONS FOR GNATCATCHER/CACTUS WREN SURVEYS

Date	Time	Surveyors	Weather Conditions		
			Temperature (°F) (Start/End)	Wind (mph) (Start/End)	Cloud Cover (%) (Start/End)
Ferber Ranch					
May 30, 2012	0600/1215	Messett	61/70	0–3/0–4	100/60
May 31, 2012	0605/1210	Messett	62/75	0–1/0–2	100/Clear
June 1, 2012	0600/1200	Messett	61/70	0–1/0–2	100/30
June 6, 2012	0610/1230	Messett	60/71	0–2/0–3	80/40
June 7, 2012	0600/1215	Messett	60/73	0–1/0–3	Clear/Clear
June 8, 2012	0600/1205	Messett	61/74	0–1/0–6	30/Clear
June 20, 2012	0620/1210	Messett	63/71	0–3/0–4	100/50
June 21, 2012	0610/1225	Messett	63/72	0–2/0–2	10/25
June 25, 2012	0600/1200	Messett	61/74	0–1/0–3	25/35
O'Neill Oaks					
May 31, 2012	0700/1145	Couffer	56/86	0–1/0–3	90/Clear
June 1, 2012	0620/1040	Couffer	57/76	0–1/0–1	100/Clear
June 8, 2012	0615/1155	Couffer	55/76	0–1/0–1	Clear/Clear
June 9, 2012	0635/1112	Couffer	56/72	0–1/0–1	Clear/Clear
June 16, 2012	0615/1200	Couffer	59/75	0–1/0–1	90/Clear
June 17, 2012	0615/1200	Couffer	61/81	0–1/0–2	70/Clear
Hafen					
June 5, 2012	0630/1050	Couffer	60/71	0–1/0–2	30/50
June 14, 2012	0615/1000	Couffer	58/66	0–1/0–1	100/10
June 22, 2012	0600/1045	Couffer	61/70	0–1/0–3	61/70
Saddle Creek South					
June 2, 2012	0645/1145	Couffer	61/74	0–1/0–6	100/Clear
June 12, 2012	0630/1026	Couffer	61/74	0–1/0–1	100/Clear
June 21, 2012	0600/1030	Couffer	60/73	0–1/0–2	90/Clear

°F: degrees Fahrenheit; mph: miles per hour.

Source: BonTerra Consulting 2012a.

Weather conditions met the USFWS survey protocol requirements for optimal gnatcatcher detection. Weather conditions that were too cold (below 55°F), too hot (above 95°F), or too windy (wind speed greater than 15 miles per hour) were avoided. Surveys were conducted by slowly walking through all appropriate habitats while listening and watching for gnatcatcher/cactus wren activity. A combination of recordings of gnatcatcher/cactus wren vocalizations and "pishing" sounds were used in an attempt to elicit responses from any gnatcatchers/cactus wren that might be present. The frequency of vocalization playback and "pishing" varied depending on conditions, such as habitat patch size and topography in each area. All bird species detected during the survey were recorded, including notable observations of special status wildlife species.

2.3.3 Southwestern Willow Flycatcher and Least Bell's Vireo

The USFWS protocol for the least Bell's vireo requires that at least eight surveys be conducted from April 10 to July 31 with a ten-day interval between each site visit (USFWS 2001). The USFWS protocol for the southwestern willow flycatcher requires a total of five surveys, with the first survey conducted between May 15 and May 31; the second and third surveys between June 1 and June 24; and the fourth and fifth surveys between June 25 and July 17 (Sogge et al. 2010). A total of eight surveys are typically required to satisfy the survey requirement of both species; however, only a total of three surveys conducted in the last two survey windows for the southwestern willow flycatcher were required for this project as agreed to previously by the OCTA and USFWS.

BonTerra Consulting Senior Biologist Brian Daniels (USFWS Permit No. TE-821401-3) conducted surveys at the properties and determined that only the Ferber Ranch property supported riparian habitat potentially suitable for occupation by breeding southwestern willow flycatcher and least Bell's vireo. Mr. Daniels performed modified survey protocol of three visits to the Ferber Ranch property on June 6, 21, and July 2, 2012. The survey focused on the willow (*Salix* sp.) dominated riparian habitat located on the southwest side of the property, but also included adjacent habitats on the property.

Taped vocalizations of southwestern willow flycatcher were used on all three surveys in an attempt to elicit a response from any potentially territorial southwestern willow flycatcher. If no southwestern willow flycatchers were detected after the initial tape playing, the recording was replayed where appropriate. As the least Bell's vireo survey protocol does not require the playback of least Bell's vireo vocalizations, no taped vocalizations of least Bell's vireo were used during these surveys. All surveys were conducted under optimal weather conditions and during early morning hours when bird activity is at a peak. Numbers were recorded for all bird species detected during the survey, including any observations of special status bird species.

2.3.4 Bats

Both visual and acoustic surveys for bat species (both common and special status) were conducted on the south county properties. During the day, visual surveys were conducted to locate potential roost sites and foraging areas. At dusk and after dark, bat activity was monitored both visually (with spotlights after dark) and acoustically with ultrasonic bat detectors.

Site Reconnaissance

Dr. Ed West and BonTerra Consulting Biologist Ann Johnston assessed the ecological status and condition of the properties on June 8, 2012. All passable roads were driven, and accessible trails suitable for survey transects were hiked. The general condition and use history of the properties was documented, and potential areas for bat roosts and foraging activity were identified.

Bat Monitoring

Acoustic monitoring was conducted on the properties between June 16 and July 7, 2012. Mobile surveys were conducted along all passable 4x4 roads on each property. On-foot hiking surveys were conducted along overgrown roads/trails that provided transects through representative habitats on each property. During the mobile surveys, two vertically mounted ultrasonic detector microphones were secured to the roof of a 4x4 Jeep Wrangler. The detectors were connected individually with cabling to an EM3 EchoMeter full spectrum bat detector (SMX-US microphone, Wildlife Acoustics, Inc.) and an Anabat SD2 CF bat detector (Standard Anabat microphone,

Titley Scientific, Inc.) mounted on a platform in the vehicle. The EM3 detector was programed for .wav file format recording with a 256K sample rate. A GPS unit was connected to the EM3 unit to provide GIS location of all recordings. All ultrasonic detections were digitally stamped with the date, time, and location of the recordings. The SD2 detector was programmed for active monitoring. During all hiking surveys, the bat detectors were hand held at above head height level with the microphones pointed vertically to optimize bat call detection.

During the mobile surveys, the roads were driven slowly and all bat detections were visually and aurally monitored by watching the EM3 real-time spectrogram and listening to the speaker output on both the EM3 and the SD2. When repeated detections occurred, the vehicle was often stopped and the site was monitored for 10 to 20 minutes. These sites were also often stopped at during subsequent surveys along the same route. Similar point monitoring procedures were implemented during the hiking surveys. Additionally, flying bats were visually searched for at dusk during each survey.

Bat Call Acoustic Analysis

Following each survey, the digital recordings of all the bat calls were downloaded to a computer and analyzed to identify which species were present. The EM3 recordings were analyzed using SonoBat 3.1 (June 2012 release, SonoBat™). All recordings obtained using the SMX-US microphone were acoustically adjusted to SonoBat standards using the SMX-UT conversion tool in the SM2 Batch Attributer program. This option was turned off for analysis of all recordings obtained using the internal SMX-UT microphone in the EM3 unit. Following batch scrubbing of extraneous ultrasonic recordings (i.e., removal of all recordings of leaf rustling noise, wind, etc.), the bat calls were automatically identified using the SonoBat SonoBatch feature. Call files (.wav format) were tagged with species codes whenever the call quality met the identification threshold standards of the SonoBat program. Call files were tagged with species codes whenever the call quality met the identification threshold standards of the SonoBat program.

Some call sequences recorded were not of sufficient quality (e.g., less than 10 clean calls per sequence, reduced amplitude, masked in noise) to allow for confident species determinations. However, many could be, and were, categorized into species groups by their characteristic minimum frequency. For example, species with minimum call frequencies (f_m) above 35 kilohertz (kHz) were grouped into a high frequency species category (HFSP), species between 25 and 35 kHz into the medium frequency category (MFSP), and species below 25 kHz into the low frequency species (LFSP) category.

Call files of lower quality were either tagged with a list of probable species or a general category identifying the general frequency range of the calls (e.g., High vs. Low). Calls with lower quality were not identified to species, but were tagged as being bat calls.

After the initial tagging and categorization of all the calls, they were each reviewed again visually and using SonoBat 3 to verify (or not) the species identifications. All calls without species ID code tags were visually examined to determine if the calls were embedded in noise that reduced their quality but were recognizable and could be digitally extracted and re-evaluated. These call files were then processed using Raven™ (Cornell Lab of Ornithology) to remove the extraneous noise. The cleaned-up files were then re-run through SonoBat 3.1 to obtain species identifications wherever possible.

All SonoBat and GPS files for calls for which species/species group identifications could be obtained were then converted to Google Earth™ KML files and mapped using Myotisoft™ Transect 1.0.5b (Beta release July, 2012).

All bat calls recorded on the Anabat SD2 units were downloaded to the computer using CFRead™ (Titley Scientific) and sonograms were produced using AnalookW™ (Titley Scientific). Each sonogram was then visually compared to sonograms of known species in a digital library to determine species/species group identities. Unique calls were identified and matched to the date-time sequencing of the SonoBat calls and wav. file tags were generated for the Myotisoft KML file creation and Google Earth mapping. Simultaneous SonoBat/Anabat recordings were mapped as single records.

2.4 REGULATORY SURVEYS

2.4.1 Jurisdictional Delineation

A jurisdictional delineation was conducted by BonTerra Consulting to describe and map the extent of resources under the jurisdiction of the U.S. Army Corps of Engineers (USACE), the Regional Water Quality Control Board (RWQCB), and the CDFW. Survey details are provided in Table 3. The delineation followed guidelines presented in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). This regional supplement is designed for use with the *1987 Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). Both the 1987 Wetlands Manual and the Arid West Supplement to the manual provide technical methods and guidelines for determining the presence of "Waters of the U.S." and wetland resources. A three-parameter approach—which requires evidence of wetland hydrology, hydrophytic vegetation, and hydric soils—was used to identify wetlands on the Project site and adjacent off-site areas. In order to be considered a wetland, an area must exhibit at least minimal hydric characteristics within the three parameters. However, problem areas may periodically or permanently lack certain indicators due to seasonal or annual variability of the nature of the soils or plant species on a project site. Atypical wetlands lack certain indicators due to recent human activities or natural events. Guidance for determining the presence of wetlands in these situations is presented in the Regional Supplement. Non-wetland "Waters of the U.S." are delineated based on the limits of the Ordinary High Water Mark (OHWM), which can be determined by a number of factors including erosion, the deposition of vegetation or debris, and changes in vegetation.

TABLE 3
SUMMARY OF JURISDICTIONAL DELINEATION SURVEYS

Property	Date(s)	Field Personnel
Ferber Ranch	July 2 and 3, 2012 February 26, 2013	G.A. Medeiros M.J. Bancroft
O'Neill Oaks	July 2 and 18, 2012	D.T. Hughes J.C. Aguayo
Hafen	July 6, 2012	D.T. Hughes F.D. Maxon
Saddle Creek South	July 3, 2012	G.A. Medeiros M.J. Bancroft
Source: BonTerra Consulting 2013a.		

It should be noted that the RWQCB shares the USACE jurisdiction unless isolated conditions are present. If isolated waters conditions are present, the RWQCB takes jurisdiction using the USACE's definition of the OHWM and/or the three-parameter wetlands methodology pursuant to the 1987 Wetlands Manual. The CDFW's jurisdiction is defined as the top of the bank of the stream, channel, or basin or the outer limit of riparian vegetation located within or immediately adjacent to the river, stream, creek, pond, or lake.

2.4.2 California Rapid Assessment Method Analysis

A CRAM analysis was conducted by Mr. Hughes concurrent with the jurisdictional delineation surveys. Surveys were conducted in accordance with the CRAM for Wetlands User's Manual (Collins et al. 2008). The CRAM analysis for Riverine Wetlands[4] was used to establish and score 100-meter-long Assessment Areas (AAs) in the principal streambed features on the properties. The AA is the fundamental unit of evaluation for CRAM analysis. The AA width was defined as the outer canopy of vegetation that overhung the streambed.

Information recorded for the AA includes (1) the percentage of the AA that was surrounded by a buffer and the width of the buffer; (2) the water source for the AA; (3) the cross-sectional measurements to determine hydrologic connectivity to adjacent areas; (4) the number of plant layers within the AA; and (5) the number of co-dominant species and invasive species. Qualitative factors that were assessed include (1) the condition of the buffer surrounding the AA; (2) the channel stability; (3) the complexity of the channel's bank with regards to the number of surfaces or features that provide habitat for species and topography; and (4) the horizontal and vertical structure of the plant community. Individual scores are obtained by "choosing the best-fit set of narrative descriptions of observable conditions ranging from the worst commonly observed (D) to the best achievable for the wetland (A)" (Collins et al. 2008). Each description has a fixed numerical value. This information was used to assess four primary attributes (i.e., Buffer and Landscape Context, Hydrology, Physical Structure, and Biotic Structure). The attribute score is calculated by first adding the values of the chosen narrative descriptions for the attribute's component metrics, and then converting the sum into a percentage of the maximum possible score for the attribute. The overall AA score is the average of the final attribute scores.

AA scores range from 25 to 100. The maximum AA score possible represents how a wetland is doing relative to the best achievable conditions for that wetland type in the state. It is assumed that the same scores for different wetlands of the same type represent the same overall condition and functional capacity. Therefore, these scores may be used to track the progress of restoration efforts over time; to compare impacted sites to their in-kind mitigation sites; or to compare an individual wetland to the status and trends in ambient condition of its wetland type.

3.0 EXISTING BIOLOGICAL RESOURCES

This section describes the biological resources that occur or potentially occur on the four south county properties. Vegetation types, wildlife populations and movement patterns, and special status biological resources are discussed below.

3.1 VEGETATION TYPES AND OTHER AREAS

3.1.1 Ferber Ranch

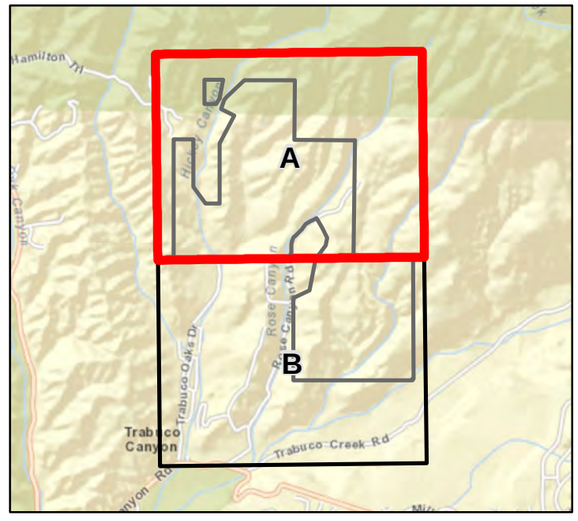
Twenty-two vegetation types and other areas occur on the Ferber Ranch property, as shown in Table 4 and Exhibit 5. These vegetation types were cross-walked to the general vegetation types used in the NCCP/HCP Plan.

[4] CRAM uses the definition of a wetland provided by the USFWS National Wetland Inventory (NWI): "Wetlands are lands transitional between terrestrial and aquatic systems, where the water table is usually at or near the surface or the land is covered by shallow water. For the purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is not a soil and is saturated with water or covered by shallow water at some time during the growing season of each year" (Cowardin et al. 1979).

1 - Arroyo Willow Thickets
2 - California Sagebrush Scrub
3 - California Sagebrush Scrub/Needle Grass Grassland
4 - Chamise - Laurel Sumac - Lemonade berry Chaparral with California Sagebrush Scrub
5 - Chamise Chaparral
6 - Cliff/Rock
7 - Coast Live Oak Woodland
8 - Coast Prickly Pear Scrub
9 - Developed
10 - Disturbed *
11 - Eucalyptus Grove
12 - Giant Wild Rye Grassland
13 - Laurel Sumac - Lemonade berry Chaparral with Californa Sagebrush - California Buckwheat Scrub
14 - Mulefat Thickets
15 - Needle Grass Grassland
16 - Needle Grass Grassland/Semi-Natural Herbaceous Stands
17 - Orchard
18 - Scale Broom Scrub
19 - Scrub Oak Chaparral
20 - Semi-Natural Herbaceous Stands
21 - Semi-Natural Woodland Stand
22 - White Alder Groves

* Includes bare ground, dirt roads, and closed/permitted trails.

Note: Hatching indicates that the vegetation type has a subassociation.



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Vegetation Types

Exhibit 5A

Measure M2 Acquisition Properties/Ferber Ranch Property

N W E S

500 250 0 500 Feet

BonTerra CONSULTING

(Rev: 12-19-2012 JAZ) Projects\OCTA\J008\Graphics\BioReport\SouthCounty\Ex5_veg_Ferber.pdf

1 - Arroyo Willow Thickets
2 - California Sagebrush Scrub
3 - California Sagebrush Scrub/Needle Grass Grassland
4 - Chamise - Laurel Sumac - Lemonade berry Chaparral with California Sagebrush Scrub
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13 - Laurel Sumac - Lemonade berry Chaparral with Californa Sagebrush - California Buckwheat Scrub
14 - Mulefat Thickets
15 - Needle Grass Grassland
16 - Needle Grass Grassland/Semi-Natural Herbaceous Stands
17 - Orchard
18 - Scale Broom Scrub
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20 - Semi-Natural Herbaceous Stands
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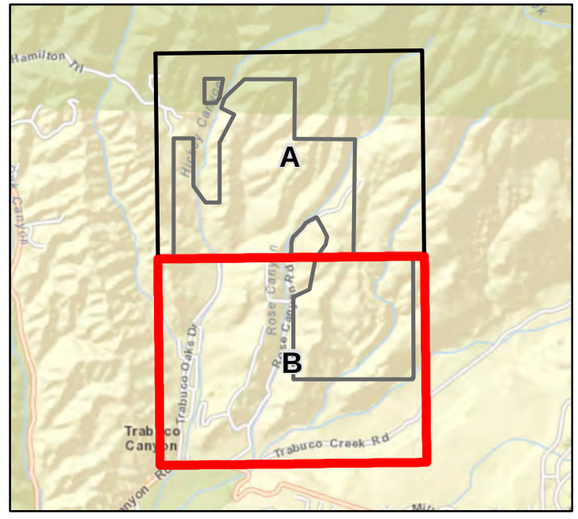
* Includes bare ground, dirt roads, and closed/permitted trails.

Note: Hatching indicates that the vegetation type has a subassociation.



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Vegetation Types

Exhibit 5B

Measure M2 Acquisition Properties/Ferber Ranch Property

N W E S

500 250 0 500

Feet

Bonterra CONSULTING

(Rev: 12-19-2012 JAZ) Projects\OCTA\J008\Graphics\BioReport\SouthCounty\Ex5_veg_Ferber.pdf

TABLE 4
VEGETATION TYPES AND OTHER AREAS ON THE FERBER RANCH PROPERTY

General Vegetation Types	Detailed Vegetation Types or Other Areas	Existing on Property (Acres)
Chaparral		
	Chamise Chaparral	11.90
	Chamise – Laurel Sumac – Lemonade Berry Chaparral with California Sagebrush Scrub	13.36
	Scrub Oak Chaparral	44.66
	Laurel Sumac – Lemonade Berry Chaparral with California Sagebrush – California Buckwheat Scrub	32.94
	Chaparral Subtotal	**102.86**
Scrub		
	California Sagebrush Scrub	149.57
	California Sagebrush Scrub/Needle Grass Grassland	0.28
	Coast Prickly Pear Scrub	6.50
	Scale Broom Scrub	0.30
	Scrub Subtotal	**156.65**
Grassland		
	Needle Grass Grassland	17.15
	Needle Grass Grassland/Semi-Natural Herbaceous Stands	3.94
	Giant Wild Rye Grassland	0.38
	Semi-Natural Herbaceous Stands[a]	7.37
	Grassland Subtotal	**28.84**
Riparian		
	White Alder Groves	0.45
	Arroyo Willow Thickets	1.87
	Mulefat Thickets	0.71
	Riparian Subtotal	**3.03**
Woodland		
	Coast Live Oak Woodland	**93.23**
Agriculture		
	Orchard	**1.51**
Barren		
	Cliff/Rock	**2.16**
Developed/Non-Native		
	Developed	0.61
	Disturbed	7.79
	Eucalyptus Grove	0.53
	Semi-Natural Woodland Stand	1.42
	Developed/Non-native Subtotal	**10.35**
	Total Acreage	***398.63***

[a] Portions of the semi-natural herbaceous stands (indicated by hatching on Exhibit 5) would be considered a "Developed/Non-native" general vegetation type.

Chaparral

Chamise Chaparral

A total of 11.90 acres of chamise chaparral occurs on slopes throughout the Ferber Ranch property. This vegetation type is dominated by chamise (*Adenostoma fasciculatum*). Subdominant species include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), and chaparral yucca (*Hesperoyucca whipplei* [*Yucca w*.]).

Chamise – Laurel Sumac – Lemonade Berry Chaparral with California Sagebrush Scrub

A total of 13.36 acres of chamise – laurel sumac – lemonade berry chaparral with California sagebrush scrub occurs in two large patches in the southern half of the Ferber Ranch property. It represents an ecotone between chaparral and scrub habitats. As such, this vegetation type is co-dominated with a variety of species such as chamise, laurel sumac (*Malosma laurina*), lemonade berry (*Rhus integrifolia*), and California sagebrush.

Scrub Oak Chaparral

A total of 44.66 acres of scrub oak chaparral occurs on slopes throughout the Ferber Ranch property. This vegetation type is dominated by dense scrub oak (*Quercus berberidifolia*); chamise is a subdominant species.

Laurel Sumac – Lemonade Berry Chaparral with California Sagebrush – California Buckwheat Scrub

A total of 32.94 acres of laurel sumac – lemonade berry chaparral with California sagebrush – California buckwheat scrub occurs on the Ferber Ranch property. This vegetation type occurs on slopes throughout the property. It represents an ecotone between chaparral and scrub habitats. It is similar to the chamise – laurel sumac – lemonade berry chaparral with California sagebrush scrub described above; however, it has California buckwheat as a co-dominant species and does not have a high percentage of chamise.

Scrub

California Sagebrush Scrub

A total of 149.57 acres of California sagebrush scrub occurs on slopes throughout the Ferber Ranch property. Most areas of this vegetation type are dominated by California sagebrush with California buckwheat, black sage, and less than 10 percent coast prickly-pear. A sub-association of this vegetation type (indicated by hatching on Exhibit 5) contains a moderate percentage (i.e., between 20 and 50 percent) of coast prickly-pear. Scattered patches of cardoon (*Cynara cardunculus*) were observed within this vegetation type.

California Sagebrush Scrub/Needle Grass Grassland

A total of 0.28 acre of California sagebrush scrub/needle grass grassland occurs in a small patch near the center of the Ferber Ranch property. This vegetation type contains purple needlegrass (*Stipa pulchra* [*Nassella p*.]) and foothill needlegrass (*Stipa lepida* [*Nassella l*.]) intermixed with California sagebrush.

Coast Prickly Pear Scrub

A total of 6.50 acres of coast prickly pear scrub occurs near the center of the Ferber Ranch property. It is dominated by dense stands of coast prickly-pear (i.e., greater than 50 percent). Scattered California sagebrush, California buckwheat, and black sage are also present in this vegetation type.

Scale Broom Scrub

A total of 0.30 acre of scale broom scrub occurs on the Ferber Ranch property. This vegetation type is located adjacent to the low flow channel of Trabuco Creek at the southeastern corner of the property. It is characterized by the presence of scattered scale-broom (*Lepidospartum squamatum*); southern woolly lotus (*Acmispon heermannii* var. *heermanii*), California brickellbush (*Brickellia californica*), California buckwheat, and everlasting (*Pseudognaphalium canescens* [*Gnaphalium c*.]) are also present. This portion of the active floodplain is relatively open with loose sand and cobble.

Grassland

Needle Grass Grassland

A total of 17.15 acres of needle grass grassland occurs on gentle slopes throughout the Ferber Ranch property. This vegetation type is characterized by having at least 10 percent relative cover of purple needlegrass and foothill needlegrass which is intermixed with wild oat (*Avena* sp.). Blue-eyed grass (*Sisyrinchium bellum*) was prevalent in some patches.

Needle Grass Grassland/Semi-Natural Herbaceous Stands

A total of 3.94 acres of needle grass grassland/semi-natural herbaceous stands occurs on gentle slopes throughout the Ferber Ranch property. This vegetation type is similar to the needle grass grassland described above, but is heavily disturbed by the non-native cardoon.

Giant Wild Rye Grassland

A total of 0.38 acre of giant wild rye grassland occurs on the Ferber Ranch property. This vegetation type is located in a small patch in the southwestern corner of the property. It is dominated by giant wild rye (*Elymus condensatus* [*Leymus c*.]).

Semi-Natural Herbaceous Stands

A total of 7.37 acres of semi-natural herbaceous stands occurs on the Ferber Ranch property. This vegetation type occurs on slopes and plateaus throughout the property. Some of these areas are dominated by non-native grasses such as ripgut grass (*Bromus diandrus*) and smilo grass (*Stipa miliacea* [*Piptatherum miliaceum*]) with scattered black mustard (*Brassica nigra*) and western ragweed (*Ambrosia psilostachya*). Other areas (indicated by hatching on Exhibit 5) are dominated by cardoon.

Riparian

White Alder Groves

A total of 0.45 acre of white alder groves occur on the Ferber Ranch property. This vegetation type is located within the floodplain of Trabuco Creek. It is dominated by white alder (*Alnus rhombifolia*) trees. Sub-dominant species include arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*), Goodding's black willow (*Salix gooddingii*), western sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii* ssp. *fremontii*), and mule fat (*Baccharis salicifolia*). This area is characteristic of a dynamic riparian community where flood waters remove vegetation and deposit sediment; as such, the trees are immature and approximately ten feet tall.

Arroyo Willow Thickets

A total of 1.87 acres of arroyo willow thickets occurs in drainages on the Ferber Ranch property. This vegetation type is dominated by arroyo willow. Saltcedar (*Tamarix ramosissima*) is present in the understory, and patches of cattail (*Typha* sp.) occur along the edge.

Mulefat Thickets

A total of 0.71 acre of mulefat thickets occurs on the Ferber Ranch property. This vegetation type occurs in two small patches: one in a drainage adjacent to Trabuco Oaks Road and another in an upland area near the western edge of the property. It is dominated by mule fat. Scattered patches of mule fat vegetation in other areas were too small to be mapped separately.

