2010–11 Baseline Survey Report for the Jamul Mountains Parcels of the the Otay Ranch Preserve

Prepared for

City of Chula Vista
276 Fourth Avenue, MSP-101
Chula Vista, CA 91910
Contact: Mr. Glen Laube

Prepared by

RECON Environmental, Inc.
1927 Fifth Avenue
San Diego, CA 92101-2358
P 619.308.9333 F 619.308.9334
RECON Number 5256
January 3, 2011

Cailin O'Meara, Biologist
J.R. Sundberg, Biologist
Mark Dodero, Senior Biologist

TABLE OF CONTENTS

1.0 Executive Summary 1

2.0 Introduction 2

3.0 Survey Methods 7

3.1 Literature and Database Review 7

3.2 Botanical Resources 7

3.2.1 Vegetation Communities 7
3.2.2 General Plant Surveys 9

3.3 Wildlife 9

3.3.1 General Wildlife Surveys 10

3.4 Wildlife Movement 11

3.5 Drainages 11

3.6 Dumping, Trespassing, and Vagrant Encampments 11

4.0 Resources and Survey Results 12

4.1 Site Description 12

4.1.1 Topography 12
4.1.2 Soils 12
4.1.3 Botanical Resources 15
4.1.4 Zoological Resources 22
4.1.5 Sensitive Species 23
4.1.6 Invasive Exotic Plant Species 36
4.1.7 Other Survey Results 38

5.0 Discussion 39

5.1 Survey Recommendations 39

5.1.1 Quino Checkerspot Butterfly Surveys 39
5.1.2 Photo Point Monitoring 39

6.0 References Cited 41

TABLE OF CONTENTS (CONT.)

FIGURES

1: Otay Ranch Preserve Regional Location 3
2: Project Location on USGS Map 4
3: Jamul Mountains Parcels on Aerial Photograph 5
4: Jamul Mountains Survey Parcels Fire History 6
5: California Natural Diversity Database Species 8
6: Jamul Mountains Survey Parcels Topography 13
7: Jamul Mountains Survey Parcels Soils 14
8: Jamul Mountains Survey Parcels Vegetation Communities and Land Cover 16
9: Jamul Mountains Survey Parcels Sensitive Plant Species 24
10: Jamul Mountains Survey Parcels Sensitive Wildlife Species 25

TABLES

1: Details for Jamul Mountains Parcels Baseline Botanical Surveys 7
2: Details for Jamul Mountains Parcels Baseline Wildlife Surveys 10
3: Acreages of Soil Series Found in the Jamul Mountains Parcels 12
4: Acreages of Vegetation Communities Found in the Jamul Mountains Parcels 15

PHOTOGRAPHS

1: Diegan Coastal Sage Scrub Dominates the Jamul Mountains Parcels 18
2: Portions of the Diegan Coastal Sage Scrub Contain a Large Non-native Grass Component 19
3: Coastal Sage-Chaparral Transition Found in the Northeastern Portion of the Jamul Parcels 19
4: Native Grassland Limited to a Small Area in the Northwestern Portion of the Jamul Mountains 21
5: Small Area of Fresh Water Marsh Located in the North–Central Drainage of the Jamul Mountains 21
6: Coast Barrel Cactus (*Ferocactus viridescens*) Occurs in the Western Portion of the Jamul Mountains 27
7: San Diego Marsh-Elder (*Iva hayesiana*) Found in Seasonal Drainages in the Jamul Mountains 27
8: Munz's Sage (*Salvia munzii*) Occurs Along the Southern Ridgeline in the Jamul Mountains 28
9: San Diego County Needlegrass (*Achnatherum diegoense*) Found Scattered throughout the Jamul Mountains 29
10: Western Dichondra (*Dichondra occidentalis*) Found in the Jamul Mountains 30
11: Coast Horned Lizards (*Phrynosoma blainvilli*) Found along Open Road Areas 34
12: Southern Mule Deer (*Odocoileus hemionus*) Observed in the Jamul Mountains 34

TABLE OF CONTENTS (CONT.)

ATTACHMENTS

1: Plant Species Observed
2: Wildlife Species Observed
3: Sensitive Plant Species Observed
4: Sensitive Wildlife Species Observed

1.0 Executive Summary

This baseline biological resource report has been prepared for the Jamul Mountains parcels of the Otay Ranch Preserve, Assessor's Parcel Numbers 598-070-05 and 598-070-06. The Otay Ranch Preserve is located in an unincorporated portion of southwestern San Diego County, east of the city of Chula Vista.

RECON biologists conducted surveys to gather baseline biological information at the Jamul Mountains parcels during the spring and summer of 2011. The surveys consisted of vegetation mapping and general plant and wildlife surveys. Sensitive species were observed incidentally, and suitable habitat for sensitive wildlife species was also evaluated during general surveys.

Three vegetation communities were mapped in the Jamul Mountains parcels during baseline surveys. Within these vegetation communities, a total of 96 native plant species and 23 non-native plant species were observed. Nine of the native plant species are considered sensitive. Wildlife observed includes nine invertebrate species,four reptile species, 28 bird species, and five mammal species. Of these,two reptile species, three bird species, and one mammal species are considered sensitive.

The baseline data gathered during these surveys will be used to guide future prioritization of preserve management actions. Focused surveys for Quino checkerspot butterfly (*Euphydryas editha quino*) and photographic monitoring have been recommended for Fiscal Year 2011–12.

2.0 Introduction

This baseline biological resources report has been prepared for the City of Chula Vista to be used in support of the Otay Ranch Resource Management Plan. The Otay Ranch Preserve (Preserve) is currently composed of seven parcels in the San Ysidro Mountains: Dulzura, Jamul Mountains, Little Cedar Canyon, McMillin, Northern San Ysidro, Salt Creek, and San Ysidro. This baseline biological resource report has been prepared for the Jamul Mountains parcels which encompasses 258 acres in Assessor's Parcel Numbers (APN) 598-070-05 and 598-070-06.

The city of Chula Vista is located in southwestern San Diego County, which is in southern California near the U.S.–Mexico border. The Jamul Mountains parcels are in an unincorporated location east of Chula Vista, north of Otay Lakes Road, and west of State Route 94 (Figure 1).

The Jamul Mountains parcels are located in the Otay River watershed and contain a drainage that feeds into Proctor Valley Creek (Figures 2 and 3). The Jamul Mountains parcels are located in the Jamul Mountains, which are a part of the Peninsular Ranges in California.

Baseline surveys were performed at the Jamul Mountains parcels in spring 2011. The surveys consisted of vegetation mapping and a general flora and fauna list. This report includes recommendations for focused surveys for selected sensitive species depending on the types of habitat present at each site. The Jamul Mountains parcels burned in 2003 and again in 2007 (Figure 4). Vegetation communities mapped in 2011 are post-burn communities.

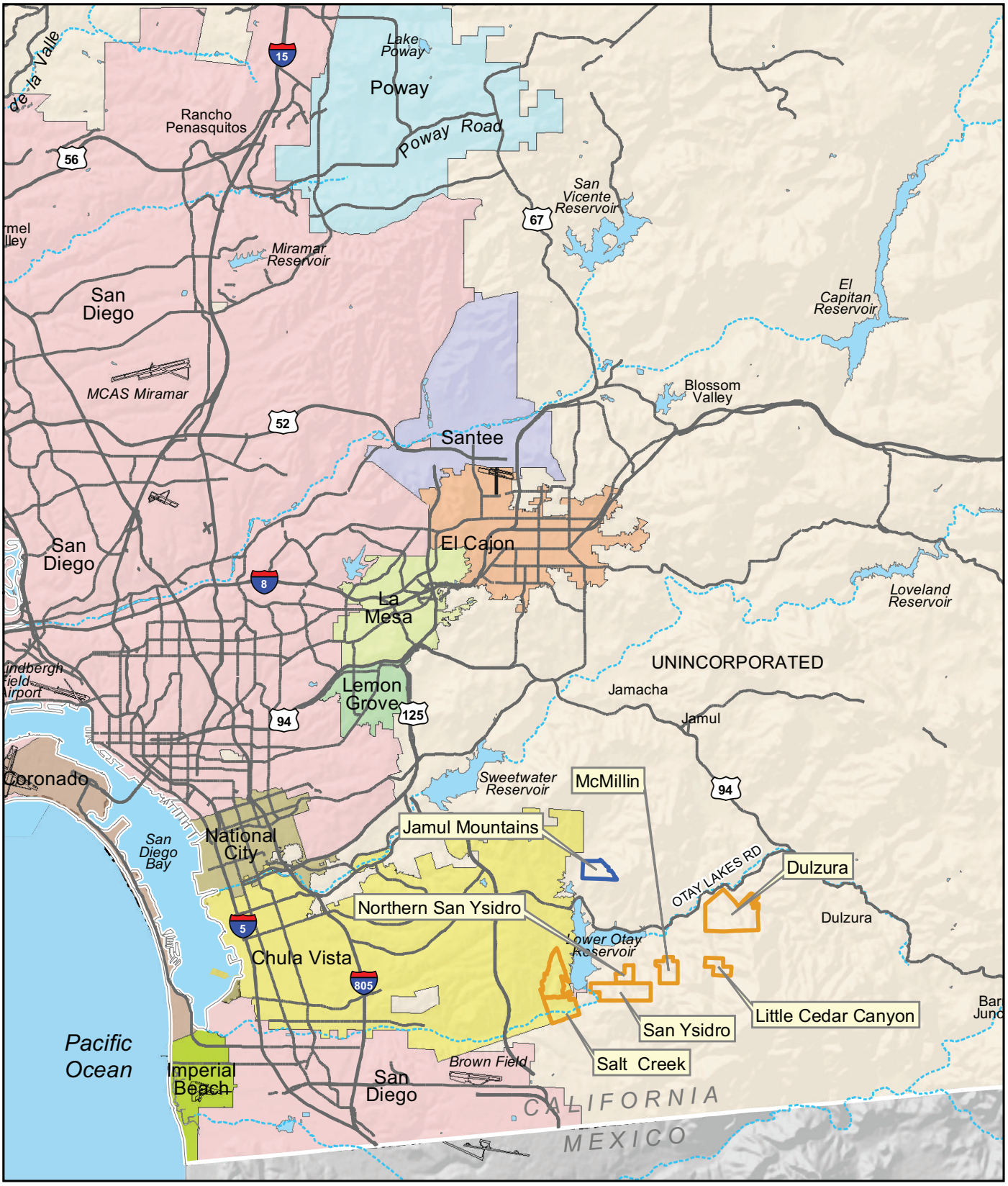


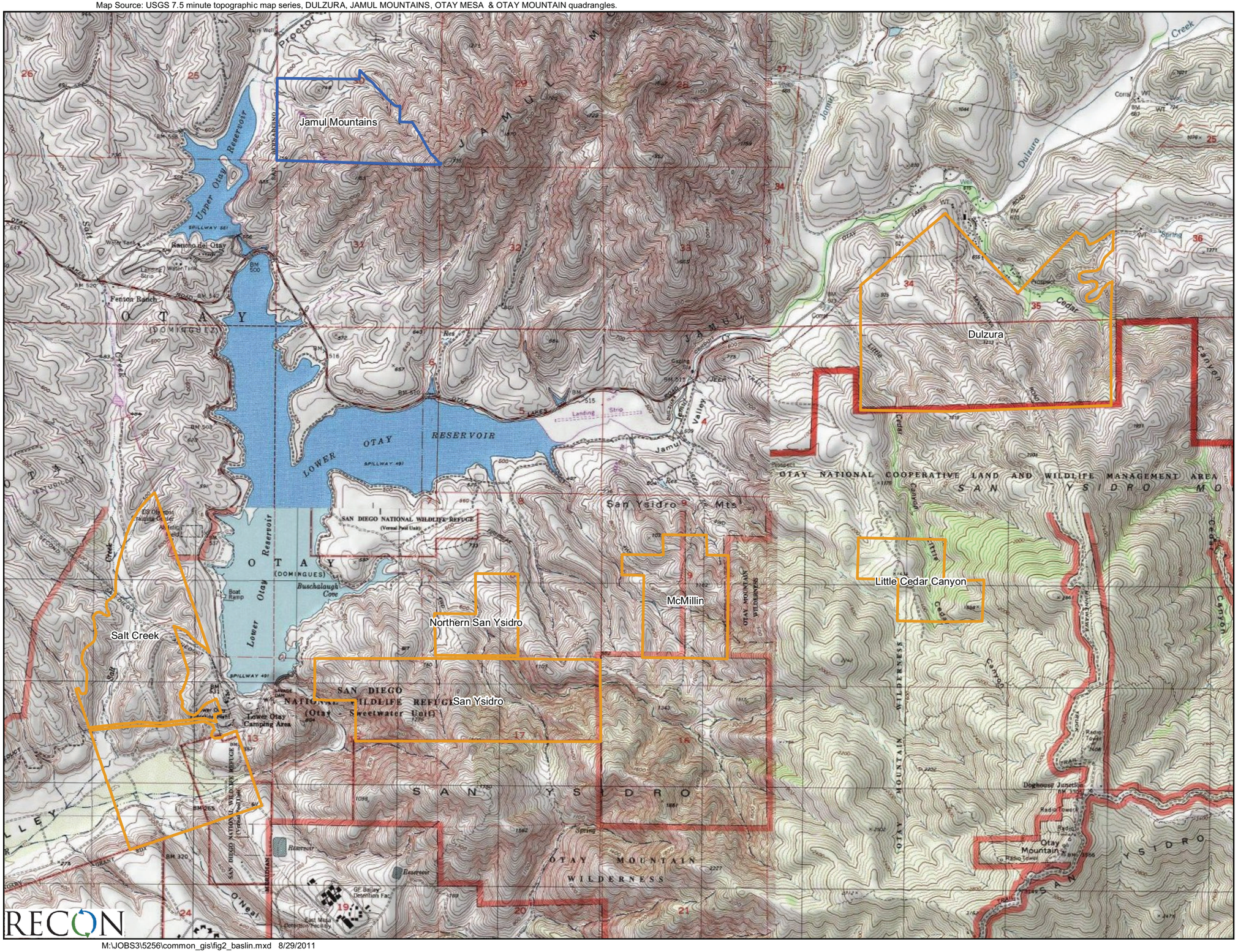
FIGURE 1

Otay Ranch Preserve Regional Location

RECON

M:\JOBS3\5256\common_gis\fig1_baslin.mxd 8/29/2011

Map Source: USGS 7.5 minute topographic map series, DULZURA, JAMUL MOUNTAINS, OTAY MESA & OTAY MOUNTAIN quadrangles.