Woodland

Coast Live Oak Woodland

A total of 93.23 acres of coast live oak woodland occurs on slopes and drainage bottoms throughout the Ferber Ranch property. This vegetation type is dominated by mature coast live oak (*Quercus agrifolia*). The understory in upland areas contains shrubs such as California sagebrush; the understory in riparian areas contains mugwort (*Artemisia douglasiana*), western poison oak (*Toxicodendron diversilobum*), hollyleaf redberry (*Rhamnus ilicifolia*), and tree tobacco (*Nicotiana glauca*).

Agriculture

Orchard

A total of 1.51 acres of orchard occurs along a trail near the center of the Ferber Ranch property. It consists of large olive (*Olea europaea*) trees that had been planted on the property in the past. It is not currently being maintained as an active orchard.

Barren

Cliff/Rock

A total of 2.16 acres of cliff/rock occurs on the Ferber Ranch property. This represents areas of exposed rock face throughout the site. The largest area, near the southern end of the site, is a deeply incised canyon with near-vertical walls that are eroding. This area is primarily unvegetated; scattered vegetation such as deerweed and California sagebrush has sprouted in eroded soil along the cliff faces and near the bottom of the cliff.

Developed/Non-Native

Developed

A total of 0.61 acre of developed areas occurs on the Ferber Ranch property. This mapping unit consists of the paved Rose Canyon Road. No vegetation is present in this area.

Disturbed

A total of 7.79 acres of disturbed areas occurs on the Ferber Ranch property. These areas consist of bare ground and contain little to no vegetation. Dirt roads, permitted trails, and closed trails are also included in this mapping unit.

Eucalyptus Grove

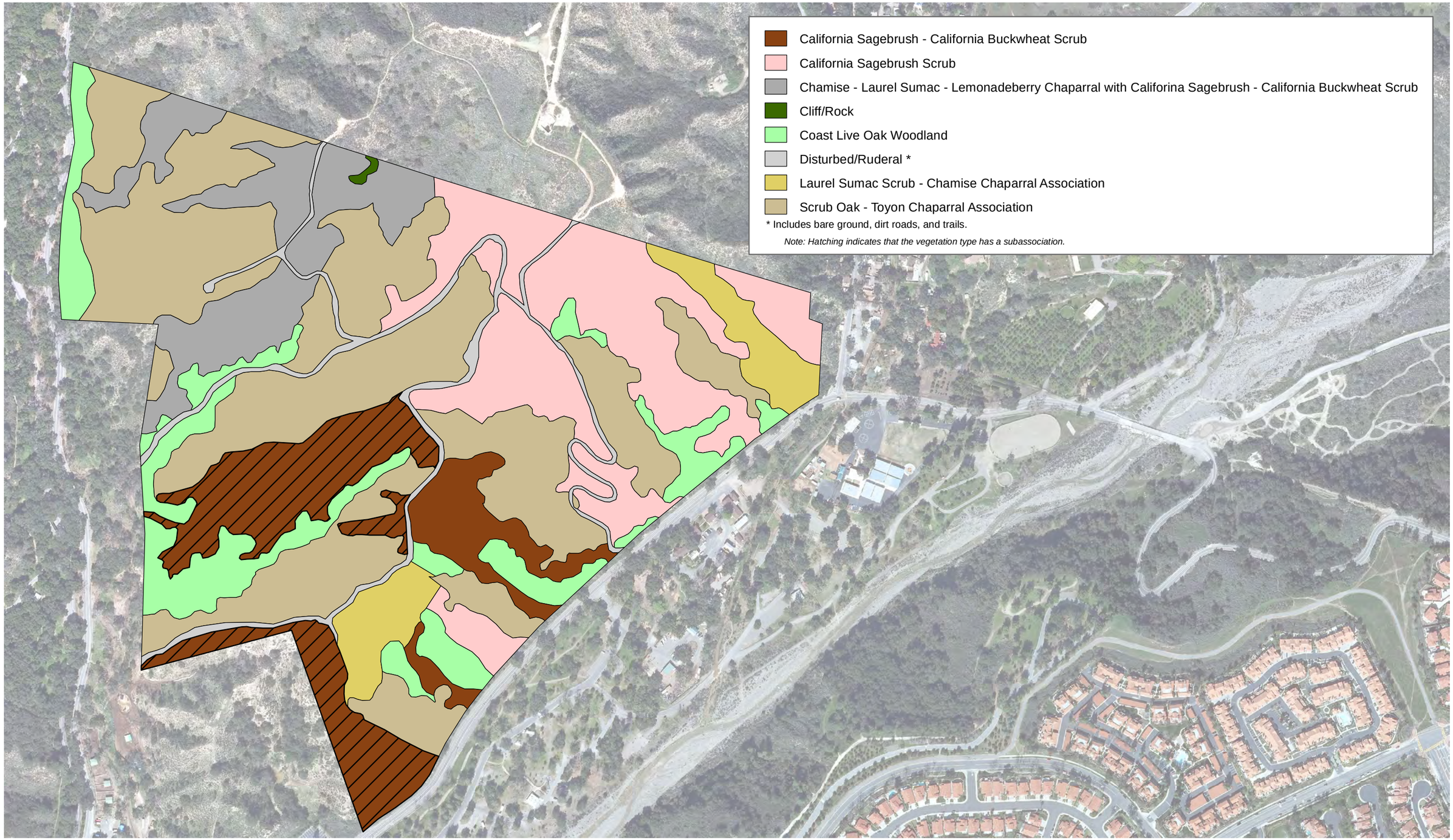
A total of 0.53 acre of eucalyptus grove occurs near the center of the Ferber Ranch property. It consists of a small stand of mature gum trees (*Eucalyptus* sp.) surrounded by California sagebrush scrub.

Semi-Natural Woodland Stand

A total of 1.42 acres of semi-natural woodland stands occurs on the Ferber Ranch property. This vegetation type is located adjacent to Rose Canyon Road. It consists of ornamental plantings of Aleppo pine (*Pinus halepensis*); the understory contains needlegrass (*Stipa* sp. [*Nassella* sp.]). The understory and surrounding grassland is periodically mowed.

O'Neill Oaks

Eight vegetation types and other areas occur on the O'Neill Oaks property, as shown in Table 5 and Exhibit 6.



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Vegetation Types

Exhibit 6

Measure M2 Acquisition Properties/O'Neill Oaks Property

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TABLE 5
VEGETATION TYPES AND OTHER AREAS ON
THE O'NEILL OAKS PROPERTY

General Vegetation Types	Detailed Vegetation Types or Other Areas	Existing on Property (Acres)
Chaparral		
	Chamise – Laurel Sumac – Lemonade Berry Chaparral with California Sagebrush – California Buckwheat Scrub	11.63
	Scrub Oak – Toyon Chaparral Association	44.06
	Laurel Sumac Scrub – Chamise Chaparral Association	5.80
	Chaparral Subtotal	**61.49**
Scrub		
	California Sagebrush Scrub	21.43
	California Sagebrush – California Buckwheat Scrub	17.73
	Scrub Subtotal	**39.16**
Woodland		
	Coast Live Oak Woodland	**13.12**
Barren		
	Cliff/Rock	**0.12**
Developed/Non-native		
	Disturbed/Ruderal	**3.65**
	Total Acreage	***117.54***

Chaparral

Chamise – Laurel Sumac – Lemonade Berry Chaparral with California Sagebrush – California Buckwheat Scrub

A total of 11.63 acres of chamise – laurel sumac – lemonade berry chaparral with California sagebrush – California buckwheat scrub occurs on the O'Neill Oaks property. This vegetation type is located on southeast-facing slopes in the northwestern corner of the property. It represents an ecotone between chaparral and scrub habitats. As such, it is co-dominated by a variety of species such as chamise, laurel sumac, lemonade berry, California sagebrush, California buckwheat, and deerweed.

Scrub Oak – Toyon Chaparral Association

A total of 44.06 acres of scrub oak – toyon chaparral association occurs on north-facing slopes throughout the O'Neill Oaks property. This vegetation type is co-dominated by scrub oak and toyon (*Heteromeles arbutifolia*). Subdominant species include laurel sumac, chaparral nolina, and chamise. Sawyer et al. (2009) recognize this vegetation type as an association.

Laurel Sumac Scrub – Chamise Chaparral Association

A total of 5.80 acres of laurel sumac scrub – chamise chaparral association occurs on 2 slopes on the O'Neill Oaks property. This vegetation type is co-dominated by laurel sumac and chamise. Scrub oak and scrub species such as California sagebrush also occur in this vegetation type. Sawyer et al. (2009) recognize chamise chaparral – laurel sumac scrub as an association.

Scrub

California Sagebrush Scrub

A total of 21.43 acres of California sagebrush scrub occurs on the O'Neill Oaks property. This vegetation type is located on primarily southwest-facing slopes in the eastern half of the property. It is dominated by California sagebrush; coast prickly-pear is a sub-dominant species.

California Sagebrush – California Buckwheat Scrub

A total of 17.73 acres of California sagebrush – California buckwheat scrub occurs on the O'Neill Oaks property. This vegetation type is located on southerly-facing slopes in the eastern half of the property. It is co-dominated by California sagebrush, California buckwheat, and deerweed. Subdominant species include coast prickly-pear, golden-yarrow (*Eriophyllum confertiflorum*), and lemonade berry. A subassociation of this vegetation type (indicated by hatching on Exhibit 6) contains a high density of chaparral nolina, a special status plant species (i.e., it has a California Rare Plant Rank [CRPR] of 1B.2).

Woodland

Coast Live Oak Woodland

A total of 13.12 acres of coast live oak woodland occurs in drainage bottoms throughout the O'Neill Oaks property. This vegetation type is dominated by mature coast live oaks.

Barren

Cliff/Rock

A total of 0.12 acre of cliff/rock occurs on the O'Neill Oaks property. This exposed rock face is located along the northern boundary of the property within the chaparral – scrub ecotone described above.

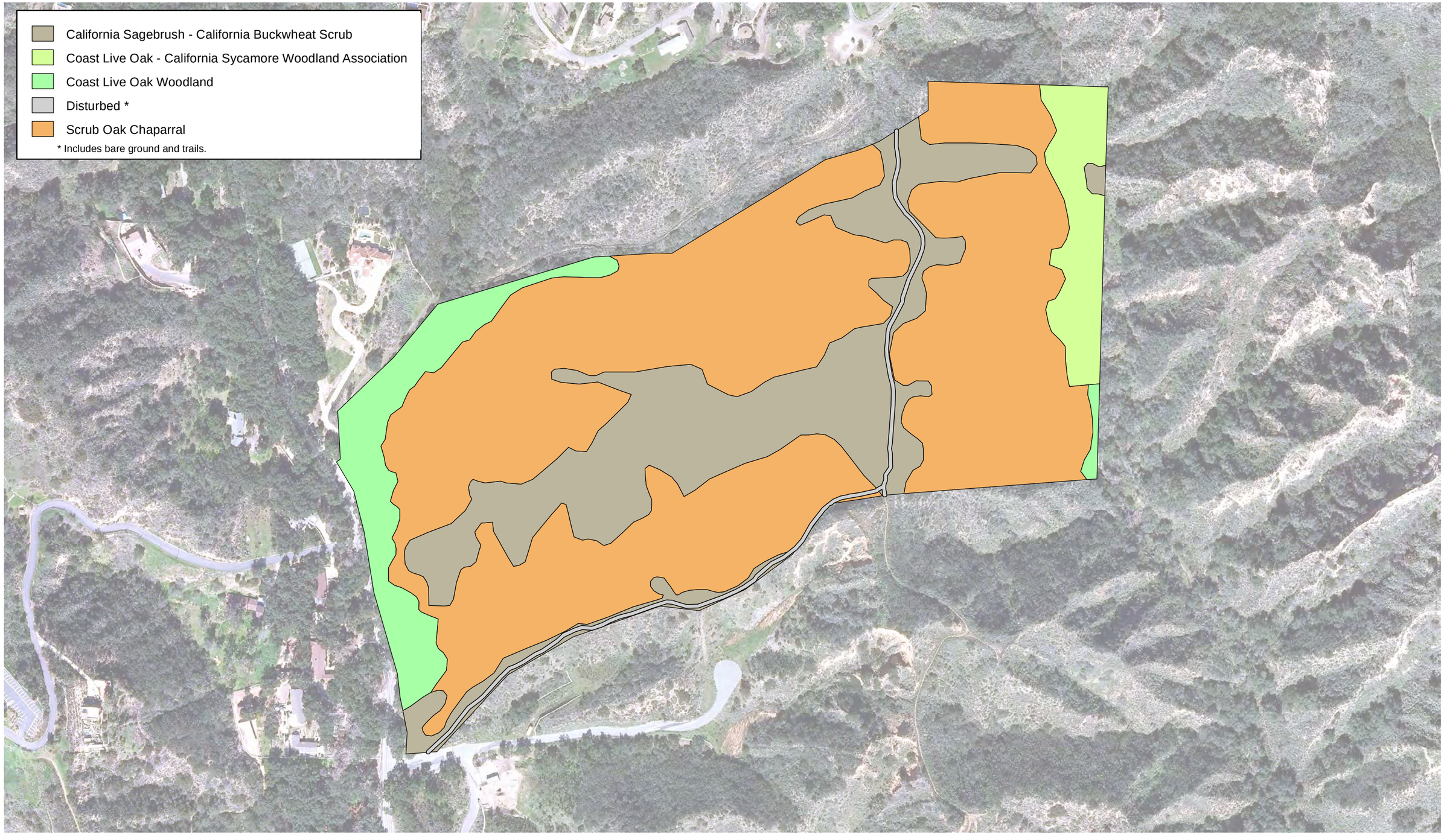
Developed/Non-native

Disturbed/Ruderal

A total of 3.65 acres of disturbed/ruderal vegetation occurs on the O'Neill Oaks property. Disturbed/ruderal areas consist of the dirt access roads and trails throughout the property. The majority of these roads and trails are primarily bare ground, but some areas are somewhat overgrown by non-native ruderal species such as black mustard, goldentop (*Lamarckia aurea*), and Bermuda grass (*Cynodon dactylon*). It should be noted that the northwest-southeast running trail in the northwest portion of the property is entirely overgrown with native shrubs and herbs (e.g., California sagebrush, western ragweed, and sapphire woollystar [*Eriastrum sapphirinum*]); these species are also establishing on the northwesternmost trail. Inclusion of these areas in the disturbed/ruderal vegetation type reflects the graded nature of the trail as opposed to its current vegetation cover.

Hafen

Five vegetation types and other areas occur on the Hafen property, as shown in Table 6 and Exhibit 7.



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Vegetation Types

Exhibit 7

Measure M2 Acquisition Properties/Hafen Property

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TABLE 6
VEGETATION TYPES AND OTHER AREAS ON THE HAFEN PROPERTY

General Vegetation Types	Detailed Vegetation Types or Other Areas	Existing on Property (Acres)
Chaparral		
	Scrub Oak Chaparral	**30.56**
Scrub		
	California Sagebrush – California Buckwheat Scrub	**11.61**
Riparian		
	Coast Live Oak – California Sycamore Woodland Association	**2.35**
Woodland		
	Coast Live Oak Woodland	**3.61**
Developed/Non-native		
	Disturbed	**0.12**
	Total Acreage	***48.25***

Chaparral

Scrub Oak Chaparral

A total of 30.56 acres of scrub oak chaparral occurs on north-facing slopes throughout the Hafen property. This vegetation type is dominated by dense scrub oak. Toyon and chamise are subdominant species.

Scrub

California Sagebrush – California Buckwheat Scrub

A total of 11.61 acres of California sagebrush – California buckwheat scrub occurs on the Hafen property. This vegetation type is located on the south-facing slopes of the property and along the ridgeline that runs north-south across the property. It is co-dominated by a variety of scrub species such as California sagebrush, California buckwheat, black sage, and deerweed. Chaparral nolina, a special status plant species (i.e., with a CRPR of 1B.2), is also prevalent in this vegetation type.

Riparian

Coast Live Oak – California Sycamore Woodland Association

A total of 2.35 acres of coast live oak – California sycamore woodland association occurs on the Hafen property. This vegetation type occurs along the drainage bottom at the eastern edge of the property. It is dominated by mature coast live oak and western sycamore trees. Common understory species include mugwort and mule fat. Sawyer et al. (2009) recognize California sycamore – coast live oak woodland as an association.

Woodland

Coast Live Oak Woodland

A total of 3.61 acres of coast live oak woodland occurs on the Hafen property. This vegetation type occurs in drainage bottoms along the western edge of the property adjacent to Live Oak Canyon Road and at the northwest and southeast corners of the property. It is dominated by mature coast live oaks. The understory includes smilo grass, western poison oak, and Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*).

Developed/Non-Native

Disturbed

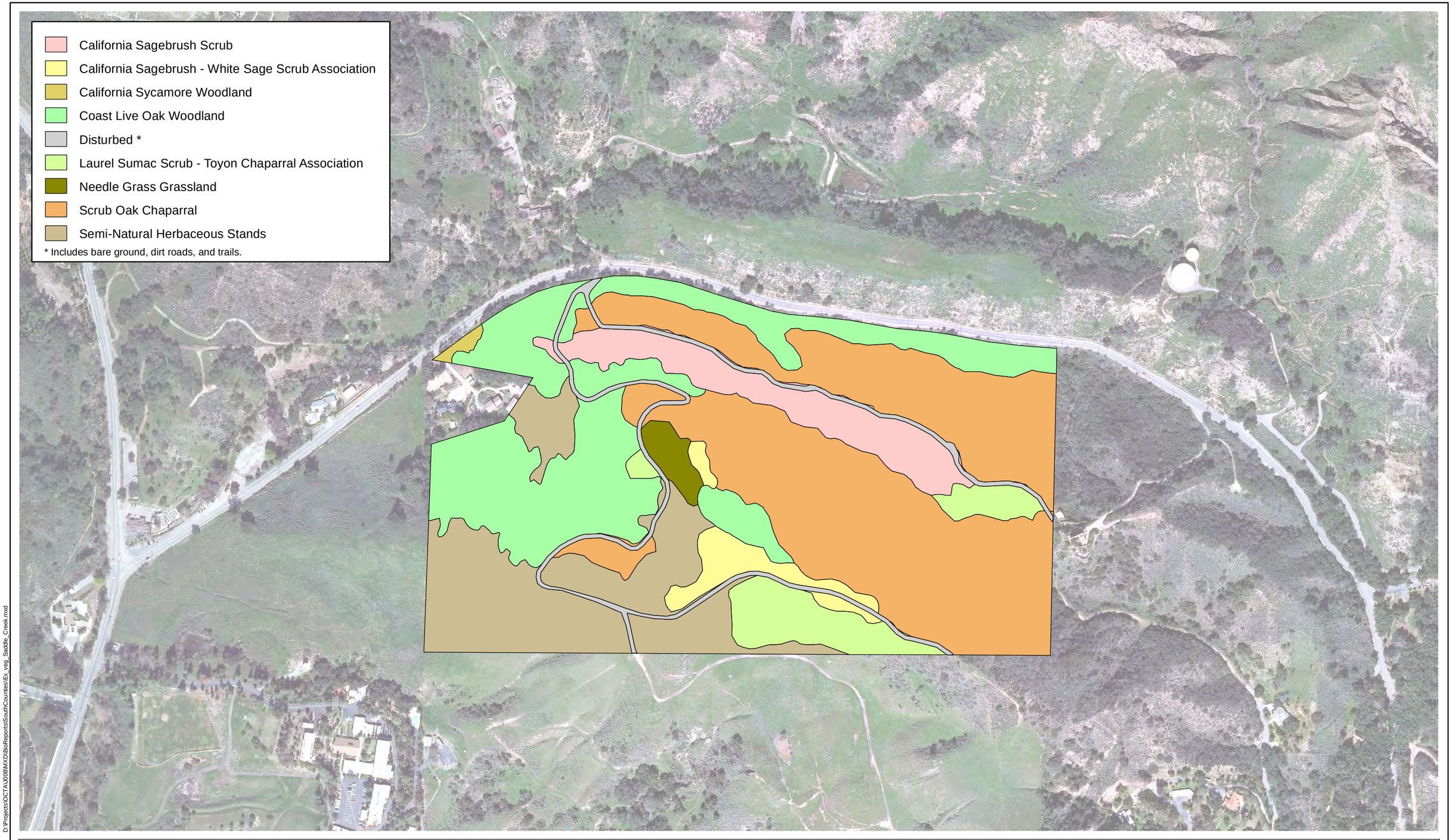
A total of 0.12 acre of disturbed areas occurs on the Hafen property. These areas consist of bare ground and contain little to no vegetation. Trails are also included in this mapping unit.

Saddle Creek South

Nine vegetation types and other areas occur on the Saddle Creek South property, as shown in Table 7 and Exhibit 8.

TABLE 7
VEGETATION TYPES AND OTHER AREAS ON
THE SADDLE CREEK SOUTH PROPERTY

General Vegetation Types	Detailed Vegetation Types or Other Areas	Existing on Property (Acres)
Chaparral		
	Scrub Oak Chaparral	31.41
	Laurel Sumac Scrub – Toyon Chaparral Association	4.82
	Chaparral Subtotal	**36.23**
Scrub		
	California Sagebrush Scrub	6.04
	California Sagebrush – White Sage Scrub Association	2.53
	Scrub Subtotal	**8.57**
Grassland		
	Needle Grass Grassland	1.06
	Semi-Natural Herbaceous Stands	14.26
	Grassland Subtotal	**15.32**
Riparian		
	California Sycamore Woodland	**0.25**
Woodland		
	Coast Live Oak Woodland	**19.09**
Developed/Non-native		
	Disturbed	**2.68**
	Total Acreage	***82.14***



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Vegetation Types

Exhibit 8

Measure M2 Acquisition Properties/Saddle Creek South Property

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Chaparral

Scrub Oak Chaparral

A total of 31.41 acres of scrub oak chaparral occurs on north-facing slopes throughout the Saddle Creek South property. This vegetation type is dominated by scrub oak; toyon is a subdominant species. Pockets of scrub species, such as California sagebrush and black sage, also occur in this vegetation type.

Laurel Sumac Scrub – Toyon Chaparral Association

A total of 4.82 acres of laurel sumac scrub – toyon chaparral association occurs on the Saddle Creek South property. This vegetation type is located primarily on south-facing slopes along the southern and eastern edges of the property; one small patch of laurel sumac scrub – toyon chaparral association is located near the center of the property. It is co-dominated by a variety of chaparral and scrub species such as laurel sumac, toyon, scrub oak, California sagebrush, bush monkeyflower (*Mimulus aurantiacus*), and golden-yarrow. Sawyer et al. (2009) recognize toyon chaparral – laurel sumac scrub as an association

Scrub

California Sagebrush Scrub

A total of 6.04 acres of California sagebrush scrub occurs on the Saddle Creek South property. This vegetation type is located on a south-facing slope that runs east-west across the property. It is dominated by California sagebrush with a moderate percentage (i.e., between 20 and 50 percent) of coast prickly-pear. Subdominant species include deerweed, desert brittlebush (*Encelia farinosa*), and bush monkeyflower.

California Sagebrush – White Sage Scrub Association

A total of 2.53 acres of California sagebrush – white sage scrub association occurs on the Saddle Creek South property. This vegetation type is located on a northwest- to northeast-facing slope near the center of the property. It is co-dominated by California sagebrush and white sage (*Salvia apiana*). Sawyer et al. (2009) recognize white sage scrub – California sagebrush scrub as an association.

Grassland

Needle Grass Grassland

A total of 1.06 acres of needle grass grassland occurs on a moderate north-facing slope near the center of the Saddle Creek South property. This vegetation type is characterized by having at least ten percent relative cover of purple needlegrass. This vegetation type has been heavily disturbed by grazing and has a high proportion of non-native species such as red brome (*Bromus madritensis* ssp. *rubens*), ripgut grass, goldentop, and cardoon. Coastal goldenbush (*Isocoma menziesii*) is a prevalent emergent shrub in this area.

Semi-Natural Herbaceous Stands

A total of 14.26 acres of semi-natural herbaceous stands occurs on the Saddle Creek South property. This vegetation type extends downslope from the ridgeline at the southwest corner of the property and in a patch adjacent to off-site development on the western edge of the

property. It is co-dominated by cardoon and a variety of non-native grasses including perennial ryegrass (*Festuca perennis* [*Lolium perenne*]), barley (*Hordeum murinum*), ripgut grass, and soft chess (*Bromus hordeaceus*). Coastal goldenbush is a prevalent emergent shrub in this area.

Riparian

California Sycamore Woodland

A total of 0.25 acre of California sycamore woodland occurs on the Saddle Creek South property. This vegetation type is located in the northwest corner of the property adjacent to Live Oak Canyon Road. It consists of a mix of mature western sycamore and olive trees.

Woodland

Coast Live Oak Woodland

A total of 19.09 acres of coast live oak woodland occurs on the Saddle Creek South property. This vegetation type is located along Live Oak Canyon Road and on north-facing slopes in the western half of the property. It is dominated by mature coast live oak trees. Scattered olive trees are also present in this vegetation type. The understory includes Italian thistle and barley.

Developed/Non-Native

Disturbed

A total of 2.68 acres of disturbed areas occurs on the Saddle Creek South property. These areas consist of bare ground and contain little to no vegetation. Dirt roads and trails are included in this mapping unit.

3.2 WILDLIFE POPULATIONS AND MOVEMENT PATTERNS

Vegetation on and adjacent to the south county properties provides potential habitat for a number of wildlife species. Common wildlife species observed or expected to occur on the properties and/or in adjacent off-site areas are discussed below. Some species were observed on all four properties while other species were observed on only one or some of the properties.

3.2.1 Fish

Most creeks and waterways in Southern California are subject to periods of high water flow in winter and spring and little to no flow during the late summer and fall. Most drainages occurring on the properties are expected to convey water only following storm events. No fish species were observed on the south county properties. Fish species, such as western mosquitofish (*Gambusia affinis*), would only be expected to occur in Trabuco Creek on the Ferber Ranch property during periods of high flow.

3.2.2 Amphibians

Amphibians require moisture for at least a portion of their life cycle and many require standing or flowing water for reproduction. Terrestrial species may or may not require standing water for reproduction; they survive in dry areas by aestivating (i.e., remaining beneath the soil in burrows or under logs and leaf litter, and emerging only when temperatures are low and humidity is high). Many of these species' habitats are associated with water and they emerge to breed once

the rainy season begins. Soil moisture conditions can remain high throughout the year in some habitat types depending on factors such as amount of vegetation cover, elevation, and slope/aspect.

Marginally suitable habitat for amphibian species occurs in the drainages on each property. No amphibian species were observed on the south county properties. Common amphibian species that may occur on the properties include garden slender salamander (*Batrachoseps major*), western toad (*Anaxyrus boreas*), and Pacific treefrog (*Pseudacris* [*Hyla*] *regilla*).

3.2.3 Reptiles

Reptiles are well-adapted to life in arid habitats. They have several physiological adaptations that allow them to conserve water. Reptiles can also become dormant during weather extremes, allowing them to survive prolonged droughts and paucity of food (Ruben and Hillenius 2005). Reptilian diversity and abundance typically varies with vegetation type and character. Many species prefer only one or two vegetation types; however, most species will forage in a variety of habitats. Most reptile species that occur in open areas will excavate a burrow or use rodent burrows for cover, protection from predators, and refuge during extreme weather conditions.

Lizard species observed on the properties include western fence lizard (*Sceloperus occidentalis*) and side-blotched lizard (*Uta stansburiana*). One snake species was observed on the properties: gopher snake (*Pituophis catenifer*).

3.2.4 Birds

A variety of bird species are expected to be residents on the south county properties, using the habitats throughout the year. Other species are present only during certain seasons. For example, the white-crowned sparrow (*Zonotrichia leucophrys*) is expected to occur on the properties during the winter season, but would not occur in the summer season because it migrates north to its breeding range.

Resident bird species observed on the properties include California quail (*Callipepla californica*), acorn woodpecker (*Melanerpes formicivorus*), Nuttall's woodpecker *(Picoides nuttallii*), northern flicker (*Colaptes auratus*), western scrub-jay (*Aphelocoma californica*), common raven (*Corvus corax*), oak titmouse (*Baeolophus inornatus*), bushtit (*Psaltriparus minimus*), Bewick's wren (*Thryomanes bewickii*), house wren (*Troglodytes aedon*), wrentit (*Chamaea fasciata*), California thrasher (*Toxostoma redivivum*), common yellowthroat (*Geothlypis trichas*), spotted towhee (*Pipilo maculatus*), California towhee (*Pipilo crissalis*), and song sparrow (*Melospiza melodia*). Urban-tolerant species that occur in disturbed areas and in natural vegetation types that were also observed on the properties include mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), house finch (*Carpodacus mexicanus*), and lesser goldfinch (*Spinus* [*Carduelis*] *psaltria*).

Wintering birds are those species that generally breed outside the region but migrate to the area for the winter season. Wintering species observed on the properties include fox sparrow (*Passerella iliaca*). Summer residents are species that migrate into the region to breed, but generally winter south of the region. Summer breeders observed during the surveys include black-chinned hummingbird (*Archilochus alexandri*), western wood-pewee (*Contopus sordidulus*), Pacific-slope flycatcher (*Empidonax difficilis*), western kingbird (*Tyrannus verticalis*), cliff swallow (*Petrochelidon pyrrhonota*), hooded oriole (*Icterus cucullatus*), and Bullock's oriole (*Icterus bullockii*). During spring and fall migration, the Project site also provides foraging habitat for a variety of migratory species.

Birds of prey (raptors) observed on the properties include turkey vulture (*Cathartes aura*) (a scavenger), northern harrier (*Circus cyaneus*), Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), barn owl (*Tyto alba*), and great horned owl (*Bubo virginianus*).

3.2.5 Mammals

Active burrows are present throughout the properties and could provide cover for a number of small mammal species. Small ground-dwelling mammals or their sign observed on the properties include California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), dusky-footed woodrat (*Neotoma fuscipes*), and desert woodrat (*Neotoma lepida*).

Open grassland communities and the leafy understory of scrub and woodland communities provide excellent foraging habitat for herbivorous mammals. Common herbivores observed during field surveys include mule deer (*Odocoileus hemionus*) and desert cottontail (*Sylvilagus audubonii*).

Medium to larger mammalian predators (both carnivorous and omnivorous species) that were observed or are expected on the property in a variety of habitats include common striped skunk (*Mephitis mephitis*), gray fox (*Urocyon cinereoargenteus*), coyote (*Canis latrans*), and mountain lion.

Five bat species were identified from the acoustic analysis: Yuma myotis, hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), big brown bat (*Eptesicus fuscus*), and Brazilian free-tailed bat (*Tadarida brasiliensis*). The most common species was the Brazilian free-tailed bat, which was found on all four properties. Most of the bat activity documented on the properties occurred in the lower elevation canyons and ravines where the bats are most likely to find more abundant insect food. Ferber Ranch provides a diversity of habitats suitable for foraging, as well as potential roost habitats for small numbers of bats in snags, under bark, or in tree foliage. No suitable cliffs, buildings, or other man-made structures that would be suitable for roosting are present on the Ferber Ranch property. O'Neill Oaks has some potential to support roosting bats in tree snags or under bark; however, the closed nature of the chaparral habitat provides limited open areas suitable for foraging. Hafen supported relatively few bats, possibly due to the closed nature of the chaparral habitat and lack of open areas. An abandoned homestead with several dilapidated buildings was located on the Saddle Creek South property; however, no bats or bat sign (e.g., droppings, urine stains) were observed.

3.2.6 Wildlife Movement

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated "islands" of wildlife habitat. In the absence of habitat linkages that allow movement to adjoining open space areas, various studies have concluded that some wildlife species, especially the larger and more mobile mammals, will not likely persist over time in fragmented or isolated habitat areas because they prohibit the infusion of new individuals and genetic information (MacArthur and Wilson 1967; Soule 1987; Harris and Gallagher 1989; Bennett 1990). Corridors mitigate the effects of this fragmentation by (1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes from fire, predators and human disturbances, thus reducing the risk that catastrophic events (such as fire or disease) will result in population or local species extinction; and (3) serving as travel routes for individual animals as they move in their home ranges in search of food, water,

mates, and other necessary resources (Noss 1983; Fahrig and Merriam 1985; Simberloff and Cox 1987; Harris and Gallagher 1989).

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas or individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (e.g., foraging for food or water, defending territories or searching for mates, breeding areas, or cover). A number of terms such as "wildlife corridor", "travel route", "habitat linkage", and "wildlife crossing" have been used in various wildlife movement studies to refer to areas in which wildlife move from one area to another. To clarify the meaning of these terms and to facilitate the discussion on wildlife movement in this analysis, these terms are defined as follows:

- ***Travel route*** **–** a landscape feature (such as a ridgeline, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and to provide access to necessary resources (e.g., water, food, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another. It contains adequate food, water, and/or cover while moving between habitat areas and it provides a relatively direct link between target habitat areas.

- ***Wildlife corridor*** **–** a piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bound by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and to facilitate movement while in the corridor. Larger, landscape-level corridors (often referred to as "habitat linkages" or "landscape linkages") can provide both transitory and resident habitat for a variety of species.

- ***Wildlife crossing*** **–** a small, narrow area, relatively short in length and generally constricted in nature that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are man-made and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These often represent "choke points" along a movement corridor, which may impede wildlife movement and increase the risk of predation.

It is important to note that in a large open space area where there are few or no man-made or naturally occurring physical constraints to wildlife movement, wildlife corridors (as defined above) may not yet exist. Given an open space area that is both large enough to maintain viable populations of species and to provide a variety of travel routes (e.g., canyons, ridgelines, trails, riverbeds, and others), wildlife will use these "local" routes while searching for food, water, shelter, and mates and will not need to cross into other large open space areas. Based on their size, location, vegetative composition and availability of food, some of these movement areas (e.g., large drainages and canyons) are used for longer lengths of time and serve as source areas for food, water and cover, particularly for small- and medium-sized animals. This is especially true if the travel route is within a larger open space area. However, once open space areas become constrained and/or fragmented as a result of urban development or construction of physical obstacles (such as roads and highways), the remaining landscape features or travel routes that connect the larger open space areas become corridors as long as they provide adequate space, cover, food and water, and do not contain obstacles or distractions (e.g., man-made noise, lighting) that would generally hinder wildlife movement.

In general, animals discussed within the context of movement corridors typically include larger, more mobile species (such as mule deer, black bear [*Ursus americanus*], mountain lion, fox [*Urocyon* sp.], and coyote) and even some of the mid-sized mammals (such as raccoon [*Procyon lotor*], striped skunk, American badger [*Taxidea taxus*], and Virginia opossum [*Didelphis virginiana*]). Most of these species have relatively large home ranges through which they move to find adequate food, water, and breeding and wintering habitat. It is assumed that corridors that serve larger, more vagile species also serve as corridors for many smaller, less mobile species, such as reptiles, amphibians, and rodents (generally discussed within the context of local movement). Regional movement for these species facilitates gene flow and requires at least some local "stepping stone" movement of individuals between populations.

The availability of open space corridors is generally considered less important for bird species. Most bird species are believed to fly in more or less direct paths to desired locations; however, some habitat-specific species may not move great distances from their preferred habitat types, and are believed to be less inclined to travel across unsuitable areas.

Ideally, an open space corridor should encompass a heterogeneous mix of vegetation types to accommodate the ecological requirements of a wide variety of resident species in any particular region. Most species typically prefer adequate vegetation cover during movement, which can serve as both a food source and as protection from weather and predators. Drainages, riparian areas, and forested canyon bottoms typically serve as natural movement corridors because these features provide cover, food, and often water for a variety of species. Very few species will move across large expanses of open, uncovered habitat unless it is the only option available to them. For some species, landscape linkages must be able to support animals for sustained periods, not just for travel. Smaller or less mobile animals (such as rodents and reptiles) require long periods to traverse a corridor, so the corridor must contain adequate food and cover for survival.

Regional Movement

Open space on each of the properties is contiguous with larger areas of open space in the region. The landscape matrix around the properties is generally undeveloped, broken primarily by Live Oak Canyon Road and rural residential development primarily along Trabuco Canyon Road, Live Oak Canyon Road, and Rose Canyon Road. The northern end of the Ferber Ranch property directly abuts the Cleveland National Forest. The southeastern edge of the O'Neill Oaks property directly abuts the O'Neill Regional Park boundary. The remainder of these two properties, as well as the Hafen and Saddle Creek South properties, generally border privately owned open space that connects to O'Neill Regional Park or the Cleveland National Forest. The relatively undeveloped nature of the landscape is highly conducive to regional wildlife movement.

Local Movement

The south county properties contain numerous ridgelines and canyons that provide a variety of travel routes for local wildlife movement. The trails and access roads on the properties may also be used for movement. Movement is expected to occur on the properties, as well as between each property and contiguous off-site habitat. Wildlife species that require relatively large home ranges, such as coyote, bobcat, or mule deer, were observed on the Ferber Ranch, O'Neill Oaks, and Saddle Creek South properties.

3.3 SPECIAL STATUS BIOLOGICAL RESOURCES

The following section addresses special status biological resources that were observed, reported, or have the potential to occur on the property or in adjacent off-site areas. These resources include plant and wildlife species that have been afforded special status and/or recognition by federal and State resource agencies and private conservation organizations. In general, the principal reason an individual taxon (i.e., species, subspecies, or variety) is given such recognition is the documented or perceived decline or limitations of its population size, geographic range, and/or distribution resulting in most cases from habitat loss. Tables 10 and 17 respectively provide a summary of special status plant and wildlife species known to occur in the Project vicinity (i.e., the USGS' Black Star Canyon, Cañada Gobernadora, El Toro, and Santiago Peak 7.5-minute quadrangles) and include information on the status; habitat; potential for occurrence; results of focused survey efforts; and definitions for the various status designations. Generally, this list includes species reported by the CNDDB and CNPS, supplemented with species from the author's experience that either occur nearby or could occur based on the presence of suitable habitat. In addition to species, special status biological resources include vegetation types and habitats that are either unique; of relatively limited distribution in the region; or of particularly high wildlife value. These resources have been defined by federal, State, and local government conservation programs. Sources used to determine the status of biological resources are listed below.

- ***Plants*** **–** Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2012); the CNDDB (CDFG 2012a); various USFWS *Federal Register* notices regarding listing status of plant species; and the *List of Special Vascular Plants, Bryophytes, and Lichens* (CDFG 2012b).

- ***Wildlife*** **–** California Wildlife Habitat Relationships Database System (CDFG BDB 2012); the CNDDB (CDFG 2012a); various USFWS *Federal Register* notices regarding listing status of wildlife species; and the *List of Special Animals* (CDFG 2011).

- ***Habitats*** **–** CNDDB (CDFG 2012a) and the *List of California Natural Communities* (CDFG 2010).

3.3.1 Definitions of Special Status Biological Resources

A **federally Endangered species** is one facing extinction throughout all or a significant portion of its geographic range. A **federally Threatened species** is one likely to become Endangered in the foreseeable future throughout all or a significant portion of its range. The presence of any federally Threatened or Endangered species in a project impact area generally imposes severe constraints on development, particularly if a project would result in "take" of the species or its habitat. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct. Harm, in this sense, can include any disturbance of habitats used by the species during any portion of its life history.

Proposed species or **Candidate species** are those officially proposed by the USFWS for addition to the federal Threatened and Endangered species list. Because proposed species may soon be listed as Threatened or Endangered, these species could become listed prior to or during implementation of a proposed project. The presence of a Proposed or Candidate species within a project impact area may impose constraints on development if they are listed prior to issuance of project permits, particularly if a project would result in "take" of the species or its habitat.

The State of California considers an **Endangered species** as one whose prospects of survival and reproduction are in immediate jeopardy; a **Threatened species** as one present in such small numbers throughout its range that it is likely to become an Endangered species in the near future in the absence of special protection or management; and a **Rare species** as one present in such small numbers throughout its range that it may become Endangered if its present environment worsens. Rare species applies only to California native plants. State-listed Threatened and Endangered species are protected against take unless an Incidental Take Permit is obtained from the resource agencies. The presence of any State-listed Threatened or Endangered species in a project impact area generally imposes severe constraints on development, particularly if a project would result in "take" of the species or its habitat.

California Species of Special Concern is an informal designation used by the CDFW for some declining wildlife species that are not State Candidates. This designation does not provide legal protection, but signifies that these species are recognized as special status by the CDFW. Recently, the CDFW downgraded some of these species from Species of Special Concern to the **Watch List**.

Species that are **California Fully Protected** and **Protected** include those protected by special legislation for various reasons, such as the mountain lion and white-tailed kite (*Elanus leucurus*). Fully Protected species may not be taken or possessed at any time. California Protected species include those species that may not be taken or possessed at any time except under special permit from the CDFW issued pursuant to the *California Code of Regulations* (Title 14, §§650, 670.7) or Section 2081 of the *California Fish and Game Code.*

Species of **Local Concern** are those that have no official status with the resource agencies, but are being watched because there is either a unique population in the region or the species is declining in the region.

Special Animal is a general term that refers to species that the CNDDB is interested in tracking, regardless of legal or protective status. This term includes species designated as any of the above terms, but also includes species that may be considered biologically rare; restricted in distribution; declining throughout their range; have a critical, vulnerable stage in their life cycle that warrants monitoring; are on the periphery of their range and are threatened with extirpation in California; are associated with special status habitats; or are considered by other State or federal agencies or private organizations to be sensitive or declining.

The California Rare Plant Rank (CRPR), formerly known as CNPS List, is a ranking system by the Rare Plant Status Review group[5] and managed by the CNPS and the CDFW. A CRPR summarizes information on the distribution, rarity, and endangerment of California's vascular plants. Plants with a CRPR of **1A** are presumed extinct in California because they have not been seen in the wild for many years. Plants with a CRPR of **1B** are Rare, Threatened, or Endangered throughout their range. Plants with a CRPR of **2** are considered Rare, Threatened, or Endangered in California but are more common in other states. Plants with a CRPR of **3** require more information before they can be assigned to another rank or rejected; this is a "review" list. Plants with a CRPR of **4** are of limited distribution or infrequent throughout a broader area in California; this is a "watch" list. The CRPR Threat Rank is an extension added onto the CRPR to designate the level of endangerment by a 1 to 3 ranking (CNPS 2011). An extension of **.1** is assigned to plants that are considered to be "seriously threatened" in California (i.e., over 80 percent of the occurrences threatened or having a high degree and immediacy of threat). Extension **.2** indicates the plant is "fairly threatened" in California (i.e.,

[5] This group consists of over 300 botanical experts from the government, academia, non-governmental organizations, and the private sector.

between 20 and 80 percent of the occurrences threatened or having a moderate degree and immediacy of threat). Extension **.3** is assigned to plants that are considered "not very threatened" in California (i.e., less than 20 percent of occurrences threatened or having a low degree and immediacy of threat or no current threats known). The absence of a threat code extension indicates plants lacking any threat information.

3.3.2 Vegetation Types

In addition to providing an inventory of special status plant and wildlife species, the CNDDB also provides an inventory of vegetation types that are considered special status by the State and federal resource agencies, academic institutions, and various conservation groups (such as the CNPS). Determination of the level of imperilment (i.e., exposure to injury, loss, or destruction) is based on the NatureServe Heritage Program Status Ranks that rank both species and vegetation types on a global (G) and statewide (S) basis according to their rarity, trend in population size or area, and recognized threats (e.g., proposed developments, habitat degradation, and non-native species invasion) (Faber-Langendoen et al. 2009). The ranks are scaled from 1 to 5. NatureServe considers **G1** or **S1** communities to be critically imperiled and at a very high risk of extinction or elimination due to extreme rarity, very steep declines, or other factors; **G2** or **S2** communities to be imperiled and at high risk of extinction or elimination due to very restricted range, very few populations or occurrences, steep declines, or other factors; **G3** or **S3** communities to be vulnerable and at moderate risk of extinction or elimination due to a restricted range, relatively few populations or occurrences, recent and widespread declines, or other factors; **G4** or **S4** communities to be apparently secure and uncommon but not rare with some cause for long-term concern due to declines or other factors; and **G5** or **S5** communities to be secure. A question mark (?) denotes an inexact numeric rank, but existing information points to this rank (Faber-Langendoen et al. 2009). For vegetation alliances[6] that have State ranks of S1–S3, all associations within the alliance are considered to be highly imperiled.

Special status vegetation types observed the properties are described further below.

Chaparral Communities

Various chaparral communities occur on the south county properties, though they fall into three broad categories: chamise-dominated, scrub oak-dominated, and laurel sumac-dominated.

Scrub oak chaparral is the most abundant vegetation community on the O'Neill Oaks (44.06 acres of scrub oak – toyon chaparral association), Hafen (30.56 acres), and Saddle Creek South (31.41 acres) properties; it is also prevalent on the Ferber Ranch property (44.66 acres). The forms of chaparral dominated by a mix of large evergreen shrubs—such as laurel sumac, toyon, lemonade berry, and/or chamise—often intermixed with sage scrub species, are also prevalent on the south county properties. Ferber Ranch contains 13.36 acres of chamise – laurel sumac – lemonade berry chaparral with California sagebrush scrub; 11.90 acres of chamise chaparral; and 32.94 acres of laurel sumac – lemonade berry chaparral with California sagebrush – California buckwheat scrub. The O'Neill Oaks property contains 11.63 acres of chamise – laurel sumac – lemonade berry chaparral with California sagebrush – California buckwheat scrub and 5.80 acres of laurel sumac scrub – chamise chaparral association. Saddle Creek South contains 4.82 acres of laurel sumac scrub – toyon chaparral association.

Chaparral is a "drought tolerant plant community dominated by sclerophyllous, woody shrubs shaped by a Mediterranean-type climate and naturally recurring wildfires" (Halsey 2007). It is

[6] A vegetation alliance is "a classification unit of vegetation, containing one or more associations and defined by one or more diagnostic species, often of high cover, in the uppermost layer or the layer with the highest canopy cover" (Sawyer et al. 2009).

the most extensive vegetation community in California and is not presently considered to have special status, though its status in the future may be uncertain given continuing drought conditions; increased fire frequencies; and limited understanding of the system. In general, chaparral vegetation types on the properties are considered secure or apparently secure. Scrub oak chaparral is ranked by the CDFW as G4 S4. At the alliance level, chamise chaparral is ranked as G5 S5 and laurel sumac scrub is ranked as G4 S4; associations of these alliances would not be considered highly imperiled. One chaparral vegetation type on the south county properties would be considered vulnerable at the State level: toyon chaparral – laurel sumac scrub (ranked as G5 S3).

Sage Scrub Communities

California sagebrush scrub is the most abundant vegetation type on the Ferber Ranch property (149.57 acres); it also occurs on the O'Neill Oaks (21.43 acres) and Saddle Creek South properties (6.04 acres). In addition, California sagebrush scrub/needle grass grassland (0.28 acre), coast prickly pear scrub (6.50 acre), and scale broom scrub (0.30 acre) occur on the Ferber Ranch property. California sagebrush – California buckwheat scrub occurs on the O'Neill Oaks (17.73 acres) and Hafen (11.61 acres) properties, and California sagebrush – white sage scrub association (2.53 acres) occurs on the Saddle Creek South property.

California sagebrush scrub is ranked by the CDFW as G5 S5, the California sagebrush – California buckwheat scrub alliance is ranked as G4 S4, the white sage – California sagebrush alliance is ranked as G4 S3, coast prickly pear scrub is ranked as G4 S3, and scale broom scrub is ranked as G3 S3. While the Global/State rankings of California sagebrush scrub indicate that it is secure, it is of local concern as part of the larger coastal sage scrub community. Coastal sage scrub had, as a whole, declined approximately 70 to 90 percent in its historic range in California by the mid-1990s (Noss and Peters 1995). Sage scrub has largely been lost to land use changes in Southern California basins and foothills. The ecological function of Southern California's remaining sage scrub is threatened by habitat fragmentation and degradation, which is largely the result of invasive non-native species, livestock grazing, off-highway vehicles, altered fire regime, and air pollution (O'Leary 1995; Allen et al. 2000). Scalebroom scrub once occurred along intermittent streams and gently sloping fans in Los Angeles and Orange counties, but few stands remain (Sawyer et al. 2009). Construction of houses and golf courses, agriculture, dams, gravel mining, and stream channelization have interrupted the natural fluvial processes that are a part of this habitat.

Grassland Communities

Needle grass grassland occurs on the Ferber Ranch (17.15 acres) and Saddle Creek South (1.06 acres) properties; needle grass grassland/semi-natural herbaceous stands (3.94 acres) and giant wild rye grassland (0.38 acre) also occur on the Ferber Ranch property.

Needle grass grassland is ranked according to its degree of imperilment by the CDFW; the *Nassella pulchra* (purple needle grass grassland) Provisional Alliance is ranked as G4 S3?[7] and the *Nassella lepida* (foothill needle grass grassland) Provisional Alliance is ranked as G3? S3?. Giant wild rye grassland is ranked G3 S3. Vegetation types ranked as S3 are considered of special concern. Native grasslands are believed to have covered nearly $^1/_5$ of the state and have declined by approximately 99 percent in their historic range in California (Barry 1972; Noss and Peters 1995). In the mid-nineteenth century, heavy grazing by cattle and sheep caused native perennials to be replaced by fast-growing annual grasses, which are able to take advantage of

[7] A question mark (?) denotes an inexact numeric rank due to insufficient samples over the full expected range of the type, but existing information points to this rank.

spring rains and produce seeds before the dry heat of summer. The native perennial grasses, which are more palatable to livestock than annuals, were damaged by grazing and trampling. Native grasslands have also been lost to development and conversion to agriculture. Most of the needle grass grassland on the Ferber Ranch property is relatively undisturbed, supporting a high percent cover of native bunch grasses. The needlegrass grassland on the Saddle Creek South property has been disturbed by the presence of non-native grasses and would, therefore, not be considered as biologically valuable as undisturbed types.

Giant wild rye grassland is described under the Herbaceous Alliances and Stands and this alliance tends to be short lived because it is stimulated by fire and fairly quickly taken over by native shrubs of the coastal sage scrub zone following fire (Sawyer et al. 2009). Giant wild rye was one of the species whose abundance was maintained by Native American burning (Sawyer et al. 2009). Giant wild rye does occur after fires; however, it may persist independently of fire in areas of human disturbance and urban runoff or in areas of coastal sage scrub where natural slumping and seepage occur (Sawyer et al. 2009).

Woodland Communities

Coast live oak woodland occurs on all four south county properties (93.23 acres on Ferber Ranch, 13.12 acres on O'Neill Oaks, 3.61 acres on Hafen, and 19.09 acres on Saddle Creek South).

Coast live oak woodland is ranked as G5 S4. Oak woodlands are declining throughout California due to residential, commercial, and industrial development. Woodlands are an important resource in California that provide aesthetic, cultural, economic, and environmental value, in addition to wildlife habitat. In addition, some woodlands on the properties are associated with jurisidictional resources, discussed below.

Riparian Communities

Various riparian communities are present on the Ferber Ranch property. A total of 1.87 acres of arroyo willow thickets, 0.71 acre of mulefat thicket, and 0.45 acre white alder groves occurs on the property. In addition, 2.35 acres of coast live oak – California sycamore woodland association occurs on the Hafen property and 0.25 acre of California sycamore woodland occurs on the Saddle Creek South property.

While these are included within the jurisdiction of the USACE, the RWQCB, and/or the CDFW, they are also ranked by the CDFW according to their degree of imperilment. Arroyo willow thickets are ranked as G4 S4, mulefat thickets are ranked as G5 S4, and white alder groves are ranked as G4 S4. The California sycamore – coast live oak woodland association is ranked as G3 S3, and California sycamore woodland is ranked as G3 S3.

Typically, riparian vegetation provides important biological functions for an ecosystem such as (1) for cover and water sources for wildlife; (2) for filtration of runoff water and groundwater to be recharged; and (3) for flood control and sediment stabilization purposes. Riparian habitats are biologically productive as well as diverse, and are the exclusive habitat of several special status species. As a result, the resource agencies often consider riparian vegetation types to be important resources. It is estimated that as much as 95 to 97 percent of historic riparian habitats in Southern California had been lost by the late 1980s due to agriculture, urban development, flood control, and other human-caused impacts (Faber et al. 1989; Bell 1997). Additionally, since the 1970s, giant reed has become the greatest threat to the remaining riparian resources in coastal Southern California (Bell 1997). This invasive species competes with native species

such as willows (*Salix* spp.), mule fat, and cottonwoods (*Populus* spp.); is difficult to control; and apparently does not provide food or nesting habitat for native species (Bell 1997).

Jurisdictional Areas

The south county properties are within the San Juan Hydrologic Unit. All drainages on the Ferber Ranch, O'Neill Oaks, and Hafen properties flow into Trabuco Creek; the drainages on the Saddle Creek South property flow into Aliso Creek. Trabuco Creek and Aliso Creek eventually connect with the Pacific Ocean, a Traditional Navigable Water (TNW), as designated by the USACE. The tributaries of Trabuco Creek and Aliso Creek do not satisfy the USACE criteria for Relatively Permanent Waters (RPW); however, they have a connection to those larger creeks either directly, through an underground drainage system, or via sheet flow over upland areas. No "Waters of the U.S." on the south county properties exhibited the three parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology) to be considered a wetland. A total of 4.70 acres, 1.06 acres, 0.66 acre, and 0.45 acre of non-wetland "Waters of the U.S." occur on the Ferber Ranch, O'Neill Oaks, Hafen, and Saddle Creek South properties, respectively (Exhibits 9, 10, 11, and 12; Table 8). A total of 51.50 acres, 11.47 acres, 3.90 acres, and 7.33 acres under the jurisdiction of the CDFW occur on the Ferber Ranch, O'Neill Oaks, Hafen, and Saddle Creek South properties, respectively (Exhibits 9, 10, 11, and 12; Table 8).