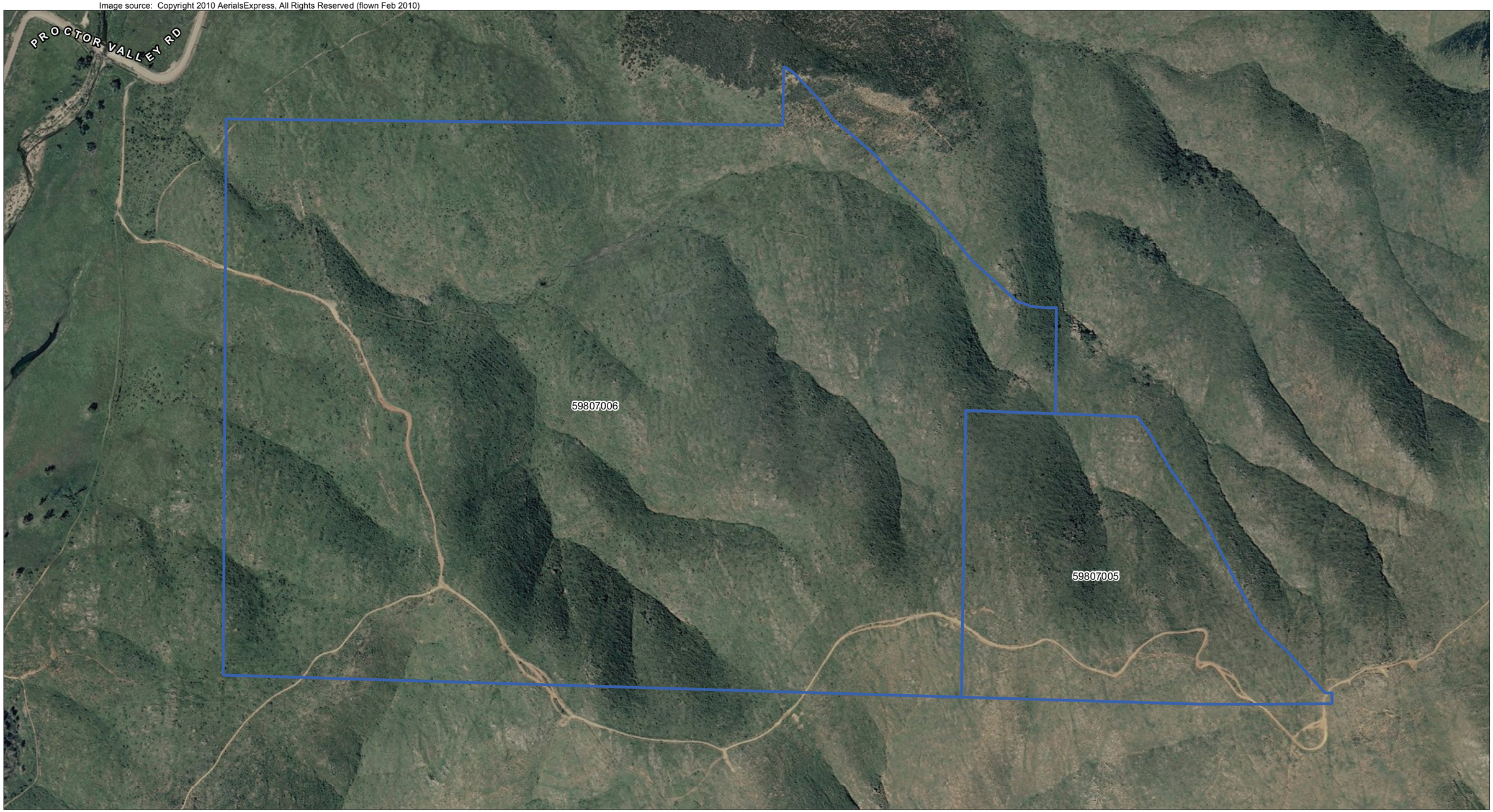
RECON

M:\JOBS3\5256\common_gis\fig2_baslin.mxd 8/29/2011

FIGURE 2

Project Location on USGS Map

Image source: Copyright 2010 AerialsExpress, All Rights Reserved (flown Feb 2010)



Jamul Mountains Survey Parcels

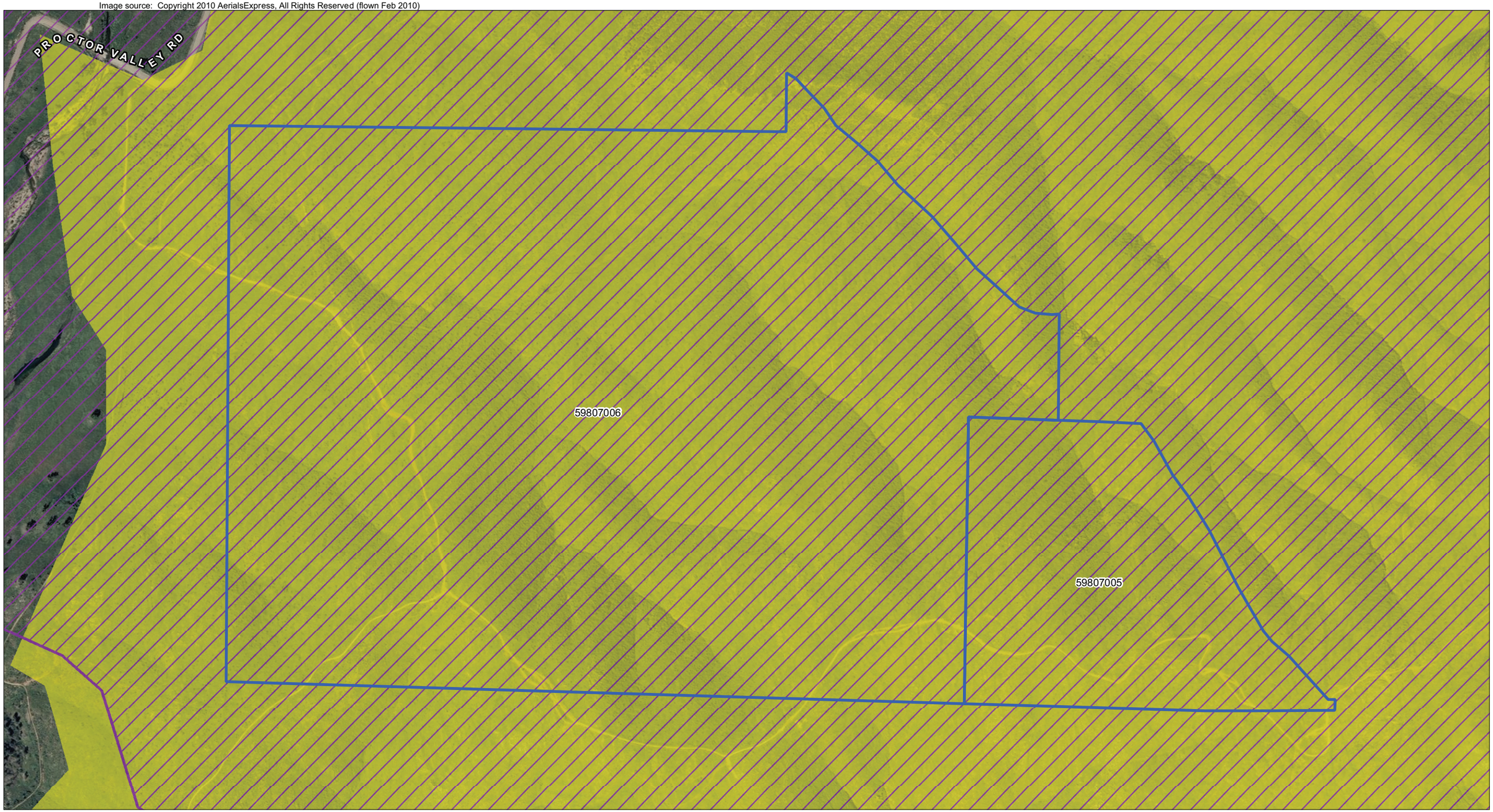
FIGURE 3

RECON

M:\JOBS3\5256\common_gis\fig3_baslinJamul.mxd 8/29/2011

Jamul Mountains Parcels on Aerial Photograph

Image source: Copyright 2010 AerialsExpress, All Rights Reserved (flown Feb 2010)



Jamul Mountains Survey Parcels

Fire Burn History by Year

Otay/Mine Fire 2003

Harris Fire 2007

FIGURE 4

Jamul Mountains Survey Parcels Fire History

RECON

M:\JOBS3\5256\common_gis\fig4_baslinJamul.mxd 8/29/2011

3.0 Survey Methods

3.1 Literature and Database Review

Prior to conducting the surveys, data were compiled from various resources, including the California Natural Diversity Database (CNDDB), the Consortium of California Herbaria, San Diego County vegetation maps, and previous biological surveys conducted by RECON, in an effort to utilize diverse sources of historical data on the flora and fauna present or within the nearby vicinity of the Jamul Mountains parcels. Figure 5 shows sensitive plant and wildlife species recorded within a 2-mile radius of the Jamul Mountains parcels.

3.2 Botanical Resources

RECON personnel conducted baseline surveys for botanical resources by mapping vegetation communities and compiling an inventory of the flora within the Jamul Mountains parcels. Survey dates and personnel for the botanical resources baseline surveys are presented in Table 1. The results of these surveys are discussed separately in Section 4.0 Resources and Survey Results.

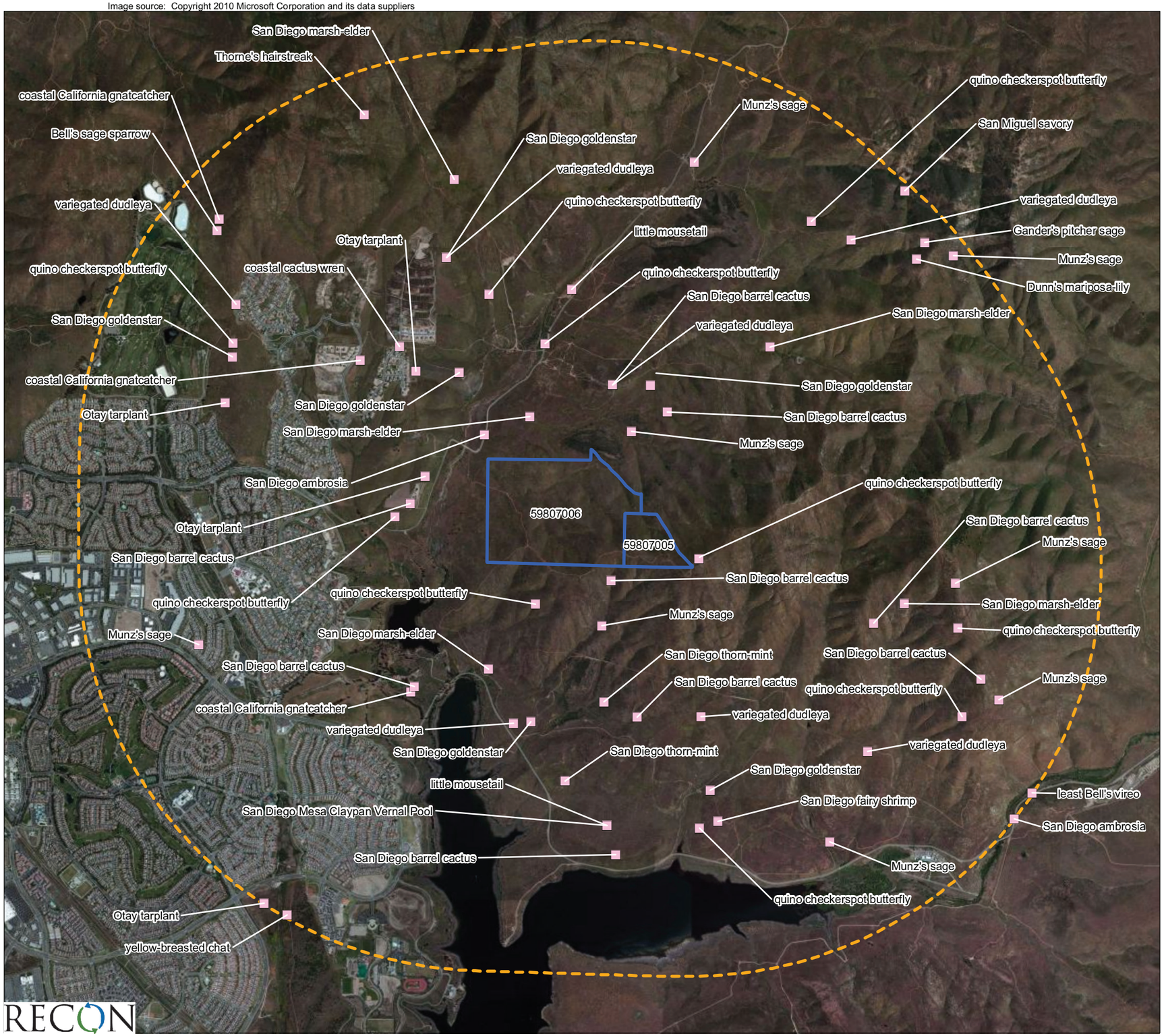
TABLE 1
DETAILS FOR JAMUL MOUNTAINS PARCELS BASELINE BOTANICAL SURVEYS

Survey Date	Task	Personnel Present
03/14/2011	Pre-Baseline Survey (Checked access at multiple locations)	Anna Bennett, Mark Dodero
04/12/2011	Baseline Survey	Anna Bennett, Mark Dodero
05/24/2011	Baseline Survey	John Lovio, JR Sundberg
05/27/2011	Baseline Survey	Brenna Ogg, JR Sundberg
07/15/2011	Baseline Survey	Anna Bennett, Megan Lahti

3.2.1 Vegetation Communities

The main objective of the baseline vegetation community mapping was to identify vegetation communities suitable for sensitive plants and wildlife occurrences and to guide future preserve management decisions. Communities were mapped on 1-inch-equals-200-feet aerial photographs flown in February 2010. County of San Diego Department of Land Use vegetation communities mapped in August 2004 and November 2005 were used as a reference for the updated 2011 mapping. Meandering

Image source: Copyright 2010 Microsoft Corporation and its data suppliers



Jamul Mountains Survey Parcels

2 Mile Buffer

CNDDB Observations

Species Previously Observed Within 2 Miles of Jamul Mtns Parcels

0 Miles 0.5

RECON

M:\JOBS3\5256\common_gis\fig5_baslineJamul.mxd 8/29/2011

FIGURE 5

California Natural Diversity Database Species

transects were walked by biologists through the range of habitats and other conditions present within the Jamul Mountains parcels.