TABLE 8
"WATERS OF THE U.S." AND "WATERS OF THE STATE"
ON THE SOUTH COUNTY PROPERTIES

Jurisdiction	Existing on Property (Acres)			
	Ferber Ranch[b]	O'Neill Oaks	Hafen	Saddle Creek South
USACE "Waters of the U.S."[a]	4.70	1.06	0.66	0.45
CDFW "Waters of the State"	51.50	11.47	3.90	7.33

[a] "Waters of the U.S." are under the jurisdiction of both the USACE and the RWQCB.
[b] The USACE and CDFW totals for Ferber Ranch include 0.24 acre shown as "basin" on Exhibit 9.

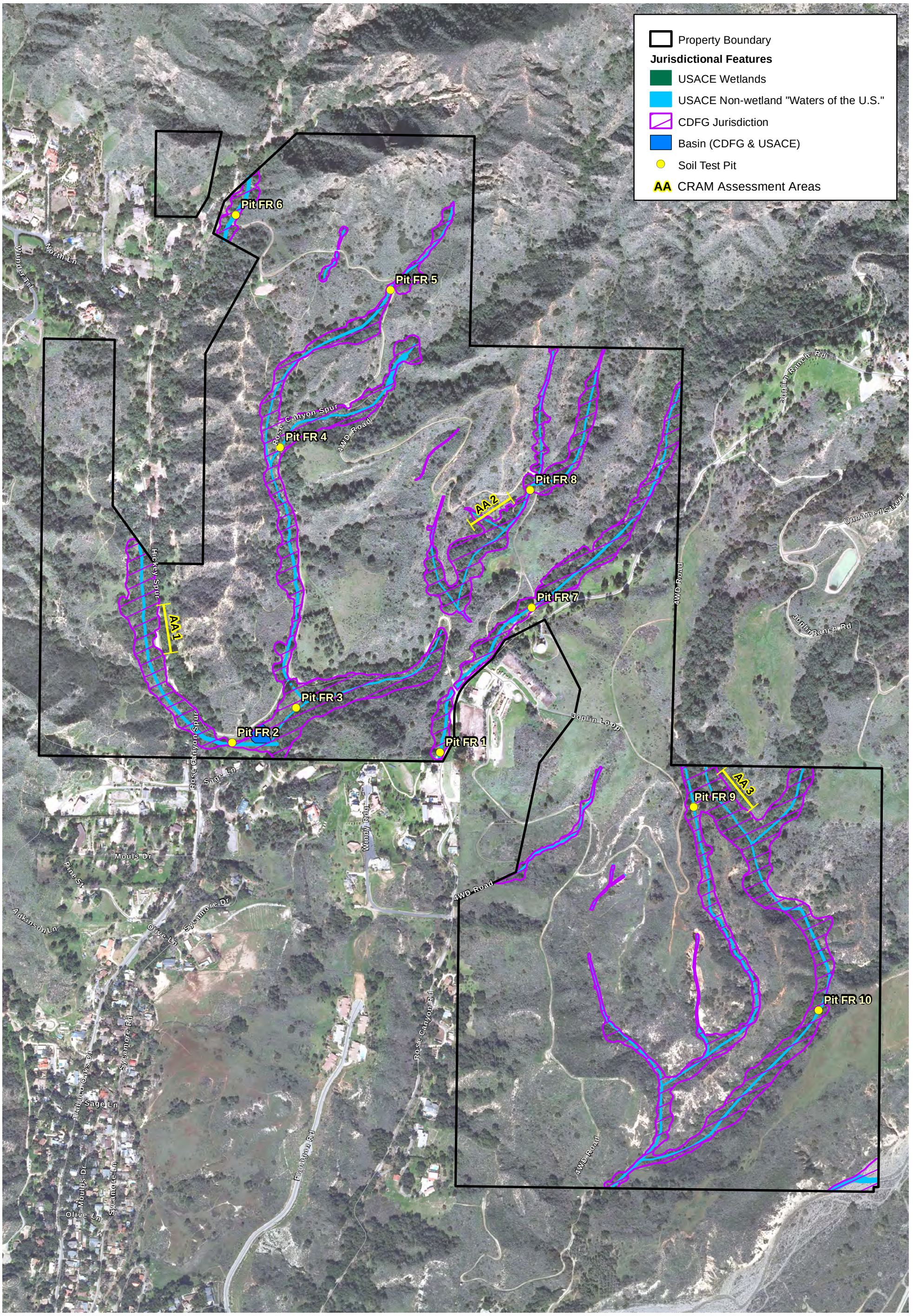
Source: BonTerra Consulting 2013a.

Should jurisdictional resources be impacted by management activities on the properties, permits/agreements from the regulatory agencies would be required. This would consist of a USACE Section 404 Permit and/or Letters of Permission[8]; an RWQCB Section 401 Water Quality Certification; and a CDFW Section 1602 Streambed Alteration Agreement.

CRAM is a tool for assessing the overall condition[9] of a wetland; it was developed by a consortium of federal, State, and local scientists and managers. The results of a condition assessment can be used to infer the ability to provide various functions or services to which a wetland is most suited. This analysis can be used for a variety of applications, such as in evaluating a project site to inform regulatory decisions (e.g., Section 401 and 404 permitting) or restoration or mitigation site evaluation.

[8] The Hafen, O'Neill Oaks, and Ferber Ranch properties are located within the San Juan Creek/Western San Mateo Creek Watershed Special Area Management Plan; all Nationwide Permits were revoked as part of the approval for this plan. As such, permiting through the USACE would be authorized through the Letters of Permission process or the Standard Individual Permit process.

[9] "Condition" is defined as the state of a wetland AA's physical and biological structure, the hydrology, and its buffer and landscape context relative to the best achievable states for the same type of wetland (CWMW 2012).



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Jurisdictional Resources

Exhibit 9

Measure M2 Acquisition Properties/Ferber Ranch Property

N W E S

550 275 0 550 Feet

BonTerra CONSULTING

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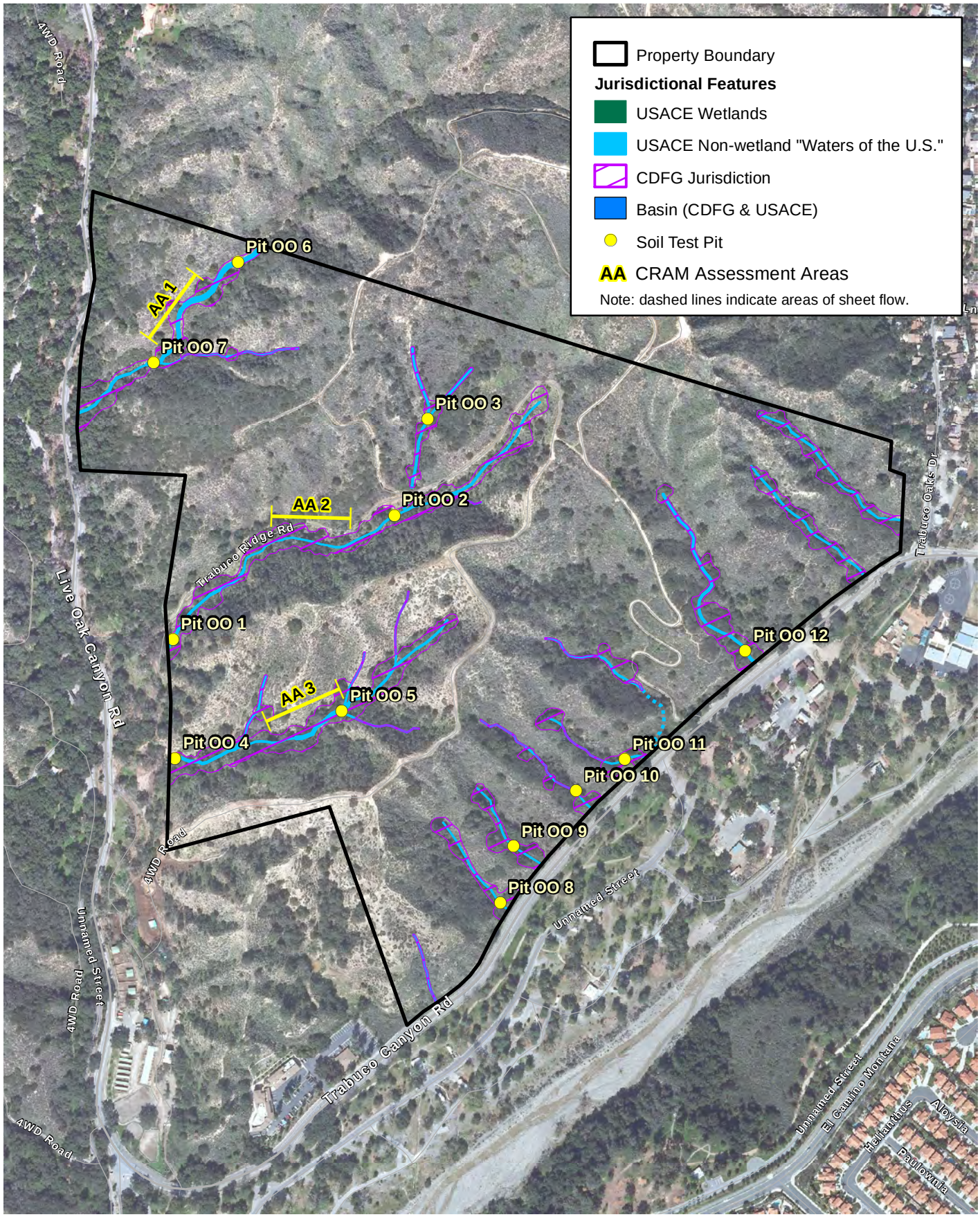

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Jurisdictional Resources

Exhibit 10

Measure M2 Acquisition Properties/O'Neill Oaks Property

N W E S

500 250 0 500 Feet

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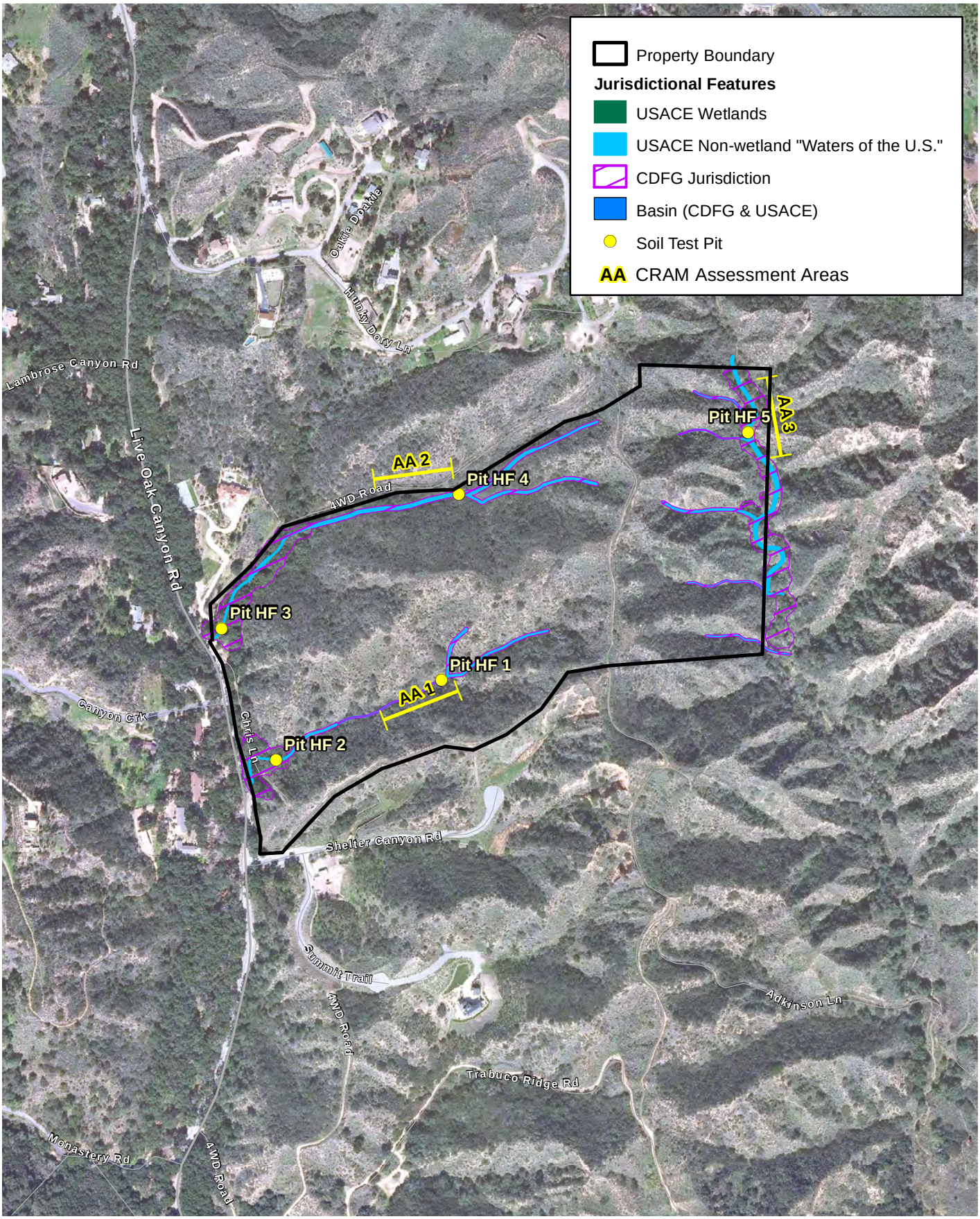

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Jurisdictional Resources

Exhibit 11

Measure M2 Acquisition Properties/Hafen Property

N W E S

500 250 0 500 Feet

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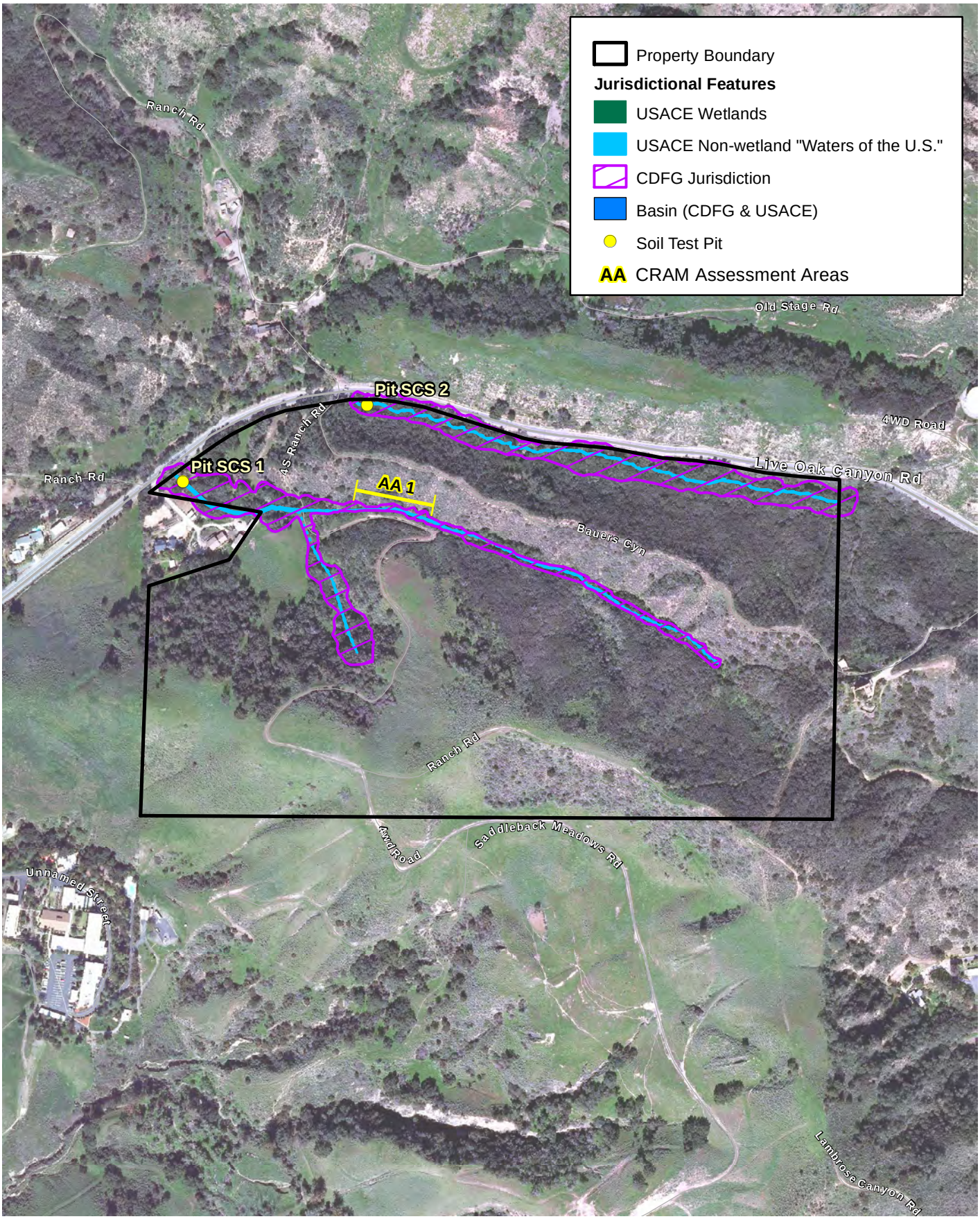

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Jurisdictional Resources

Exhibit 12

Measure M2 Acquisition Properties/Saddle Creek South Property

N W E S

500 250 0 500 Feet

BonTerra CONSULTING

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As stated previously, AA scores range from 25 to 100. The maximum AA score possible represents how a wetland is doing relative to the best achievable conditions for that wetland type in the state. It is assumed that the same scores for different wetlands of the same type represent the same overall condition and functional capacity. Therefore, these scores may be used to track the progress of restoration efforts over time; to compare impacted sites to their in-kind mitigation sites; or to compare an individual wetland to the status and trends in ambient condition of its wetland type.

Ten 100-meter-long AAs were scored for the CRAM analysis of the south county properties (Ferber Ranch – 3, O'Neill Oaks – 3, Hafen – 3, Saddle Creek South – 1) (Exhibits 9, 10, 11, and 12). The overall AA scores range from 61.6 to 88.9 (Table 9). The Buffer and Landscape Context attribute scores range from 55.8 to 100.0; the Hydrology attribute scores were all 100.0; the Physical Structure attribute scores range from 37.5 to 75.0; and the Biotic Structure attribute scores range from 47.2 to 80.6. These scores reflect the generally natural condition of the properties. Specifically, the scores are very high for buffer condition and hydrology at all sites. This reflects the large amount of open space surrounding the drainages and lack of disturbance to the water sources resulting in little or no channel degradation. The generally low scores for Physical Structure are a reflection of the type of riparian system (i.e., generally ephemeral and uniform) as opposed to the result of anthropogenic disturbance. Because most of the jurisdictional resources are dominated by coast live oak riparian habitat, the natural density of these woodlands has limited the establishment of understory species and inhibited the scores for Biotic Structure (specifically, the number of co-dominant species, plant zonation, and vertical biotic structure). The scores for Landscape Connectivity are the most variable, with streambeds unaffected by nearby development (within 500 meters upstream or downstream) receiving the maximum score, while drainages with nearby development receiving the lowest score.

There are enhancement opportunities that would likely result in higher CRAM scores. Enhancement measures are aimed to improve scores associated with the Buffer and Landscape Context and Biotic Structure attributes. Measures aimed at changing the Hydrology and Physical Structure attributes would require changes outside the ability of an individual landowner and/or require changes in the physical structure of the bed and bank of the system that are not recommended.

There are opportunities on the O'Neill Oaks property to enhance and restore streambed areas that have been damaged by cattle grazing. Overgrazing may negatively impact the quality of drainages and surrounding buffer (e.g., through soil compaction, erosion, and facilitating the spread and persistence of non-native species) (Schoenherr 1992). Enhancement measures (e.g., elimination of grazing, targeted removal of species such as Italian thistle and tree tobacco, and restoration of native species) have the potential to increase the CRAM scores for the number of co-dominant species, percent of invasive co-dominant species, and the vertical biotic structure metrics. Due to the largely natural condition of the Ferber Ranch, Hafen, and Saddle Creek South properties, enhancement activities are not likely to significantly increase CRAM scores. However, elimination of grazing, where present, and management of non-native invasive species would help to maintain the natural conditions of these sites.

3.3.3 Special Status Plants

Based on the results of the literature review, 40 special status plant species are known to occur in the vicinity of the south county properties. These species and their potential for occurrence (which is based on the presence of suitable habitat) are summarized in Table 10. Note that these species are listed alphabetically according to their scientific name. Six special status plant species were observed on the south county properties. These species are discussed after the table.

TABLE 9
ATTRIBUTE SCORES FOR SOUTH COUNTY PROPERTY ASSESSMENT AREAS

Attribute	Metric	CRAM Scores[a]									
		Ferber Ranch			O'Neill Oaks			Hafen			Saddle Creek South
		AA1	AA2	AA3	AA1	AA2	AA3	AA1	AA2	AA3	AA1
Buffer and Landscape Context	Landscape Connectivity	D (3)	A (12)	A (12)	D (3)	D (3)	D (3)	D (3)	D (3)	A (12)	D (3)
	Buffer Condition (submetrics below)										
	Percentage of Assessment Area with Buffer	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)
	Average Buffer Width	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	B (9)	A (12)	A (12)	B (9)
	Buffer Condition	B (9)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)
	Attribute Score	*55.8*	*100.0*	*100.0*	*62.5*	*62.5*	*62.5*	*59.0*	*62.5*	*100.0*	*59.0*
Hydrology	Water Source	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)
	Hydroperiod/Channel Stability	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)
	Hydrologic Connectivity	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)
	Attribute Score	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
Physical Structure	Structural Patch Richness	D (3)	D (3)	D (3)	D (3)	D (3)	D (3)	D (3)	D (3)	B (9)	D (3)
	Topographic Complexity	C (6)	C (6)	C (6)	B (9)	C (6)	C (6)	C (6)	C (6)	B (9)	C (6)
	Attribute Score	*37.5*	*37.5*	*37.5*	*50.0*	*37.5*	*37.5*	*37.5*	*37.5*	*75.0*	*37.5*
Biotic Structure	Plant Community (submetrics below)										
	Number of Plant Layers	B (9)	A (12)	B (9)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)	A (12)
	Number of Co-dominant Species	C (6)	C (6)	C (6)	A (12)	B (9)	B (9)	B (9)	B (9)	B (9)	C (6)
	Percent of Invasive Co-dominant Species	A (12)	B (9)	B (9)	A (12)	B (9)	D (3)	A (12)	A (12)	A (12)	B (9)
	Horizontal Interspersion/Plant Zonation	C (6)	D (3)	D (3)	C (6)	D (3)	D (3)	C (6)	C (6)	B (9)	D (3)
	Vertical Biotic Structure	C (6)	B (9)	B (9)	C (6)	C (6)	C (6)	B (9)	B (9)	B (9)	C (6)
	Attribute Score	*58.3*	*58.3*	*55.6*	*66.7*	*52.8*	*47.2*	*72.2*	*72.2*	*80.6*	*50.0*
Overall Assessment Area Score[b]		***62.9***	***74.0***	***73.3***	***69.8***	***63.2***	***61.8***	***67.2***	***68.1***	***88.9***	***61.6***

CRAM: California Rapid Assessment Method; AA: Assessment Area.

[a] CRAM scores are indicated by the letter score (A through D) that is assigned to each metric and the corresponding numeric value of that score is in parentheses.

[b] The overall CRAM score is calculated by averaging the four attribute scores.

Source: BonTerra Consulting 2013a.

TABLE 10
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status			Blooming Period	Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW	CRPR				Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Abronia villosa var. *aurita* chaparral sand-verbena	—	—	1B.1	Between January and September.	Sandy places, primarily in coastal sage scrub and chaparral habitats and alluvial washes and river benches.	Central and southern South Coast and western Sonoran (Colorado) Desert; between sea level and 5,250 feet above msl.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Astragalus brauntonii Braunton's milk-vetch	FE	—	1B.1	Between March and July.	Recent burns or disturbed areas in chaparral and tecate cypress forest.	Western Transverse Ranges, San Gabriel Mountains possibly to the South Coast, and northern Peninsular Ranges; between sea level and 2,133 feet above msl.	Only known from northern Santa Ana Mountains (Gypsum and Coal Canyons) in Orange County. Not expected to occur.	Outside known range (Gypsum and Coal Canyons) in Orange County. Not expected to occur.	Outside known range (Gypsum and Coal Canyons) in Orange County. Not expected to occur.	Outside known range (Gypsum and Coal Canyons) in Orange County. Not expected to occur.
Atriplex coulteri Coulter's saltbush	—	—	1B.2	Between March and October.	Alkaline soils or clay barrens in open areas of perennial grasslands, coastal sage scrub, and coastal bluff scrub.	South Coast and Channel Islands to Baja California, Mexico; sea level to 1,640 feet above msl.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.

TABLE 10 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status			Blooming Period	Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW	CRPR				Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Baccharis malibuensis Malibu baccharis	—	—	1B.1	Between August and September.	Grassy openings in chaparral.	Western Transverse Ranges and Peninsular Ranges; between 164 and 984 feet above msl.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Brodiaea filifolia thread-leaved brodiaea	FT	SE	1B.1	Between March and June.	Grasslands and vernal pools.	South Coast, San Bernardino Mountains, and western Peninsular Ranges; 80 to 2,820 feet above msl.	Suitable habitat present. Surveys conducted at end of or past blooming period.	Suitable habitat present. Surveys conducted at end of or past blooming period.	Suitable habitat present. Surveys conducted at end of or past blooming period.	Suitable habitat present. Surveys conducted at end of or past blooming period.
Calochortus catalinae Catalina mariposa lily	—	—	4.2	Between March and June, uncommonly as early as February.	Heavy soils in open grasslands, coastal sage scrub, and chaparral.	Southern Central Coast, western South Coast, and Channel Islands; sea level to 2,300 feet above msl.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.
Calochortus plummerae Plummer's mariposa lily	—	—	4.2	Between May and July.	Coastal sage scrub; dry, rocky chaparral; and yellow-pine forest.	South Coast and Peninsular Ranges; sea level to 5,580 feet above msl.	Outside known range. Not expected to occur.	Outside known range. Not expected to occur.	Outside known range. Not expected to occur.	Outside known range. Not expected to occur.

TABLE 10 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status			Blooming Period	Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW	CRPR				Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Calochortus weedii var. *intermedius* intermediate mariposa lily*	—	—	1B.2	Between May and July.	Coastal sage scrub and chaparral on dry, rocky, open slopes.	South Coast and northern Peninsular Ranges; sea level to 2,230 feet above msl.	**Suitable habitat present. Observed on the property.**	**Suitable habitat present. Observed on the property.**	**Suitable habitat present. Observed on the property.**	**Suitable habitat present. Observed on the property.**
Camissoniopsis lewisii Lewis' evening-primrose	—	—	3	Between March and June.	Sandy or clay soils of coastal grassland.	South Coast, western Peninsular Ranges, and northern Baja California, Mexico; between sea level and 984 feet above msl.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.
Centromadia parryi ssp. *australis* southern tarplant*	—	—	1B.1	Between May and November.	Seasonally moist, silty, alkaline soils in salt marshes, alkali meadows, mesic grasslands, vernal pools, ditches, and coastal scrub.	South Coast to northwestern Baja California, Mexico; sea level to 655 feet above msl.	No suitable habitat; outside known elevational range. Not expected to occur.	No suitable habitat; outside known elevational range. Not expected to occur.	No suitable habitat; outside known elevational range. Not expected to occur.	No suitable habitat; outside known elevational range. Not expected to occur.

TABLE 10 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status			Blooming Period	Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW	CRPR				Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Chorizanthe parryi var. *fernandina* San Fernando Valley spineflower	FC	SE	1B.1	Between April and June.	Sandy areas.	Laskey Mesa in Ventura County and the northern Santa Susana Mountains of Los Angeles County; between 295 and 1,640 feet above msl.	Outside known range; no suitable habitat. Not expected to occur.	Outside known range; no suitable habitat. Not expected to occur.	Outside known range; no suitable habitat. Not expected to occur.	Outside known range; no suitable habitat. Not expected to occur.
Chorizanthe polygonoides var. *longispina* long-spined spineflower	—	—	1B.2	Between April and June.	Sandy areas.	Peninsular Ranges; between 98 and 4,921 feet above msl.	Only known from northern Santa Ana Mountains (Gypsum Canyon) in Orange County. Not expected to occur.	Only known from northern Santa Ana Mountains (Gypsum Canyon) in Orange County. Not expected to occur.	Only known from northern Santa Ana Mountains (Gypsum Canyon) in Orange County. Not expected to occur.	Only known from northern Santa Ana Mountains (Gypsum Canyon) in Orange County. Not expected to occur.
Clinopodium chandleri San Miguel savory	—	—	1B.2	Between March and July.	Rocky slopes in chaparral, oak woodland, and riparian forest.	Peninsular Ranges to northern Baja California, Mexico; between sea level and 3,609 feet above msl.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.

TABLE 10 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status			Blooming Period	Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW	CRPR				Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Comarostaphylis diversifolia ssp. *diversifolia* summer holly	—	—	1B.2	Between May and June.	Chaparral.	South Coast and Peninsular Ranges to northern Baja California, Mexico; between 328 and 1,804 feet above msl.	Not expected to occur. Not observed during focused surveys.	Not expected to occur. Not observed during focused surveys.	Not expected to occur. Not observed during focused surveys.	Not expected to occur. Not observed during focused surveys.
Dodecahema leptoceras slender-horned spineflower	FE	SE	1B.1	Between April and June.	Sandy or gravelly areas.	East-central South Coast, adjacent foothills of the Transverse Ranges, and Peninsular Ranges; 655 to 2,295 feet above msl.	Outside known range. Not expected to occur.	Outside known range. Not expected to occur.	Outside known range. Not expected to occur.	Outside known range. Not expected to occur.
Dudleya cymosa ssp. *ovatifolia* Santa Monica dudleya	FT	—		Between May and June.	Shaded, rocky outcrops and slopes in volcanic or sedimentary soils.	The Santa Monica Mountains in the southern Western Transverse Ranges and Peninsular Ranges; between 492 and 1,640 feet above msl.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.

TABLE 10 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status			Blooming Period	Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW	CRPR				Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Dudleya multicaulis many-stemmed dudleya*	—	—	1B.2	Between April and July.	Heavy (often clayey) soils in coastal sage scrub and native grassland on coastal plains and sandstone outcrops.	South Coast; sea level to 1,970 feet above msl.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.
Dudleya viscida sticky dudleya	—	—	1B.2	Between May and June.	Bluffs, canyon walls, and rocky cliffs.	Southern South Coast of Orange and San Diego counties; between sea level and 1,476 feet above msl.	Suitable habitat present. Not observed during focused surveys.	Marginally suitable habitat present. Not observed during focused surveys.	Marginally suitable habitat present. Not observed during focused surveys.	Marginally suitable habitat present. Not observed during focused surveys.
Eriastrum densifolium ssp. *sanctorum* Santa Ana River woollystar	FE	SE	1B.1	Between May and September.	Washes, floodplains, and dry river beds.	Eastern South Coast (i.e., the Santa Ana River drainage and southwestern San Bernardino County); sea level to 1,640 feet above msl.	No suitable habitat. Considered extirpated from Orange County.	No suitable habitat. Considered extirpated from Orange County.	No suitable habitat. Considered extirpated from Orange County.	No suitable habitat. Considered extirpated from Orange County.

TABLE 10 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status			Blooming Period	Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW	CRPR				Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Hesperocyparis forbesii Tecate cypress	—	—	1B.1	—	Chaparral.	Western Peninsular Ranges to northwestern Baja California, Mexico; planted outside native range; between 1,476 and 4,921 feet above msl.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Hordeum intercedens bobtail barley	—	—	3.2	Between March and June.	Vernal pools; dry, saline streambeds; and alkaline flats.	San Joaquin Valley, outer South Coast Ranges, South Coast, Channel Islands, and Peninsular Ranges to northwestern Baja California, Mexico; between sea level and 1,640 feet above msl.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.

TABLE 10 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status			Blooming Period	Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW	CRPR				Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Imperata brevifolia California satintail	—	—	2.1	Between September and May.	Wet springs, meadows, streambanks, and floodplains.	Outer North Coast Ranges, Cascade Range foothills, southern Sierra Nevada foothills, San Joaquin Valley, South Coast, Transverse Ranges, and deserts to Utah, Texas, and Mexico; sea level and 1,640 feet above msl.	Potentially suitable habitat present; known from only one location in Orange County. Not observed during focused surveys.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Lepechinia cardiophylla heart-leaved pitcher sage	—	—	1B.2	Between April and July.	Chaparral.	Peninsular Ranges; between 1,969 and 3,937 feet above msl.	Outside known elevation range. Not expected to occur.	Outside known elevation range. Not expected to occur.	Outside known elevation range. Not expected to occur.	Outside known elevation range. Not expected to occur.
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass	—	—	1B.2	Between January and July.	Dry sandy or thin soils in coastal sage scrub and chaparral.	Southwestern California and Baja California, Mexico; sea level and 1,640 feet above msl.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.

TABLE 10 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status			Blooming Period	Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW	CRPR				Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Lilium humboldtii ssp. *ocellatum* ocellated Humboldt lily	—	—	4.2	Between May and August.	Oak canyons, chaparral, and yellow-pine forest.	Southern, central-western, and southwestern California; between sea level and 5,906 feet above msl.	**Suitable habitat present. Observed on the property.**	No suitable habitat. Not expected to occur.	Suitable habitat present. Not observed during focused surveys.	No suitable habitat. Not expected to occur.
Monardella hypoleuca ssp. *lanata* felt-leaved monardella[a]	—	—	1B.2	Between May and October.	On rocky, granitic slopes or hillsides in chaparral.	Southwesstern Peninsular Ranges of San Diego County to northern Baja California, Mexico; between 984 and 4,920 feet above msl.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.
Monardella macrantha ssp. *hallii* Hall's monardella	—	—	1B.3	Between May and August.	Chaparral and woodland.	Southern San Bernardino Mountains and Peninsular Ranges; between 1,968 and 6,562 feet above msl.	Outside known elevation range. Not expected to occur.	Outside known elevation range. Not expected to occur.	Outside known elevation range. Not expected to occur.	Outside known elevation range. Not expected to occur.

TABLE 10 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status			Blooming Period	Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW	CRPR				Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Nama stenocarpum mud nama	—	—	2.2	Between March and October.	Intermittently wet areas, margins of vernal pools and ponds.	San Joaquin Valley, South Coast, southern Channel Islands, western Peninsular Ranges, southeastern Sonoran Desert to Texas and northern Mexico; sea level to 2,657 feet above msl.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.
Nolina cismontana peninsular nolina	—	—	1B.2	Between May and July.	Dry chaparral or coastal mountains.	South Coast, Western Transverse Ranges, and Peninsular Ranges; 655 to 4,265 feet above msl.	**Suitable habitat present. Observed on the property.**	**Suitable habitat present. Observed on the property.**	**Suitable habitat present. Observed on the property.**	Suitable habitat present. Not observed during focused surveys.
Penstemon californicus California beardtongue	—	—	1B.2	Between May and June.	Sandy soils of yellow-pine forest or pinyon/juniper woodland.	Peninsular Ranges and Mexico; between 3,937 and 7,546 feet above msl.	Outside known elevation range. Not expected to occur.	Outside known elevation range. Not expected to occur.	Outside known elevation range. Not expected to occur.	Outside known elevation range. Not expected to occur.

TABLE 10 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status			Blooming Period	Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW	CRPR				Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Pentachaeta aurea ssp. *allenii* Allen's pentachaeta	—	—	1B.1	Between March and May.	Grassy areas.	Southern South Coast and Peninsular Ranges of Orange County; sea level to 1,640 feet above msl.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.
Phacelia keckii Santiago Peak phacelia	—	—	1B.3	Between May and June.	Open chaparral.	The Santa Ana Mountains of the Peninsular Ranges; 1,640 to 5,249 feet above msl.	Outside known elevation range. Not expected to occur.	Outside known elevation range. Not expected to occur.	Outside known elevation range. Not expected to occur.	Outside known elevation range. Not expected to occur.
Piperia cooperi chaparral rein-orchid	—	—	4.2	Between June and August.	Generally dry sites in scrub, chaparral, woodland, or forest.	South Coast, San Gabriel Mountains, Peninsular Ranges, Santa Catalina Island, to Baja California, Mexico; between sea level and 4,921 feet above msl.	**Suitable habitat present. Observed on the property.**	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.

TABLE 10 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status			Blooming Period	Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW	CRPR				Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Polygala cornuta var. fishiae Fish's milkwort	—	—	4.3	Between May and August.	Chaparral and oak woodland.	Southern Outer South Coast Ranges, Western Transverse Ranges, San Gabriel Mountains, and Peninsular Ranges to northern Baja California, Mexico; between 295 and 4,167 feet above msl.	**Suitable habitat present. Observed on the property.**	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.
Pseudognaphalium leucocephalum white rabbit-tobacco	—	—	2.2	Between August and November, uncommonly as early as July or as late as December.	Sandy or gravelly benches, dry stream bottoms, and canyon bottoms.	South Coast, San Bernardino Mountains, and Peninsular Ranges to Arizona, New Mexico, and Mexico; sea level to 1,640 feet above msl.	Suitable habitat present. Not observed during focused surveys.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Quercus dumosa Nuttall's scrub oak	—	—	1B.1	Between February and April, uncommonly as late as August.	Generally in sandy soils near the coast, sandstone, chaparral, or coastal sage scrub.	South Coast, Peninsular Ranges, and Baja California, Mexico; sea level to 656 feet above msl.	Outside known elevation range. Not expected to occur.	Outside known elevation range. Not expected to occur.	Outside known elevation range. Not expected to occur.	Outside known elevation range. Not expected to occur.

TABLE 10 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status			Blooming Period	Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW	CRPR				Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Romneya coulteri Coulter's matilija poppy	—	—	4.2	Between March and July.	Dry washes and canyons.	South Coast, Western Transverse Ranges, and Peninsular Ranges; sea level to 3,937 feet above msl.	**Suitable habitat present. Observed on the property.**	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.	Suitable habitat present. Not observed during focused surveys.
Senecio aphanactis chaparral ragwort	—	—	2.2	Between January and April.	Alkaline flats and dry, open rocky areas of coastal bluff scrub and coastal sage scrub.	Central Western California and South Coast to Baja California, Mexico; 30 to 1,805 feet above msl.	Suitable habitat present. Surveys not conducted during blooming period.	Suitable habitat present. Surveys not conducted during blooming period.	Suitable habitat present. Surveys not conducted during blooming period.	Suitable habitat present. Surveys not conducted during blooming period.
Sidalcea neomexicana salt spring checkerbloom	—	—	2.2	Between March and June.	Alkaline seeps, springs, and marshes.	South Coast, San Gabriel Mountains, San Bernardino Mountains, Peninsular Ranges, and southwestern Mojave Desert to New Mexico and northern Mexico; possibly extirpated from the Western Transverse Ranges; sea level to 4,920 feet above msl.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.

TABLE 10 (Continued)
SPECIAL STATUS PLANT SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status			Blooming Period	Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW	CRPR				Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Tetracoccus dioicus Parry's tetracoccus	—	—	1B.2	Between April and May.	Dry slopes, chaparral.	Southern South Coast of San Diego County, western Peninsular Ranges, and Baja California, Mexico; sea level to 3,281 feet above msl.	Known from only one location in Orange County (San Juan Canyon). Not observed during focused surveys.	Known from only one location in Orange County (San Juan Canyon). Not observed during focused surveys.	Known from only one location in Orange County (San Juan Canyon). Not observed during focused surveys.	Known from only one location in Orange County (San Juan Canyon). Not observed during focused surveys.

USFWS: U.S. Fish and Wildlife Service; CDFW: California Department of Fish and Wildlife; CRPR: California Rare Plant Rank; msl: mean sea level

LEGEND

Federal (USFWS)
FE Endangered
FT Threatened
FC Candidate

State (CDFW)
SE Endangered

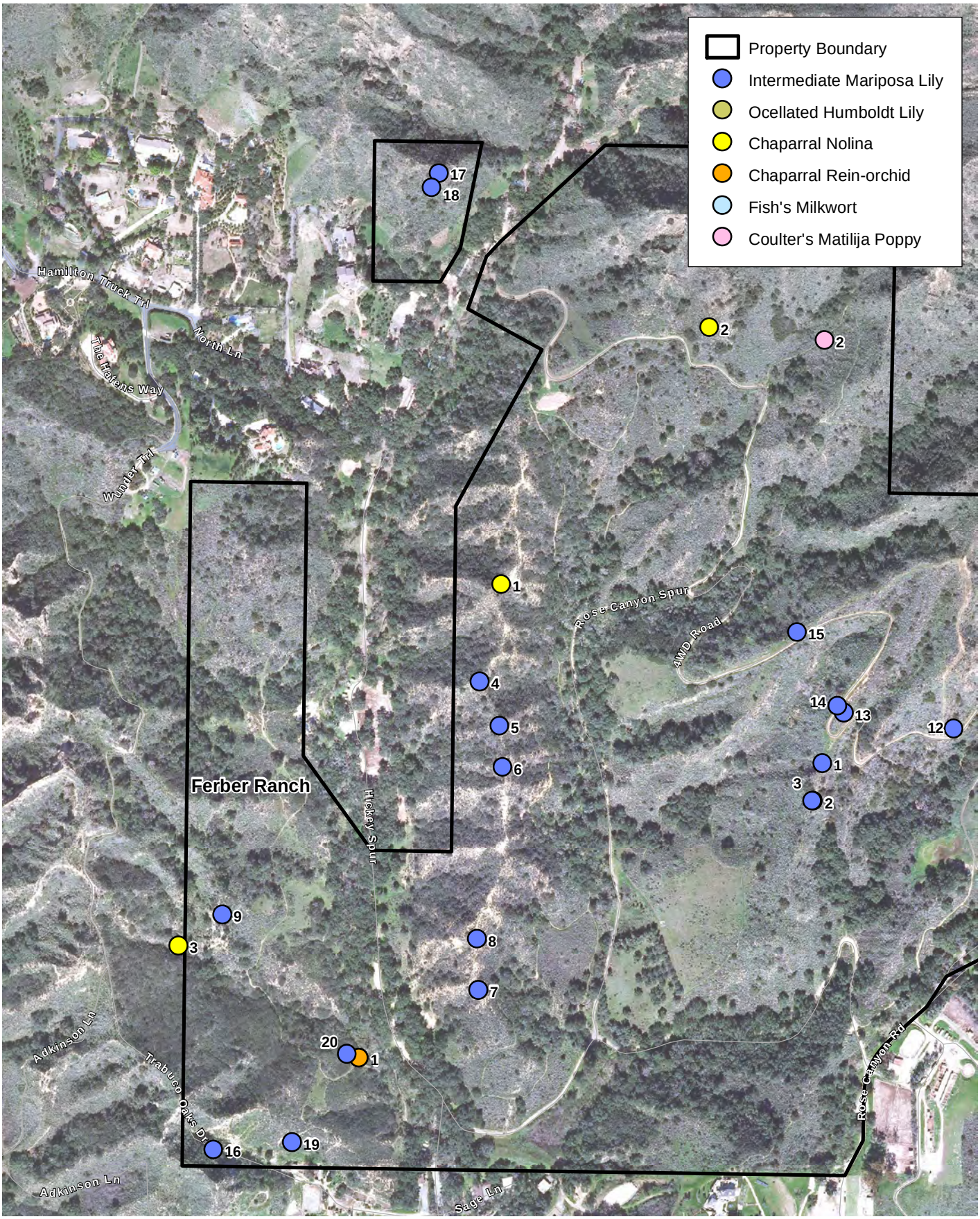
California Rare Plant Rank (CRPR)

1B Plants Rare, Threatened, or Endangered in California and Elsewhere
2 Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
3 Plants about which we need more information – A Review List
4 Plants of Limited Distribution – A Watch List

CRPR Threat Code Extensions
.1 Seriously Threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat)
.2 Fairly Threatened in California (20–80% of occurrences threatened; moderate degree and immediacy of threat)
.3 Not Very Threatened in California (<20% of occurrences threatened; low degree and immediacy of threat or no current threats known)

* Proposed covered species in the NCCP/HCP
[a] CNDDB reports this plant from the Santa Ana Mountains. However Elvin and Sanders (2009) studied these plants from the Santa Ana Mountains and determined them to be an undescribed taxon, not felt-leaved monardella. They described the plant as intermediate monardella (*Monardella hypoleuca* ssp. *intermedia*), which is not a special status plant. The CNDDB has not yet been updated with this information. Some individuals of intermediate monardella were found on the Ferber Ranch property.

Source: BonTerra Consulting 2013b.



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Special Status Plant Locations

Exhibit 13A

Measure M2 Acquisition Properties/Ferber Ranch Property

N W E S

500 250 0 500 Feet

BonTerra CONSULTING

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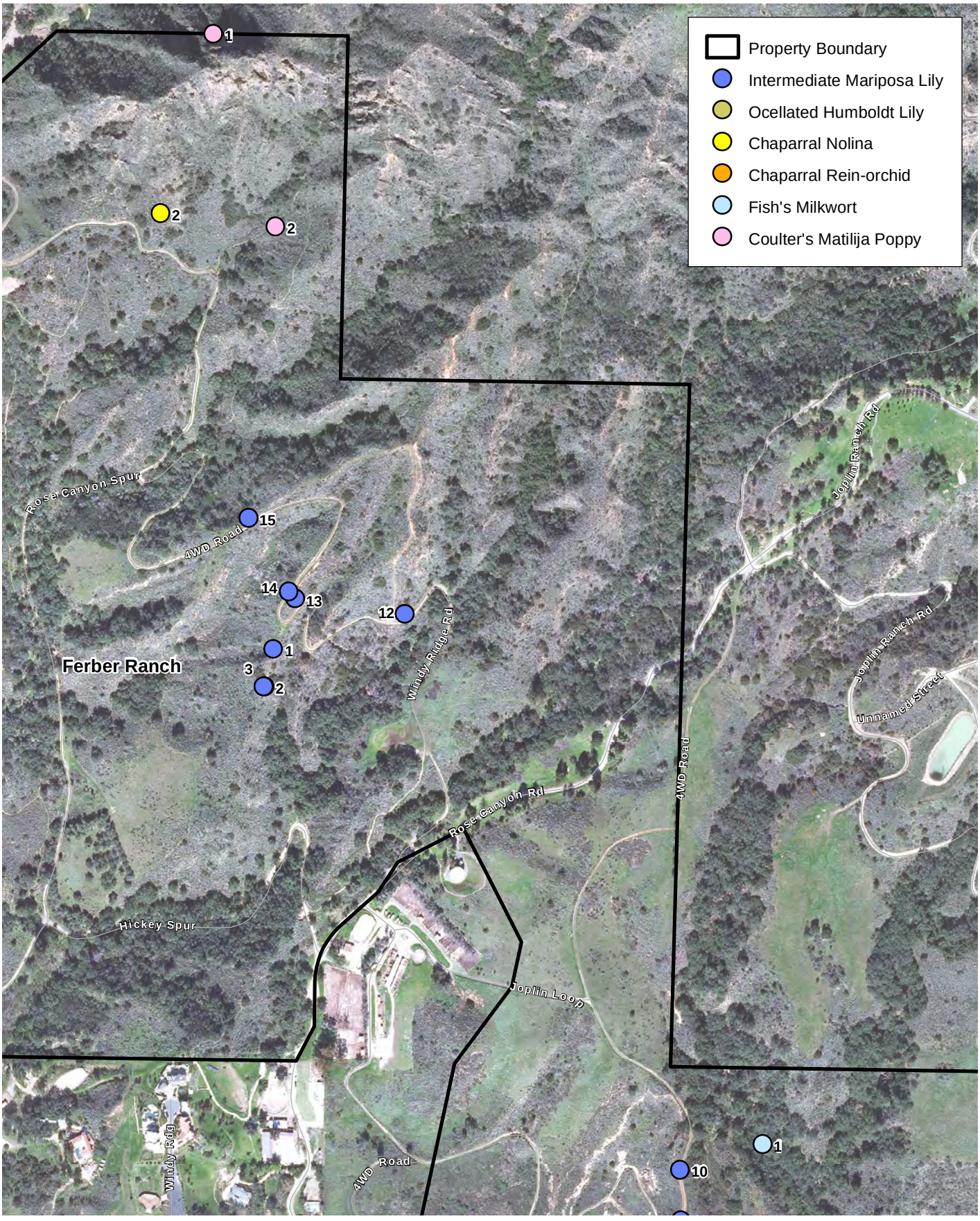

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Special Status Plant Locations

Exhibit 13A

Measure M2 Acquisition Properties/Ferber Ranch Property

N W E S

500 250 0 500 Feet

BonTerra CONSULTING

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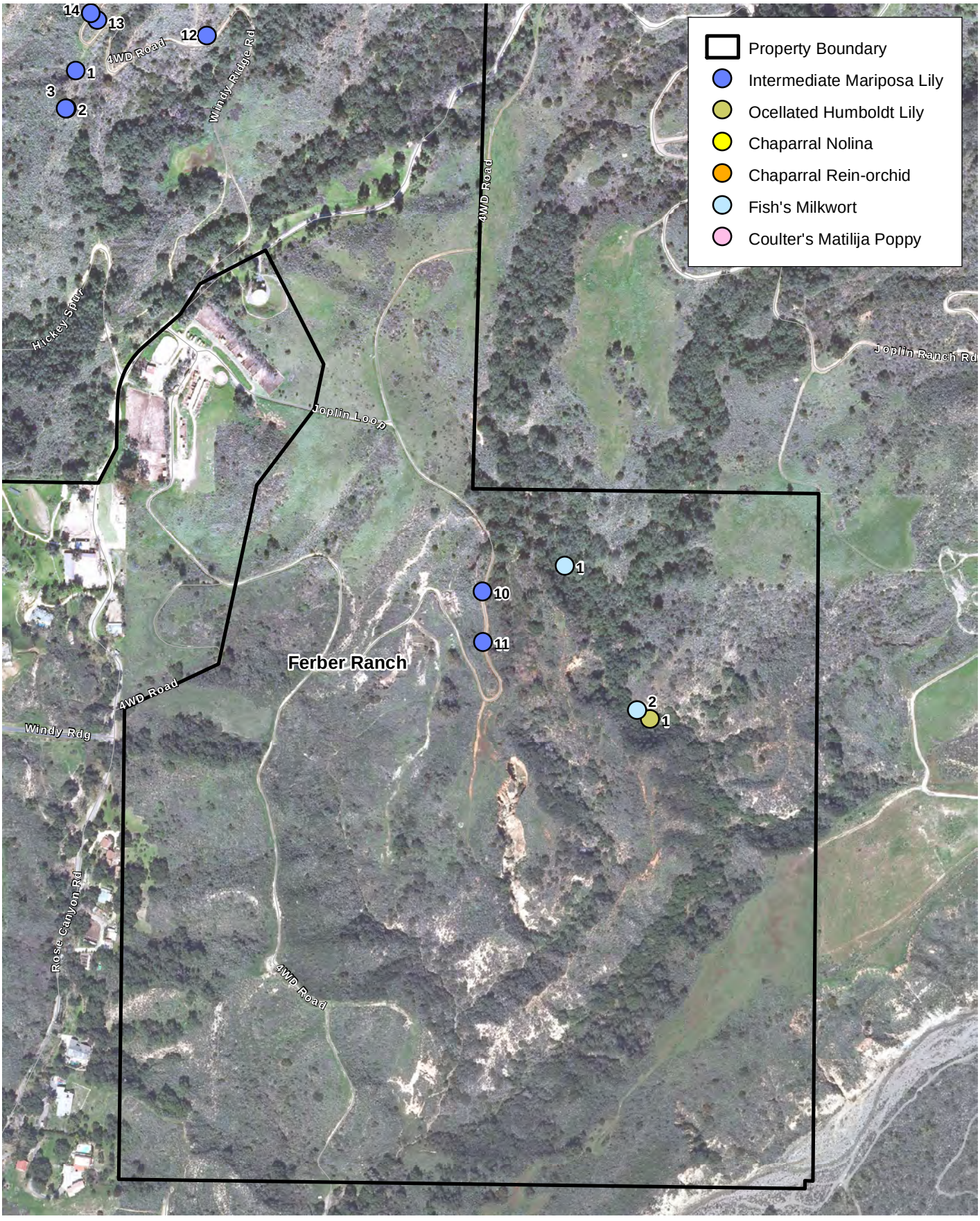

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Special Status Plant Locations