Vegetation communities and land cover types were typically determined by the dominant plant species present and classified using the *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008), which is based on Holland's 1986 *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). A minimum of five percent cover of shrubs was used as the criterion for assigning a vegetation community to a shrub association rather than non-native grasslands. Criteria for determining vegetation communities are described in further detail in Section 4.1.3 Botanical Resources.

3.2.2 General Plant Surveys

General plant surveys were conducted simultaneously with vegetation mapping to identify plant species present within the vegetation communities surveyed. All plant species apparent at the time of the surveys were recorded. Floral nomenclature for species follows the Jepson Online Interchange specifications (JFP 2011). Species that could not be readily identified in the field were collected and identified using a taxonomic key. Although focused sensitive plant surveys were not conducted, sensitive plant species identified during the general plant surveys were mapped using a hand held Trimble Global Positioning (GPS) unit and species lists were revised accordingly. Assessments of the sensitivity of plant species are based primarily on State of California (2011a), City of Chula Vista (2003), and California Native Plant Society (CNPS; 2011).

Assessments for the potential occurrence of sensitive plant species are based upon species occurrence records from the CNDDB within a 2-mile radius of the Jamul Mountains parcels, The Consortium of California Herbaria, and literature review (see Figure 5 and Section 3.1). Likelihood for reoccurrence within the Jamul Mountains parcels was evaluated based on habitat requirements, range, the timing constraints of the surveys, and visibility potential.

3.3 Wildlife

RECON personnel conducted baseline wildlife surveys to (1) identify species assemblages associated with various post-burn vegetation communities and (2) identify any indicator species that may correspond with particular floristic and/or structural habitat characteristics. Survey dates and personnel for the baseline surveys are presented in Table 2. The results of these surveys are discussed separately in Section 4.0 Resources and Survey Results.

TABLE 2
DETAILS FOR JAMUL MOUNTAINS PARCELS BASELINE WILDLIFE SURVEYS

Date	Observers	Specific Areas	Field Hours	Total Hours	Weather
05/24/2011	John Lovio, JR Sundberg	SE SE sec. 30, T17S, R1E	0815–1500	10.25	61–70ºF; Clear; windy
06/08/2011	John Lovio	SW sec. 30, T17S, R1E	0600–1130	8.25	57–72ºF; variable, 30% cloud cover to heavy overcast; windy 0 to 3–5 mph
07/20/2011	Anna Bennett, Mark Dodero	TASKS: Quino checkerspot butterfly (*Euphydryas editha quino*) & California gnatcatcher (*Polioptila californica californica*) habitat assessment			
07/25/2011	Anna Bennett, Mark Dodero	TASKS: Quino checkerspot butterfly & California gnatcatcher habitat assessment			

3.3.1 General Wildlife Surveys

The baseline wildlife surveys of the Jamul Mountains parcels were conducted on the basis of defined focal survey areas and were related to specific sets of habitat conditions present at the time the baseline surveys were conducted. Irregular transects were designed to represent the range of habitats and other conditions (e.g., hydrology, topography) within each focal area. An effort was made to sample each habitat type within a focal area in approximate proportion to its occurrence. Survey effort was allocated among a range of weather conditions conducive to activity by the various target taxa (e.g., cool mornings for birds, warm weather for reptiles and butterflies). Routes were mapped on 1-inch-equals-800-feet aerial photographs flown in February 2010 to allow scaling of quantitative data since route lengths and configurations were not uniform.

An effort was made to conduct repeat visits to certain focal areas so as to document the levels of consistency or seasonal change in wildlife assemblage composition. Repeat visits to focal areas did not repeat the previous survey routes exactly, but often overlapped significantly. The robustness of the above sampling method was examined by comparing the degree of similarity of species composition and counts of transects within and among focal areas with similar combinations of habitat features.

All wildlife species apparent at the time of the surveys were recorded. Individuals of the following taxa were counted during inventories: insects, amphibians, reptiles, birds, and mammals. All animal species were observed visually or detected from calls, tracks, scat,

or nests. Because surveys were performed during the day, nocturnal animals were identified only by sign. Bird species and often other species were annotated to habitat association. Any sensitive wildlife species identified during the general wildlife surveys was also recorded and the species lists revised accordingly.

Assessments for the potential occurrence of sensitive wildlife species are based upon species occurrence records from the CNDDB within a 2 mile radius of the Jamul Mountains parcels. Likelihood for reoccurrence within the Jamul Mountains parcels was evaluated based on habitat requirements, range, and the timing constraints of the surveys.

Zoological nomenclature for invertebrates is in accordance with Mattoni (1990) and Opler and Wright (1999); for amphibians and reptiles with Crother (2001, 2008) and Crother et al. (2003); for birds with the American Ornithologists' Union Checklist (1998) and Unitt (1984, 2004); and for mammals with Baker et al. (2003) and Hall (1981). Assessments of the sensitivity of species are based primarily on State of California (2011b, 2011c), and City of Chula Vista (2003).

3.4 Wildlife Movement

Wildlife movement was incidentally observed during baseline wildlife surveys. Constraints to wildlife movement are discussed in Section 4.1.7.2.

3.5 Drainages

Major drainages and channels are defined here as either natural or artificial channels that provide a course for the flow of water, whether that flow is continuous or intermittent. These drainages occur in the canyon bottoms and are often associated with riparian vegetation. Drainages were determined by using USGS 7.5-minute topographic maps and performing a visual inspection in the field.

3.6 Dumping, Trespassing, and Vagrant Encampments

Dumping, trespassing, and vagrant encampments were incidentally observed and recorded during baseline surveys.

4.0 Resources and Survey Results

4.1 Site Description

The following sections describe the topography and soils within the Jamul Mountains parcels.

4.1.1 Topography

The Jamul Mountains parcels are located in the San Ysidro mountains. The Jamul Mountains parcels consist of gently sloping to moderately steep slopes, ranging between 5 and 20 degrees. Elevations range from 580 to 1,660 feet. Proctor Valley Creek is located directly northwest of the Jamul Mountains parcels (see Figure 2). The topography of the Jamul Mountains parcels is shown in Figure 6.

4.1.2 Soils

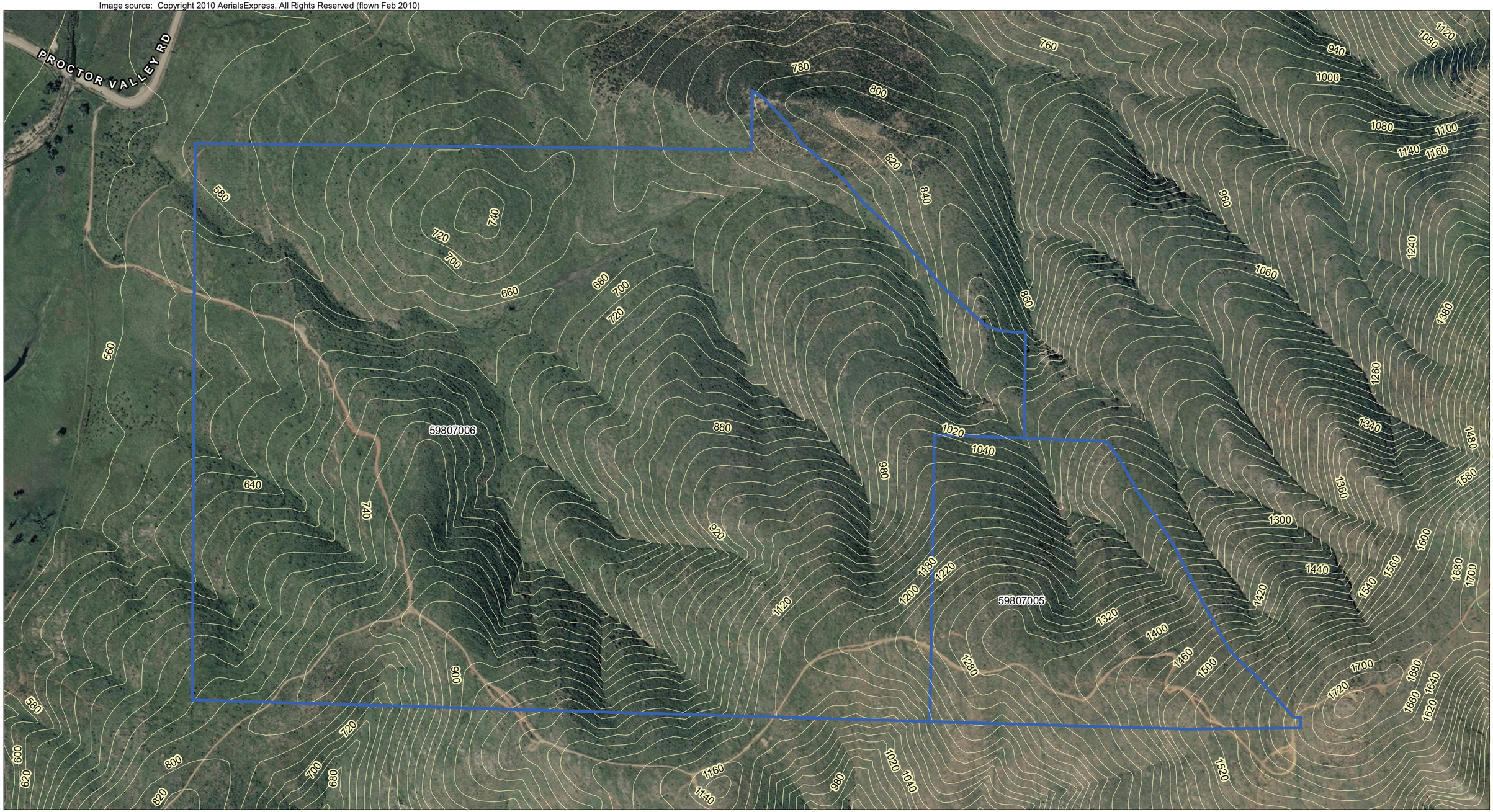
Three soil series occur in the Jamul Mountain parcels: Friant rocky fine sandy loam, Olivenhain cobbly loam, and San Miguel–Exchequer rocky silt loam (Figure 7). The acreages of these soil series are listed in Table 3.

TABLE 3
ACREAGES OF SOIL SERIES FOUND IN THE JAMUL MOUNTAINS PARCELS

Soil Series	Acreage
Friant rocky fine sandy loam, 30 to 70% slopes	135 acres
Olivenhain cobbly loam, 2 to 9% slopes	<1 acre
San Miguel-Exchequer rocky silt loams, 9 to 70% slopes	123 acres

- The Friant series consists of shallow and very shallow, well-drained fine sandy loams underlain by hard metasedimentary rock. This soil occurs on mountainous uplands at elevations between 680 and 1,660 feet. Rock outcrop covers 2 to 10 percent of the surface.
- The Olivenhain series consists of moderately deep to deep cobbly loams with very cobbly clay subsoil. This soil occurs at elevations around 580 feet.
- The San Miguel–Exchequer series consists of shallow to moderately deep silt loams with clay subsoil. This soil occurs on mountainous uplands at elevations between 580 and 1,100 feet. Rock outcrop covers 10 percent of the surface (USDA 1973).

Image source: Copyright 2010 AerialsExpress, All Rights Reserved (flown Feb 2010)



Jamul Mountains Survey Parcels

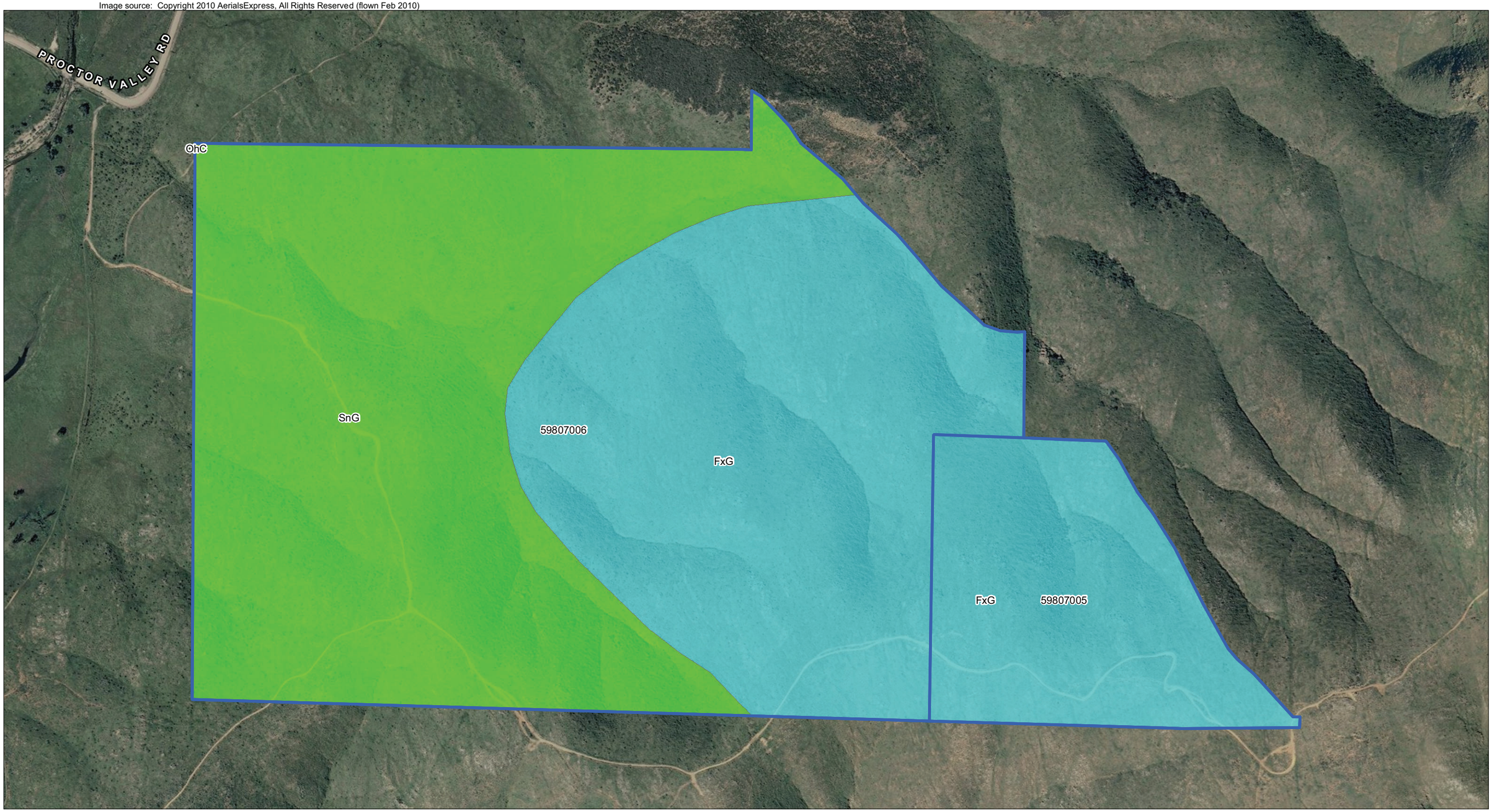
FIGURE 6

Jamul Mountains Survey Parcels Topography

RECON

M:\JOBS3\5256\common_gis\fig6_baslinJamul.mxd 8/29/2011

Image source: Copyright 2010 AerialsExpress, All Rights Reserved (flown Feb 2010)