Exhibit 13A

Measure M2 Acquisition Properties/Ferber Ranch Property

N W E S

500 250 0 500 Feet

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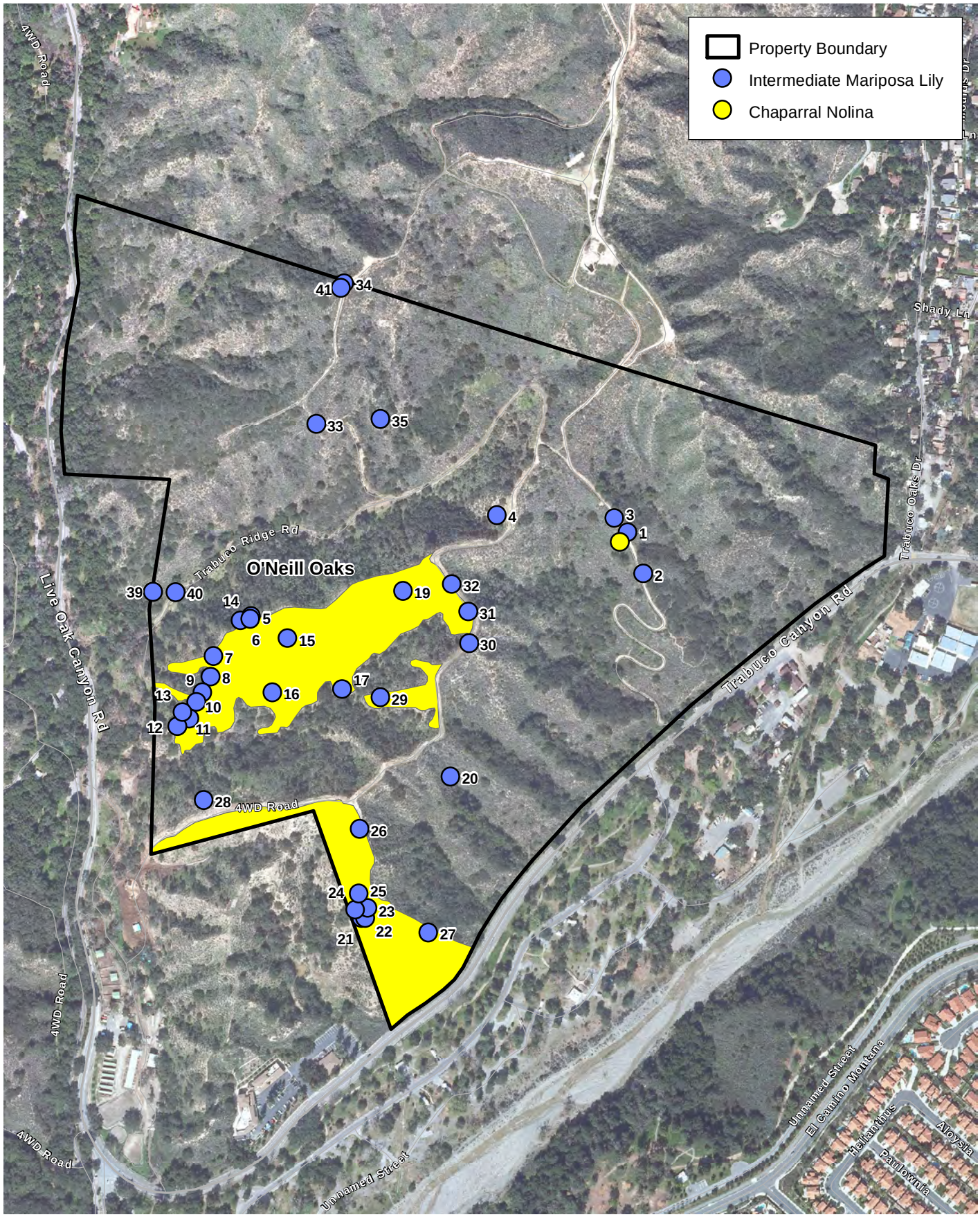

Special Status Plant Locations

Exhibit 13B

Measure M2 Acquisition Properties/O'Neill Oaks Property

N W E S

500 250 0 500 Feet

BonTerra CONSULTING

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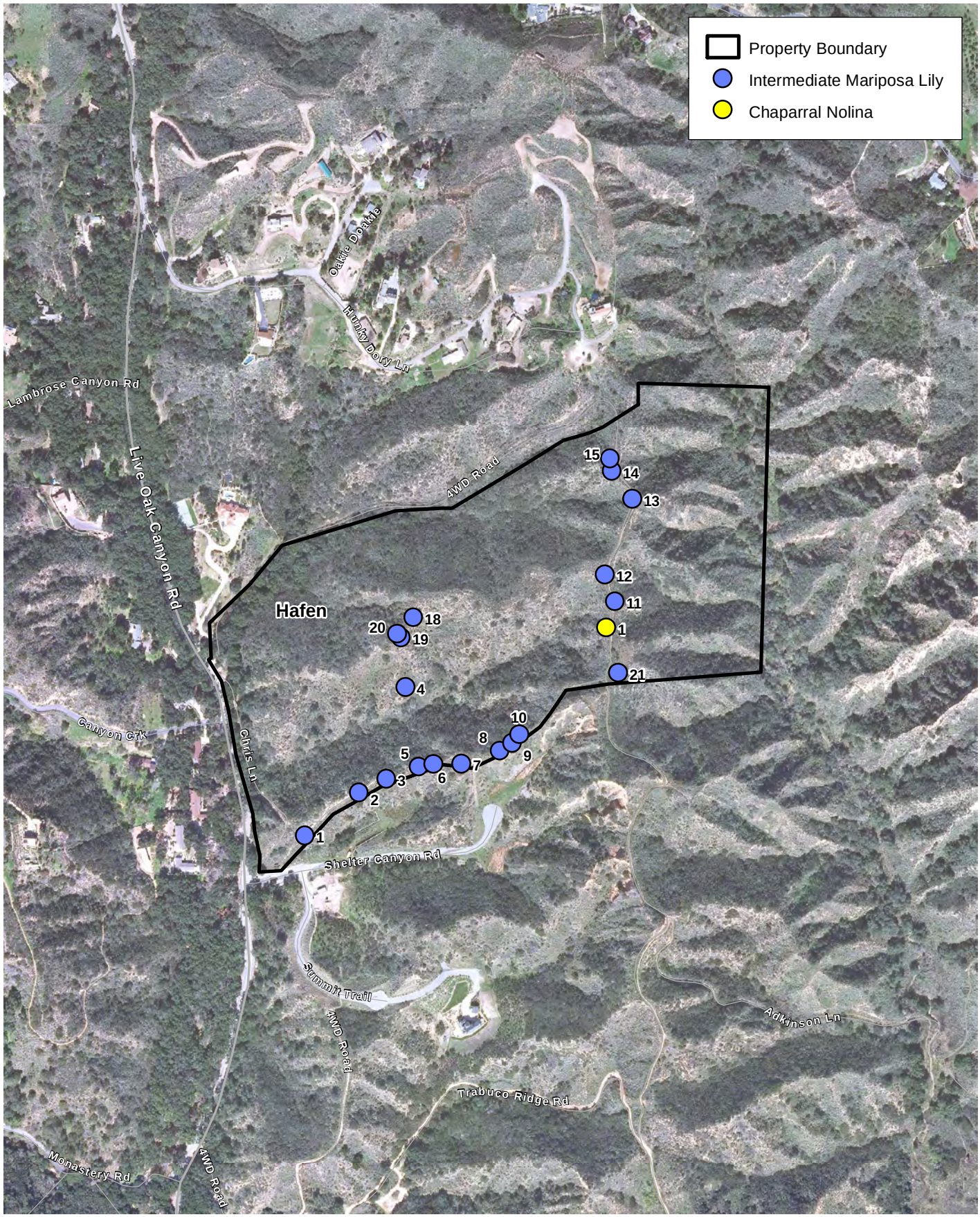

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Special Status Plant Locations

Exhibit 13C

Measure M2 Acquisition Properties/Hafen Property

N W E S

500 250 0 500 Feet

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Special Status Plant Locations

Exhibit 13D

Measure M2 Acquisition Properties/Saddle Creek South Property

N W E S

500 250 0 500

Feet

BonTerra CONSULTING

(Rev: 12-19-12 cjs) Projects\OCTA\J008\Graphics\BioReport\SouthCounty\Ex13D_SSplant_SaddleCreek.pdf

Intermediate Mariposa Lily

Intermediate mariposa lily was observed on all four south county properties. Populations were observed throughout the Ferber Ranch, O'Neill Oaks, and Hafen properties; one population was observed in the drainage running through the center of the Saddle Creek South property. Details on the occurrences are summarized in Table 11 and illustrated on Exhibits 13A, 13B, 13C, and 13D.

TABLE 11
INTERMEDIATE MARIPOSA LILY POPULATIONS OBSERVED
ON THE SOUTH COUNTY PROPERTIES

Population	Number of Individuals	Habitat Description	Phenology		
			Percent Vegetative	Percent Flowering	Percent Fruiting
Ferber Ranch					
F-1	1	Rocky clay soil on south-facing slope; associated with California sagebrush, black sage, chaparral yucca, and deerweed.	100%	0	0
F-2	4	Rocky clay soil on ridgeline; associated with deerweed and California sagebrush.	0	0	100%
F-3	2	Rocky clay soil on ridgeline; associated with California sagebrush, black sage, chaparral yucca, and deerweed	50%	50%	0
F-4	12	Rocky clay soil on ridgeline; associated with California buckwheat, white sage, chaparral yucca, and large-bracted morning-glory (*Calystegia macrostegia*).	75%	25%	0
F-5	12	Rocky clay soil on ridgeline; associated with California buckwheat, white sage, chaparral yucca, and large-bracted morning-glory.	75%	25%	0
F-6	4	Rocky sandy soil on ridgeline; associated with California sagebrush, deerweed, and white sage.	100%	0	0
F-7	3	Sandy soil on ridgeline; associated with scrub oak and crested needlegrass (*Stipa coronata*).	100%	0	0
F-8	2	Sandy clay soil on ridgeline; associated with California sagebrush and everlasting.	100%	0	0
F-9	2	Ridgeline; associated with chamise.	50%	50%	0
F-10	3	Sandy soil with some clay pockets; associated with chaparral yucca, California sagebrush, bedstraw (*Galium* sp.), and California buckwheat.	100%	0	0
F-11	1	Reddish clay loam soil; associated with chaparral yucca, needlegrass (*Stipa* sp.), black sage, and California sagebrush.	100%	0	0
F-12	3	Gravelly sandy soil on southeast-facing slope; associated with chaparral yucca, black sage, bedstraw, orange bush monkeyflower (*Mimulus aurantiacus* ssp. *puniceus*), and dune bentgrass (*Agrostis pallens*).	100%	0	0
F-13	4	Gravelly sandy soil on southeast-facing slope; associated with chaparral yucca, black sage, bedstraw, orange bush monkeyflower, and dune bentgrass.	100%	0	0

TABLE 11
INTERMEDIATE MARIPOSA LILY POPULATIONS OBSERVED ON THE SOUTH COUNTY PROPERTIES

Population	Number of Individuals	Habitat Description	Phenology		
			Percent Vegetative	Percent Flowering	Percent Fruiting
F-14	1	Gravelly sandy soil on southeast-facing slope; associated with deerweed, golden-yarrow, narrowly leaved bedstraw (*Galium angustifolium*), black sage, coast prickly-pear, California sagebrush, California buckwheat, and foothill needlegrass.	100%	0	0
F-15	1	Gravelly sandy soil on east-facing slope; associated with black sage, deerweed, California sagebrush, and foothill needlegrass.	100%	0	0
F-16	8	Sandstone-derived cliff face; associated with lance-leaved dudleya (*Dudleya lanceolata*), Bigelow's spike-moss (*Selaginella bigelovii*), narrowly leaved bedstraw, and lichens.	100%	0	0
F-17	1	Rocky gravelly soil; associated with chamise, chaparral yucca, black sage, and sweetbush (*Bebbia juncea* var. *aspera*).	0	100%	0
F-18	1	Rocky gravelly soil; associated with chamise, chaparral yucca, black sage, and sweetbush.	0	100%	0
F-19	3	Sandy soil near top of south-facing slope; associated with chamise, chaparral yucca, and black sage.	0	100%	0
F-20	1	Sandy soils on northeast-facing slope; associated with chaparral rein-orchid (*Piperia cooperi*), chamise, chaparral yucca, and scrub oak.	0	100%	0
O'Neill Oaks					
O-1	1	Sandy soil on ridgeline; associated with California sagebrush, deerweed, California buckwheat, and lance-leaved dudleya.	0	100%	0
O-2	3	Sandy soil on ridgeline; associated with California buckwheat, deerweed, California sagebrush, and lance-leaved dudleya.	0	100%	0
O-3	3	Sandy soil on ridgeline; associated with California buckwheat, deerweed, California sagebrush, and lance-leaved dudleya.	0	100%	0
O-4	9	Sandy soil on northwest-facing slope; associated with American lotus (*Acmispon americanus* var. *americanus*), chalk dudleya (*Dudleya pulverulenta*), white pincushion (*Chaenactis artemisiifolia*), and littleseed muhly (*Muhlenbergia microsperma*).	33%	67%	0
O-5	4	Sandy soil on north-facing slope; associated with California sagebrush and red brome.	75%	25%	0
O-6	5	Sandy loam soil on knoll; associated with California sagebrush, prickly phlox (*Linanthus californicus*), and lemonade berry.	40%	60%	0
O-7	5	Sandy soil on southwest-facing slope; associated with littleseed muhly, California sagebrush, California buckwheat, and chaparral nolina.	20%	80%	0
O-8	5	Sandy soil on southwest-facing slope; associated with chaparral nolina, California sagebrush, and California buckwheat.	0	100%	0

TABLE 11
INTERMEDIATE MARIPOSA LILY POPULATIONS OBSERVED ON THE SOUTH COUNTY PROPERTIES

Population	Number of Individuals	Habitat Description	Phenology		
			Percent Vegetative	Percent Flowering	Percent Fruiting
O-9	4	Sandy and rocky soil on southeast-facing slope; associated with California sagebrush, chaparral nolina, California buckwheat, four-o'clock (*Mirabilis* sp.), and deerweed.	0	100%	0
O-10	4	Sandy and rocky soil on southwest-facing slope; associated with California sagebrush and black sage.	25%	50%	25%
O-11	2	Sandy soil on southwest-facing slope; associated with California sagebrush, California buckwheat, and chaparral yucca.	50%	50%	0
O-12	2	Sandy loam soil on southwest-facing slope; associated with California sagebrush.	100%	0	0
O-13	1	Sandy loam soil on west-facing slope; associated with California sagebrush.	100%	0	0
O-14	2	Loamy sand soil on south/southwest-facing slope; associated with California sagebrush.	100%	0	0
O-15	6	Sandy loam soil on west/southwest-facing slope; associated with chaparral nolina, black sage, and California sagebrush.	33%	67%	0
O-16	19	Sandy soil on west/southwest-facing slope; associated with chaparral nolina, black sage, and California sagebrush.	26%	74%	0
O-17	46	Loamy sand soil in drainage; associated with chaparral nolina, California sagebrush, white sage, chaparral yucca, and splendid mariposa lily (*Calochortus splendens*).	41%	54%	4%
O-19	53	Sandy soil on ridgeline; associated with chaparral nolina.	32%	64%	0
O-20	4	Sandy soil on ridgeline; associated with chaparral nolina, white sage, and California buckwheat.	0	100%	0
O-21	1	Cobbly sand soil on west-facing slope; associated with sessileflower goldenaster (*Heterotheca sessiliflora*).	0	100%	0
O-22	1	Cobbly sand soil on ridgeline; associated with California sagebrush.	0	100%	0
O-23	1	Cobbly sandy soil on south-facing slope; associated with California sagebrush.	0	100%	0
O-24	4	Cobbly sandy soil on ridgeline; associated with California sagebrush and chaparral yucca.	50%	50%	0
O-25	1	Sandy soil on west-facing slope; associated with California sagebrush and California buckwheat.	0	100%	0
O-26	3	Sandy soil on west-facing slope; associated with California sagebrush and chaparral nolina.	0	100%	0
O-27	20	Clay soil on ridgeline.	15%	85%	0
O-28	1	Sandy loam soil on north-facing slope; associated with California sagebrush.	0	100%	0
O-29	36	West-facing slope.	39%	61%	0
O-30	12	Sandy loam soil on west-facing slope; associated with California sagebrush.	92%	8%	0

TABLE 11
INTERMEDIATE MARIPOSA LILY POPULATIONS OBSERVED ON THE SOUTH COUNTY PROPERTIES

Population	Number of Individuals	Habitat Description	Phenology		
			Percent Vegetative	Percent Flowering	Percent Fruiting
O-31	4	Ridgeline; associated with white sage, California sagebrush, and chaparral nolina.	0	100%	0
O-32	2	Ridgeline; associated with California sagebrush and chaparral dodder (*Cuscuta californica*).	50%	50%	0
O-33	1	Rocky loam soil on south-facing slope; associated with deerweed.	0	100%	0
O-34	3	Rocky loam soil on south-facing slope; associated with deerweed.	67%	33%	0
O-35	1	Sandy loam soil on south-facing slope; associated with deerweed.	0	100%	0
O-39	5	Silt loam soil on south-facing slope; associated with deerweed.	40%	60%	0
O-40	6	Silty loam soil on east-facing slope; associated with deerweed.	17%	83%	0
O-41	3	Sandy soil on south-facing slope.	0	0	100%
Hafen					
H-1	1	Sandy cobble; associated with chaparral yucca, California sagebrush, crested needlegrass, white sage, and scrub oak.	0	100%	0
H-2	1	Sandy cobble on northwest-facing slope; associated with chaparral yucca.	0	100%	0
H-3	9	Sandy soil; associated with California buckwheat, chaparral yucca, deerweed, and chaparral dodder.	22%	77%	0
H-4	1	Sandy soil on northwest-facing slope; associated with California buckwheat.	0	100%	0
H-5	5	Sandy soil; associated with California sagebrush.	40%	60%	0
H-6	2	Sandy soil on northwest-facing slope; associated with deerweed, California sagebrush, and chaparral yucca.	50%	50%	0
H-7	3	Sandy cobble on west-facing slope; associated with California buckwheat and chaparral yucca.	0	100%	0
H-8	1	Sandy soil; associated with deerweed.	0	0	100%
H-9	1	Sandy soil on southeast-facing slope; associated with deerweed.	0	100%	0
H-10	1	Sandy soil; associated with deerweed.	0	100%	0
H-11	5	Cobbly sandy soil on ridgeline; associated with chaparral yucca, California buckwheat, California sagebrush, black sage, scrub oak, and chaparral dodder.	20%	80%	0
H-12	2	Sandy soil on ridgeline; associated with chaparral yucca, California buckwheat, chaparral dodder, and California sagebrush.	0	100%	0
H-13	1	Sandy soil on ridgeline; associated with California sagebrush, chaparral dodder, and narrowly leaved bedstraw.	100%	0	0
H-14	4	Sandy soil on ridgeline; associated with chaparral nolina, California sagebrush, narrowly leaved bedstraw, and black sage.	25%	75%	0

TABLE 11
INTERMEDIATE MARIPOSA LILY POPULATIONS OBSERVED
ON THE SOUTH COUNTY PROPERTIES

Population	Number of Individuals	Habitat Description	Phenology		
			Percent Vegetative	Percent Flowering	Percent Fruiting
H-15	23	Sandy soil on ridgeline; associated with chaparral yucca, chaparral nolina, deerweed, California buckwheat, and narrowly leaved bedstraw.	26%	70%	4%
H-18	3	Sandy soil on south-/southwest-facing slope; associated with California buckwheat.	33%	67%	0
H-19	1	Cobbly sand on south-facing slope; associated with chaparral nolina.	0	100%	0
H-20	1	Cobbly sand on west-facing slope; associated with chaparral nolina.	0	100%	0
H-21	9	Sandy soil; associated with crested needlegrass and deerweed.	11%	88%	0
Saddle Creek South					
S-1	2	Red sandy clay soil at base of steep west-/southwest-facing slope; associated with California sagebrush, splendid mariposa lily, California buckwheat, and California fuchsia (*Epilobium canum*).	100%	0	0

Ocelated Humboldt Lily

Ocelated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*) was observed on the Ferber Ranch property. Two individuals were observed near the southeastern portion of the property. Details on the occurrence are summarized in Table 12 and illustrated on Exhibit 13A.

TABLE 12
OCELATED HUMBOLDT LILY POPULATIONS OBSERVED
ON THE FERBER RANCH PROPERTY

Population	Number of Individuals	Habitat Description	Phenology		
			Percent Vegetative	Percent Flowering	Percent Fruiting
F-1	2	Gravelly sandy loam soil in shaded riparian habitat; associated with coast live oak, western poison oak, Fish's milkwort, and mugwort.	50%	50%	0

Chaparral Nolina

Chaparral nolina was observed on the Ferber Ranch, O'Neill Oaks, and Hafen properties (Table 13; Exhibits 13A, 13B, and 13C). Relatively small populations were observed at three locations near the eastern side of the Ferber Ranch property. Large populations were observed throughout the O'Neill Oaks and Hafen properties. Over 10,000 individuals were observed throughout south-facing slopes in California sagebrush – California buckwheat scrub in the southern half of the O'Neill Oaks property and along a dirt road on the eastern side of the property. Approximately 5,000 individuals were observed along a ridgeline in California sagebrush – California buckwheat scrub on the Hafen property.

TABLE 13
CHAPARRAL NOLINA POPULATIONS OBSERVED
ON THE SOUTH COUNTY PROPERTIES

Population	Number of Individuals	Habitat Description	Phenology		
			Percent Vegetative	Percent Flowering	Percent Fruiting
Ferber Ranch					
F-1	1	Sandy clay on ridgeline; associated with bush monkeyflower, deerweed, chamise, and crested needlegrass.	100%	0	0
F-2	~200	Gravelly sandy soil on south-facing slope in California sagebrush scrub; associated with California sagebrush, lemonadeberry, golden-yarrow, black sage, and slender sunflower.	10%	90%	0
F-3	1	Northeast-facing slope in chamise chaparral; associated with chamise, white sage, and black sage.	0	0	100%
O'Neill Oaks					
Not labeled	~10,000	South-facing slopes throughout property in California sagebrush – California buckwheat scrub.	DNR	DNR	DNR
Hafen					
H-1	~5,000	Along ridgeline in California sagebrush – California buckwheat scrub	DNR	DNR	DNR
DNR: Did not record.					

Chaparral Rein-Orchid

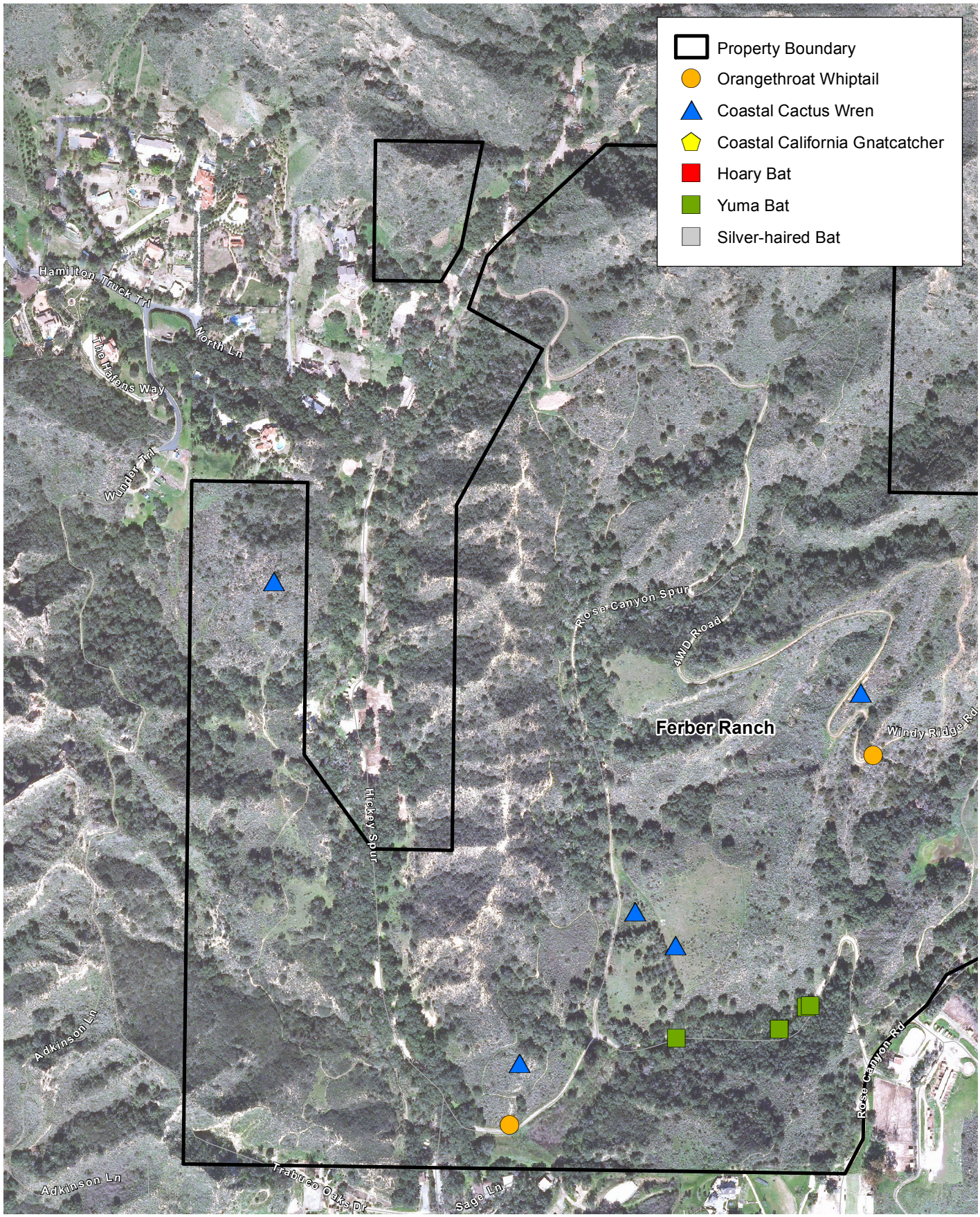
Chaparral rein-orchid (*Piperia cooperi*) was observed on the Ferber Ranch property. Two individuals were observed near the center of the eastern side of the property. Details on the occurrence are summarized in Table 14 and illustrated on Exhibit 13A.

TABLE 14
CHAPARRAL REIN-ORCHID POPULATIONS OBSERVED
ON THE FERBER RANCH PROPERTY

Population	Number of Individuals	Habitat Description	Phenology		
			Percent Vegetative	Percent Flowering	Percent Fruiting
F-1	2	Sandy soil on northeast-facing slope in chaparral/sage scrub; associated with intermediate mariposa lily, chamise, chaparral yucca, and scrub oak.	0	50%	50%

Fish's Milkwort

Fish's milkwort (*Polygala cornuta* var. *fishiae*) was observed on the Ferber Ranch property. Thirty-one individuals were observed in an ephemeral drainage in the southeastern region of the property. Details on the occurrences are summarized in Table 15 and illustrated on Exhibit 13A.