Jamul Mountains Survey Parcels

Soil Classification

- FxG - Friant rocky fine sandy loam, 30 to 70 percent slopes
- OhC - Olivenhain cobbly loam, 2 to 9 percent slopes
- SnG - San Miguel-Exchequer rocky silt loams, 9 to 70 percent slopes

FIGURE 7

Jamul Mountains Survey Parcels Soils

RECON

M:\JOBS3\5256\common_gis\fig7_baslinJamul.mxd 8/29/2011

4.1.3 Botanical Resources

4.1.3.1 Common Plant Species

Attachment 1 provides a complete list of all plant species observed in the Jamul Mountains parcels. A total of 119 plant species were observed in the Jamul Mountains parcels. Of these species, 96 species are native, and 23 species are non-native. The vegetation communities where these plant species occur in are described below.

4.1.3.2 Vegetation Communities

There were five vegetation communities and land cover types present in the Jamul Mountains parcels: Diegan coastal sage scrub, non-native grassland, coastal sage–chaparral transition, valley needlegrass grassland, and freshwater marsh. The acreages of these vegetation communities within the Northern Jamul Mountains parcels and their respective tiers under the City of Chula Vista's Multiple Species Conservation Program Subarea Plan are shown in Table 4 (City of Chula Vista 2003). Vegetation communities mapped on-site are shown on Figure 8. The following text provides an explanation of the tier classification under the MSCP and general descriptions of the vegetation communities based on the Vegetation Communities of San Diego County (Oberbauer et al. 2008). A more detailed description specific to the Jamul Mountains parcels follows the general descriptions.

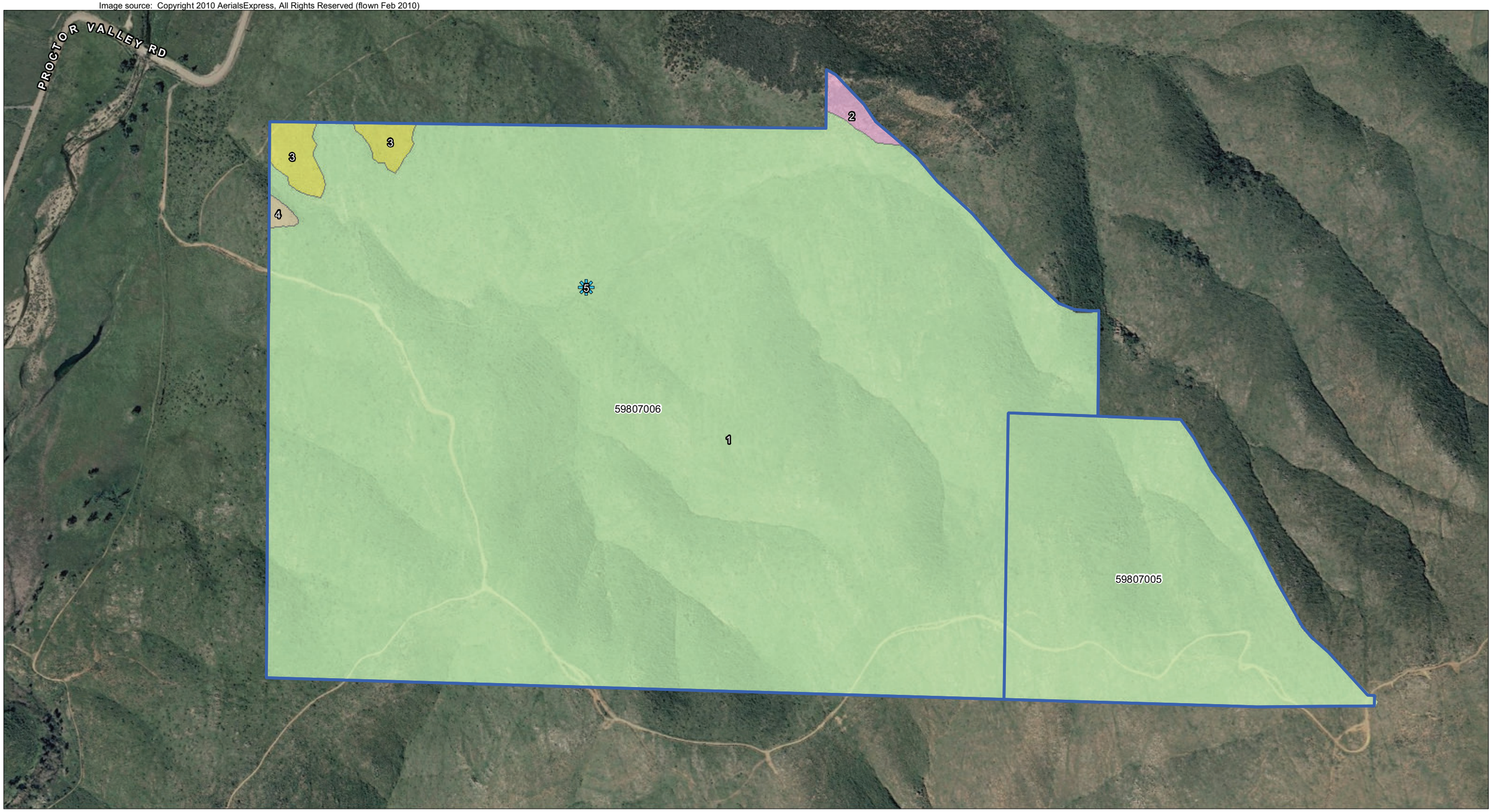
TABLE 4
ACREAGES OF VEGETATION COMMUNITIES FOUND IN THE JAMUL MOUNTAINS PARCEL

Vegetation Types	Acres	Percent	Tier
Diegan Coastal Sage Scrub	253	98%	II
Non-native Grassland	3	1%	III
Coastal Sage-Chaparral Transition	1	1%	II
Valley Needlegrass Grassland	>1	>1%	I
Freshwater Marsh	>1	>1%	NA

4.1.3.2.1 Diegan Coastal Sage Scrub (Holland Code 32500)

Diegan coastal sage scrub is considered a sensitive Tier II (uncommon upland) vegetation community by the MSCP (City of Chula Vista 2003). Diegan coastal sage scrub is the southern form of coastal sage scrub comprising low-growing, aromatic, drought-deciduous, soft-woody shrubs. Diegan coastal sage scrub is found in coastal areas from Los Angeles County south into Baja California. The community is typically found on sites that have low moisture availability with steep, xeric slopes or clay-rich soils that are slow to release stored water. These sites often include drier south- and west-facing slopes and occasionally north-facing slopes, where the community can act

Image source: Copyright 2010 AerialsExpress, All Rights Reserved (flown Feb 2010)



Jamul Mountains Survey Parcels

Vegetation Classification

- 1 - Diegan Coastal Sage Scrub
- 2 - Coastal Sage-Chaparral Transition
- 3 - Non-Native Grassland
- 4 - Valley Needlegrass Grassland
- 5 - Freshwater Marsh

0 Feet 450

RECON

M:\JOBS3\5256\common_gis\fig8_baslinJamul.mxd 12/30/2011

FIGURE 8

Jamul Mountains Survey Parcels
Vegetation Communities and Land Cover

as a successional phase in chaparral development. The plant community is typically dominated by facultatively drought-deciduous species such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina*), and white sage (*Salvia apiana*) (Oberbauer et al. 2008). San Diego County viguiera (*Bahiopsis lacinata*), golden-yarrow (*Eriophyllum confertiflorum*), and deerweed (*Acmispon glaber*) also tend to be present.

Diegan coastal sage scrub was mapped in the Jamul Mountains parcels when shrub cover was greater than 5 percent and any of the following species were dominant: California sagebrush, California buckwheat, white sage, and black sage (*Salvia mellifera*) (Photographs 1 and 2). Vegetation communities were also mapped as this association if shrub cover was greater than 5 percent, the species present were not clearly another vegetation community (such as southern mixed chaparral or chamise chaparral), and the following species were lacking for the site: chamise (*Adenostoma fasciculatum*), manzanita (*Arctostaphylos* sp.), California-lilac (*Ceanothus* sp.), or mission manzanita (*Xylococcus bicolor*).

Some Diegan coastal sage scrub areas were dominated by golden-yarrow, and chaparral bush-mallow. On the north facing slopes, toyon (*Heteromoles arbutifolia*), laurel sumac, and southern California clematis (*Clematis pauciflora*) were dominant in some stands. In addition, there were some rocky open stands of Diegan coastal sage scrub which had significant constituents of dune bentgrass (*Agrostis pallens*) and yarrow (*Achillea millefolium*).

Diegan coastal sage scrub occurred on 254 acres, representing 98 percent of the Jamul Mountain parcels.

4.1.3.2.2 Non-native Grassland (Holland Code 42200)

Non-native grassland is considered Tier III (common upland) by the City of Chula Vista's Multiple Species Conservation Program Subarea Plan (City of Chula Vista 2003). Non-native grassland is a vegetation community characterized by at least 50 percent cover of the entire herbaceous layer from annual non-native grass species, although other plant species (native and non-native) may be intermixed. This association may contain wild oat (*Avena* spp.), bromes (*Bromus* spp.), ryegrass (*Lolium* spp.), and fescues (*Vulpia* spp.). These annuals germinate with the onset of the rainy season and set seeds in the late winter or spring. With a few exceptions, the plants are dead through the summer–fall dry season, persisting as seeds. Typically, this plant community is found in valleys and foothills throughout most of California at elevations below 3,000 to 4,000 feet (Oberbauer et al. 2008).

PHOTOGRAPH 1
Diegan Coastal Sage Scrub
Dominates the Jamul Mountains Parcels

RECON

PHOTOGRAPH 2
Portions of the Diegan Coastal Sage Scrub
Contain a Large Non-native Grass Component

PHOTOGRAPH 3
Coastal Sage Scrub-Chaparral Transition Found
in the Northeastern Portion of the Jamul Parcels

The non-native grassland at the Jamul Mountain parcels was typically dominated by wild oat or ripgut brome (*Bromus diandrus*) with rattail sixweeks grass (*Vulpia myuros*). In more mesic areas, Italian ryegrass (*Lolium multiflorum*) and soft chess (*Bromus hordeaceus*) were dominant. Areas of non-native grass occurred in flatter terrain in the northwest part of the parcels.

Non-native grassland occurred on 3 acres, representing 1 percent of the Jamul Mountain parcels total.

4.1.3.2.3 Coastal Sage–Chaparral Transition (Holland 37G00)

Coastal sage–chaparral transition is considered a Tier II (uncommon upland) by the MSCP (City of Chula Vista 2003). Coastal sage–chaparral transition contains a mix of woody chaparral species and drought-deciduous sage scrub species. This vegetation type is found from the outer Coast Ranges and Peninsular Range from Big Sur south to Baja California. The association is an intermediate between coastal scrub and chaparral associations and tends to be a post-fire successional community (Oberbauer et al. 2008).

Coastal sage-chaparral transition at Jamul Mountains parcels occurs in the northeastern corner of the site. This vegetation community is a blend of Diegan coastal sage scrub and southern mixed chaparral species with significant quantities of chamise, mission manzanita, California sage brush, California buckwheat, deerweed, white sage, and golden-yarrow (Photograph 3).

Coastal sage-chaparral transition occurred on 1 acre, representing 1% of the Jamul Mountains parcels.

4.1.3.2.4 Valley Needlegrass Grassland

Valley needlegrass grassland is considered a sensitive Tier I (rare upland) vegetation community by the MSCP (City of Chula Vista 2003). Valley needlegrass grassland is a plant community dominated by purple needlegrass (*Nassella pulchra*). Native and introduced annuals occur between the perennials, often exceeding the bunch grasses in cover. In San Diego, native perennial herbs *Sanicula,* checkerbloom (*Sidalcea* spp.)*,* blue-eyed grass (*Sisyrinchium* spp.)*,* poppy (*Eschscholzia* spp.)*,* or goldfields (*Lasthenia* spp.) may be present. Valley needlegrass grasslands often have a large component of non-native grasses but are distinguished as native grasslands if the percent cover by native species is 20 percent or greater (Oberbauer, et al. 2008).

The valley needlegrass grassland at the Jamul Mountains parcels is dominated by purple needlegrass (Photograph 4). Other species often present in high numbers are rattail fescue, blue-eyed-grass, checker-bloom (*Sidalcea sparsiflora*), johnny-jump-up (*Viola pedunculata*), and golden tarplant (*Deinandra fasciculata*).

PHOTOGRAPH 4
Native Grassland Limited to Small Area in the
Northwestern Portion of the Jamul Mountains

PHOTOGRAPH 5
Small Area of Fresh Water Marsh Located in the
North-Central Drainage of the Jamul Mountains

Valley needlegrass grassland occurred on less than 1 acre, representing less than 1 percent of the Jamul Mountains parcels.

4.1.3.2.5 Freshwater Marsh (Oberbauer 52400)

Freshwater marsh communities are composed of perennial emergent monocots typically forming a closed canopy. This habitat typically occurs in open bodies of fresh water with little current flow, such as ponds, and to a lesser extent around seeps and springs. Freshwater marshes occur in areas of permanent inundation by freshwater without active stream flow. Freshwater marsh communities, as with all wetland habitats, have been greatly reduced throughout their entire range and continue to decline as a result of urbanization. They are considered sensitive by state and federal resource agencies.

Freshwater marsh occurred in a drainage in the north–central portion of the Jamul Mountains parcels (Photograph 5). Freshwater marsh at the Jamul Mountains parcels was comprised of spike rush (*Eleocharis* spp.), rush (*Juncus* spp.), cattail (*Typha* spp.), deergrass (*Muhlenbergia rigens*), and annual beard grass (*Polypogon monspeliensis*).

Freshwater marsh occurred on less than 1 acre, representing less than 1 percent of the Jamul Mountains parcels.

4.1.4 Zoological Resources

Attachment 2 provides a complete list of all wildlife species observed in the Jamul Mountains parcels.

4.1.4.1 Invertebrates

A total of nine butterfly species were observed. Some common butterfly species include Gabb's checkerspot (*Chlosyne gabbii*), common buckeye (*Junonia coenia*), anise swallowtail (*Papilio zelicaon*), and cabbage white (*Pieris rapae*). Both species are not considered sensitive.

4.1.4.2 Reptiles

A total of four reptile species were observed. Two species are not considered sensitive and two species are considered sensitive (See Section 4.1.5.3 Sensitive Reptiles). The two common reptile species observed were: western fence lizard (*Sceloporus occidentalis*) and common side-blotched lizard (*Uta stansburiana*).

4.1.4.3 Birds

A total of twenty-eight bird species were observed. Twenty-five species are not considered sensitive and three species are considered sensitive (See Section 4.1.5.4 Sensitive Birds). Some common bird species include mourning dove (*Zenaida macroura marginella*), Anna's hummingbird (*Calypte anna*), and cliff swallow (*Petrochelidon pyrrhonota tachina*).

4.1.4.4 Mammals

A total of five mammal species were observed. Four species are not considered sensitive and one species is considered sensitive (See Section 4.1.5.5 Sensitive Mammals). The four common mammal species observed were: desert cottontail (*Sylvilagus audubonii*), California ground squirrel (*Spermophilus beecheyi*), woodrat (*Neotoma* sp.), and coyote (*Canis latrans*).

4.1.5 Sensitive Species

For the purposes of this report, a species is considered sensitive if it is: (1) listed by state or federal agencies as threatened or endangered or is a candidate or proposed for such listing; (2) considered rare, endangered, or threatened by the State of California (State of California 2011a, 2011b, 2011c); (3) a narrow endemic or covered species in the MSCP (City of Chula Vista 2003); (4) considered by the CNPS to have a California Rare Plant Rank of 1B or 2 (CNPS 2011); or (5) considered rare, sensitive, or noteworthy by local conservation organizations or specialists. Noteworthy plant species are considered to be those that are considered by CNPS to have a California Rare Plant rank of 3 or 4. Sensitive habitat types are those identified by the MSCP and Oberbauer et al. 2008. Assessments for the potential occurrence of sensitive or noteworthy species are based upon species occurrence records from the CNDDB.

Attachment 3 provides a complete list of all sensitive plant species observed in the Jamul Mountains parcels. Sensitive plant species in the Jamul Mountains parcels are shown on Figure 9. Attachment 4 provides a complete list of all sensitive wildlife species observed in the Jamul Mountains parcels. Sensitive wildlife species observed in the Jamul Mountains parcels are shown on Figure 10.

4.1.5.1 Sensitive Plant Species

Nine sensitive plant species were identified in the Jamul Mountains parcels. Nine additional sensitive plant species have the potential to occur. Several sensitive plant species are historically known to occur in the vicinity of the site, but were not observed during surveys. Many of these species are considered to have low potential for occurrence because of lacking habitat requirements within the Jamul Mountains parcels.

Image source: Copyright 2010 AerialsExpress, All Rights Reserved (flown Feb 2010)

PROCTOR VALLEY RD

59807006

59807005

Jamul Mountains Survey Parcels

Sensitive Flora Observations

- Ashy Spike Moss
- Decumbent Goldenbush
- Munz's Sage
- Nuttall's scrub oak
- San Diego Barrel Cactus
- San Diego County Needle Grass
- San Diego County Viguiera
- San Diego Marsh-elder
- Western Dichondra

0 Feet 500

RECON

M:\JOBS3\5256\common_gis\fig9_baslinJamul.mxd 1/3/2012

FIGURE 9

Jamul Mountains Survey
Parcels Sensitive Plant Species

Image source: Copyright 2010 AerialsExpress, All Rights Reserved (flown Feb 2010)

59807006

59807005

Jamul Mountains Survey Parcels

Sensitive Wildlife Observations

- Coast Horned Lizard
- Grasshopper Sparrow
- Loggerhead Shrike
- Mule Deer
- Woodrat

0 Feet 450

RECON

M:\JOBS3\5256\common_gis\fig10_baslinJamul.mxd 8/29/2011

FIGURE 10

Jamul Mountains Survey
Parcels Sensitive Wildlife Species

In other cases, species that are perennial or annual herbs may not have been detected due to timing constraints. These species are discussed below.

Observed

San Diego barrel cactus (*Ferocactus viridescens)*—an MSCP-covered species. This perennial cactus is an MSCP-covered species and has a CNPS ranking of 2.1 (rare, threatened, or endangered in California, but more common elsewhere; seriously endangered in California; CNPS 2011). This species occurs in Diegan coastal sage scrub in the Jamul Mountains parcels (Photograph 6).

Decumbent goldenbush (*Isocoma menziesii* var. *decumbens*). This perennial shrub has a CNPS ranking of 1B.2 (rare, threatened, or endangered in California and elsewhere; fairly endangered in California; CNPS 2011). This species occurs in Diegan coastal sage scrub and non-native grassland in the Jamul Mountains parcels.

Nuttall's scrub oak (*Quercus dumosa*). This perennial shrub has a CNPS ranking of 1B.1 (rare, threatened, or endangered in California and elsewhere; seriously endangered in California; CNPS 2011). This species occurs in Diegan coastal sage scrub and non-native grassland in the Jamul Mountains parcels.

San Diego marsh-elder (*Iva hayesiana*). This perennial herb has a CNPS ranking of 2.2 (rare, threatened, or endangered in California, but more common elsewhere; fairly endangered in California; CNPS 2011). This species occurs in seasonal drainages in the Jamul Mountains parcels (Photograph 7).

Munz's sage (*Salvia munzii*). This perennial shrub has a CNPS ranking of 2.2 (rare, threatened, or endangered in California, but more common elsewhere; fairly endangered in California; CNPS 2011). This species occurs in Diegan coastal sage scrubin the Jamul Mountains parcels (Photograph 8).

San Diego County needle grass (*Achnatherum diegoense*). This perennial grass has a CNPS ranking of 4.2 (uncommon in California; fairly endangered in California; CNPS 2011). This species occurs in Diegan coastal sage scrub in the Jamul Mountains parcels (Photograph 9).

Western dichondra (*Dichondra occidentalis*). This perennial herb has a CNPS ranking of 4.2 (uncommon in California; fairly endangered in California; CNPS 2011). This species occurs in Diegan coastal sage scrub and non-native grassland in the Jamul Mountains parcels (Photograph 10).

Ashy spike moss (*Selaginella cinerascens*). This perennial herb has a CNPS ranking of 4.1 (uncommon in California; endangered in California; CNPS 2011). This species occurs in Diegan coastal sage scrub in the Jamul Mountains parcels.

PHOTOGRAPH 6
San Diego Barrel Cactus (*Ferocactus viridescens*)
Occurs in the Western Portion of the Jamul Mountains

PHOTOGRAPH 7
San Diego Marsh-Elder (*Iva hayesiana*)
Found in Seasonal Drainages in the Jamul Mountains

PHOTOGRAPH 8
Munz's Sage (*Salvia munzii*) Occurs Along
the Southern Ridgeline in the Jamul Mountains

PHOTOGRAPH 9
San Diego County Needlegrass
(*Achnatherum diegoense*) Found
Scattered throughout the Jamul Mountains

RECON

PHOTOGRAPH 10
Western Dichondra (*Dichondra occidentalis*) Found in the Jamul Mountains

San Diego County viguiera (*Bahiopsis* =[Viguiera] *laciniata*). This perennial shrub has a CNPS ranking of 4.2 (uncommon in California; fairly endangered in California; CNPS 2011). This species occurs in Diegan coastal sage scrub in the Jamul Mountains parcels.

Not Observed

San Diego ambrosia (*Ambrosia pumila*)—a narrow endemic species covered under the MSCP. This perennial herb is federally endangered, a narrow endemic MSCP-covered species, and has a CNPS ranking of 1B.1 (rare, threatened, or endangered in California and elsewhere; seriously endangered in California; CNPS 2011). According to CNDDB, this species is known to occur within two miles of the Jamul Mountains parcels (State of California 2011d); therefore, it has a moderate potential to occur. Preferred habitat for this species is coastal scrub with sandy loam, which is present in the Jamul Mountains parcels.

San Diego thornmint (*Acanthomintha ilicifolia*)—a narrow endemic species covered under the MSCP. This perennial herb is federally threatened, is state listed as endangered, is a narrow endemic MSCP-covered species, and has a CNPS ranking of 1B.1 (rare, threatened, or endangered in California and elsewhere; seriously endangered in California; CNPS 2011). According to CNDDB, this species is known to occur within two miles of the Jamul Mountains parcels (State of California 2011d); however, this species has a low potential to occur. Preferred habitat for this species contains clay soils, which do not occur in the Jamul Mountains parcels.

Variegated dudleya (*Dudleya variegata*)—a narrow endemic species covered under the MSCP. This succulent perennial is a narrow endemic MSCP-covered species and has a CNPS ranking of 1B.2 (rare, threatened, or endangered in California and elsewhere; fairly endangered in California; CNPS 2011). According to CNDDB, this species is known to occur within two miles of the Jamul Mountains parcels (State of California 2011d). This species has a moderate potential to occur in the Jamul Mountains parcels, as there is suitable habitat with spike-moss (*Selaginella* spp.) and smallflower soap plant (*Chlorogalum parviflorum*) present.

Gander's pitcher sage (*Lepechinia ganderi*)—a narrow endemic species covered under the MSCP. This perennial shrub is a narrow endemic MSCP-covered species and has a CNPS ranking of 1B.3 (rare, threatened, or endangered in California and elsewhere; not very endangered in California; CNPS 2011). According to CNDDB, this species is known to occur within two miles of the Jamul Mountains parcels (State of California 2011d); therefore, it has a moderate potential to occur. Preferred habitat is coastal scrub and grassland with soils derived from metamorphic rock. The San Miguel soil series consists of soils derived from metamorphic rock and occurs in those habitats within the Jamul Mountains parcels.

Dunn's mariposa lily (*Calochortus dunnii*)—a narrow endemic species covered under the MSCP. This perennial herb is state-listed as rare, is a narrow endemic MSCP-covered species, and has a CNPS ranking of 1B.2 (rare, threatened, or endangered in California and elsewhere; fairly endangered in California; CNPS 2011). According to CNDDB, this species is known to occur within two miles of the Jamul Mountains parcels (State of California 2011d). This species has a moderate potential to occur in the Jamul Mountains parcels. Preferred habitat is grassland with soils derived from metamorphic rock, which is present in the Jamul Mountains parcels.

San Miguel savory (*Satureja chandleri*)—a MSCP-covered species. This perennial herb is a MSCP-covered species and has a CNPS ranking of 1B.2 (rare, threatened, or endangered in California and elsewhere; fairly endangered in California; CNPS 2011). According to CNDDB, this species is known to occur within two miles of the Jamul Mountains parcels (State of California 2011d). This species has a moderate potential to occur in the Jamul Mountains parcels. Preferred habitat is coastal scrub and grassland with soils derived from metamorphic rock, both of which are present in the Jamul Mountains parcels.

San Diego goldenstar (*Muilla clevelandii*)—a MSCP-covered species. This perennial herb is a MSCP-covered species and has a CNPS ranking of 1B.1 (rare, threatened, or endangered in California and elsewhere; seriously endangered in California; CNPS 2011). According to CNDDB, this species occurs within two miles of the Jamul Mountains parcels (State of California 2011d). Additionally, as there is suitable Diegan coastal sage scrub present, this species has a high potential to occur.

Smooth tarplant (*Centromadia pungens* ssp. laevis). This annual herb has a CNPS ranking of 1B.1 (rare, threatened, or endangered in California and elsewhere; seriously endangered in California; CNPS 2011). According to CNDDB, this species does not occur within two miles of the Jamul Mountains parcels (State of California 2011d). This species has a low potential to occur in the Jamul Mountains parcels. Preferred habitat for this species contains alkaline soils, which do not occur in the Jamul Mountains parcels.

Little mousetail (*Myosurus minimus* ssp. *apus*). This annual herb has a CNPS ranking of 3.1 (needs review, seriously endangered in California; CNPS 2011). According to CNDDB, this species occurs within two miles of the Jamul Mountains parcels (State of California 2011d). This species has a low potential to occur in the Jamul Mountains parcels. Preferred habitat for this species is grasslands, which are present in the Jamul Mountains parcels. However, the grasslands present are dominated by exotic grass species that displace native grass species. Additional preferred habitats are vernal pools, wet fields, stream banks, and lake shores (JFP 2011).

4.1.5.2 Sensitive Invertebrates

No sensitive invertebrate species were identified in the Jamul Mountains parcels. Three sensitive invertebrate species have the potential to occur. These species are discussed below.

Not Observed

San Diego fairy shrimp (*Branchinecta sandiegonensis*)—an MSCP-covered species. This species is a MSCP-covered species and is federally endangered. According to CNDDB, this species has been observed downslope just outside of the eastern boundary of the Jamul Mountains parcels and has multiple occurrences within a two mile radius of the Jamul Mountains parcels (State of California 2011d); however, this species is not likely to occur in the Jamul Mountains parcels. Preferred habitat is vernal pools (City of Chula Vista 2003). There are no vernal pools present in the Jamul Mountains parcels.