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Special Status Wildlife Locations

Exhibit 14A

Measure M2 Acquisition Properties/Ferber Ranch Property

N W E S

500 250 0 500 Feet

BonTerra CONSULTING

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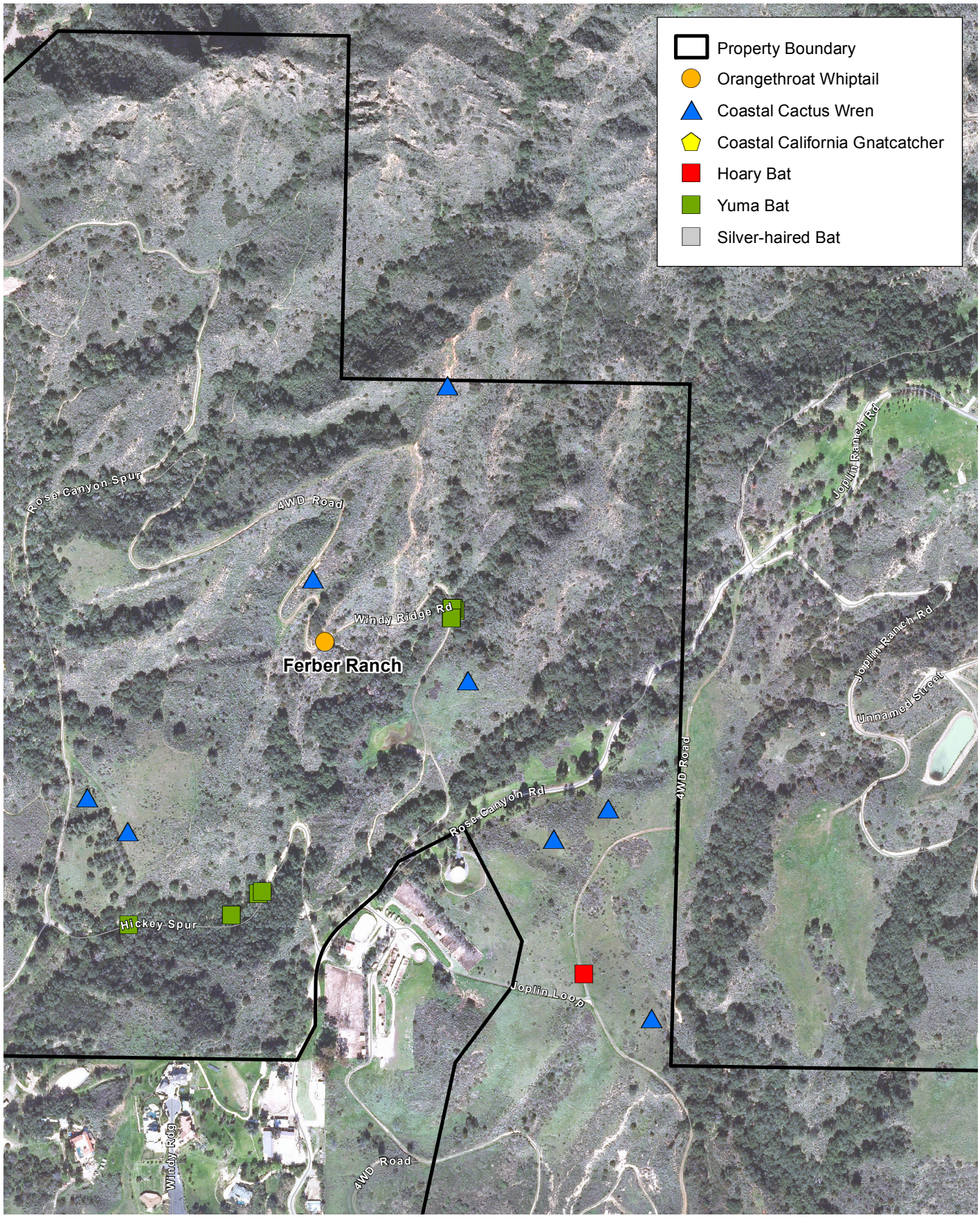

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Special Status Wildlife Locations

Exhibit 14A

Measure M2 Acquisition Properties/Ferber Ranch Property

N
W E
S

500 250 0 500

Feet

BonTerra CONSULTING

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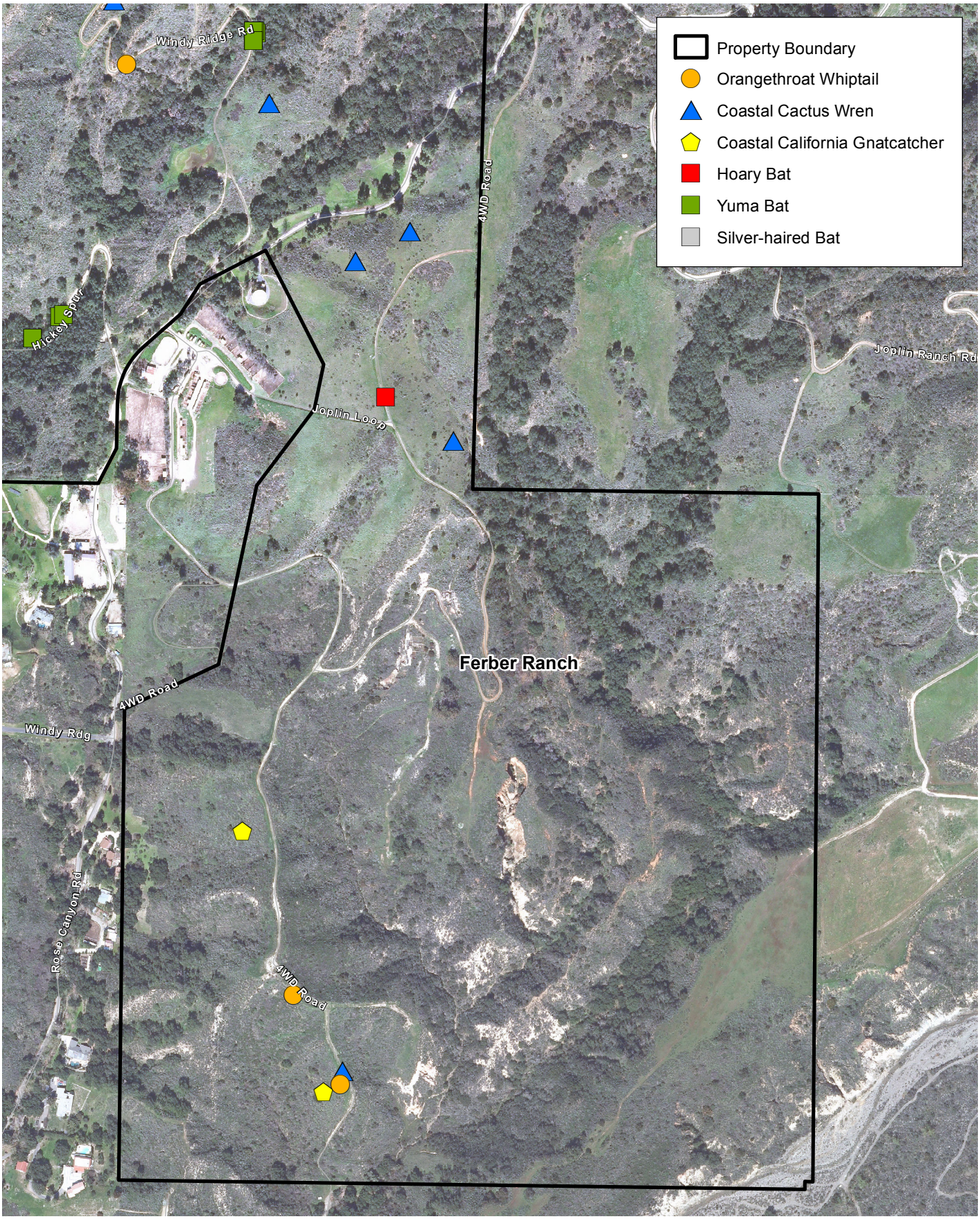

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Special Status Wildlife Locations

Exhibit 14A

Measure M2 Acquisition Properties/Ferber Ranch Property

N
W E
S

500 250 0 500

Feet

BonTerra CONSULTING

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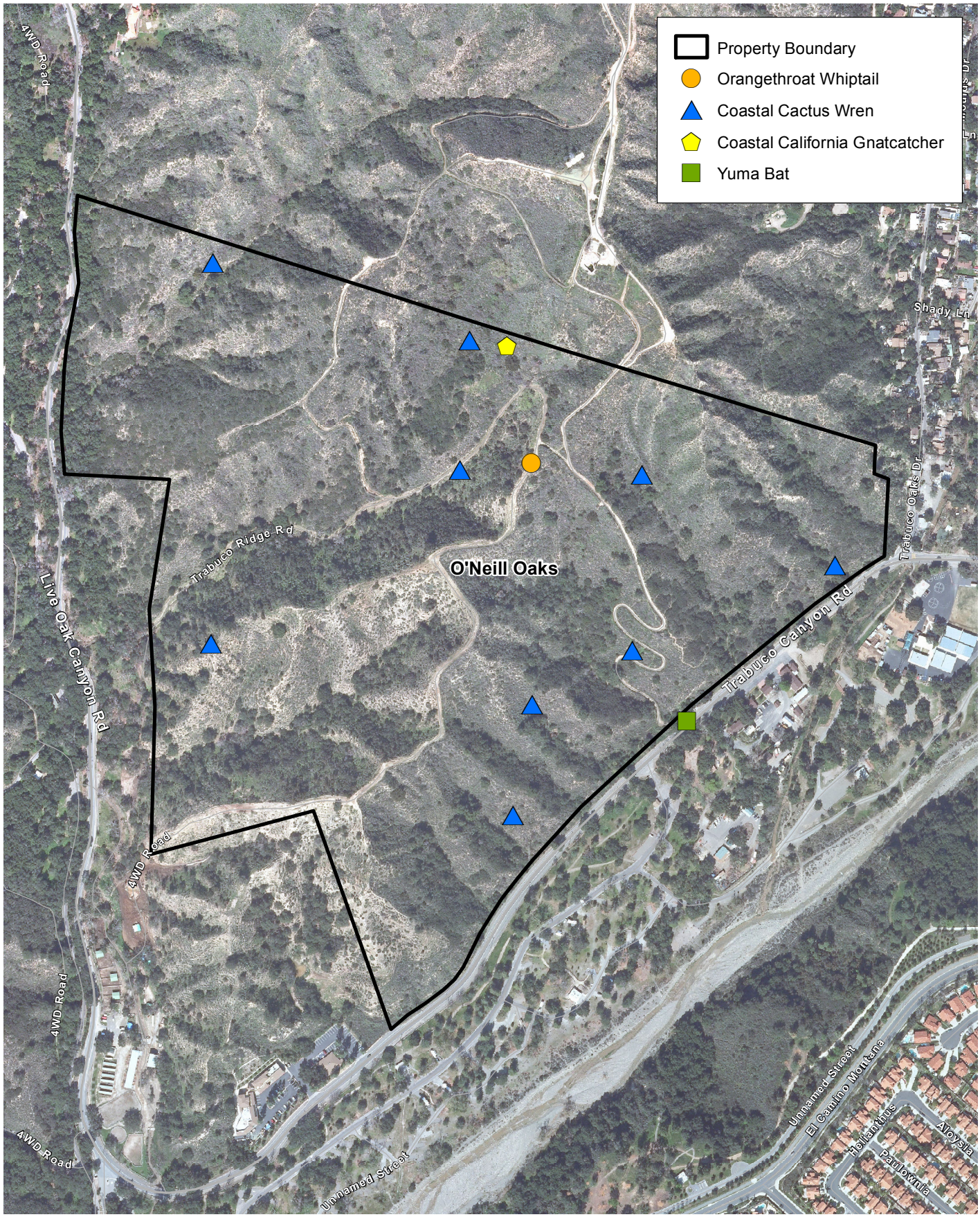

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Special Status Wildlife Locations

Exhibit 14B

Measure M2 Acquisition Properties/O'Neill Oaks Property

N
W E
S

500 250 0 500

Feet

BonTerra CONSULTING

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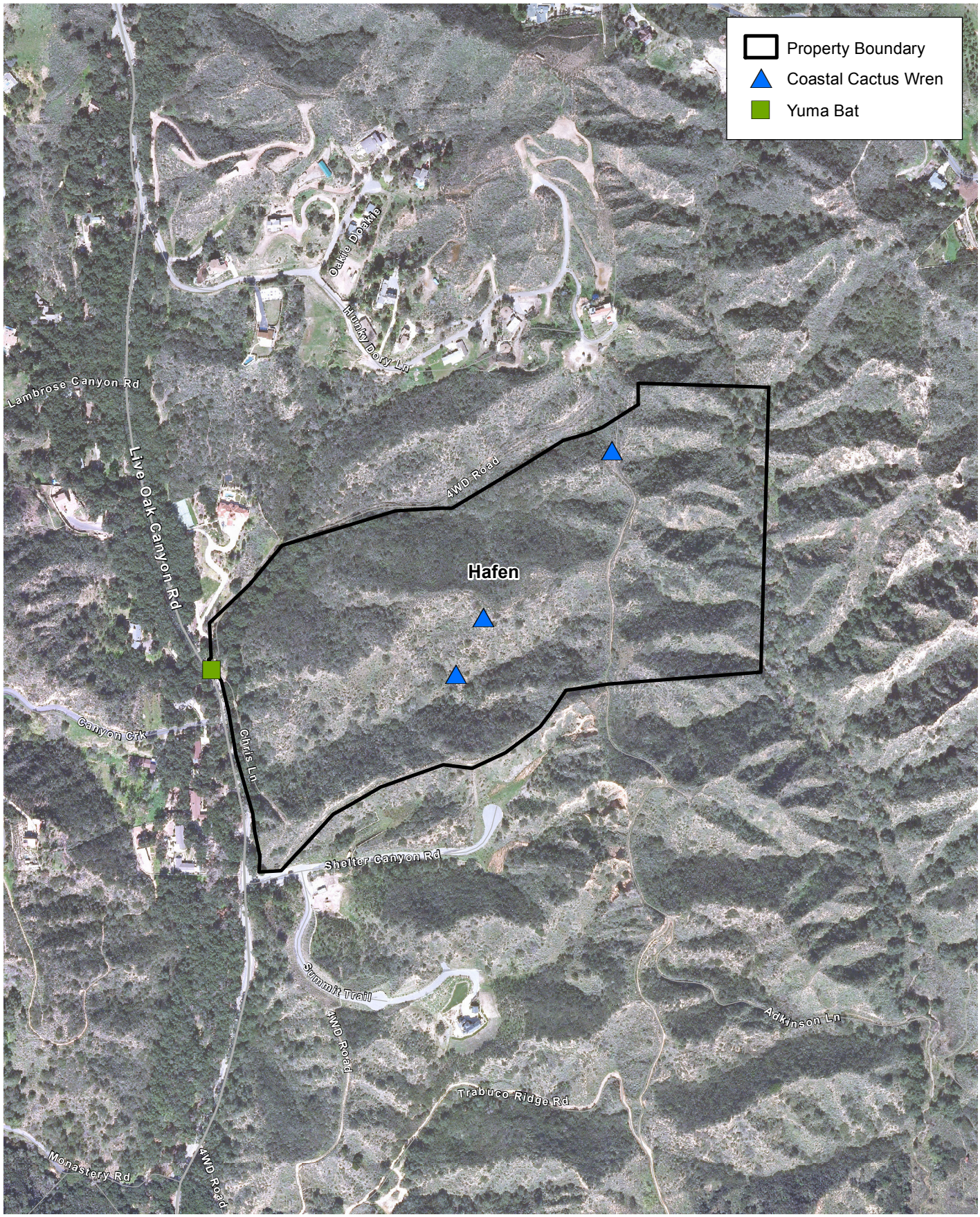

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Special Status Wildlife Locations

Exhibit 14C

Measure M2 Acquisition Properties/Hafen Property

N
W E
S

500 250 0 500

Feet

BonTerra CONSULTING

(Rev: 12-21-12 JAZ) Projects\OCTA\J008\Graphics\BioReport\SouthCounty\Ex14C_SSAnimals_Hafen.pdf

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Special Status Wildlife Locations

Exhibit 14D

Measure M2 Acquisition Properties/Saddle Creek South Property

N W E S

500 250 0 500

Feet

BonTerra CONSULTING

(Rev: 12-21-12 JAZ) Projects\OCTA\J008\Graphics\BioReport\SouthCounty\Ex14D_SSAnimals_SaddleCreek.pdf

TABLE 15
FISH'S MILKWORT POPULATIONS OBSERVED
ON THE FERBER RANCH PROPERTY

Population	Number of Individuals	Habitat Description	Phenology		
			Percent Vegetative	Percent Flowering	Percent Fruiting
F-1	11	Loamy soil on east-facing slope in coast live oak woodland; associated with western poison oak and California goldenrod.	100%	0	0
F-2	20	Sandy loam soil on moderate, east-facing slope in coast live oak woodland; associated with western poison oak and western sycamore.	100%	0	0

Coulter's Matilija Poppy

Coulter's matilija poppy (*Romneya coulteri*) was observed on the Ferber Ranch property. Sixty-five individuals were observed in the northern portion of the property. Details on the occurrances are summarized in Table 16 and illustrated on Exhibit 13A.

TABLE 16
COULTER'S MATILIJA POPPY POPULATIONS OBSERVED
ON THE FERBER RANCH PROPERTY

Population	Number of Individuals	Habitat Description	Phenology		
			Percent Vegetative	Percent Flowering	Percent Fruiting
F-1	15	South-facing slope in laurel sumac – lemonade berry chaparral with California sagebrush – California buckwheat scrub.	0	100%	0
F-2	50	South-facing slope in California sagebrush scrub.	0	0	100%

3.3.4 Special Status Wildlife

Based on the results of the literature review and the list of proposed covered wildlife species for the NCCP/HCP, 67 special status wildlife species are known to occur in vicinity of the south county properties. These species and their potential for occurrence (i.e., based on the presence of suitable habitat) are summarized in Table 17. Note that these species are listed taxonomically. Thirteen special status wildlife species were observed on the south county properties (see Exhibits 14A, 14B, 14C, and 14D. Species for which focused surveys were conducted are discussed after the table.

TABLE 17
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status		Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Invertebrates								
Branchinecta sandiegonensis San Diego fairy shrimp	FE	–	Vernal pools.	Coastal Orange County and San Diego County.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Streptocephalus woottoni Riverside fairy shrimp	FE	–	Vernal pools and ephemeral ponds.	Coastal Ventura County south to Baja California, Mexico.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Fish								
Catostomus santaanae Santa Ana sucker	FT	SSC	Small to medium-sized perennial streams, preferably with coarse gravel, rubble, or boulder substrate.	Los Angeles, San Gabriel, and Santa Ana River drainages.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Gila orcuttii arroyo chub*	–	SSC	Coastal freshwater streams and rivers with steady current and emergent vegetation.	Currently found at three native locations: Santa Margarita and De Luz Creeks in San Diego County, Trabuco and San Juan Creeks in Orange County; and Malibu Creek in Los Angeles County; introduced elsewhere.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Oncorhynchus mykiss irideus Southern steelhead – Southern California DPS	FE	SSC	Cool water streams; spawns in areas of gravelly substrate in riffles or pool tails.	The Southern California Steelhead DPS occurs from the Santa Maria River to the Tijuana River at the U.S. and	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.

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	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
				Mexican border in seasonally accessible rivers and streams.				
Rhinichthys osailolus Santa Ana speckled dace	—	SSC	Small streams, springs, large rivers, deep lakes; prefer clear oxygenated water with movement from current or waves; typically overhanging vegetation cover.	Restricted to the headwaters of the Los Angeles, Santa Ana, and San Gabriel rivers.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Amphibians								
Spea hammondii western spadefoot	–	SSC	Quiet streams, vernal pools, and temporary ponds.	Great Valley and bordering foothills and Coast Ranges from Monterey Bay south to Baja California, Mexico.	Marginally suitable habitat. Limited potential to occur.	Marginally suitable habitat. Limited potential to occur.	Marginally suitable habitat. Limited potential to occur.	Marginally suitable habitat. Limited potential to occur.
Anaxyrus californicus [*Bufo microscaphus californicus*] arroyo toad	FE	SSC	Semi-arid regions near washes or intermittent streams; requires suitable breeding pools.	Southern California and northwestern Baja California, Mexico.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Lithobates [*Rana*] *pipiens* northern leopard frog (native populations)	–	SSC	Variety of habitats such as grasslands, brushlands, woodlands, and forests; requires aquatic habitat for overwintering and breeding.	Broadly distributed; native in California only from Modoc and Lassen Counties.	Outside native range of species; not expected to occur as a native population.	Outside native range of species; not expected to occur as a native population.	Outside native range of species; not expected to occur as a native population.	Outside native range of species; not expected to occur as a native population.

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SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

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	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Taricha torosa Coast Range newt	–	SSC	Wet forests, oak forests, chaparral, grasslands. Breeds in streams, rivers, ponds, lakes, and reservoirs.	Coast and coast range mountains from Mendocino County south to San Diego County.	Marginally suitable habitat. Limited potential to occur.	Marginally suitable habitat. Limited potential to occur.	Marginally suitable habitat. Limited potential to occur.	Marginally suitable habitat. Limited potential to occur.
Reptiles								
Actinemys marmorata [*Emys m.*] Pacific [western] pond turtle*	–	SSC	In ponds, lakes, marshes, rivers, streams, and irrigation ditches with a rocky or muddy bottom and aquatic vegetation.	Pacific slope drainages from Washington south to northern Baja California, Mexico.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Phrynosoma blainvillii coast horned lizard*	–	SSC	Scrubland, grassland, coniferous forests, and broadleaf woodland with friable soil for burrowing.	Northern California south to northern Baja California, Mexico.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Aspidoscelis hyperytha [*Cnemidophorus hyperythus beldingi*] orangethroat whiptail*	–	SSC	Washes and open areas of sage scrub and chaparral in friable, gravelly soil.	Western Peninsular Ranges from Orange and San Bernardino Counties south to Baja California, Mexico.	Suitable habitat. **Observed on the property.**	Suitable habitat. **Observed on the property.**	Suitable habitat. May occur.	Suitable habitat. May occur.
Aspidoscelis [*Cnemidophorus*] *tigris stejnegeri* coastal whiptail [coastal western whiptail]	–	SA	Hot and dry open areas with sparse foliage such as chaparral, woodland.	Coastal Southern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges, and north into Ventura County.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.

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Species	Status		Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Anniella pulchra pulchra silvery legless lizard	–	SSC	In loose sandy soil of chaparral, pine-oak woodland, beach, and riparian areas.	Coast, Transverse, and Peninsular Ranges from Contra Costa County south to Baja California, Mexico.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Salvadora hexalepis virgultea coast patch-nosed snake	–	SSC	Sandy or rocky grasslands, chaparral, sagebrush plains, piñon-juniper woodlands, and desert scrub.	Coast of California from San Luis Obispo County south to Baja California, Mexico.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Thamnophis hammondii two-striped garter snake	–	SSC	Perennial or intermittent freshwater streams with rocky beds bordered by willows or other dense vegetation.	From Monterey County south to El Rosario in Baja California, Mexico.	Limited suitable habitat. Limited potential to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Thamnophis sirtalis ssp. south coast garter snake	–	SSC[a]	Associated with permanent or semi-permanent bodies of water in habitats such as grassland, woodland, scrubland, chaparral, and forest.	Coastal plain from Ventura County to San Diego County.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.

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	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Lampropeltis zonata pulchra California mountain kingsnake (San Diego population)	–	SSC	Found in diverse habitats including coniferous forests, oak-pine woodlands, riparian woodland, chaparral, manzanita, and coastal sage scrub; wooded areas near a stream with rock outcrops, talus or rotting logs that are exposed to the sun.	Found in three areas in Southern California: in the central San Diego County peninsular ranges - the Laguna, Palomar, Volcan, and Hot Springs Mountains; in the Santa Ana Mountains; and in the Hollywood Hills and the Santa Monica mountains.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Crotalus ruber red-diamond rattlesnake	–	SSC	Open scrub, chaparral, woodland, and grassland.	Orange County and San Bernardino County south to Baja California, Mexico.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Birds								
Plegadis chihi white-faced ibis (rookery sites)	–	WL	Nests in extensive marshes with tall marsh plants and feeds in fresh emergent wetland, shallow ponds or lakes, and the muddy ground of wet meadows of irrigated pastures and croplands.	Within Orange County, this species is known to occur at the San Joaquin Marsh and along lower San Diego Creek to Upper Newport Bay and at the Santa Ana River channel.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.

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Species	Status		Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Accipiter cooperii Cooper's hawk (nesting)	–	WL	Prefers to nest in oak woodlands and riparian woodlands. Forages primarily in forest habitats.	Breeds from southern Canada into northwestern and north-central Mexico. Wintering range extends south.	**Observed on the property.** Expected to occur for foraging and nesting; suitable foraging and nesting habitat.	**Observed on the property.** Expected to occur for foraging and nesting; suitable foraging and nesting habitat.	**Observed on the property.** Expected to occur for foraging and nesting; suitable foraging and nesting habitat.	**Observed on the property.** Expected to occur for foraging and nesting; suitable foraging and nesting habitat.
Accipiter striatus sharp-shinned hawk (nesting)	–	WL	Nests and forages in forest habitats.	Breeds in Alaska and Canada, portions of the U.S., in the West Indies, and south through Mexico, Central America, and South America. Migrant and winter visitor in Orange County.	Suitable foraging habitat; may occur for foraging. Outside the breeding range of the species; not expected to occur for nesting.	Suitable foraging habitat; may occur for foraging. Outside the breeding range of the species; not expected to occur for nesting.	Suitable foraging habitat; may occur for foraging. Outside the breeding range of the species; not expected to occur for nesting.	Suitable foraging habitat; may occur for foraging. Outside the breeding range of the species; not expected to occur for nesting.
Aquila chrysaetos golden eagle (nesting and non-breeding/ wintering)	–	FP, WL	Nests in open and semi-open habitats, such as tundra, shrublands, grasslands, woodland-brushlands, coniferous forests, farmland, and riparian habitats. Forages in broad expanses of open country.	Resident throughout Southern California, except in the Colorado Desert and Colorado River, where it is a casual winter visitor.	**Observed foraging on the property.** Limited potential to occur for nesting; marginal nesting habitat.	May occur for foraging; suitable foraging habitat. Limited potential to occur for nesting; marginal nesting habitat.	May occur for foraging; suitable foraging habitat. Limited potential to occur for nesting; marginal nesting habitat.	May occur for foraging; suitable foraging habitat. Limited potential to occur for nesting; marginal nesting habitat.

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	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Buteo regalis ferruginous hawk (non-breeding/ wintering)	–	WL	Open, dry habitats such as grasslands, shrublands, rangelands, and plowed agricultural fields.	Winter resident in California; visitor along the coast of Southern California.	Not expected to occur for foraging or nesting; no suitable foraging habitat and outside the breeding range of the species.	Not expected to occur for foraging or nesting; no suitable foraging habitat and outside the breeding range of the species.	Not expected to occur for foraging or nesting; no suitable foraging habitat and outside the breeding range of the species.	Not expected to occur for foraging or nesting; no suitable foraging habitat and outside the breeding range of the species.
Circus cyaneus northern harrier (nesting)	–	SSC	Breeds on the ground within dense vegetation. Forages in open habitats such as marshes and fields.	Winter migrant throughout Southern California, but a scarce local breeder.	**Observed foraging on the property.** Limited potential to occur for nesting; marginal nesting habitat.	May occur for foraging; suitable foraging habitat. Limited potential to occur for nesting; marginal nesting habitat.	May occur for foraging; suitable foraging habitat. Limited potential to occur for nesting; marginal nesting habitat.	May occur for foraging; suitable foraging habitat. Limited potential to occur for nesting; marginal nesting habitat.
Elanus leucurus white-tailed kite (nesting)	–	FP	Low elevation grassland, agricultural areas, wetlands, oak woodlands, savannahs, and riparian habitat adjacent to open areas.	Resident in coastal Southern California and a visitor and local breeder on the western edge of the deserts.	**Observed on the property.** May occur for nesting. Suitable foraging and nesting habitat.	May occur for foraging and nesting. Suitable foraging and nesting habitat	May occur for foraging and nesting. Suitable foraging and nesting habitat	May occur for foraging and nesting. Suitable foraging and nesting habitat

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	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Falco columbarius merlin (non-breeding/ wintering)	–	WL	Breeds in forests and prairies. Occures along the coast in open grasslands, savannahs; in inland and montane valleys; and in the desert.	Breeds in northern North America, Europe, and Asia. Fall transient and rare winter visitor in California.	Suitable foraging habitat; may occur for foraging as a fall or winter visitor. Outside the breeding range of the species; not expected to occur for nesting.	Suitable foraging habitat; may occur for foraging as a fall or winter visitor. Outside the breeding range of the species; not expected to occur for nesting.	Suitable foraging habitat; may occur for foraging as a fall or winter visitor. Outside the breeding range of the species; not expected to occur for nesting.	Suitable foraging habitat; may occur for foraging as a fall or winter visitor. Outside the breeding range of the species; not expected to occur for nesting.
Falco mexicanus prairie falcon (nesting)	–	WL	Nests on cliffs. Forages in grassland and scrub vegetation.	Year-round resident of interior Southern California. Winter resident and rare summer resident along the Southern California coast.	Suitable foraging habitat; may occur for foraging as a fall or winter visitor. Outside the breeding range of the species; not expected to occur for nesting.	Suitable foraging habitat; may occur for foraging as a fall or winter visitor. Outside the breeding range of the species; not expected to occur for nesting.	Suitable foraging habitat; may occur for foraging as a fall or winter visitor. Outside the breeding range of the species; not expected to occur for nesting.	Suitable foraging habitat; may occur for foraging as a fall or winter visitor. Outside the breeding range of the species; not expected to occur for nesting.

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	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Charadrius alexandrinus nivosus western snowy plover (nesting)	FT[b]	SSC[c]	Nests primarily on dune-backed beaches, barrier beaches, and salt-evaporation ponds; on the coast, it forages on beaches, tide flats, salt flats, and salt ponds.	The Pacific coast populations of the western snowy plover breed from southern Washington south through Baja California, Mexico. In Orange County, breeding is currently limited to Bolsa Chica and the mouth of the Santa Ana River. Migrants have been observed in the County from late summer through winter.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Coccyzus americanus occidentalis western yellow-billed cuckoo (nesting)	FC	SE	Broad areas of old-growth riparian habitats dominated by willows with dense understory.	Breeds primarily along the Sacramento River and south fork of the Kern River; from the Santa Ana River in the region.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Asio otus long-eared owl (nesting)	–	SSC	Nests in dense trees such as oaks and willows. Forages over grasslands and other open habitats.	Breeds in Canada south to northern Baja California, Mexico. Winters throughout breeding range to the interior of Mexico.	May occur for foraging and nesting. Suitable foraging and nesting habitat.	May occur for foraging and nesting. Suitable foraging and nesting habitat.	May occur for foraging and nesting. Suitable foraging and nesting habitat.	May occur for foraging and nesting. Suitable foraging and nesting habitat.

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	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Athene cunicularia burrowing owl (burrow sites; wintering in northern counties)	–	SSC	Sparse vegetation in arid and semi-arid habitats such as grasslands, steppes, deserts, prairies, and agricultural areas. Nests in mammal burrows or man-made cavities.	In California from the Central Valley and Southern California.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Empidonax traillii extimus southwestern willow flycatcher* (nesting)	FE	SE	Riparian habitats with dense growths of willows; often with a scattered overstory of cottonwood.	Breeds in coastal Southern California.	Marginally suitable habitat. Not seen during surveys/not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Lanius ludovicianus loggerhead shrike (nesting)	–	SSC	Grasslands and other dry, open habitats.	Throughout North America; a year-round resident in Southern California.	Suitable habitat. May occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	Suitable habitat. May occur.
Vireo bellii pusillus least Bell's vireo* (nesting)	FE	SE	Riparian habitat dominated by willows with dense understory vegetation.	Breeds throughout the Central Valley and other low-elevation river systems in California and Baja California, Mexico.	Marginally suitable habitat. Not seen during surveys/not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Eremophila alpestris actia California horned lark	–	WL	Open habitats with bare ground or short vegetation, such as shortgrass prairie, deserts, brushy flats, alpine, shrubsteppe, and agricultural areas.	From Alaska and Canadian arctic south to Mexico. Common migrant and winter resident that remains to breed along the Southern California	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.

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	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
				coast.				
Progne subis purple martin (nesting)	–	SSC	Breeds in cavities of conifer or western sycamore. Forages over riparian areas, forests, and woodlands.	Throughout much of eastern North American and locally in the Rocky Mountains, Sonoran Desert, Central Mexico, and Pacific coast states. Summer resident and migrant in California.	No suitable habitat due to presence of European starlings. Not expected to occur.	No suitable habitat due to European starlings. Not expected to occur.	No suitable habitat due to European starlings. Not expected to occur.	No suitable habitat due to European starlings. Not expected to occur.
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren* (San Diego and Orange Counties)	–	SSC	Coastal sage scrub and alluvial sage scrub with prickly pear cactus and/or cholla.	Southern Orange County and San Diego County to northwestern Baja California, Mexico.	Suitable habitat. **Observed on the property.**	Suitable habitat. **Observed on the property.**	Suitable habitat. **Observed on the property.**	Suitable habitat. **Observed on the property.**
Polioptila californica californica coastal California gnatcatcher*	FT	SSC	Coastal sage scrub vegetation.	Los Angeles, Orange, Riverside, and San Diego Counties south to Baja California, Mexico.	Suitable habitat**. Observed on the property.**	Suitable habitat. **Observed on the property.**	Suitable habitat. Not observed during focused surveys.	Suitable habitat. Not observed during focused surveys.
Dendroica petechia brewsteri yellow warbler (nesting)	–	SSC	Riparian vegetation, often with willows and cottonwoods.	Breeds in Southern California.	Marginally suitable habitat. Not seen during surveys/not expected to occur (except as migrant).	No suitable habitat. Not expected to occur (except as migrant).	No suitable habitat. Not expected to occur (except as migrant).	No suitable habitat. Not expected to occur (except as migrant).

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	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Icteria virens yellow-breasted chat (nesting)	–	SSC	The border of streams, creeks, sloughs, and rivers in dense thickets and tangles of blackberry, wild grape, and willow.	Summer resident in Southern California along the coast and in the deserts.	Marginally suitable habitat. Not seen during surveys/not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	–	WL	Steep, dry, rocky, south- or west-facing slopes in scrub vegetation interspersed with grasses and forbs or rock outcrops.	Year-round in Southern California.	Suitable habitat. **Observed on the property.**	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Ammodramus savannarum grasshopper sparrow (nesting)	–	SSC	Dense, dry or well-drained grassland.	Across North America from southern Canada south to Ecuador. Summer resident along the coastal slope of Southern California.	Suitable habitat. May occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	Suitable habitat. May occur.
Amphispiza belli belli Bell's sage sparrow	–	WL	Low, dense chamise chaparral and dry scrub vegetation, often with stands of cactus.	Resident in interior foothills or coastal Southern California.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Agelaius tricolor tricolored blackbird (nesting colony)	–	SSC	Colonially nests in marsh vegetation of bulrushes and cattails. In winter, forages in grasslands, agricultural fields, dairies, and feedlots.	Primarily in California with local nesting colonies in Oregon, Washington, Nevada, and coastal Baja California, Mexico.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.

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	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Mammals								
Antrozous pallidus pallid bat*	–	SSC	Low elevation grasslands, shrublands, woodlands, and forests. Roosts in caves, crevices, mines, bridges, and occasionally in hollow trees.	Throughout California except the high Sierra Nevada from Shasta County to Kern County and in the northwestern portion of the State.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Corynorhinus townsendii Townsend's big-eared bat	–	SSC	Wide variety of habitats except subalpine and alpine. Roosts in caves, mines, tunnels, buildings, or other human-made structures.	Throughout most of California.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Euderma maculatum spotted bat	–	SSC	Foothills, mountains, arid deserts, grasslands, and mixed conifer forests. Roosts in rock crevices, occasionally in caves and buildings.	Western North America from southern British Columbia to Mexico.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Lasionycteris noctivagans silver-haired bat	–	SA	Coastal and montane forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats. Primarily a forest dweller.	North America, from southern British Columbia to northern Mexico.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. **Observed during focused bat surveys.**

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	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Lasiurus cinereus hoary bat	–	SA	Prefers open habitats or habitat mosaics, with access to trees and open areas or habitat edges.	Widest range of any New World bat, living from Argentina and Chile northward through Canada.	Suitable habitat. **Observed during focused bat surveys.**	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Lasiurus blossevillii western red bat	–	SSC	Prefers riparian areas dominated by walnuts, oaks, willows, cottonwoods, and sycamores where they roost in these broad-leafed trees.	Found in western Canada, the western U.S., western Mexico and Central America.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Lasiurus xanthinus western yellow bat	–	SSC	Valley foothill riparian, desert riparian, desert wash, and palm oasis. Roosts in trees.	Mexican Plateau, coastal western Mexico, and deserts of the southwestern U.S.	Suitable habitat. May occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Myotis ciliolabrum western small-footed myotis*	–	SA	Arid uplands, primarily in arid wooded and brushy uplands near water. Roosts in caves, buildings, mines, crevices, and occasionally under bridges and under bark.	Southern British Columbia, Alberta, and Saskatchewan, Canada to the southwestern U.S.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.

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	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Myotis evotis long-eared myotis*	–	SA	Nearly all brush, woodland, and forest habitats, but appears to prefer coniferous woodlands and forests. Roosts in buildings, crevices, spaces under bark, and snags.	Western Canada; western U.S.; and Baja California, Mexico.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Myotis yumanensis Yuma myotis*	–	SA	Open forests and woodlands, closely associated with water bodies. Roosts in buildings, mines, caves, crevices, swallow nests, and under bridges.	Southwestern British Columbia through the western U.S., and into central Mexico.	Suitable habitat. **Observed during focused bat surveys.**	Suitable habitat. **Observed during focused bat surveys.**	Suitable habitat. **Observed during focused bat surveys.**	Suitable habitat. **Observed during focused bat surveys.**
Eumops perotis californicus western mastiff bat	–	SSC	Open, semi-arid to arid habitats including conifer and deciduous woodland, coastal scrub, grasslands, palm oases, chaparral, desert scrub, and urban. Roosts in crevices in cliffs, high buildings, trees, and tunnels.	Southeastern San Joaquin Valley and Coastal Ranges from Monterey County south through Southern California, and from the coast eastward to the Colorado Desert.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Nyctinomops femorosaccus pocketed free-tailed bat	–	SSC	Pinyon-juniper woodland, desert scrub, desert succulent scrub, desert riparian, desert. Roosts in crevices in cliffs, caverns, or buildings.	Southwestern U.S. to south-central Mexico.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.

TABLE 17
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status		Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Nyctinomops macrotis big free-tailed bat*	–	SSC	Forages over water in rugged, rocky terrain. Roosts in crevices in high cliffs or rocky outcrops.	Western U.S. to northern South America and the Caribbean Islands.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Lepus californicus bennettii San Diego black-tailed jackrabbit	–	SSC	Herbaceous and desert-shrub areas and open, early stages of forest and chaparral.	Pacific slope from Santa Barbara County south to northwestern Baja California, Mexico.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.	No suitable habitat. Not expected to occur.
Chaetodipus fallax fallax northwestern San Diego pocket mouse	–	SSC	Chaparral, coastal sage scrub, and grassland.	Southwest San Bernardino County south to northern Baja California, Mexico.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Neotoma lepida intermedia San Diego desert woodrat	–	SSC	Joshua tree woodland, pinyon-juniper, mixed and chamise-redshank chaparral, sagebrush, and desert habitats.	Pacific slope from San Luis Obispo south to northwestern Baja California, Mexico.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Onychomys torridus ramona southern grasshopper mouse	–	SSC	Desert areas, especially in scrub habitats with friable soil. Also in coastal scrub, mixed chaparral, sagebrush, low sage, and bitterbrush habitats.	Along the coast of Southern California from Los Angeles County south through San Diego County.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Bassariscus astutus ringtail[d]	–	–	Woodlands, riparian areas, and arid scrubland.	The southwestern third of the U.S. into Baja California and other portions of Mexico.	Limited suitable habitat. Limited potential to occur.	Limited suitable habitat. Limited potential to occur.	Limited suitable habitat. Limited potential to occur.	Limited suitable habitat. Limited potential to occur.

TABLE 17
SPECIAL STATUS WILDLIFE SPECIES KNOWN TO OCCUR IN THE VICINITY OF THE SOUTH COUNTY PROPERTIES

Species	Status		Habitat	Range	Potential to Occur on Each Property/Results of Focused Surveys			
	USFWS	CDFW			Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South
Taxidea taxus American badger	–	SSC	Drier, open stages of shrub, forest, and herbaceous habitats with friable soil.	Throughout California except the extreme northwest.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.
Puma [*Felis*] *concolor* mountain lion[e*]	–	–	Broad variety of habitats in range except shrubless deserts and agricultural areas.	Latitudinal range of 110 degrees in North and South America.	Suitable habitat. May occur.	Suitable habitat. **Observed on the property[e].**	Suitable habitat. May occur.	Suitable habitat. May occur.
Lynx rufus bobcat[*]	–	–	Broad variety of habitats.	Throughout contiguous U.S. and Mexico south to Rio Mescale, and Canada.	Suitable habitat. **Observed on the property.**	Suitable habitat. May occur.	Suitable habitat. May occur.	Suitable habitat. May occur.

USFWS: U.S. Fish and Wildlife Service; CDFW: California Department of Fish and Wildlife; DPS: Distinct Population Segment; msl: mean sea level.

LEGEND

Federal (USFWS)		State (CDFW)	
FE	Endangered	SE	Endangered
FT	Threatened	SSC	Species of Special Concern
FC	Candidate Species	WL	Watch List
		FP	Fully Protected
		SA	Special Animal

[*] Proposed covered species in the NCCP/HCP.
[a] Individuals on the coastal plain from Ventura County to San Diego County, from sea level to approximately 2,790 feet above msl, are protected.
[b] Federal listing applies only to the Pacific coastal population.
[c] SSC designation refers to both the coastal and interior populations.
[d] A species of local concern.
[e] Incidentally observed by a Park Ranger in May 2012.

Coastal Cactus Wren

Coastal cactus wren was observed on all four south county properties (Exhibits 14A, 14B, 14C, and 14D). Multiple territories were observed on each property, including one territory on the Ferber Ranch property adjacent to willow riparian habitat that fledged young cactus wrens.

Coastal California Gnatcatcher

Coastal California gnatcatchers were observed in the southwest corner of the Ferber Ranch property and the northern edge of the O'Neill Oaks property during focused surveys. One breeding pair and one individual (detected through vocalization) were observed on the Ferber Ranch property; one breeding pair was detected on the O'Neill Oaks property. Breeding behavior was confirmed either through observation of males displaying territorial behavior, or observations of adults carrying nesting material and/or food for nesting.

Silver-Haired Bat

Silver-haired bat was observed during the focused bat surveys. It was documented once on the Saddle Creek South location in Bauers Canyon, which runs west-east through the center of the property (Exhibit 14D).

Hoary Bat

Hoary bat was observed during the focused bat surveys. It was documented once on the Ferber Ranch property over open fields along the northern spur road off Joplin Loop Road in the central portion of the property (Exhibit 14A).

Yuma Myotis

Yuma myotis was observed during the focused bat surveys (Exhibits 14A, 14B, 14C, and 14D). It was documented 15 times on the Ferber Ranch property and once on each of the other threeproperties. On the Ferber Ranch property, it was primarily recorded from two locations: along Hickey Canyon Road and Windy Ridge Road in the northern section of the property. On the O'Neill Oaks property it was recorded at the western boundary of the property; it is likely that three high frequency species detected along the Trabuco Ridge trail and at the entrance to the property were also Yuma myotis. On the Hafen property, it was recorded along Live Oak Canyon Road on the western border of the property; a high frequency species detected at the entrance is possibly a Yuma myotis. On the Saddle Creek South property, it was recorded on the northern boundary of the property along Live Oak Canyon Road.

3.3.5 Critical Habitat

The USFWS defines critical habitat as follows:

> the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the [Endangered Species] Act, on which are found those physical or biological features (1) essential to the conservation of the species and (2) that may require special management considerations or protection; and specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

On February 9, 2011, the USFWS published a Final Rule designating critical habitat for arroyo toad. This Final Rule designates 98,366 acres in Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, Orange, and San Diego Counties as critical habitat. The southern end of the Ferber Ranch property and the southeastern edge of the O'Neill Oaks property are within Unit 10b of the designated critical habitat for arroyo toad.

On December 19, 2007, the USFWS published a final rule revising critical habitat for the coastal California gnatcatcher. The revised critical habitat designates 197,303 acres of land in Ventura, Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties, California. All four properties are within Unit 6 of the designated critical habitat for coastal California gnatcatcher.

On December 4, 2012, the USFWS published a Final Rule revising critical habitat for the Riverside fairy shrimp (*Streptocephalus woottoni*). The revised critical habitat designates 1,724 acres of land in Ventura, Orange, and San Diego Counties, California. The southern half of the Saddle Creek South property overlaps Subunit 2dA of the designated critical habitat for Riverside fairy shrimp.

3.4 COVERED SPECIES SUMMARY

The baseline surveys described in this document were focused towards establishing baseline knowledge of the set of species covered by the OCTA M2 NCCP/HCP. The OCTA M2 NCCP/HCP includes requirements to understand and document the status of Covered Species and their habitats within the Preserves. Table 18 provides of summary of the OCTA M2 NCCP/HCP Covered Species; whether they were observed during the baseline surveys; other information documenting the potential for the Covered Species to occur on site; and a description of the threats and opportunities for management of the Preserve to benefit Covered Species.

TABLE 18
SUMMARY OF COVERED SPECIES

Species	Observations During Baseline Surveys				Potential to Occur on the Property				Opportunities, Threats, and Management
	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	
Plants									
Calochortus weedii var. *intermedius* intermediate mariposa lily	**OBS**	**OBS**	**OBS**	**OBS**	POT	POT	POT	POT	Potential threats include off-road vehicles, equestrian use, and grazing. Opportunities occur to establish the species in areas with suitable conditions (e.g., soils) that are currently degraded. A resource management plan may incorporate restricting unauthorized

TABLE 18 (Continued)
SUMMARY OF COVERED SPECIES

Species	Observations During Baseline Surveys				Potential to Occur on the Property				Opportunities, Threats, and Management
	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	
									vehicles on site and transplantation and/or seeding of this variety in suitable areas on site.
Centromadia parryi ssp. *australis* southern tarplant	NO	NO	NO	NO	NE	NE	NE	NE	No opportunities available because properties are outside range of the species.
Dudleya multicaulis many-stemmed dudleya	NO	NO	NO	NO	POT	MAR	MAR	MAR	Potential threats include off-road vehicles, equestrian use, and grazing. Opportunities occur to establish the species in areas with suitable conditions (e.g., soils) that are currently degraded. A resource management plan may incorporate restrictions to unauthorized vehicles on site and transplantation and/or seeding of this species in suitable areas on site.
Fish									
Gila orcuttii arroyo chub	NO	NO	NO	NO	NE	NE	NE	NE	No opportunities available because suitable habitat does not occur on the properties.
Reptiles									
Actinemys marmorata [*Emys m.*] Pacific [western] pond turtle	NO	NO	NO	NO	NE	NE	NE	NE	No opportunities available because suitable habitat does not occur on the properties.
Phrynosoma	NO	NO	NO	NO	POT	POT	POT	POT	Potential threats

TABLE 18 (Continued)
SUMMARY OF COVERED SPECIES

Species	Observations During Baseline Surveys				Potential to Occur on the Property				Opportunities, Threats, and Management
	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	
blainvillii coast horned lizard									include mortality and habitat destruction due to off-road vehicles/ equestrian use and spread of non-native ant species. Habitat restoration opportunities for coastal sage scrub and other suitable habitat exists. A resource management plan may incorporate restricting unauthorized vehicles and ensuring any plant/soil material brought on site is free of non-native ant species.
Aspidoscelis hyperytha [*Cnemidophorus hyperythus beldingi*] orangethroat whiptail	**OBS**	**OBS**	NO	NO	POT	POT	POT	POT	The major threat to this species is loss of habitat by development. The preservation of suitable habitats on site is the best conservation opportunity for this species. A resource management plan may incorporate restoration opportunities for coastal sage scrub and other native habitats utilized by this species.
Birds									
Empidonax traillii extimus southwestern	NO	NO	NO	NO	MAR	NE	NE	NE	The loss and degradation of riparian habitats

TABLE 18 (Continued)
SUMMARY OF COVERED SPECIES

Species	Observations During Baseline Surveys				Potential to Occur on the Property				Opportunities, Threats, and Management
	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	
willow flycatcher (nesting)									and brood parasitism by the brown-headed cowbird (*Molothrus ater*) are this subspecies' greatest threats. The southwestern willow flycatcher population has not shown the same recovery that the least Bell's vireo has shown in response to riparian habitat restoration and cowbird control, as described below. Therefore, no additional opportunities or management activities have been identified.
Vireo bellii pusillus least Bell's vireo (nesting)	NO	NO	NO	NO	MAR	NE	NE	NE	The loss and degradation of riparian habitats and brood parasitism by the brown-headed cowbird are this subspsecies' greatest threats. Possible opportunities available on the Ferber Ranch property for riparian habitat restoration and enhancement. A resource management plan may include a cowbird-control program and an exotic plant removal effort to support riparian restoration efforts

TABLE 18 (Continued)
SUMMARY OF COVERED SPECIES

Species	Observations During Baseline Surveys				Potential to Occur on the Property				Opportunities, Threats, and Management
	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	
									on the Ferber Ranch property.
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren (San Diego and Orange Counties)	**OBS**	**OBS**	**OBS**	**OBS**	POT	POT	POT	POT	Habitat loss, degradation, and fragmentation are the most critical threats facing this subspecies. Protection of coastal sage scrub habitat is crucial for the preservation of this subspecies. A resource management plan may incorporate restoration opportunities for coastal sage scrub with cactus species utilized by this subspecies.
Polioptila californica californica coastal California gnatcatcher	**OBS**	**OBS**	NO	NO	POT	POT	POT	POT	Habitat loss, degradation, and fragmentation are the most critical threats facing this subspecies. Protection of coastal sage scrub habitat is crucial for the preservation of this subspecies. A resource management plan may incorporate restoration opportunities for coastal sage scrub utilized by this subspecies.
Mammals									
Antrozous pallidus pallid bat	NO	NO	NO	NO	PF/PR	PF/PR	PF/PR	PF/PR	Loss of foraging areas has decreased prey availability and diversity. This species is also

TABLE 18 (Continued)
SUMMARY OF COVERED SPECIES

Species	Observations During Baseline Surveys				Potential to Occur on the Property				Opportunities, Threats, and Management
	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	
									very sensitive to disturbance, including hiking in proximity to roost sites. To provide roosting opportunities for this species, mature trees and snags and abandoned buildings should be maintained. Avoid use of pesticides that would affect prey populations.
Myotis ciliolabrum western small-footed myotis	NO	NO	NO	NO	PF/PR	PF/PR	PF/PR	PF/PR	Loss of foraging areas has decreased prey availability and diversity. To provide roosting opportunities for this species, mature trees and snags and abandoned buildings should be maintained. Avoid use of pesticides that would affect prey populations.
Myotis evotis long-eared myotis	NO	NO	NO	NO	PF/PR	PF/PR	PF/PR	PF/PR	Habitat loss is the most critical threat facing this species. To provide roosting opportunities for this species, mature trees and snags should be maintained on site.

TABLE 18 (Continued)
SUMMARY OF COVERED SPECIES

Species	Observations During Baseline Surveys				Potential to Occur on the Property				Opportunities, Threats, and Management
	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	
									Avoid use of pesticides that would affect prey populations.
Myotis yumanensis Yuma myotis	**OBS**	**OBS**	**OBS**	**OBS**	PF/NR	PF/NR	PF/NR	PF/PR	Loss of foraging areas has decreased prey availability and diversity. To provide roosting opportunities for this species, the abandoned building on the Saddle Creek South property should be maintained. Avoid use of pesticides that would affect prey populations.
Nyctinomops macrotis big free-tailed bat	NO	NO	NO	NO	PF/PR	PF/PR	PF/PR	PF/PR	Loss of foraging areas has decreased prey availability and diversity. To provide roosting opportunities for this species, mature trees and snags and abandoned buildings should be maintained. Avoid use of pesticides that would affect prey populations.
Puma [*Felis*] *concolor* mountain lion	NO	**OBS**	NO	NO	POT	POT	POT	POT	Potential threats include illegal hunting and habitat loss. Opportunities are available for on-site native habitat restoration and

TABLE 18 (Continued)
SUMMARY OF COVERED SPECIES

Species	Observations During Baseline Surveys				Potential to Occur on the Property				Opportunities, Threats, and Management
	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	Ferber Ranch	O'Neill Oaks	Hafen	Saddle Creek South	
									enhancement, which would benefit this species.
Lynx rufus bobcat	**OBS**	NO	NO	NO	POT	POT	POT	POT	Potential threats include illegal hunting and habitat loss. Opportunities are available for on-site native habitat restoration and enhancement, which would benefit this species.

NO: Not observed on site; OBS: Observed on site; NE: No suitable habitat and/or outside known range; not expected to occur; MAR: Marginally suitable habitat; not observed during surveys and not expected to occur;
POT: Suitable habitat; may occur; PF/NR: Suitable foraging, but no suitable roosting habitat; may occur for foraging but is not expected to roost on site; PF/PR: Suitable foraging and roosting habitat; may occur for foraging and roosting.

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Attachment A

Plant and Wildlife Compendia