Quino checkerspot butterfly (*Euphydryas editha quino*)—an MSCP-covered species. This species is a MSCP-covered species and is federally threatened. According to CNDDB, this species occurs within two miles of the Jamul Mountains parcels (State of California 2011d). This species has a high potential to occur in the Jamul Mountains parcels. Preferred habitat is open areas with low growing habitat, including chaparral, scrubland, and grassland (City of Chula Vista 2003). These habitats are present in the Jamul Mountains parcels within the known range of the Quino checkerspot butterfly.

Thorne's hairstreak butterfly (*Mitoura thornei*)—an MSCP-covered species. This species is a MSCP-covered species. According to CNDDB, this species occurs within two miles of the Jamul Mountains parcels (State of California 2011d). This species was not surveyed for during the baseline surveys. This species is not expected to occur in the Jamul Mountains parcels since its host plant, Tecate cypress (*Hesperocyparis forbesii)*, is not present.

4.1.5.3 Sensitive Reptiles

Two sensitive reptile species were identified in the Jamul Mountains parcels. These species are discussed below.

Observed

Coast horned lizard (*Phrynosoma blainvillii*)—an MSCP-covered species. This species is a MSCP-covered species and CDFG species of special concern. This species was observed along roads in Diegan coastal sage scrub (Photograph 11).

PHOTOGRAPH 11
Coast Horned Lizards (*Phrynosoma blainvilli*) Found Along Open Road Areas

PHOTOGRAPH 12
Southern Mule Deer (*Odocoileus hemionus*) Observed in the Jamul Mountains

Coronado skink (*Eumeces skiltonianus interparietalis*). This species is a CDFG species of special concern. This species was observed in Diegan coastal sage scrub.

4.1.5.4 Sensitive Birds

Three sensitive bird species were identified in the Jamul Mountains parcels. Four other sensitive bird species have the potential to occur. These species are discussed below.

Observed

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)—an MSCP covered species. This species is a MSCP-covered species and CDFG species of special concern (State of California 2011c). This species was observed in Diegan coastal sage scrub in the Jamul Mountains parcels.

Loggerhead shrike (*Lanius ludovicianus*). This species is a CDFG species of special concern (State of California 2011c). This species was observed in Diegan coastal sage scrub in the Jamul Mountains parcels.

Grasshopper sparrow (*Ammodramus savannarum perpallidus*). This species is a CDFG species of special concern (State of California 2011c). This species was observed in Diegan coastal sage scrub and non-native grassland in the Jamul Mountains parcels.

Not Observed

Coastal California gnatcatcher (*Polioptila californica californica*)—an MSCP-covered species. This species is a MSCP-covered species, federally threatened, and a CDFG species of special concern (State of California 2011c). According to CNDDB, this species occurs within two miles of the Jamul Mountains parcels (State of California 2011d). This species has a moderate potential to occur in the Jamul Mountains parcels. This species was observed within the Jamul Mountains parcels in 2000, prior to the 2003 and 2007 fires (State of California 2011e). This species is expected to recover in the area as suitable coastal sage scrub habitats recover.

Coastal cactus wren (*Campylorhynchus brunneicapillus couesi*)—an MSCP covered species. This species is a MSCP-covered species and CDFG species of special concern (State of California 2011c). According to CNDDB, this species occurs within two miles of the Jamul Mountains parcels (State of California 2011d). This species has a low potential to occur in the Jamul Mountains parcels. Preferred habitat for this species includes scrublands and cactus thickets, both of which are present in the Jamul Mountains parcels within its known range (City of Chula Vista 2003). A small coastal cholla (*Cylindropuntia prolifera*) stand is located in the northwest corner of Jamul Mountains parcel.

Bell's sage sparrow (*Amphispiza belli belli*). This species is a CDFG species of special concern (State of California 2011c). According to CNDDB, this species occurs within two miles of the Jamul Mountains parcels (State of California 2011d). This species has a moderate potential to occur in the Jamul Mountains parcels. Preferred habitat for this species includes chaparral and sage scrub, both of which are present in the Jamul Mountains parcels within its known range (Unitt 2004).

Yellow-breasted chat (*Icteria virens auricollis*). This species is a CDFG species of special concern (State of California 2011c). According to CNDDB, this species occurs within two miles of the Jamul Mountains parcels (State of California 2011d); however, this species is not expected to occur. Preferred habitat is dense riparian woodland, which is not present in the Jamul Mountains parcels (Unitt 2004).

4.1.5.5 Sensitive Mammals

Two sensitive mammal species were identified in the Jamul Mountains parcels. These species are discussed below.

Observed

Southern mule deer (*Odocoileus hemionus*)—an MSCP-covered species. This species was observed in open Diegan coastal sage scrub (Photograph 12 on page 34).

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*). This species is a CDFG species of special concern. Signs of this species were observed in coastal sage–chaparral transition in the Jamul Mountains parcels.

4.1.6 Invasive Exotic Plant Species

A total of twenty-two non-native plant species were documented in the Jamul Mountain parcels. Under the California Invasive Plant Inventory Database established by the California Invasive Plant Council, non-native weed species are ranked according to ecological impacts, invasive potential, and distribution (Cal-IPC 2006).

Non-native weed species ranked as 'high' have severe ecological impacts, moderate to high rates of dispersal and establishment, and are widely distributed. One plant species, red brome (*Bromus madritensis* ssp. *rubens*), documented in the Jamul Mountains parcels is ranked as 'high' under the California Invasive Plant Inventory Database.

- Red brome is an exotic annual grass that is spreading into coastal scrub, desert shrubland, three-needle pine woodlands, and pinyon pine-juniper communities. Increased fire frequency favors red brome establishment by reducing competition from native species and converts these communities to annual grasslands

(DiTomaso et al. 2007). Populations of red brome were identified in Diegan coastal sage scrub, coastal sage-chaparral scrub, and non-native grassland.

Non-native weed species ranked as 'moderate' have substantial but generally not severe ecological impacts, moderate to high rates of dispersal and establishment, and limited to widespread distribution. In general, successful establishment of weed species ranked as 'moderate' is dependent upon ecological disturbance. Five plant species documented in the Jamul Mountains parcels are ranked as 'moderate' under the California Invasive Plant Inventory Database: slender wild oat (*Avena barbata*), purple falsebrome (*Brachypodium distachyon*), ripgut grass (*Bromus diandrus*), short-pod mustard (*Hirschfeldia incana*), and italian ryegrass (*Lolium multiflorum*).

- Slender wild oat is a winter annual grass that grows in a majority of grasslands in California where it outcompetes and replaces native perennial grasses (DiTomaso et al. 2007). Slender wild oat was identified in Diegan coastal sage scrub and non-native grassland communities in the Jamul Mountains parcels.

- Purple falsebrome is a winter annual grass that occurs in dry slopes and fields, roadsides, disturbed grassland, margins of shrub thickets, and oak woodlands. Some populations have developed resistance to pesticides that are photosystem II inhibitors (DiTomaso et al. 2007). Purple falsebrome was identified in Diegan coastal sage scrub, non-native grassland, and southern riparian scrub in the Jamul Mountains parcels.

- Ripgut grass is an annual grass that displaces native California grasslands. It is highly flammable when dry and increases fire frequency (DiTomaso et al. 2007). Ripgut grass was identified in Diegan coastal sage scrub, non-native grassland, and southern riparian scrub in the Jamul Mountains parcels.

- Short-pod mustard is a biennial or short-lived perennial that favors dry washes and disturbed areas, such as roadsides, agricultural fields, and ditches. This species is a becoming increasingly problematic in wildland areas of southern California (DiTomaso et al. 2007). Short-pod mustard was identified in Diegan coastal sage scrub and non-native grassland in the Jamul Mountains parcels.

- Italian ryegrass is an annual grass that has developed resistance to a variety of herbicide classes. It favors disturbed areas, such as roadsides and agricultural fields, but does not generally persist on infertile soils or where there is competition from other grasses (DiTomaso et al. 2007). Italian ryegrass was identified in Diegan coastal sage scrub and non-native grassland in the Jamul Mountains parcels.

Non-native weed species ranked as 'limited' have minor ecological impacts, moderate to low rates of dispersal and establishment, and generally limited distribution. However, these species are still considered invasive and can be both persistent and problematic.

Nine plant species documented in the Jamul Mountains parcels are ranked as 'limited' under the California Invasive Plant Inventory Database: soft chess (*Bromus hordaceous*), red-stemmed filaree (*Erodium cicutarium*), curly dock (*Rumex crispus*), and London rocket (*Sisymbrium irio*).

Non-native weed species categorized as 'evaluated but not listed' by the California Invasive Plant Council either do not presently have significant impacts or information is not sufficient enough to assign a rating. One plant species, prickly lettuce (*Lactuca serriola*), documented in the Jamul Mountains parcels was categorized as such. Nine species documented in the Jamul Mountains parcels have not been evaluated or listed by the California Invasive Plant Council: scarlet pimpernel (*Anagallis arvensis*), poverty brome (*Bromus sterilis)*, tocalote (*Centaurea melitensis*), crete weed (*Hedypnois cretica*), smooth cat's ear (*Hypochaeris glabra*), goldentop (*Lamarckia aurea*), narrow-leaf herba impia (*Logfia gallica*), windmill pink (*Silene gallica*), common chickweed (*Stellaria media*).

4.1.7 Other Survey Results

4.1.7.1 Drainages

The Jamul Mountains parcels are located in the Otay River watershed and contain one drainage. The drainage travels northwest from the southeastern corner of the Jamul Mountains parcels, where it feeds into Proctor Valley Creek. Proctor Valley Creek feeds into the Upper Otay reservoir. The Upper Otay reservoir is an isolated waterbody. However, an old spillway connects the Upper Otay reservoir with Lower Otay reservoir. In the event the Upper Otay reservoir overtops capacity, flows pass through the spillway into the lower reservoir. The Otay River flows from the Lower Otay reservoir and eventually discharges into the San Diego Bay (County of San Diego 2006).

4.1.7.2 Wildlife Movement

Barriers to wildlife movement surrounding the Jamul Mountains parcels include Proctor Valley Road to the northwest, Highway 94 to the northeast, and Otay Lakes Road and the U.S.-Mexico Border Fence to the south. No barriers to wildlife movement occur within the Jamul Mountains parcels, allowing wildlife to move freely throughout.

4.1.7.3 Dumping, Trespassing, and Vagrant Encampments

Trash and debris from the U.S. Border Patrol was observed within the Jamul Mountains parcels. Trespassing from illegal off-roading vehicles was observed through tread marks. No vagrant encampments were observed.

5.0 Discussion

5.1 Survey Recommendations

5.1.1 Quino Checkerspot Butterfly Surveys

During preliminary site visits in March 2011 to check access for the baseline surveys, Quino checkerspot butterfly was incidentally observed at the McMillin and Dulzura parcels in the Otay Ranch Preserve. Based on the proximity of the sightings to the Jamul Mountains parcels and observation of suitable habitat during the baseline surveys, the Preserve Steward/Biologist (PSB) recommends that focused Quino checkerspot butterfly surveys be conducted in spring 2012 to determine the extent of occupied habitat within the Jamul Mountains parcels. The Quino checkerspot butterfly flight season does not consist of a set range of dates, but is determined by the growth and condition of the host plants used by Quino checkerspot butterfly. Therefore the date for initiating and completing surveys cannot be predetermined. A post-survey report detailing the results of the Quino checkerspot butterfly surveys will be submitted to the POM prior to June 30, 2012.

5.1.2 Photo Point Monitoring

The PSB recommends establishing permanent photograph monitoring points so that changes in native vegetation and weed cover can be detected over time. Photo monitoring points will be established at the Jamul Mountains parcels in spring 2012 and shall be completed by May 15, 2012. Photo points represent the first phase of long-term vegetation monitoring within the Preserve. The photo monitoring point locations will be determined in the field and recorded using a hand held Trimble® Global Positioning System (GPS) unit. The photo monitoring points will be repeated a minimum of every three years.

The photo monitoring point locations will be chosen so that they provide a broad view of representative vegetation communities in the Preserve. The GPS accuracy and direction of the photographs will be recorded. Prominent features will be mindfully placed in each photograph to make relocating the exact location easier in future years. The prominent features will be chosen so that changes to the landscape (i.e., fire or weed encroachment) will minimize change to the visibility of the feature. Photo points may also be established along habitat ecotones to monitor habitat shifts in elevation. Additional photo monitoring point locations may be added in the future.

Focused long-term vegetation sampling will be conducted using more rigorous methods once California gnatcatcher study areas are established per the Otay Ranch Phase 2

Resource Management Plan. The PSB may utilize San Diego State University (SDSU) vegetation monitoring methods to detect changes in vegetation over time at the Preserve. The SDSU vegetation methods will be incorporated into the consistency analysis for the Otay Ranch Phase 2 Resource Management Plan, as appropriate.

6.0 References Cited

American Ornithologists' Union
1998 Check-list of North American Birds. 7th ed. Washington, D.C.

Baker, R.J., L.C. Bradley, R.D. Bradley, J.W. Dragoo, M.D. Engstrom, R.S. Hoffmann, C.A. Jones, F. Reid, D.W. Rice, and C. Jones
2003 Revised Checklist of North American Mammals North of Mexico, 2003. Occasional Papers of the Museum of Texas Tech University 229: 1-23.

Brenzel, K.N., Editor
2007 *Sunset Western Garden Book*. Sunset Books Inc., Menlo Park, CA.

California, State of
2011a State and Federally Listed Endangered, Threatened, and Rare Plants of California. California Natural Diversity Data Base. Department of Fish and Game.
2011b State & Federally Listed Endangered & Threatened Animals of California. California Natural Diversity Data Base. Department of Fish and Game.
2011c Special Animals. California Natural Diversity Data Base. Department of Fish and Game.
2011d RareFind Version 3.1.0. California Natural Diversity Data Base. Department of Fish and Game.

California Invasive Plant Council (Cal-IPC)
2006 California Invasive Plant Inventory. Accessed at: www.cal-ipc.org/ip/inventory/weedlist.php. December 2011.

California Native Plant Society
2011 Inventory of Rare and Endangered Plants (online edition, v8-01a). Sacramento, Ca. Accessed at: www.rareplants.cnps.org. December 2011.

Chula Vista, City of
2003 City of Chula Vista MSCP Subarea Plan.

Crother, B. I.
2001 Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in our Understanding. Society for the Study of Amphibians and Reptiles Circular 29. iii + 82 pp.

2008 Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in our Understanding. Sixth edition. Society for the Study of Amphibians and Reptiles.

Crother, B.I., J. Boundy, F.T. Burbrink, J.A. Campbell, K. de Queiroz, D.R. Frost, R. Highton, J.B. Iverson, F. Kraus, R.W. McDiarmid, J.R. Mendelson III, P.A. Meylan, R. A. Pyron, T.W. Reeder, M.E. Seidel, S. G. Tilley, D.B.Wake

2003 Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico: Update. *Herpetological Review.* 34: 196-203.

Di Tomaso, J.M. and E.A. Healy

2007 Weeds of California and Other Western States, Vol. 1 & 2. Regents of the University of California Division of Agriculture and Natural Resources.

Hall, E. R.

1981 *The Mammals of North America.* 2nd ed. 2 vols. John Wiley & Sons, New York.

Holland, R. F.

1986 Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program, California Department of Fish and Game. October.

Jepson Flora Project (JFP)

2011 The Jepson Online Interchange for California Floristics. University of California Berkeley. Regents of the University of California. Accessed online in December, 2011 from http://ucjepstest.berkeley.edu/interchange/.

Mattoni, R.

1990 Butterflies of Greater Los Angeles. The Center for the Conservation of Biodiversity/Lepidoptera Research Foundation, Inc., Beverly Hills, CA.

Milne, L. and M. Milne.

1980. *The Audobon Society's Field Guide to North American Insects and Spiders*. New York, New York: Alfred A. Knopf.

Oberbauer, T., Kelly, M., and J. Buegge

2008 Draft Vegetation Communities of San Diego County

Opler, P. A. and A. B. Wright
1999 *A Field Guide to Western Butterflies.* Peterson Field Guide Series. Houghton Mifflin, Boston.

Rebman, J.P., and M.G. Simpson
2006 Checklist of the Vascular Plants of San Diego County, 4th ed. San Diego Natural History Museum, San Diego, CA

San Diego, County of
2006 Otay River Watershed Management Plan.

United States Department of Agriculture (USDA)
1973 *Soil Survey, San Diego Area, California.* Edited by Roy H. Bowman. Soil Conservation Service and Forest Service.
2011 Plants Database. Accessed at: <http://plants.usda.gov/>.

Unitt, P. A.
1984 *Birds of San Diego County.* Memoir No. 13. San Diego Society of Natural History.
2004 *San Diego County Bird Atlas.* Proceedings of the San Diego Society of Natural History, No. 39. San Diego Natural History Museum.

ATTACHMENTS

ATTACHMENT 1

ATTACHMENT 1
PLANT SPECIES OBSERVED—JAMUL MOUNTAINS PARCELS

Scientific Name	Common Name	Origin
LYCOPODS		
SELAGINELLACEAE	**SPIKE-MOSS FAMILY**	
Selaginella bigelovii L. Underw.	Bigelow spike-moss	N
Selaginella cinerascens A.A. Eaton	ashy spike-moss	N
FERNS		
PTERIDACEAE	**BRAKE FAMILY**	
Adiantum jordanii Mull. Hal.	California maiden-hair	N
Cheilanthes newberryi (D.C. Eaton) Domin	California cottonfern	N
Pellaea mucronata (D. C. Eaton) D. C. Eaton var. *mucronata*	bird's-foot fern	N
Pentagramma triangularis (Kaulf.) Yatsk, Windham & E. Wollenw.	goldback fern	N
GYMNOSPERMS		
ANGIOSPERMS: MONOCOTS		
AGAVACEAE	**AGAVE FAMILY**	
Chlorogalum parviflorum S. Watson	smallflower soap plant	N
Yucca whipplei Torr.	our Lord's candle	N
ALLIACEAE	**ONION FAMILY**	
Allium praecox Brandegee	common wild onion	N
CYPERACEAE	**SEDGE FAMILY**	
Eleocharis sp.	spike-rush	N
JUNCACEAE	**RUSH FAMILY**	
Juncus sp.	rush	N
LILIACEAE	**LILY FAMILY**	
Calochortus splendens Benth.	lilac mariposa	N
POACEAE (GRAMINEAE)	**GRASS FAMILY**	
Achnatherum diegoense (Swallen) Barkworth	San Diego County needle grass	N
Agrostris pallens Trin.	Seashore bent grass	N
Avena sp.	wild oats	I
Avena barbata Link	slender wild oat	I
Bothriochloa barbinodis (Lag.) Herter	cane bluestem	N
Brachypodium distachyon (L.) P. Beauv.	purple falsebrome	I

ATTACHMENT 1
PLANT SPECIES OBSERVED—JAMUL MOUNTAINS PARCELS
(continued)

Scientific Name	Common Name	Origin
Bromus diandrus Roth	ripgut grass	I
Bromus hordeaceus L.	soft chess	I
Bromus madritensis L. ssp. *rubens* (L.) Husnot	red brome	I
Bromus sterilis L.	barren brome, poverty brome	I
Lamarckia aurea (L.) Moench	goldentop	I
Lolium multiflorum Lam.	Italian ryegrass	I
Melica imperfecta Trin.	California melic	N
Muhlenbergia rigens (Benth.) Hitchc.	deergrass	N
Nassella lepida (Hitchc.) Barkworth	foothill needlegrass	N
Nassella pulchra (Hitchc.) Barkworth	purple needlegrass	N
Polypogon monspeliensis (L.) Desf.	annual beard grass	N
Vulpia myuros	rattail six weeks grass	I
THEMIDACEAE	**BRODIAEA FAMILY**	
Dichelostemma capitatum (Benth.) A.W. Wood	blue dicks	N
TYPHACEAE	**CATTAIL FAMILY**	
Typha sp.	cattail	N
ANGIOSPERMS: DICOTS		
ADOXACEAE	**ADOXA FAMILY**	
Sambucus nigra [=*mexicana*] L. ssp. *caerulea* (Raf.) Bolli	blue elderberry	N
ANACARDIACEAE	**SUMAC OR CASHEW FAMILY**	
Malosma laurina Nutt. ex Abrams	laurel sumac	N
Rhus integrifolia (Nutt.) Benth. & Hook. f. ex Rothr.	lemonadeberry	N
APIACEAE (UMBELLIFERAE)	**CARROT FAMILY**	
Apiastrum angustifolium Nutt.	wild-celery	N
Daucus pusillus Michx.	rattlesnake weed	N
Lomatium sp.	lomatium	N
Sanicula arguta J.M. Coult. & Rose	little-jim sanicle	N
ASTERACEAE	**SUNFLOWER FAMILY**	
Achillea millefolium L.	yarrow, milfoil	N
Acourtia microcephala DC.	purple-head, sacapellote	N
Artemisia californica Less.	California sagebrush	N

ATTACHMENT 1
PLANT SPECIES OBSERVED—JAMUL MOUNTAINS PARCELS
(continued)

Scientific Name	Common Name	Origin
Baccharis sarothroides A. Gray	broom baccharis	N
Bahiopsis [=*Viguiera*] *laciniata* (A. Gray) E.E. Schilling & Panero	San Diego County viguiera	N
Centaurea melitensis L.	tocalote, star-thistle	I
Corethrogyne filaginifolia [= all previously known *Lessingia filaginifolia* varieties in California] (Hook. & Arn.) Nutt.	California-aster	N
Deinandra [=*Hemizonia*] *fasciculata* (DC.) Greene	golden tarplant	N
Erigeron foliosus Nutt.	leafy fleabane	N
Eriophyllum confertiflorum (DC.) A. Gray var. *confertiflorum*	golden-yarrow	N
Gnaphalium californicum DC.	green everlasting	N
Hazardia squarrosa (Hook. & Arn.) Greene	saw-toothed goldenbush	N
Hedypnois cretica (L.) Dum. Cours.	crete weed	I
Hypochaeris glabra L.	smooth cat's-ear	I
Isocoma menziesii (Hook. & Arn.) G. L. Nesom var. *decumbens* (Greene) G. L. Nesom [=var. *menziesii*]	decumbent goldenbush	N
Iva hayesiana A. Gray	San Diego marsh-elder	N
Lactuca serriola L.	prickly lettuce	I
Lasthenia californica DC. ex Lindl.	goldfields	N
Logfia [=*Filago*] *gallica* (L.) Cross. & Germ.	narrow-leaf herba impia	I
Osmadenia tenella Nutt.	osmadenia	N
Sonchus oleraceus L.	common sow thistle	I
Stylocline gnaphaloides Nutt.	everlasting nest straw	N
BORAGINACEAE	**BORAGE FAMILY**	
Cryptantha sp.	cryptantha	N
Eriodictyon trichocalyx A. Heller	hairy yerba santa	N
Phacelia cicutaria Greene var. *hispida* (A. Gray) J.T. Howell	caterpillar phacelia	N
Pholistoma sp.	fiesta flower	N
BRASSICACEAE (CRUCIFERAE)	**MUSTARD FAMILY**	
Hirschfeldia incana (L.) Lagr.-Fossat	short-pod mustard	I
Lepidium sp.	peppergrass	N/I
Sisymbrium irio L.	London rocket	I
Thysanocarpus sp.	lacepod	N
CACTACEAE	**CACTUS FAMILY**	

ATTACHMENT 1
PLANT SPECIES OBSERVED—JAMUL MOUNTAINS PARCELS
(continued)

Scientific Name	Common Name	Origin
Ferocactus viridescens (Torr. & A. Gray) Britton & Rose	San Diego barrel cactus	N
CARYOPHYLLACEAE	**PINK FAMILY**	
Silene gallica L.	windmill pink	I
Silene laciniata Cav. ssp. *laciniata* [=ssp. *major*]	Indian pink	N
Stellaria media (L.) Vill.	common chickweed	I
CONVOLVULACEAE	**MORNING-GLORY FAMILY**	
Calystegia macrostegia	coast morning-glory	N
Dichondra occidentalis House	western dichondra	N
CRASSULACEAE	**STONECROP FAMILY**	
Crassula connata (Ruiz & Pav.) A. Berger	pygmy-weed	N
CUCURBITACEAE	**GOURD FAMILY**	
Marah macrocarpus (Greene) Greene	wild cucumber	N
ERICACEAE	**HEATH FAMILY**	
Xylococcus bicolor Nutt.	mission manzanita	N
EUPHORBIACEAE	**SPURGE FAMILY**	
Croton [=*Eremocarpus*] *setigerus* Hook.	dove weed	N
FABACEAE (LEGUMINOSAE)	**LEGUME FAMILY**	
Acmispon glaber (Vogel) Brouillet [=*Lotus scoparius*]	deerweed	N
Acmispon strigosus (Nutt.) Brouillet [=*Lotus strigosus*]	bishop's/strigose lotus	N
Lathyrus vestitus Nutt. var. *alefeldii* (T. G. White) Isely	wild sweet pea	N
Lupinus concinnus J. Agardh	bajada lupine	N
Vicia ludoviciana Nutt. var. *ludoviciana*	deerpea vetch	N
FAGACEAE	**OAK FAMILY**	
Quercus berberidifolia Liebm.	scrub oak	N
Quercus dumosa Nutt.	Nuttall's scrub oak	N
GENTIANACEAE	**GENTIAN FAMILY**	
Zeltnera [=*Centaurium*] *venusta* (A. Gray) G. Mans.	canchalagua	N
GERANIACEAE	**GERANIUM FAMILY**	
Erodium cicutarium (L.) L'Hér. ex Aiton	red stemmed filaree	I

ATTACHMENT 1
PLANT SPECIES OBSERVED—JAMUL MOUNTAINS PARCELS
(continued)

Scientific Name	Common Name	Origin
GROSSULARIACEAE	**GOOSEBERRY FAMILY**	
Ribes indecorum Eastw.	white flowering currant	N
LAMIACEAE	**MINT FAMILY**	
Salvia apiana Jeps.	white sage	N
Salvia munzii Epling	Munz's sage	N
MALVACEAE	**MALLOW FAMILY**	
Sidalcea sparsifolia (C. L. Hitchc.) S. R. Hill	checker-bloom	N
MONTIACEAE	**MONTIA FAMILY**	
Claytonia perfoliata Willd.	miner's lettuce	N
MYRSINACEAE		
Anagallis arvensis L.	scarlet pimpernel, poor-man's weatherglass	I
NYCTAGINACEAE	**FOUR O'CLOCK FAMILY**	
Mirabilis laevis [=*californica*] (Benth.) Curran var. *crassifolia* (Choisy) Spellenb.	wishbone bush	N
ONAGRACEAE	**EVENING-PRIMROSE FAMILY**	
Clarkia sp.	clarkia	N
PHRYMACEAE [=SCROPHULARIACEAE]	**HOPSEED FAMILY**	
Mimulus aurantiacus Curtis	bush monkey-flower	N
Mimulus guttatus DC.	common monkey-flower	N
PLANTAGINACEAE	**PLANTAIN FAMILY**	
Antirrhinum sp.	snapdragon	N
Collinsia heterophylla Buist ex Graham	Chinese houses	N
POLEMONIACEAE	**PHLOX FAMILY**	
Navarretia hamata Greene	hooked navarretia	N
POLYGONACEAE	**BUCKWHEAT FAMILY**	
Eriogonum fasciculatum Benth. var. *foliolosum* (Nutt.) S. Stokes ex Abrams	inland California buckwheat	N
Pterostegia drymarioides Fisch. & C.A. Mey.	California thread-stem	N
Rumex crispus L.	curly dock	I

ATTACHMENT 1
PLANT SPECIES OBSERVED—JAMUL MOUNTAINS PARCELS
(continued)

Scientific Name	Common Name	Origin
RANUNCULACEAE	**BUTTERCUP FAMILY**	
Clematis pauciflora Nutt.	ropevine	N
Delphinium parryi A. Gray	blue larkspur	N
Thalictrum fendleri Engelm. ex A. Gray	Fendler's meadow-rue	N
RHAMNACEAE	**BUCKTHORN FAMILY**	
Ceanothus oliganthus Nutt.	hairy ceanothus	N
Rhamnus crocea Nutt.	spiny redberry	N
ROSACEAE	**ROSE FAMILY**	
Adenostoma fasciculatum Hook. & Arn.	chamise	N
Heteromeles arbutifolia (Lindl.) M. Roem.	toyon, Christmas berry	N
RUBIACEAE	**MADDER OR COFFEE FAMILY**	
Galium angustifolium A. Gray ssp. *angustifolium*	narrow-leaf bedstraw	N
Galium aparine L.	goose grass, stickywilly	N
SAXIFRAGACEAE	**SAXIFRAGE FAMILY**	
Jepsonia parryi (Torr.) Small	mesa saxifrage	N
SCROPHULARIACEAE	**FIGWORT FAMILY**	
Castilleja foliolosa Hook. & Arn.	woolly Indian paintbrush	N
Scrophularia californica Cham. & Schltdl.	California figwort	N
SOLANACEAE	**NIGHTSHADE FAMILY**	
Solanum parishii A. Heller	Parish's nightshade	N
URTICACEAE	**NETTLE FAMILY**	
Parietaria hespera Hinton var. *californica* Hinton	California pellitory	N
VIOLACEAE	**VIOLET FAMILY**	
Viola pedunculata Torr. & A. Gray	johnny-jump-up	N

SOURCES: Jepson Flora Project <http://ucjeps.berkeley.edu/interchange.html> (2011); K. N. Brenzel (editor), *Sunset Western Garden Book* (Sunset Publishing, Menlo Park, CA, 2007); Jon P. Rebman and Michael G. Simpson, *Checklist of the Vascular Plants of San Diego County,* 4th ed. (San Diego Natural History Museum, San Diego, CA, 2006); USDA Plants Database <http://plants.usda.gov/> (2011).

ATTACHMENT 2

ATTACHMENT 2
WILDLIFE SPECIES OBSERVED—JAMUL MOUNTAINS PARCELS

Scientific Name	Common Name	Occupied Habitat (Birds Only)	Seasonality (Birds Only)
INVERTEBRATES (Nomenclature from Milne and Milne 1980; Mattoni 1990; and Opler and Wright 1999)			
HESPERIIDAE	**SKIPPERS**		
PAPILIONIDAE	**PARNASSIANS & SWALLOWTAILS**		
Papilio zelicaon	anise swallowtail		
PIERIDAE	**WHITES & SULPHURS**		
Colias sp.	unknown sulphur		
Pontia protodice	common or checkered white		
Pieris rapae	cabbage white		
LYCAENIDAE	**BLUES, COPPERS, & HAIRSTREAKS**		
Leptotes marina	marine blue		
RIODINIDAE	**METALMARKS**		
Apodemia virgulti	Behr's metalmark		
NYMPHALIDAE	**BRUSH-FOOTED BUTTERFLIES**		
Chlosyne gabbii	Gabb's checkerspot		
Junonia coenia	common buckeye		
Speyeria callippe comstocki	Comstock's fritillary		
REPTILES (Nomenclature from Crother 2001 and Crother et al. 2003)			
IGUANIDAE	**IGUANID LIZARDS**		
Phrynosoma blainvillii [=*Phrynosoma coronatum blainvillii*]	coast horned lizard		
Sceloporus occidentalis	western fence lizard		
Uta stansburiana	common side-blotched lizard		
SCINCIDAE	**SKINKS**		
Eumeces skiltonianus interparietalis	Coronado skink		

ATTACHMENT 2
WILDLIFE SPECIES OBSERVED—JAMUL MOUNTAINS PARCELS
(continued)

Scientific Name	Common Name	Occupied Habitat (Birds Only)	Seasonality (Birds Only)
BIRDS (Nomenclature from American Ornithologists' Union 1998 and Unitt 2004)			
COLUMBIDAE	**PIGEONS & DOVES**		
Zenaida macroura marginella	mourning dove	DCSS, CSCT	Y
CUCULIDAE	**CUCKOOS & ROADRUNNERS**		
Geococcyx californianus	greater roadrunner	DCSS	Y
TROCHILIDAE	**HUMMINGBIRDS**		
Calypte anna	Anna's hummingbird	DCSS, CSCT	Y
Calypte costae	Costa's hummingbird	DCSS	S
TYRANNIDAE	**TYRANT FLYCATCHERS**		
Myiarchus cinerascens cinerascens	ash-throated flycatcher	DCSS	S
Sayornis saya	Say's phoebe	DCSS, NNG	W
LANIIDAE	**SHRIKES**		
Lanius ludovicianus	loggerhead shrike	DCSS	Y
CORVIDAE	**CROWS, JAYS, & MAGPIES**		
Corvus corax clarionensis	common raven	F	Y
ALAUDIDAE	**LARKS**		
Eremophila alpestris	horned lark	DCSS	Y
HIRUNDINIDAE	**SWALLOWS**		
Petrochelidon pyrrhonota tachina	cliff swallow	DCSS, F	S
AEGITHALIDAE	**BUSHTIT**		
Psaltriparus minimus minimus	bushtit	DCSS	Y
TROGLODYTIDAE	**WRENS**		
Salpinctes obsoletus obsoletus	rock wren	DCSS	Y
Thryomanes bewickii	Bewick's wren	DCSS	Y
Troglodytes aedon parkmanii	house wren	DCSS	Y

ATTACHMENT 2
WILDLIFE SPECIES OBSERVED—JAMUL MOUNTAINS PARCELS
(continued)

Scientific Name	Common Name	Occupied Habitat (Birds Only)	Seasonality (Birds Only)
SYLVIIDAE	**GNATCATCHERS**		
Polioptila caerulea	blue-gray gnatcatcher	CSCT	Y
TIMALIIDAE	**BABBLERS**		
Chamaea fasciata henshawi	wrentit	CSCT	Y
MIMIDAE	**MOCKINGBIRDS & THRASHERS**		
Mimus polyglottos polyglottos	northern mockingbird	DCSS, CSCT	Y
Toxostoma redivivum redivivum	California thrasher	CSCT	Y
EMBERIZIDAE	**EMBERIZIDS**		
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	DCSS	Y
Ammodramus savannarum perpallidus	grasshopper sparrow	DCSS, NNG	Y
Chondestes grammacus strigatus	lark sparrow	DCSS, NNG	Y
Pipilo crissalis	California towhee	DCSS	Y
Pipilo maculatus	spotted towhee	DCSS	Y
CARDINALIDAE	**CARDINALS & GROSBEAKS**		
Passerina caerulea salicaria	blue grosbeak	DCSS	S
Passerina amoena	lazuli bunting	DCSS	C
ICTERIDAE	**BLACKBIRDS & NEW WORLD ORIOLES**		
Sturnella neglecta	western meadowlark	DCSS, NNG	Y
FRINGILLIDAE	**FINCHES**		
Carduelis psaltria hesperophilus	lesser goldfinch	DCSS	Y
Carpodacus mexicanus frontalis	house finch	DCSS	Y

ATTACHMENT 2
WILDLIFE SPECIES OBSERVED—JAMUL MOUNTAINS PARCELS
(continued)

Scientific Name	Common Name	Occupied Habitat (Birds Only)	Seasonality (Birds Only)
	MAMMALS (Nomenclature from Baker et al. 2003)		
CERVIDAE	**DEER**		
Odocoileus hemionus	mule deer		
LEPORIDAE	**RABBITS & HARES**		
Lepus californicus bennettii	San Diego black-tailed jackrabbit		
Sylvilagus audubonii	desert cottontail		
SCIURIDAE	**SQUIRRELS & CHIPMUNKS**		
Spermophilus beecheyi	California ground squirrel		
MURIDAE	**OLD WORLD MICE & RATS (I)**		
Neotoma sp.	woodrat		
CANIDAE	**CANIDS**		
Canis latrans	coyote		

(I) = Introduced species

HABITATS
CSCT = Coastal sage–chaparral transition
DCSS = Diegan Coastal sage scrub
NNG = Non-native grassland

SEASONALITY *(birds only)*
A = Accidental; species not known to occur under normal conditions; may be an off-course migrant
F = Flying overhead
M = Migrant; uses site for brief periods of time, primarily during spring and fall months
S = Spring/summer resident; probable breeder on-site or in vicinity
T = Transient; uses site regularly but unlikely to breed on-site
V = Rare vagrant
W = Winter visitor; does not breed locally
Y = Year-round resident; probable breeder on-site or in vicinity

ATTACHMENT 3

ATTACHMENT 3
SENSITIVE PLANT SPECIES OBSERVED—JAMUL MOUNTAINS PARCELS

Species	State/ Federal Status	CNPS Rare Plant Rank	City of Chula Vista	Habitat/Blooming Period
LYCOPODS				
SELAGINELLACEAE SPIKE-MOSS FAMILY				
Selaginella cinerascens Ashy spike-moss	-/-	4.1	-	Perennial herb (rhizomatous); chaparral, coastal-scrub; elevation 60-2,100 feet.
ANGIOSPERMS: MONOCOTS				
POACEAE GRASS FAMILY				
Achnatherum diegoense San Diego County needle grass	–/–	4.2	–	Perennial herb; rocky soils, chaparral, coastal sage scrub, often near streams; blooms Feb.–June; elevation less than 2,300 feet.
ANGIOSPERMS: DICOTS				
ASTERACEAE SUNFLOWER FAMILY				
Isocoma menziesii var. *decumbens* [=var. *menziesii*] decumbent goldenbush	–/–	1B.2	–	Shrub; chaparral, coastal sage scrub, sandy soils, often in disturbed areas; blooms April–Nov.; elevation less than 500 feet.
Iva hayesiana San Diego marsh-elder	–/–	2.2	–	Perennial herb; marshes and swamps, playas, riparian areas; blooms April–Sept.; elevation below 1,700 feet.
Bahiopsis [=*Viguiera*] *laciniata* San Diego County viguiera	–/–	4.2	–	Shrub; chaparral, coastal sage scrub; blooms Feb.–June; elevation less than 2,500 feet.
CACTACEAE CACTUS FAMILY				
Ferocactus viridescens San Diego barrel cactus	–/–	2.1	MSCP	Succulent; chaparral, coastal sage scrub, valley and foothill grassland, vernal pools; blooms May–June; elevation less than 1,500 feet.

ATTACHMENT 3
SENSITIVE PLANT SPECIES OBSERVED—JAMUL MOUNTAINS PARCELS

Species		State/ Federal Status	CNPS Rare Plant Rank	City of Chula Vista	Habitat/Blooming Period
CONVOLVULACEAE	**MORNING-GLORY FAMILY**				
Dichondra occidentalis western dichondra		–/–	4.2	–	Perennial herb; chaparral, cismontane woodland, coastal sage scrub, valley and foothill grassland; blooms Mar.–July; elevation less than 1,650 feet.
FAGACEAE	**OAK FAMILY**				
Quercus dumosa Nuttall's scrub oak		–/–	1B.1	–	Evergreen shrub; closed-cone coniferous forest, coastal chaparral, coastal sage scrub, sandy and clay loam soils; blooms Feb.–March; elevation less than 1,300 feet.
LAMIACEAE	**MINT FAMILY**				
Salvia munzii Munz's sage		–/–	2.2	–	Evergreen shrub; chaparral, coastal sage scrub, blooms Feb.–April; elevation less than 3,500 feet.

FEDERAL CANDIDATES AND LISTED PLANTS
FE = Federally listed endangered
FT = Federally listed threatened
FC = Federal candidate for listing as endangered or threatened

STATE LISTED PLANTS
CE = State listed endangered
CR = State listed rare
CT = State listed threatened

CALIFORNIA NATIVE PLANT SOCIETY Rare Plant Rankings
1A = Species presumed extinct.
1B = Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.
2 = Species rare, threatened, or endangered in California but more common elsewhere. These species are eligible for state listing.
3 = Species for which more information is needed. Distribution, endangerment, and/or taxonomic information is needed.
4 = A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.
.1 = Species seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat)
.2 = Species fairly threatened in California (20-80% occurrences threatened; moderate degree and immediacy of threat)
.3 = Species not very threatened in California (<20% of occurrences threatened; low degree and immediacy of threat or no current threats known)

CITY OF CHULA VISTA
NE = Narrow endemic
MSCP = Multiple Species Conservation Program covered species

ATTACHMENT 4

ATTACHMENT 4
SENSITIVE WILDLIFE SPECIES OBSERVED—JAMUL MOUNTAINS PARCELS

Species	Status	Habitat
REPTILES		
IGUANIDAE IGUANID LIZARDS		
Coast horned lizard *Phrynosoma blainvillii* [=*Phrynosoma coronatum blainvillii*]	CSC, MSCP, *	Chaparral, coastal sage scrub with fine, loose soil. Partially dependent on harvester ants for forage.
SCINCIDAE SKINKS		
Coronado skink *Eumeces skiltonianus interparietalis*	CSC	Grasslands, open woodlands and forest, broken chaparral. Rocky habitats near streams.
BIRDS (Nomenclature from American Ornithologists' Union 1998 and Unitt 1984)		
LANIIDAE SHRIKES		
Loggerhead shrike *Lanius ludovicianus*	CSC	Open foraging areas near scattered bushes and low trees.
EMBERIZIDAE EMBERIZIDS		
Southern California rufous-crowned sparrow *Aimophila ruficeps canescens*	CSC, MSCP	Coastal sage scrub, chaparral, grassland. Resident.
Grasshopper sparrow (nesting) *Ammodramus savannarum perpallidus*		Tall grass areas. Localized summer resident, rare in winter.

ATTACHMENT 4
SENSITIVE WILDLIFE SPECIES OBSERVED—JAMUL MOUNTAINS PARCELS (continued)

Species	Status	Habitat
MAMMALS (Nomenclature from Jones et al. 1997 and Hall 1981)		
CERVIDAE **DEER**		
Southern mule deer *Odocoileus hemionus fuliginata*	MSCP	Many habitats.
LEPORIDAE **RABBITS & HARES**		
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	CSC	Open areas of scrub, grasslands, agricultural fields.

STATUS CODES

Listed/Proposed
FE = Listed as endangered by the federal government
FPE = Federally proposed endangered
FPT = Federally proposed threatened
FT = Listed as threatened by the federal government
SE = Listed as endangered by the state of California
ST = Listed as threatened by the state of California

Other
BEPA = Bald and Golden Eagle Protection Act
CFP = California fully protected species
CSC = California Department of Fish and Game species of special concern
FC = Federal candidate for listing (taxa for which the U.S. Fish and Wildlife Service has on file sufficient information on biological vulnerability and threat(s) to support proposals to list as endangered or threatened; development and publication of proposed rules for these taxa are anticipated)
MSCP = Multiple Species Conservation Program covered species
PSE = Proposed as endangered by the state of California
* = Taxa listed with an asterisk fall into one or more of the following categories:
- Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines
- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range
- Population(s) in California that may be peripheral to the major portion of a taxon's range but which are threatened with extirpation within California
- Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands)