Dudek, "2007 Sensitive Plant Survey Results for the Entrada [Magic Mountain Entertainment] Site, Los Angeles, California" (December 2007; 2007G)

2007 Sensitive Plant Survey Results

Entrada

Los Angeles County, California

D E C E M B E R 2 0 0 7

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2007 SENSITIVE PLANT SURVEY RESULTS
for the
ENTRADA SITE
LOS ANGELES COUNTY, CALIFORNIA

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December 2007

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1.0 INTRODUCTION

The purpose of this report is to document the results of surveys for sensitive plant species within the 550-acre Entrada site for the 2007 field season. Surveys placed an emphasis on the identification of populations of the state-listed endangered San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) (SFVS). Focused surveys were conducted within those areas that were previously known to support SFVS occurrences. Any additional sensitive plant species observed were noted.

2.0 SITE DESCRIPTION

The Entrada site is located in an unincorporated portion of the Santa Clara River Valley in northwestern Los Angeles County (*Figure 1*). The Entrada site lies just west of Interstate 5 (I-5) and south of the Santa Clara River. The City of Santa Clarita is immediately east of the Entrada site, on the other side of I-5 (*Figure 2*).

The northeastern portion of the Entrada site is dominated by several north/south trending ridges, and a narrow panhandle (roughly 100 meters (328 feet) wide) that extends along the western portion of the site to an agricultural field adjacent to the Santa Clara River. California sagebrush scrub is the dominant vegetation community on the Entrada site, much of it dominated by California buckwheat. California annual grassland, chaparral, and big sagebrush scrub are also common vegetation communities on the Entrada site. Site elevations range from approximately 1,000 feet above mean sea level (AMSL) along the Santa Clara River, to approximately 1,550 feet AMSL on the ridges in the southwestern portion of the site (*Figure 2*).

Slope gradients range from moderate to very steep in the hillside areas to very gentle, adjacent to the Santa Clara River, tributary canyons, and associated mesas. Distinctive geographic features include the north/south trending ridges on the southern portion of the site, a wash that drains north through the site to a concrete-lined drainage channel that passes through the Six Flags Magic Mountain Amusement Park, and the Santa Clara River on the northwestern portion of the site.

Z:\Projects\j373801\Spineflower Management Plan\arcmap\2007 Sensitive Plant Surveys\Entrada\Figure 1 - Entrada Regional Map.mxd -SL 1/21/2008

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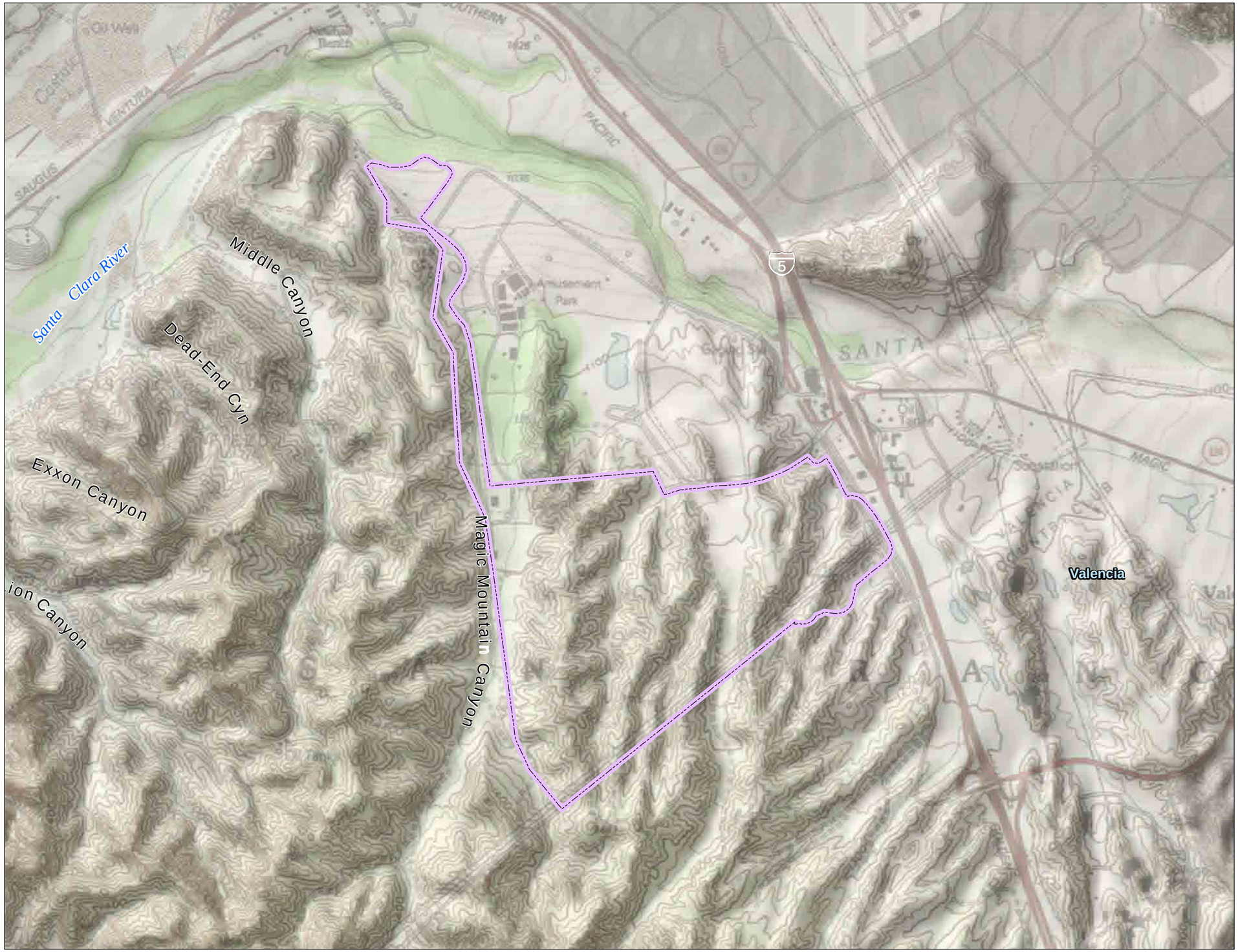
Entrada - 2007 Sensitive Plant Surveys

Regional Map

FIGURE 1



Entrada Boundary

County Boundary

N

0 0.25 0.5 Miles

IMAGE SOURCE: USGS 24K Quad

Z:\Projects\373801\Spineflower Management Plan\arcmap\2007 Sensitive Plant Surveys\Figure 2 - Vicinity Map.mxd - SL 1/21/2008

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Entrada - 2007 Sensitive Plant Surveys

Vicinity Map

FIGURE 2

2.1 Vegetation Communities and Land Covers

Dudek conducted a sensitive plant survey in the Entrada study area. Native and naturalized vegetation communities within the Entrada study area are representative of those found in this region and provide examples of those vegetation communities found in the Santa Susana Mountains and the Santa Clara River ecosystems. California sagebrush scrub, chaparral, big sagebrush scrub, and California grassland, are the major upland plant communities on the site. Ephemeral drainages on site are associated with big sagebrush scrub and alluvial scrub. While upland vegetation communities dominate the landscape within the site, the Santa Clara River is immediately adjacent to it and supports a variety of riparian vegetation communities. These include southern cottonwood–willow riparian forest, southern willow scrub, and mulefat scrub.

Newhall Land leases out portions of the site for oil and natural gas production, as well as for cattle grazing and agricultural operations. Grazing activities have had a noticeable effect on much of the natural vegetation on site. Scrub communities have been displaced by California annual grasslands, apparently as a result of grazing. Southern California Edison and Southern California Gas Company have transmission lines within easements along the southern portion of the site as well. The easements/transmission lines are actively maintained.

2.2 Geology and Soils

Geologically, the site is located within the Transverse Range geomorphic province of Southern California in the eastern portion of the Ventura depositional basin. This basin was produced by tectonic downwarping in the geologic past to produce a large-scale synclinal structure in which a thick sequence of Cenozoic sediments has accumulated. These sediments have been lithified into a sequence of sedimentary rock that has subsequently been uplifted, tilted, and tectonically deformed (Allan E. Seward 2002, 2004). They are cut by segments of the Del Valle and Salt Creek area faults. Bedrock formations found in the area include the Modelo, Towsley, Pico, Saugus, and Pacoima formations, as well as Quaternary Terrace deposits. Surficial deposits include Quaternary alluvium, slopewash, soil, and artificial fill (Allan E. Seward 2002, 2004).

3.0 METHODS AND SURVEY LIMITATIONS

Data regarding botanical resources present in the Entrada study area were obtained through a review of the pertinent literature and field reconnaissance, which is described below.

3.1 Literature Review

General floristic and sensitive botanical resources present or potentially present on the Entrada study area were identified through a literature search using the following sources: the California

Natural Diversity Database for the Newhall, Santa Susana, Oat Mountain, Mint Canyon, San Fernando, Green Valley, Warm Springs Mountain, Whitaker Peak, Cobblestone Mountain, Piru, Simi, Thousand Oaks, and Val Verde quadrangle maps (CDFG 2007); 2002 and 2003 Sensitive Plant Survey Results for Newhall Ranch Specific Plan Area (Dudek 2002, 2004a); 2003 Sensitive Plant Survey Results for Valencia Commerce Center, Castaic Mesa, Isola, and Ventura Homestead Sites, Magic Mountain Entertainment Center/Entrada Site, Castaic Junction Site, and Salt Creek (Dudek 2004b, 2004c, 2004d, 2004e, 2004g); 2004 Sensitive Plant Survey Results for Valencia Commerce Center, Entrada Site, Legacy, and Newhall Ranch Specific Plan Area (Dudek 2004h, 2004i, 2004j, 2004k); 2005 Sensitive Plant Survey Results for Valencia Commerce Center, Entrada Site, and Newhall Ranch Specific Plan Area (Dudek 2006a, 2006b, 2006c); 2006 Sensitive Plant Survey Results for Valencia Commerce Center, Entrada Site, and Newhall Ranch Specific Plan Area (Dudek 2006d, 2006e, 2006f); *Biological Resource Assessment of the Proposed Santa Susana Mountains/Simi Hills Significant Ecological Area* (PCR, November 2002); CalFlora (2002); U.S. Fish and Wildlife Service (USFWS 1999); *Inventory of Rare and Endangered Vascular Plants of California (*CNPS 2001); *Vascular Flora of the Liebre Mountains, Western Transverse Ranges, California* (Boyd 1999); *Checklist of Rare Ventura County Plant Species* (Magney 2002); *A Flora of the Santa Barbara Region, California* (Smith 1976); *A Flora of the Santa Monica Mountains* (Raven et al. 1986); *Biology of the San Fernando Valley Spineflower, Ahmanson Ranch, Ventura County, California* (Glenn Lukos Associates, Inc. and Sapphos Environmental, Inc. 2000); *Report to the Fish and Game Commission on the Status of San Fernando Valley Spineflower* (CDFG 2001); Biota Report, Newhall Ranch Specific Plan (RECON and Impact Sciences, Inc. 1996); and herbarium specimens from Rancho Santa Ana Botanic Garden (RSA) and the University of California, Riverside (UCR) Herbarium. General information regarding vegetation communities was obtained from Holland (1986) and Sawyer and Keeler-Wolf (1995). Vegetation community and land cover classifications used in this report primarily follow the Vegetation Classification and Mapping Program, List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database (CDFG 2003), with a few exceptions. In certain instances, the vegetation communities observed in the field did not match the vegetation communities described in CDFG (2003). Plant species nomenclature follows Hickman (1993).

3.2 Field Reconnaissance Methods

Botanical surveys for sensitive plant species were conducted by Dudek staff biologists Brianna Wood, Britney Strittmater, Callie Ford, Doug Gettinger, Galen Hagen, F. Marcus Obregon and Travis Smith. All surveys were conducted on foot. Resumes for survey personnel are provided in *Appendix A*.

Botanical surveys of the Entrada study area were conducted in early June 2007 in accordance with the schedule provided in *Table 1*. Approximately 230 person-hours (23 person-days) were spent conducting botanical surveys within the Entrada study area. Surveys were conducted in teams of two or more biologists, with at least one senior-level biologist included with each team. Biologists were able to observe reference populations of the state-listed endangered SFVS and other sensitive plant species in order to develop a search-image prior to conducting surveys of the Entrada study area. Surveys focused on the identification and location of SFVS within those areas that were known to support the SFVS occurrences previously. Additional sensitive plant species observed during SFVS surveys, including California Native Plant Society (CNPS) List 1B and List 4 species, were recorded.

Table 1
Survey Schedule and Personnel: Entrada Site

Date	Biologists	Purpose
6-05-07	Britney Strittmater, Callie Ford, Galen Hagen, Doug Gettinger	Focused surveys for SFVS; other sensitive plant species noted as observed.
6-06-07	Britney Strittmater, Doug Gettinger	Focused surveys for SFVS; other sensitive plant species noted as observed.
6-07-07	Britney Strittmater, Callie Ford, Galen Hagen, Doug Gettinger, Travis Smith	Focused surveys for SFVS; other sensitive plant species noted as observed.
6-08-07	Britney Strittmater, Callie Ford, Doug Gettinger, Travis Smith	Focused surveys for SFVS; other sensitive plant species noted as observed.
06-12-07 to 06-13-07	Brianna Wood, Britney Strittmater, Galen Hagen, Marcus Obregon	Focused surveys for SFVS; other sensitive plant species noted as observed.

All plant species encountered during the field surveys were identified and recorded for inclusion in *Appendix B*. Latin and common names of plants follow *The Jepson Manual* (Hickman 1993) or other recent published taxonomic treatments. Where not listed in Hickman (1993), common names were taken from Abrams (1923). Where not found in this reference, a variety of sources were used (e.g., Dale 1985 or Roberts 1998).

While surveying in the field and mapping SFVS, a 4-meter (13.1-foot) rule was used to separate polygons for mapping purposes. This 4-meter distance is a heuristic mapping tool based on the topography, vegetation, detectability of the plants, the general accuracy of the GPS, and time constraints. This heuristic criterion is not specifically tied to SFVS biology (i.e., reproductive biology, seed dispersal) and thus is not intended to reflect reproductively isolated sub-populations, the total extent of the SVFS seed bank, or any other feature of the species life history.

The outer perimeter of each SFVS polygon was searched in one continuous direction until returning to the starting point, with plants being located within at least every 1 to 4 meters (3.3 to

13.1 feet) along the boundary, and points were stored with a Trimble GPS (that has sub-meter accuracy) manually, to form the boundaries of the polygon. GPS points were taken within at least every 1 to 4 meters. The various SFVS polygons were given a unique identifier (i.e., numbers and/or letters) in the field. Field data sheets were completed for each of the SFVS polygons that include data on site conditions (i.e., plant number estimates, associated species) (*Appendix C*). Polygons were analyzed in the lab and delineated based on a 4-meter minimum convex polygon rule (i.e., all polygons within 4 meters of each other are joined using GIS software (e.g., ArcGIS, AutoCAD), then delineated as one polygon with the outer boundary represented by a minimum convex polygon.

Due to the small numbers of SFVS individuals that were observed during the 2007 field season, each population was determined through direct counting. No other sensitive plant species were observed. Information regarding the mapping for SFVS is included in *Section 4.2.1* below.

3.2.1 Sensitive Plant Species

Sensitive plant species are those species that have been given special recognition by federal, state, or local conservation agencies and organizations due to limited, declining, or threatened population sizes. This designation includes those species listed by the state and federal government as threatened or endangered, those species proposed for state and/or federal listing or candidates, those plant species found on Lists 1A, 1B or 2 of the CNPS Inventory of Rare and Endangered Plants of California (CNPS 2001) or CNPS online inventory (CNPS 2007), and those plant species which are found on the list of "Threatened and Endangered Species and Species of Concern, Los Angeles County" (Los Angeles Almanac 2007). CNPS List 3 or List 4 species, which have a lower level of sensitivity, were included in discussions only when incidentally encountered during the field surveys. Focused surveys were conducted only in areas that were previously known to support SFVS.

3.2.2 Survey Limitations

Surveys were conducted in early June 2007. The timing of the surveys was coincident with the blooming period for SFVS and some other species that were expected to bloom at this time. This maximized the potential for detection of SFVS and other sensitive plants during the survey effort.

Surveys for SFVS were concentrated within those areas known to support SFVS occurrences previously. All surveys were conducted during daylight hours under weather conditions which did not preclude observation of sensitive plant species (e.g., surveys were not conducted during heavy fog or rain).

The rainfall in the winter and spring of 2007 was less than average, and consequently the new vegetation growth was also very low. The SFVS were smaller and less abundant this year compared to previous years. In addition, other sensitive plant species were not incidentally observed as they had been in previous years.

4.0 RESULTS OF SURVEYS

4.1 Botany – Floral Diversity

The site is situated at the nexus of the Transverse, Coast, and Sierra Nevada ranges; the Mojave Desert; and coastal plains (Hickman 1993). Ecotone areas such as this are often characterized by higher biological diversity than similar-sized areas within the core of a physiographic region (Boyd 1999). As such, a high diversity of plant species is expected during a year of at least average rainfall amounts for the area.

A total of 356 plant species was identified within the Entrada site. Of these, 269 species (75%) are native to the region and 87 species (25%) are nonnative. The cumulative list of plant species identified on the site in 2002, 2003, 2004, 2005, 2006, and 2007 is provided as *Appendix B*.

4.2 Sensitive Plant Species

Focused surveys were conducted within those areas that were previously known to support SFVS occurrences and SFVS was the only sensitive plant species observed during the course of 2007 SFVS surveys. Other sensitive species that have the potential to occur on the Entrada site, based on the presence of suitable habitat and soils, are listed in *Table 2*. This list is confined primarily to those species listed by the state and federal government as threatened or endangered, those species proposed for state and/or federal listing or candidates, or those plant species found on Lists 1A, 1B, or 2 of the CNPS *Inventory of Rare Endangered Plants of California* (CNPS 2001) or CNPS online inventory (CNPS 2007).

Table 2
Sensitive Plant Species Observed or Potentially Occurring at the Entrada Study Area

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/ Life Form/Blooming Period	Presence or Likelihood of Occurrence On Site
Arenaria paludicola	marsh sandwort	FE/SE	1B	dense freshwater marsh/perennial herb/May-August	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads; nearest occurrences are in the Santa Ana River and in Santa Barbara. Limited suitable habitat on site; very low likelihood of occurrence within the study area.
Astragalus brauntonii	Braunton's milk-vetch	FE/None	1B	chaparral, coastal sage scrub, grasslands; often on carbonate substrates/perennial herb/March-July	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads; nearest occurrence is in the Simi Hills. Suitable habitat exists on site. Moderate likelihood of occurrence within the study area.
Atriplex coulteri	Coulter's saltbush	None/None	1B	coastal sage scrub and grasslands on alkaline or clay substrate/perennial herb/March-October	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads. Suitable habitat exists on site. Moderate likelihood of occurrence within the study area.
Atriplex serenana var. *davidsonii*	Davidson's saltscale	None/None	1B	coastal bluff scrub and coastal sage scrub on alkaline substrate/annual herb/May-October	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads. Suitable habitat exists on site. Low likelihood of occurrence within the study area.
Baccharis malibuensis	Malibu baccharis	None/None	1B	chaparral, coastal sage scrub, cismontane woodland/deciduous shrub/August	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads.; closest known populations are in the western Santa Monica Mountains near Malibu. Not expected to occur within the study area.
Berberis nevinii	Nevin's barberry	FE/SE	1B	chaparral, coastal sage scrub, riparian scrub, cismontane woodland on sandy or gravelly substrate/evergreen shrub/March-April	Not observed during 2007 field season. CNDDB records exist for San Francisquito Canyon at confluence with Santa Clara River; suitable habitat present on site. Moderate likelihood of occurrence within the study area.
Brodiaea filifolia	thread-leaved Brodiaea	FT/SE	1B	clay substrate openings in chaparral, sage scrub, and grasslands/perennial herb (geophyte)/March-June	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads; nearest occurrence is in San Dimas. Suitable habitat present on site. Low likelihood of occurrence within the study area.
Calachortus catalinae	Catalina mariposa lily	None/None	4	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/ perennial herb (geophyte)/ February-May	Not observed during 2007 field season. In 2002, a *Calochortus* species with a wide seed capsule and a membranous bulb coat was observed on site that was likely *C. catalinae*. A search of this area in 2006 only revealed *C. venustus* and *C. clavatus* var. *gracilis*. Low to moderate to high likelihood of occurrence within the study area.

Table 2 (Cont.)

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/ Life Form/Blooming Period	Presence or Likelihood of Occurrence On Site
Calochortus clavatus var. *gracilis*	slender mariposa lily	None/None	1B	chaparral and coastal sage scrub/perennial herb (geophyte)/March-May	Not observed during 2007 field season. CNDDB records for mouth of Pico Canyon.
Calochortus plummerae	Plummer's mariposa lily	None/None	1B	chaparral, coastal sage scrub, cismontane woodland, grasslands on rocky granitic substrate/perennial herb (geophyte)/May-July	Not observed during 2007 field season. A *Calochortus* species with narrow seed capsules and a fibrous bulb coat was observed on site in 2002, but could not be confirmed as *C. plummerae*. A search of this area in 2006 only revealed *C. venustus*. Moderate likelihood of occurrence within the study area.
Calochortus weedii var. *vestus*	late-flowered mariposa lily	None/None	1B	chaparral, cismontane & riparian woodland/perennial herb (geophyte)/ June-August	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads; however, habitat similar to where species occurs in eastern Ventura County is present on site.
Calystegia peirsonii	Pierson's morning-glory	None/None	4	Chaparral, coastal sage scrub, cismontane woodland, grassland/ perennial herb/ May-June	Not observed during 2007 field season.
Calystegia sepium ssp. *Binghamiae*	Santa Barbara morning-glory	None/None	1A	marshes and swamps/perennial herb/ April-May	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads. Limited suitable habitat present on site. Low likelihood of occurrence within the study area.
Centromadia (=Hemizonia) parryi ssp. *Australis*	southern tarplant	None/None	1B	mesic edges of marshes in grasslands/annual herb/May-November	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads. Suitable habitat exists on site. Low likelihood of occurrence within the study area.
Cercocarpus betuloides var. *blancheae*	island mountain-mahogany	None/None	4	Chaparral, closed-cone coniferous forest/ evergreen shrub/ February-May	Not observed during 2007 field season.
Chorizanthe parryi var. *fernandina*	San Fernando Valley spineflower	FC/SE	1B	coastal sage scrub, sandy soils/annual herb/April-June	Observed eight polygons in the southeastern, central, and western portions of the site. Total on-site population estimate is 258 individuals within occurrence polygons covering 0.02 acres of the site.
Deinandra (=Hemizonia])minthornii	Santa Susana tarplant	None/SR	1B	chaparral and coastal sage scrub on rocky substrate/deciduous shrub/July-November	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads; however, records exist for the Simi Hills and Oat Mountains. Suitable habitat exists on site. Low likelihood of occurrence within the study area.
Delphinium parryi ssp. *Blochmaniae*	dune larkspur	None/None	1B	maritime chaparral, coastal dunes/ perennial herb/ April-May	Not observed during the 2007 field season. Not expected to occur.

Table 2 (Cont.)

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/ Life Form/Blooming Period	Presence or Likelihood of Occurrence On Site
Dodecahema leptoceras	slender-horned spineflower	FE/SE	1B	alluvial scrub on sandy substrate/ annual herb/April-June	Not observed during 2007 field season. Historic CNDDB records exist for the Newhall or Val Verde quads in alluvial habitat similar to that present on site. Moderate to high likelihood of occurrence within the study area.
Dudleya blochmaniae var. *blochmaniae*	Blochman's Dudleya	None/None	1B	clay openings in chaparral and coastal sage scrub, grasslands/perennial herb/April-June	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads. Suitable habitat present on site. Low to moderate likelihood of occurrence within the study area.
Dudleya cymosa ssp. *Marcescens*	marcescent Dudleya	FT/CR	1B	chaparral, often on volcanic substrate/perennial herb (geophyte)/ April-June	Not observed during 2007 field season. No CNDDB records exist for Newhall and Val Verde quads. Low likelihood of occurrence within the study area.
Dudleya cymosa ssp. *Ovatifolia*	Santa Monica Mountains Dudleya	FT/None	1B	chaparral and coastal sage scrub, often on volcanic substrate/perennial herb (geophyte)/April-June	Not observed during 2007 field season. No CNDDB records exist for Newhall and Val Verde quads. Suitable habitat present on site. Low likelihood of occurrence within the study area.
Dudleya multicaulis	many-stemmed Dudleya	None/None	1B	coastal bluff scrub, coastal sage scrub, valley and foothill grassland, rocky, often clay substrate/perennial herb/ April-June	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads; closest known occurrences are in Calabasas and San Dimas. Suitable habitat exists on site. Low to moderate likelihood of occurrence within the study area.
Dudleya parva	Conejo Dudleya	FT/None	1B	coastal sage scrub and grassland on rocky, gravelly clays/perennial herb/May-June	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads. Suitable habitat exists on site. Low to moderate likelihood of occurrence within the study area.
Erodium macrophyllum	round-leaved filaree	None/None	2	cismontane woodland and grasslands on clay substrate/annual herb/March-May	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads; however, records exist for Simi Valley, and this plant was observed in the hills east of Castaic Lake in 2003. Suitable habitat present on site. Moderate likelihood of occurrence within the study area.

Table 2 (Cont.)

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/ Life Form/Blooming Period	Presence or Likelihood of Occurrence On Site
Helianthus nuttallii ssp. *Parishii*	Los Angeles sunflower	None/None	1A	marshes and swamps/perennial herb/ August-October	Not observed during 2007 field season. A *Helianthus* population, discovered in 2002 at Castaic Spring, on the south side of the Santa Clara River between Middle Canyon and San Jose Flats, was determined by some experts to be this species, but determined by other experts not to be this species. Based on pollen electron microscopy and chromosome counts, it is likely that the *Helianthus* species on Newhall Land property is a hybrid between *H. nuttallii* and *H. californicus* or an intermediate evolutionary step between the two species (Porter and Fraga 2004). No suitable habitat observed within the study area.
Horkelia cuneata var. *puberula*	Mesa horkelia	None/None	1B	chaparral, cismontane woodland, coastal sage scrub on sandy or gravelly substrate/perennial herb/February-December	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads. Suitable habitat present on site. Low likelihood of occurrence within the study area.
Lasthenia glabrata ssp. *Coulteri*	Coulter's goldfields	None/None	1B	Marshes, swamps, plays, vernal pools/ annual herb/ February-June	Not observed during 2007 field season. In 2006, it was observed as a component of an erosion control seed mix applied along dirt roads associated with the gas and power transmission line easement running the southeastern edge of the study area. These plants were growing in conditions outside the natural habitat for this species.
Malacothamnus davidsonii	Davidson's bush mallow	None/None	1B	chaparral, coastal sage scrub, riparian woodland/ deciduous scrub/June-January	Not observed during 2007 field season. Nearest occurrences are in Van Nuys and Sunland quads. Suitable habitat present on site. Moderate likelihood of occurrence within the study area.
Nama stenocarpum	mud nama	None/None	2	edges of lakes, rivers, ponds, vernal pools/annual/January-July	Not observed during 2007 field season. Moderate likelihood of occurrence on banks of Santa Clara River and other mesic areas on site. No CNDDB records exist for the Newhall or Val Verde quads. Limited suitable habitat present on site. Low likelihood of occurrence within the study area.
Nolina cismontane	chaparral nolina	None/None	1B	chaparral, coastal sage scrub on sandstone or gabbro substrate/ perennial shrub/May-July	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads. Limited suitable habitat present on site. Low likelihood of occurrence within the study area.

Table 2 (Cont.)

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/ Life Form/Blooming Period	Presence or Likelihood of Occurrence On Site
Opuntia basilaris var. *brachyclada*	short-joint beavertail	None/None	1B	chaparral, Joshua tree woodland, Mojavean desert scrub/succulent shrub/ April-June	This variety was identified on site by Dudek in 2002; however, further investigations indicate that these plants are not consistent with *Opuntia basilaris* var. *brachyclada*. Therefore, *O. basilaris* plants were not mapped during surveys of the study area in 2007.
Pentachaeta lyonii	Lyon's pentachaeta	FE/SE	1B	openings in chaparral and coastal sage scrub, grasslands/annual herb/March-August	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads; nearest occurrences are in the Simi Valley. Suitable habitat present on site. Moderate likelihood of occurrence within the study area.
Rorippa gambelii	Gambel's watercress	FE/ST	1B	Marsh and swamps (freshwater and brackish)/ perennial herb/April-June	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads. Limited suitable habitat present on site. Very low likelihood of occurrence within the study area.
Seneca aphanites	ray less ragwort	None/None	2	chaparral, coastal sage scrub, cismontane woodland on alkaline substrate/annual herb/January-April	Not observed during 2007 field season. Historic CNDDB record for Saugus, south of Santa Clara River. Suitable habitat exists on site. Low to moderate likelihood of occurrence within the study area.
Sidle neomexicana	Salt spring checkerbloom	None/None	2	chaparral, coastal sage scrub, and playas on alkaline substrate/perennial herb/March-June	Not observed during 2007 field season. No CNDDB records exist for the Newhall or Val Verde quads; suitable habitat exists on site. Moderate likelihood of occurrence within the study area.
Thelypteris puberula var. *sonorensis*	Sonoran maiden fern	None/None	2	meadows and seeps/perennial herb/ fertile January-September	Not observed during 2007 field season; however, entire site not surveyed. No CNDDB records exist for the Newhall or Val Verde quads; nearest occurrence at Point Dume. Limited suitable habitat present on site. Low likelihood of occurrence within the study area.

Legend

FE:	Federally-listed as endangered	CNPS List 1A:	Plants presumed extinct in California
FT:	Federally-listed as threatened	CNPS List 1B:	Plants rare, threatened, or endangered in California and elsewhere
FC:	Federal candidate for listing	CNPS List 2:	Plants rare, threatened, or endangered in California but more common elsewhere
SC:	State candidate for listing	CNPS List 3:	Plants about which we need more information – a review list
SE:	State-listed as endangered	CNPS List 4:	Plants of limited distribution – a watch list
ST:	State-listed as threatened		
SR:	State-listed as rare		

Figure 3 depicts the locations of SFVS on the Entrada site during 2007. Information regarding the mapping and recorded characteristics of SFVS is included in *Section 4.2.1* below.

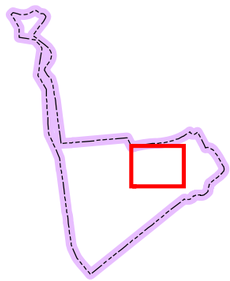
4.2.1 San Fernando Valley Spineflower (*Chorizanthe parryi* var. *fernandina*)

SFVS is state-listed as endangered, a candidate for federal listing, and a CNPS List 1B.1 species. Until its rediscovery in 1999 at Laskey Mesa on Ahmanson Ranch in Ventura County, it was thought to be extinct. A review of information of historic occurrence of SFVS in the California Natural Diversity Database (CNDDB) indicates that it was previously thought to occur in sandy to gravelly soils of washes, riverbeds, and upland areas primarily on the margins of the San Fernando Valley at the base of the Santa Susana Mountains, San Gabriel Mountains, and the Simi Hills (CDFG 2007). Munz (1974) provides distribution information to include Orange and San Diego counties.

SFVS polygons were identified in several areas on site including the southwestern portion of the site, the north-central area beside the wash, and the western portion of the wash adjacent to the Six Flags Magic Mountain Amusement Park. These polygons are depicted on *Figure 3*. Labels for each of the polygons in this figure correlate with those in *Table 3*, which contains estimates for the number of individuals within each polygon.

Almost 96% of the SFVS individuals were found on north-facing slopes in California annual grasslands and great basin sagebrush scrub. Elevations of the SFVS polygons on this site range from approximately 1,150 to 1,205 feet AMSL.

Vegetative cover in the area of SFVS occurrences ranges from 2% to 60%, but individuals are most common in areas with between 35% and 40% vegetative cover. About 97% of individuals were found on sandy clay loam, and about 3% were found on sandy loam soils. A total of eight SFVS polygons were mapped ranging in size from one square foot to 269 square feet. The number of individuals within each polygon ranges from one to 155. CNDDB forms are included in *Appendix C* for each occurrence on site.



Entrada Boundary

San Fernando Valley Spineflower

N

0 100 200 Feet

IM

Z:\Projects\37380.01\Spineflower Management Plan\arcmap\2007 Sensitive Plant Surveys\Entrada\Figure 3 - Entrada Results.mxd -SL 1/21/2008

DUDEK
Santa Barbara GIS Division
621 Chapala Street
Santa Barbara, Ca 93101
(805) 963-0651

Entrada - 2007 Sensitive Plant Surveys

Entrada Results

FIGURE 3

Table 3
San Fernando Valley Spineflower Summary of Occurrence Data for the Entrada Study Area

Polygon Name	Polygon Area (sq. ft.)	Estimated Number of Individuals
629901	269	155
629902	2	1
629903	7	8
6210201	147	33
6210202	188	53
622301	6	1
622302	34	6
622303	1	1
Total	654	258

5.0 ACKNOWLEDGMENTS

Britney Strittmater prepared this report, with review by Callie Ford and Sherri Miller. Spenser Lucarelli provided graphics and GIS mapping analyses.

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APPENDIX A

Resumes of Survey Personnel

Callie Ford – Biologist

EXPERIENCE

Callie Ford is committed to professional management of environmental resources, including land conservation. As a biologist with Dudek, Ms. Ford has prepared biological sections for environmental impact reports (EIRs) and biological technical reports as well as focused survey reports on multiple projects.

Project Experience

Environmental Services for Newhall Land and Farming Company, Santa Clarita, California. Assisted in writing numerous biological technical reports and biological sections of EIRs with detailed information of special-status wildlife species. Coordinated and performed biological surveys for spineflower, a state endangered and sensitive plant species, including population counts and using GPS to locate the boundaries of the populations. Also performed biological monitoring of known spineflower populations, including population counts and point-intercept transects, and performed vegetation mapping for multiple vegetation classes.

Focused Wildlife Surveys, Yaqui Pass and Viking Farms, Borrego Springs, California. Conducted general nocturnal and diurnal surveys with a focus on special-status wildlife species on two proposed development properties in Borrego Springs.

Hazard Tree Removal Project, San Bernardino and San Jacinto Mountains, Southern California Edison, San Bernardino and Riverside Counties, California. Performed biological monitoring for trees affected by bark beetle infestations, including sensitive plant surveys and nesting wildlife species, and provided recommendations for removing trees in environmentally sensitive areas (e.g., riparian zones). Also assisted in biological monitoring for trees affected by the 2007 fires in the Lake Arrowhead area.

Miramar Trunk Sewer Replacement and Permanent Access Project, City of San Diego Metropolitan Wastewater Department (MWWD), San Diego, California. Performed construction monitoring for the sewer replacement in Rose Canyon. Monitored for special-status wildlife species.

Santa Clara River Watershed Basin Analysis, Counties of Ventura and Los Angeles, California. Researched permits issued by the US Army Corps of Engineers (ACOE) and other documents related to the Santa Clara River Watershed Basin Analysis project regarding impacts to jurisdictional waters and any sensitive plant or wildlife species.

EDUCATION

California Polytechnic State University, San Luis Obispo
BS Environmental Management & Protection/Minor in GIS
2006
Cum Laude

PROFESSIONAL AFFILIATIONS

Association of Environmental Professionals (AEP)

San Diego Metropolitan Wastewater District As-Needed Contract, San Diego, California. Reviewed and analyzed plant survey forms and incorporated pertinent information into a biological report.

Mid-County Parkway Project, County of Riverside, California. Performed wildlife surveys for the sensitive burrowing owl species.

Aliso Creek Water Quality SUPER Project, South Orange County Wastewater Authority, Laguna Niguel, California. Reviewed southwestern willow flycatcher and least Bell's vireo survey records and assisted with writing the focused survey report for the Aliso Creek area.

High Tech Project, High Tech High Learning, City of Chula Vista, California. Reviewed southwestern willow flycatcher and least Bell's vireo survey records and assisted with writing the focused survey report for the High Tech High School Development project.

Gobernadora Multipurpose Basin Project, Santa Margarita Water District, Rancho Santa Margarita, California. Assisted writing the biological technical report for the Canada Gobernadora Multipurpose Basin, which is located next to the Canada Gobernadora Creek and north of the Gobernadora Ecological Reserve Area.

Additional Experience

Morro Bay National Estuary Program, Morro Bay, California—Water Quality Testing Volunteer. Performed water quality testing, including testing for nitrogen, phosphates, dissolved oxygen, turbidity, pH, and flow (using FloMaster).

City of San Diego, Multiple Species Conservation Program Section—Intern.

- Performed biological surveys for native vegetation using hand-held GIS system and uploaded new GIS information into database.
- Reviewed plans with property within the Multiple Habitat Plan Area and made sure the plan was following the correct guidelines for that plan (i.e., riparian buffer zones, landscape plans, etc).
- Revised management plans per comments from local organizations and agencies.
- Organized property information for land put into a trust as part of mitigation measures.

Relevant Studies

- Association of Environmental Professionals CEQA Workshop November 2006.
- Friends of the Jepson Herbarium. *Introduction to the Morphology and Identification of Flowering Plants.* University of Berkeley Sciences Building. March 18–19, 2007.

Douglas Gettinger – Habitat Restoration Specialist

EXPERIENCE

Douglas Gettinger has focused his career on environmental compliance monitoring and habitat restoration. Mr. Gettinger has more than a decade of experience in biological construction monitoring and habitat restoration work, including the design, implementation, and monitoring of habitat restoration projects. His training in landscape architecture and horticulture, coupled with his experience working on large construction projects, helps bring habitat restoration and endangered species habitat creation projects to a successful conclusion. Mr. Gettinger holds a California Pest Control Adviser License, which allows him to legally act as an expert and make recommendations for the control of invasive plant species. His project experience includes construction monitoring for road, sewer, and pipeline projects. He has managed habitat restoration of chaparral, coastal sage scrub, coastal salt marsh, freshwater marsh, limestone forest, riparian woodland, southern willow scrub, and oak woodland habitats that have been implemented under agreements with various federal, state, and local agencies. Mr. Gettinger has experience working safely around the large earth-moving equipment found at various construction projects and has worked at hazardous materials sites requiring OSHA 40-hour hazardous worker training.

Water/Wastewater/Reclaimed Water

Metropolitan Wastewater Department As-Needed Biological Services Contract 2000–2005, San Diego Metropolitan Wastewater Department, City of San Diego, California. Served as a biological construction monitor on numerous emergency sewer repair and maintenance projects in sensitive habitat areas located in canyons for the City of San Diego Metropolitan Wastewater Department on the as-needed biological services contract 2000–2005. Tasks included: emergency projects repairing sewers where sewage was flowing into live stream conditions, requiring immediate response from Dudek staff; monitoring emergency sewer cleaning activities where temporary equipment access was needed in sensitive habitat canyon areas; and scheduling and coordinating the work of other biological monitors, as needed. Initial assessment reports, biological resources reports, and/or impact assessment reports were then prepared for each task, depending on project requirements.

North Mission Valley Interceptor Sewer Project, San Diego Metropolitan Wastewater Department, City of San Diego, California. Biological construction monitor for the North Mission Valley Interceptor Sewer Project through wetland habitat along the San

EDUCATION

California State Polytechnic University at Pomona
BS Landscape Architecture
1979

California State Polytechnic University at Pomona
BS Ornamental Horticulture
1980

LICENSES & CERTIFICATIONS

California Agricultural Pest Control Adviser License No. 01369 (issued 1/01/2007, expires 12/31/08)

PROFESSIONAL AFFILIATIONS

Society for Ecological Restoration

California Invasive Plant Council

California Agricultural Production Consultants' Association

Diego River. Also monitored the removal of 4 acres of the invasive exotic giant reed (*Arundo donax*) infesting the adjacent wetland mitigation site. Oversaw the transplanting of mature riparian trees and installation of the riparian mitigation plan.

San Diego County Water Authority Emergency Storage Reservoir Program, San Diego County Water Authority, County of San Diego, California. Assisted in focused biological surveys and helped prepare alternatives analysis for the environmental impact report for the San Diego County Water Authority Emergency Storage Reservoir Program. Performed extensive tree inventory surveys and mapping of coast live oak (*Quercus agrifolia*) and mesa oak (*Q. engelmannii*) in proposed project alternative areas.

Metropolitan Water District Pipeline Project, Metropolitan Water District of Southern California, Hemet, California. Collected seed from several sensitive species, including San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*), little mousetail (*Myosurus minimus* ssp. *apus*), dwarf peppergrass (*Lepidium latipes*), and woolly marbles (*Psilocarphus brevissimus*) on a Metropolitan Water District pipeline right-of-way prior to construction in Riverside County, California. Seed was sent to Rancho Santa Ana Botanic Garden for counting, cleaning, and storage. Later sowed seed in appropriate locations along right-of-way after pipeline construction was completed. Also counted population and collected seed for Parish's brittlescale (*Atriplex parishii*), a species formerly presumed extinct.

Flood Control/Flood Storage/Stormwater

Buena Vista Creek Channel Exotic Plant Species Control Plan, City of Carlsbad Engineering Department, City of Carlsbad, California. Prepared a plan to control invasive exotic plant species within the project area as part of a flood-control plan along a constricted section of Buena Vista Creek. The plan provides for the removal and control of invasive plant species as part of a larger plan to remove a portion of the cattails from the channel each year to maintain flood capacity.

Alameda Creek Flood Control Project, Philip Williams & Associates, Ltd., City of Martinez, California. Biological construction monitor for a creek widening project to increase channel capacity and reduce flooding in downtown Martinez, California. Work included overseeing a subcontractor for the removal of fish and western pond turtles (*Clemmys marmorata*) living in the project area and revegetation of creek banks with native vegetation.

Transportation

Cannon Road Extension Project, City of Carlsbad Engineering Department, City of Carlsbad, California. Biological construction monitor for Phase 2 of the Cannon Road Extension Project in Carlsbad, California through sensitive habitat containing wetland habitat for the federally endangered least Bell's vireo (*Vireo bellii pusillus*), southwestern willow flycatcher (*Empidonax traillii extimus*), and western clapper rail (*Rallus longirostris*), as well as coastal sage scrub habitat for the federally listed threatened coastal California gnatcatcher (*Polioptila californica*). Prepared monthly project progress reports and reported permit violations to the agencies. Project included oversight of subcontractors performing paleontological monitoring and recovery and construction noise monitoring. Also monitored the installation and 120-day maintenance period for the temporary impacts wetland mitigation area.

Faraday Avenue Extension Project, Native Landscape, City of Carlsbad, California. Horticultural and biological monitor for the coastal sage scrub mitigation area associated with the Faraday Avenue Extension Project in Carlsbad, California. Mr. Gettinger works as a subcontractor to the habitat restoration contractor performing the installation and long-term maintenance program. The 1.2-acre mitigation site is adjacent to high-quality coastal sage scrub habitat, and the federally listed threatened coastal California gnatcatcher has been observed foraging in the mitigation area.

Scripps Poway Parkway Extension Project, City of Poway Engineering Department, City of Poway, California. Biological monitor during 2 years of road construction through 4 miles of sensitive habitat for the Scripps Poway Parkway Extension Project in Poway, California. Located appropriate preserve habitat in the City and transplanted coast barrel cactus (*Ferocactus viridescens*) growing in the project right-of-way prior to impacts. Worked with City inspectors, surveyors, and the contractor to insure that impacts stayed within permitted limits. Monitored erosion and sediment control implementation and maintenance, as well as revegetation planting and seeding.

Mission Valley Light Rail Transit Project, San Diego Metropolitan Transit Board, City of San Diego, California. Worked with engineers performing geotechnical testing in the San Diego River for the Mission Valley Light Rail Transit Project Permitting Process. Directed drillers' activities to minimize impacts to native wetland habitat.

Bay Area Rapid Transit District (BART) Extension to San Francisco International Airport Project, Bay Area Rapid Transit District, City of Millbrae, California. Biological monitor for engineers taking geotechnical samples in and near wetland habitat for the federally listed endangered San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) and federally listed threatened California red-legged frog (*Rana aurora draytonii*) on the West of Bayshore Parcel at San Francisco International Airport for BART. Directed drillers' activities to avoid impacts to the San Francisco garter snake and California red-legged frog and prepared daily reports for submission to the US Fish and Wildlife Service. Part of the work was performed immediately adjacent to existing high-volume, high-speed rail line.

Bay Area Rapid Transit District (BART) Extension to San Francisco International Airport Project, Bay Area Rapid Transit District, City of Millbrae, California. Performed final pre-construction surveys and prepared reports for two sensitive wetland and adjacent upland areas to document conditions prior to destruction. Areas are habitat for the federally listed endangered San Francisco garter snake and federally listed threatened California red-legged frog at the West of Bayshore Parcel at San Francisco International Airport for BART.

State Highway 125 Tree Inventory and Assessment Project, California Department of Transportation (Caltrans), Lemon Grove and Spring Valley, California. Surveyed all trees in the Highway 125 project right-of-way in Lemon Grove and Spring Valley to determine which trees to be lost would be worth salvaging. Mapped tree locations, identified the species of each tree, and made an assessment of its health and form to determine whether it would be a suitable candidate for salvage. Caltrans was then notified as to which trees merited transplanting. Later took over project management for the Trees 2000 project, prepared periodic newsletters to be sent to project participants, and coordinated with the landscape contractor planting replacement trees in the community.

Landfills

Puente Hills Landfill Wetland Mitigation Project, Sanitation Districts of Los Angeles County, City of Whittier, California. Provided horticultural and botanical monitoring for the wetland habitat restoration project associated with the Puente Hills Landfill in Whittier, California. Work was performed for the Sanitation Districts of Los Angeles County and the City of Whittier. The wetland restoration area is adjacent to the Puente Hills Landfill and also provides visual screening of the landfill for adjacent residents. Also directed staff performing the required wildlife monitoring and provided consultation for coast live oak mitigation being implemented on weedy mustard-covered slopes adjacent to the landfill, coastal sage scrub restoration being attempted on the landfill's canyon fill slopes, and ornamental buffer landscape to provide visual screening.

Orote Landfill Pilot Test Work Plan, Orote Landfill Site, Pacific Division, Naval Facilities Engineering Command, COMNAVMARIANAS, Guam. Worked with project engineers, assisted with the design of a pilot study to test whether root growth from woody vegetation might impact a proposed landfill cap. The pilot study was done for the closed hazardous materials landfill on the Orote Peninsula at the US Naval Station, Guam. Once the pilot study design was approved, oversaw implementation of the pilot study, which was installed by the landfill closure contractor. The pilot study was installed on a pad immediately adjacent to the landfill, replicating exact landfill conditions, with the exception of a shallower soil layer to amplify root interactions with the landfill cap. The pilot study showed that roots did not penetrate the highly compacted root minimization layer placed over the geosynthetic membrane. These results were similar to several other studies that have been done, and in line with expectations. The pilot study did reveal some problems with cap installation procedures, which were addressed when the landfill cap was installed. The pilot study was done as part of the larger landfill closure plan done under the Navy CLEAN program.

Commercial/Office/Industrial

Home Depot Habitat Restoration Project, The Home Depot, City of Encinitas, California. Monitored project grading to minimize impacts to sensitive habitat and oversaw wetland and upland mitigation installation at the Home Depot in Encinitas. Project manager for biological monitoring during the 5-year monitoring program. Project habitat types include salt marsh, freshwater marsh, riparian scrub, riparian woodland, chaparral, and coastal sage scrub.

Homart Off-Site Wetland Mitigation Project, Homart Development Company, Lakeside, California. Took over management of biological monitoring at a failing wetland mitigation project on the San Diego River in Lakeside, California. Developed a remedial plan to address project deficiencies and received approval from the US Fish and Wildlife Service, US Army Corps of Engineers, California Department of Fish and Game, and the City of San Diego. Oversaw plan's implementation, which resulted in the project's successful resolution within the last three years of its 5-year monitoring period.

Rocketdyne Ecological Risk Assessment Project, Boeing Integrated Defense Systems, County of Ventura, California. Assisted with focused biological surveys to map vegetation communities and search for sensitive plant and wildlife species at a contaminated site. Surveys were the first stage in conducting an ecological risk assessment for the Santa Susana Field Laboratory, Ventura County.

Residential (subdivisions)

Rancho Pacifica Cottages Habitat Enhancement Plan, Taylor-Woodrow Homes, Inc., City of Encinitas, California. Prepared a plan to control invasive exotic plant species, such as giant reed, that infest the creek channel within a biological open space being preserved on the property. The plan provides for the removal and control of invasive plant species and the planting of native wetland and upland species in their place.

Village 11 Project, Brookfield Homes, Chula Vista, California. Biological construction monitor for grading of the Village 11 project in Otay Ranch in Chula Vista. Grading of the approximately 500-acre site in the eastern portion of the Otay Valley was adjacent to the Salt Creek Open Space Preserve containing wetlands and habitat for the federally listed threatened coastal California gnatcatcher. Dudek directed and monitored soil and biomass salvaging from suitable habitat areas within the project footprint and is currently monitoring installation of the wetland mitigation area.

Rolling Hills Ranch Wetland Mitigation Monitoring Project, McMillin Land Development, City of Chula Vista, California. Biological construction monitor for the installation and long-term monitoring of Phases I and II of the wetland mitigation for the Rolling Hills Ranch development in Chula Vista, California. Rolling Hills Ranch is an approximately 300-acre mixed-use project. The wetland mitigation program involves expanding wetland habitat along Salt Creek and controlling invasive, exotic salt cedar on the project site. The wetland mitigation was installed in two phases approximately 2 years apart. Oversaw the collection of botanical data and preparation of the annual reports for the two phases.

Henry Ranch Biological Construction Monitoring and Wetland Mitigation Project, William Lyon Homes, City of San Ramon, California. Directed staff performing pre-construction surveys for federally listed threatened California red-legged frog and nesting birds, and biological construction monitoring for permitted wetland impacts and initial land clearing at the Henry Ranch Project in San Ramon, California. Also oversaw and directed implementation of conceptual wetland mitigation pond plan, as well as other required enhancement measures.

Fieldstone Brush Management and Summer Holly Preservation Project, The Fieldstone Company, City of San Diego, California. Supervised a brush management and summer holly (*Comarostaphylis diversifolia*) preservation program at a housing project on the rim of Los Peñasquitos Canyon Preserve in San Diego.

Baldwin Brodiaea Preserve, The Baldwin Company, City of San Marcos, California. Supervised the planting of native purple needlegrass (*Nassella pulchra*) plants in a preserve for the federally and state-listed endangered thread-leaved brodiaea (*Brodiaea filifolia*) in San Marcos.

Master-Planned Communities (including mixed-use projects)

Newhall Ranch, Newhall Land and Farming Company, County of Los Angeles, California. Assisted with focused surveys for the state-listed endangered San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) on the approximately 6,000-acre Newhall Ranch in Los Angeles County, California.

Talone Lake Wetland Mitigation Project, Gatlin Development Company, City of Oceanside, California. Designed a wetland mitigation plan and oversaw construction impacts and mitigation installation for the loss of wetland habitat associated with a mixed-use project development for the Rancho del Oro project around Talone Lake in Oceanside, California. Project site includes habitat for the federally listed endangered least Bell's vireo. Assisted in preparation of a draft habitat management plan for the project and processed the 404 application with the US Army Corps of Engineers and 1603 Streambed Alteration Agreement with the California Department of Fish and Game. Project included coastal sage scrub buffer zone around a wetland.

Parks and Recreation Facilities (includes golf courses and water feature projects)

Carlsbad Municipal Golf Course Project, City of Carlsbad Recreation Department, City of Carlsbad, California. Biological construction monitor for the municipal golf course project in Carlsbad, California. Construction of the project was completed in July 2007. The approximately 400-acre project area contains sensitive coastal sage scrub, southern maritime chaparral, and wetland habitat for the federally listed threatened coastal California gnatcatcher, the federally endangered least Bell's vireo, and southwestern willow flycatcher. Performed construction monitoring and scheduled other construction monitors to assist with the work. Prepared project progress reports and field directives and reported permit violations to the agencies. Project included oversight of subcontractors performing cultural and paleontological monitoring and recovery as well as installing monitoring wells. Currently providing long-term biological and maintenance monitoring for approximately 40 acres of coastal sage scrub and 1.83 acres of wetland mitigation.

Trump National Habitat Restoration Project, VH Corporation, City of Rancho Palos Verdes, California. Biological and horticultural monitor at the 92-acre Trump National Habitat Restoration Project in Rancho Palos Verdes, California. The Trump National Habitat Restoration project is restoring coastal sage scrub, southern cactus scrub, and coastal bluff scrub in ruderal and degraded native habitat. The restoration program is creating additional habitat for the federally listed threatened coastal California gnatcatcher, which is already expanding into the still-developing habitat.

Twin Oaks Valley Ranch Wetland Mitigation Project, Ryland Homes, City of San Marcos, California. Provided project construction management, mitigation installation supervision, and biological monitoring at a large wetland mitigation project located in a drainage running through a golf course development at Twin Oaks Valley Ranch in San Marcos.

Olympic Training Center Boathouse Project, San Diego Sports Training Foundation, City of Chula Vista, California. Biological construction monitor to protect sensitive habitat during project grading of the Olympic Training Center Boathouse Project in Chula Vista. Mr. Gettinger directed planting of the coastal sage scrub and wetland mitigation areas and is acting as project manager for biological monitoring during the 5-year monitoring program. Federally listed threatened coastal California gnatcatcher began foraging in coastal sage scrub mitigation area after 2 years.

Habitat Restoration Plans

Moulton Niguel Water District Sewer Line Relocation and Park Improvements Project, Moulton Niguel Water District, County of Orange, California. Prepared a Wetland Mitigation Plan to comply with requirements for Section 404 and 401 permits and a 1601 Streambed Alteration

Agreement for an emergency pipeline repair project located in a public natural open space area. The Plan created and enhanced southern willow scrub and mulefat scrub wetlands within the reserve.

Bay Area Rapid Transit District (BART) Extension to San Francisco International Airport Project, Bay Area Rapid Transit District, City of Millbrae, California. Developed a wetland mitigation plan for 12 separate temporary wetland impact areas associated with the BART San Francisco International Airport Extension Project. Project site is habitat for the federally listed endangered San Francisco garter snake and the federally listed threatened California red-legged frog.

Revegetation Plan for Orote Landfill Site, Pacific Division, Naval Facilities Engineering Command, COMNAVMARIANAS, Guam. Designed a limestone forest revegetation plan for placement on top of a closed hazardous materials landfill on the Orote Peninsula at the US Naval Station in Guam. The landfill site is in an environmentally sensitive location, abutting the ocean and bordering high quality limestone forest habitat on two sides. A portion of the landfill is within the Orote Ecological Reserve Area. The revegetation plan addressed failures that have occurred on the island by attempting traditional landfill plant cover with grasses by using ecologically appropriate native species. The native species will not require maintenance over the long term, which will save money on maintenance. The revegetation plan was prepared as part of the larger landfill closure plan done under the Navy CLEAN program.

The Ranch in Silver Creek Off-Site Mitigation and Management Plan for California Tiger Salamander, William Lyon Homes, City of San Jose, California. Developed an off-site mitigation and management plan for project-related impacts to California tiger salamander (*Ambystoma californiense*) for the Ranch in Silver Creek Project in San Jose, California. Located a suitable off-site location at the Bosley Ranch for a California tiger salamander breeding pond and aestivation habitat on a cattle ranch being purchased for preservation by the East Bay Regional Parks District. William Lyon Homes provided funds to help complete the Bosley Ranch's purchase so it will preserve and expand the Park District's open space holdings. William Lyon Homes will also pay for pond construction and a 5-year maintenance and monitoring program, and will fund an endowment for long-term management.

Potrero Canyon Wetland Mitigation Plan, City of Los Angeles Department of Recreation and Parks, City of Los Angeles, California. Developed a riparian mitigation plan for impacts in a coastal canyon being filled to stabilize landslides and prevent further property losses at Potrero Canyon in the Pacific Palisades neighborhood in Los Angeles, California. Made an extensive search for off-site mitigation alternatives in the area. Attended community workshops to explain mitigation and learn neighborhood concerns about the project. Plan was prepared for presentation to the California Coastal Commission.

Galen Hagen – Biologist

EXPERIENCE

Galen Hagen has 4 years' experience as a researcher and instructor of physics, statistics, and research methods. Mr. Hagen is a published researcher and is familiar with experimental design, data analysis, and scientific report writing.

Hazard Tree Removal Project, Southern California Edison, San Bernardino and San Jacinto Mountains, Riverside and San Bernardino County, California. Conducted wildlife surveys, botanical surveys, habitat assessments and surveys for sensitive and US Forest Service threatened, endangered, and sensitive species throughout the San Bernardino and San Jacinto Mountains along Southern California Edison power line routes. The surveys are supporting implementation of a bark beetle tree removal project along existing power lines within San Bernardino County. The project area encompasses 106 square miles, with an estimated 62,000 acres of tree removal, 22,000+ power poles, and 538 linear miles of utility lines.

Barstow Industrial Park, San Bernardino County, California. Conducted biological surveys, including vegetation mapping and focused plant surveys.

Focused Wildlife Surveys, Yaqui Pass and Viking Farms, Borrego Springs, California. Conducted general nocturnal and diurnal surveys with a focus on special-status wildlife species on two proposed development properties in Borrego Springs.

Newhall Ranch Project, Newhall Land and Farming Company, Counties of Los Angeles and Ventura, California. Responsible for several tasks under this contract, including the following:

- Newhall Ranch Special-Status Plant Surveys. Conducted and coordinated focused surveys as a member of a team of botanists for the state-listed endangered San Fernando Valley spineflower plant species and other sensitive plants, recording population counts and using GPS to delineate the boundaries of the populations. Also performed biological monitoring of known spineflower populations, including population counts and point-intercept transects.
- Valencia Commerce Center (TPM 26363). Construction monitoring to assure client compliance with CDFG permit requirements protecting riparian habitat and listed species.

Assisted with the preparation and writing of numerous biological technical reports, biological sections of environmental impact reports/

EDUCATION

University of Otago,
New Zealand
Fulbright Fellow
2004–2005

University of California,
San Diego
BS Cognitive Psychology
—Minor in Economics
2003

AWARDS

Fulbright Fellowship
2004

UCSD Chancellor's
Research Scholarship
2002

Provost's Honors
1999–2003

PUBLICATIONS

Hagen, G., J. Gatherwright, B.A. Lopez, and J. Polich. 2006. "P3a from Visual Stimuli: Task Difficulty Effects." *International Journal of Psychophysiology* 59(1):8–14.

FURTHER STUDIES

Association of
Environmental
Professionals "CEQA"
Seminar
November 2003

environmental impact statements (EIR/EIS), biota reports, and conservation easements, with detailed information on special-status plant and wildlife species. Some examples include:

- Spineflower Conservation Plan. Assisted in the preparation and writing of the San Fernando Valley Spineflower Conservation Plan for the management of spineflower preserves and assisted with the preparation of an associated 2081 permit for take.
- Landmark Village EIS/EIR. Assisted in the preparation and writing of the Landmark Village EIS/EIR, providing detailed information on special-status plant and wildlife species.
- Mission Village Biota. Assisted in the preparation and writing of the Mission Village Biota report, providing detailed information on special-status plant and wildlife species.
- Castaic Creek Conservation Easement. Assisted with the coordination and assembly of the Castaic Creek conservation easement.

Frank Marcus Obregon – Biologist

EXPERIENCE

F. Marcus Obregon is a talented biologist with a comprehensive background in natural resources, ecological management practices, geospatial analysis (global positioning systems and geographic information systems (GPS/GIS)), field sampling, and data organization. As a seasoned biological field technician, he has experience in many different areas around the country, which provides him with knowledge of a variety of environments, plant communities, and monitoring techniques. Mr. Obregon has participated in, organized, and directed a wide variety of field activities, including the development and implementation of impacted ecosystem restoration projects; forest, range, and riparian management; research greenhouse operations; wetland analysis; and fire effects monitoring.

Master-Planned Communities (includes mixed-use projects)

Tejon Ranch, Tejon Mountain Village LLC, Kern County, California. Conducted biological investigations, including vegetation mapping, wetlands delineation, ringtail and golden eagle surveys, and focused surveys for sensitive plant species over a 28,000-acre site. Contributed to the biological technical resources report in support of California Environmental Quality Act (CEQA) documentation.

Newhall Ranch, Newhall Land and Farming Company, Los Angeles County, California. Conducted biological investigations, including focused surveys for sensitive plant species and a baseline pilot study to evaluate mitigation requirements for the San Fernando spineflower. Contributed to the biological technical resources report in support of CEQA documentation.

Residential (subdivisions)

Vineyard-Ventura (Casden), City of Oxnard, Ventura County, California. Conducted biological investigations, including vegetation mapping and focused surveys for sensitive plant species, and prepared a biological technical resources report in support of CEQA documentation for a 344-unit residential development.

Parcel 129, Hollister Ranch, Santa Barbara County, California. Conducted biological investigations and prepared a biological technical resources report in support of CEQA documentation for a proposed staff house and road improvements.

EDUCATION

University of Texas, San Antonio
BS Biology with Minor in Anthropology
2004

PROFESSIONAL AFFILIATIONS

Southern California Botanists

PUBLICATIONS

Produced "The Invasive Plant Handbook" in the *Santa Monica Mountains NRA*, February 2005

Commercial Development

Cabrillo Business Park, City of Goleta, Santa Barbara County, California. Conducted biological investigations and prepared wetland delineation and existing conditions technical report in support of CEQA documentation for a business park expansion.

Utility Development

Las Virgenes Pipeline, City of Calabasas, Los Angeles County, California. Conducted biological investigations in support of CEQA documentation for a utility pipeline through Malibu Creek State Park.

South Orange County Wastewater Authority, City of Dana Point, Orange County, California. Conducted biological investigations and prepared an impacts analysis and existing conditions report in support of CEQA documentation for the upgrade of an outfall structure upgrade.

Construction Monitoring

Tejon Ranch, Tejon Industrial Complex, Kern County, California. Conducted surveys for sensitive plants and animals and monitored construction activities for various projects.

Commerce Center, Newhall Land and Farming Company, Kern County, California. Monitored construction activities to ensure compliance with California Department of Fish and Game (CDFG) guidelines.

Previous Experience

Western Ecological Research Center, Las Vegas Field Station, US Geological Survey, Henderson, Nevada. As a biological science technician, Mr. Obregon was a member of a six-person team that collected data using well-established measurement and sampling methods to evaluate plant, seed, and soil conditions in fire-affected areas within the Colorado Plateau, Great Basin, and Mojave Desert. Assembled and tabulated collected data, e.g., computed and checked records from field data and computed figures to determine biological measurements. Used the inventory of plants and their distribution, habitat characteristics, and response to various experimental treatments to research the role plant invasions have on the function of fire-impacted ecosystems.

Specific duties included establishing permanent sampling sites, collecting soil samples, gathering vegetation inventory and monitoring data using handheld computers, identifying plant species using taxonomic keys, collecting and preparing herbarium specimens, managing geospatial data using ArcGIS, analyzing fire data, and maintaining field, laboratory, and computer equipment. Regularly worked in a research greenhouse to provide assistance in departmental soil seed bank assays. Used geospatial data, in coordination with aerial and topographic maps, to prepare operations and coordinate field-sampling trips that were carried out in remote locations for 2 to 14 days at a time.

Gulf Coast Exotic Plant Management Team, Big Thicket National Preserve, National Park Service, Beaumont, Texas. As a range technician, Mr. Obregon led a four-person summer seasonal team in the fulfillment of partner parks' exotic plant control programs. Performed interrelated tasks in

support of rangeland, forest, and wetland management projects to improve resource quality on federal lands.

Trained team members in forest, range, and wetland restoration techniques. Coordinated efforts that focused on herbicide treatment of noxious weeds, plant identification, vegetation monitoring, and map reading. Calibrated, adjusted, and used standard technicians' research, testing, and treatment devices in difficult working conditions.

Led the collection and analysis of scientific data for a variety of investigative projects. Selected and modified standard techniques and methods to meet project goals. Coordinated and trained technicians on the collection of treatment data using standardized methods and GPS. Directed the collection, organization, and analysis of spatial data using GPS units and the ArcGIS suite of software. Used spatial data collected from inventoried, monitored, and treated vegetation plots to create project maps and develop work plans. Used the National Park EPMT data management tool, APCAM, to input field data for national distribution.

Native Plant Conservation Corps Internship, Ecological Restoration Department, Santa Monica Mountains NRA, National Park Service, Thousand Oaks, California. As crew leader, led a four-person team to meet riparian restoration program outcomes. Managed finances, handled administrative matters, and coordinated training for crewmembers in restoration ecology management practices. Regularly participated in and supervised restoration site preparation in both riparian and upland Mediterranean environments. Exotic plant abatement, operation and maintenance of a native plant nursery, threatened and endangered species management, and site-specific revegetation and restoration projects were conducted to remediate the invasion of exotic plant species and disruption of hydrology and soil communities.

Assisted in the preparation and execution of volunteer restoration and planting days. Educated volunteers on the ecological significance of restored lands, proper planting techniques, and the characteristics of the target native plants. Supervised exotic species removal projects and prepared, monitored, and maintained landscape-scale restoration projects. Surveyed native areas and reviewed publications to determine appropriate plant palettes for restoration areas. Assisted in the preparation of native plant requests for granted departmental projects. Prepared native plants by collecting and processing local seeds to ensure true gene characteristics, estimated seed and seedling mortality to meet orders, and propagated and cared for plant stock.

Learn, Lead, and Serve Internship, Department of Biology, University of Dayton, Ohio. Developed *ATHENA*, a web-based learning tool, to provide University of Dayton students with advanced solutions for biological questions using open source software. Statistically analyzed the consequences of applying this method over a test segment of freshman biology majors. Received funding from a cooperative NSF and University of Dayton grant. Published the results of *ATHENA* in a formal thesis.

Travis Smith, PhD – Biologist

EXPERIENCE

Travis Smith has 6 years' experience in field research and quantitative ecological analysis. Dr. Smith's expertise in evolution of ecological patterns of biodiversity and biogeography aids large-scale developers plan a biologically balanced project. Working for the U.S. Navy over 8 years, he also gained invaluable experience as a diver working with the Explosive Ordnance Disposal Teams. Other experience includes:

- Marine mammal systems
- Base Realignment and Closure Program (BRAC)
- Sampling for the Environmental Protection Agency
- Acoustic testing.

Newhall Specific Plan, Newhall Land and Farming, Inc., Counties of Los Angeles and Ventura, California. Conducted rigorous quantitative analyses of populations of the state-listed San Fernando Valley spineflower. Prepared biological resources technical reports documenting survey results in compliance with EIR mitigation requirements. Assisted with San Fernando Valley spineflower conservation plan for the management of spineflower preserves. Developed revised sampling schemes to reduce time in the field and increase precision. Performed analysis of sampling strategies for oak tree mitigation plan.

Tejon Mountain Village, Tejon Mountain Ranch, L.L.C., Counties of Los Angeles and Kern, California. Developed a model for verification of existing studies in the development area to determine future work requirements. Research and development of survey protocols for potential sensitive species on TMV development site.

West Coyote Hills Project, Pacific Coast Homes, Los Angeles County, California. Analyzed potential loss of species diversity in relation to the development area in response to reviewer comments.

Western Riverside County MSHCP, California. Provided analytical support for response to reports generated by the Conservation Biology Institute (CBI).

EDUCATION

Scripps Institution of Oceanography
PhD Earth Sciences
2006

University of California, San Diego
MS Biology (Ecology and Evolution)
2000

University of California, San Diego
BS Ecology, Behavior and Evolution
1998

PROFESSIONAL AFFILIATIONS

Geological Society of America

Publications

O'Dea, A., H. Fortunato, J.T. Smith, L. D'Croz, K. Johnson, J. Todd and J.B.C. Jackson. *Environmental Change Preceded Caribbean Mass Extinction by 2 Million Years*. Proceedings, National Academy of Science (In Press).

O'Dea, A., H. Fortunato, J.T. Smith, L. D'Croz, K. Johnson, J. Todd and J.B.C. Jackson. *Environmental Change Preceded Caribbean Mass Extinction by 2 Million years*. Proceedings, National Academy of Science (*In Review*).

Smith, J.T. and K. Roy. 2006. "Selectivity during Background Extinction: Plio-Pleistocene Scallops in California." *Paleobiology* 32(3):408–416.

Smith, J.T., J.B.C. Jackson, and H. Fortunato. 2006. "Diversity and Abundance of Tropical American Scallops (Bivalvia: Pectinidae) from Opposite Sides of the Central American Isthmus." *The Veliger* 48(1):26–45.

Smith, J.T. and J.B.C. Jackson. "Diversity, Abundance, and Evolutionary Patterns of Tropical American Scallops." *Paleobiology* (in preparation).

Smith, J.T. and J.B.C. Jackson. "Evolution of Larval Life Histories in Changing Environments: An Ecological Effect on Evolutionary Patterns." *Paleobiology* (in preparation).

Smith, J.T. and J.B.C. Jackson. "Evolutionary Patterns of Body Size in Differing Ecological and Environmental Contexts." *Paleobiology* (in preparation).

Meeting Abstracts

Smith, J. Travis. 2005. Macroevolution, ecology and environments of tropical American scallops (Bivalve: Pectinidae). GSA Abstracts with Programs Vol. 37.

Smith, J. Travis and J.B.C. Jackson. 2004. Intra versus interspecific differences in larval shell size and their macro-evolutionary significance. GSA Abstracts with Programs Vol. 36, No. 5.

Smith, J. Travis, N. Nakanishi, and J.B.C. Jackson. 2003. Late Neogene divergence in life span of scallop larvae across the Isthmus of Panama. GSA Abstracts with Programs Vol. 35, No. 6.

Smith, J. Travis and Kaustuv Roy. 1999. Late Neogene extinctions and modern regional species diversity: Analysis using the Pectinidae of California. GSA Abstracts with Programs Vol. 31.

Smith, J. Travis. 1999. Sampling bias in the Neogene of California: diversity and extinction in the Pectinidae. Western Society of Malacologists 32nd Annual Meeting, California State University, Fullerton, Program and Abstracts.

Smith, J. Travis. 1999. Extinction selectivity in the late Pliocene Pectinidae of California. California Paleontology Conference Abstracts. PaleoBios Vol. 19, No. 1 Suppl. p. 10.

Teaching Experience

IGERT Summer Course: An introduction to marine ecology, oceanography, environmental economics, policy, and communications with an emphasis on group projects. *Coordinating Teaching Assistant.*

Biometry: Application of statistics in biological problems. *Teaching Assistant.*

Biodiversity: An introduction to the patterns of geographic distribution and natural history of plants and animals living in terrestrial and marine ecosystems. *Teaching Assistant.*

General Ecology: Introduction to basic principles in ecology and their effect in shaping populations, species, and ecosystems. *Teaching Assistant.*

Evolution: Introduction to the basic evolutionary processes, discussed in their genetic, historical, and ecological contexts. *Teaching Assistant.*

Geobiology: Introduction to the major biological transitions in earth history. This course focuses on the nature and limitations of the fossil record, patterns of adaptation and diversity, and the tempo and mode of biological and environmental change. *Teaching Assistant, Guest Lecturer, Developed and taught laboratory portion of the course.*

History of the Earth and Evolution: Evolution of the Earth from its origin in the early solar system to formation of continents and ocean basins, and how the planet became habitable. *Guest Lecturer.*

The Earth: A basic introduction to geology for students with little previous science background, stressing basic understanding of the concepts of the structure of the Earth and the processes which have formed it and continue to modify it. *Teaching Assistant, Guest Lecturer.*

Britney Strittmater – Environmental Analyst

EXPERIENCE

Britney Strittmater has project experience that includes National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) report preparation, vegetation mapping, biological resource surveys, data collection and analysis, and biological monitoring. Ms. Strittmater has also successfully completed a background course in CEQA.

Newhall Specific Plan, Newhall Land and Farming, Inc., Counties of Los Angeles and Ventura, California. Conducted focused surveys for the state-listed endangered San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*). Performed population counts and point-intercept transects. Assisted with writing related biological technical reports and environmental impact statements/ environmental impact reports (EISs/EIRs).

Bark Beetle Infestation Project, Southern California Edison, San Bernardino and Riverside Counties, California. Monitored tree removal and pole maintenance activities in biologically sensitive areas to ensure avoidance of impacts to potentially occurring US Forest Service (USFS) Threatened, Endangered, and Sensitive species.

Southern Subregion Natural Community Conservation Plan (NCCP) Habitat Reserve Vegetation Communities Mapping, Orange County, California. Conducted vegetation mapping for both native and developed land uses based on the Gray and Bramlet habitat classification system.

San Juan Preserve Oak Inventory, Riverside and Orange Counties, California. Assisted in oak inventory on USFS land. Performed diameter-at-breast-height (DBH) recordings and tagged all oak, sycamore, pine, and eucalyptus trees.

EDUCATION

Humboldt State University
BS Botany
2007

LICENSES & CERTIFICATIONS

Association of Environmental Professionals—CEQA Basics Workshop
Fall 2007

PROFESSIONAL AFFILIATIONS

California Invasive Plant Council (Cal-IPC)

California Native Plant Society (CNPS)

Brianna Wood – Environmental Analyst

EXPERIENCE

Brianna Wood's expertise includes rare and endangered wildlife field surveying, technical report writing, CEQA/NEPA compliance, and environmental regulatory compliance for agencies such as US Army Corps of Engineers, US Fish and Wildlife Service, California Department of Fish and Game, and California Water Quality Control Board, among others. Ms. Wood has extensive experience with scientific field techniques, including biodiversity, habitat assessment, and wildlife behavioral surveys. She performs quality control for wetland delineations and permit applications and is skilled at presenting report findings to clients and agencies in conferences. Ms. Wood is also an experienced and proficient technical writer, producing reports such as biological assessments, wildlife survey reports, wetland delineations, initial studies, environmental impact reports, etc.

Ms. Wood has nearly 3 years' experience as a professional permit coordinator for small and large-scale housing/commercial developments, mitigation/restoration, gravel extraction, and mining projects requiring numerous federal, state, and local permits. Further experience includes extensive inputting, organizing, and deciphering of large volumes of numerical, physical, and qualitative data for biological studies and inventories. She is also experienced in using GPS equipment for habitat analysis and wildlife behavioral studies.

Environmental Field Surveys and Monitoring. Conducted and directed field surveys for special-status species, including raptor surveys and wildlife habitat assessments, and conducted supporting field work for botanical inventories, cultural resource surveys, phase I site assessments, and wetland delineations. Recent wildlife survey experience includes local field surveys for presence of protected species such as Foothill yellow-legged frog, Valley elderberry longhorn beetle mitigation monitoring, giant garter snake habitat monitoring, and specialized surveys for birds (especially raptors) of special concern. Ms. Wood has performed wildlife research and habitat analyses in a variety of ecosystems, including California Central Valley oak woodlands/ annual grasslands, chaparral, Sierra/Cascade montane forests, Southern California coastal sage scrub, and numerous marine ecosystems in Southern California, Baja Mexico, northeastern Australia, and Belize.

Technical Report Writing and Formatting. Ms. Wood has prepared numerous CEQA and NEPA documents, such as Initial Studies/Environmental Assessments, Mitigated Negative Declarations/ FONSIs, Environmental Impact Reports, Municipal Services Reviews, Biological Assessment Reports, and various Natural Environment

EDUCATION

San Diego State University, California
BS General Biology, emphasis in Marine Biology
2003

LICENSES & CERTIFICATIONS

Certificate for CEQA course, UC Davis Extension

Certificate for Mitigation Monitoring Course, City of Chico Center for Economic Development

Scuba Dive Master and Scientific Research Scuba Diving Certification through San Diego State University

PROFESSIONAL AFFILIATIONS

Association of Environmental Professionals

Audubon Society – Altacal Local Chapter

Studies. In her capacity as an Environmental Analyst, she has made determinations of significant effects on the distribution and relative health of species of concern and their habitat as well as determining avoidance and mitigation measures. She also regularly produces Requests for Proposals, Scope of Work Contracts, and budget tracking sheets.

Preparation of Permitting Applications and Agency Correspondence. Ms Wood's duties as permit coordinator have included the preparation of application packages for US Army Corps of Engineers Section 404 permits, California Department of Fish and Game Streambed Alteration Agreements, Water Quality Certification applications, and permits for many other public agencies. Additionally, she has been responsible for the quality control of wetland delineations submitted to the US Army Corps of Engineers. She has experience dealing with wetland delineation procedures and regulations pertaining to wetlands, regularly communicating with local, state, and federal agency staff on behalf of clients and coordinating the permitting needs to streamline the regulatory compliance process.

APPENDIX B

Vascular Plant Species Observed at the Entrada Site (2002, 2003, 2004, 2005, 2006, and 2007)

APPENDIX B
Vascular Plant Species Observed at the Entrada Site

FERNS

PTERIDACEAE – BRAKE FAMILY

Pellaea andromedifolia var. *andromedifolia* – coffee fern
Pentagramma triangularis – goldenback fern

CONIFERS

CUPRESSACEAE – CYPRESS FAMILY

Cupressus sp. – cypress
Juniperus californica – California juniper

PINACEAE – PINE FAMILY

* *Pinus halepensis* – Aleppo pine
Pinus sp. – pine

ANGIOSPERMAE (DICOTYLEDONES)

AMARANTHACEAE – AMARANTH FAMILY

* *Amaranthus albus* – tumbleweed
* *Amaranthus retroflexus* – rough pigweed

ANACARDIACEAE – SUMAC FAMILY

Rhus ovata – sugar-bush
Rhus trilobata – squaw bush
* *Schinus molle* – Peruvian pepper-tree
* *Shinus terebinthifolius* – Brazilian pepper-tree
Toxicodendron diversilobum – poison-oak

APIACEAE – CARROT FAMILY

Apiastrum angustifolium – wild celery
Bowlesia incana – American bowlesia
Daucus pusillus – rattlesnake weed
Lomatium utriculatum – common lomatium

ASCLEPIADACEAE – MILKWEED FAMILY

Asclepias californica – California milkweed
Asclepias eriocarpa – Indian milkweed
Asclepias fascicularis – narrow-leaf milkweed

ASTERACEAE – SUNFLOWER FAMILY

Acourtia microcephala – sacapellote
Ambrosia acanthicarpa – annual burweed
Ambrosia confertifolia – weak-leaved burweed
Ambrosia psilostachya – western ragweed
* *Arctotheca calendula* – capeweed
Artemisia californica – coastal sagebrush
Artemisia douglasiana – California mugwort
Artemisia dracunculus – tarragon
Artemisia tridentata – Great Basin sagebrush
Baccharis pilularis – coyote brush
Baccharis salicifolia – mulefat
Baccharis sarothroides – chaparral broom
Brickellia californica – California brickellbush
Brickellia nevinii – Nevin's brickellbush
* *Carduus pycnocephalus* – Italian thistle
* *Centaurea melitensis* – star thistle
Chaenactis glabriuscula – yellow pincushion
* *Chamomilla suaveolens* – pineapple weed
Chrysothamnus sp. – rabbitbrush
Chrysothamnus nauseosus – rubber rabbitbrush
Cirsium occidentale var. *californicum* – California thistle
Cirsium occidentale var. *occidentale* – cobwebby thistle
* *Cirsium vulgare* – bull thistle
* *Cnicus benedictus* – blessed thistle
Conyza canadensis – common horseweed
Conyza coulteri – Coulter's horseweed
Coreopsis bigelovii – tickseed
* *Cotula australis* – cotula
* *Cotula coronopifolia* – African brass-buttons
Deinandra (Hemizonia) fasciculata – fascicled tarweed
* *Dimorphotheca sinuata* – African daisy
Encelia actoni – Acton's encelia
Encelia californica – California bush sunflower
Encelia farinosa – brittlebush, incensio
Ericameria palmeri var. *pachylepis* – Palmer's goldenbush
Ericameria linearifolia – narrowleaf goldenbush
Erigeron foliosus – leaf daisy
Eriophyllum confertiflorum – long-stem golden yarrow

Euthamia occidentalis – western goldenrod
Filago californica – California fluffweed
Gnaphalium californicum – California everlasting
Gnaphalium canescens ssp. *microcephalum* – white everlasting
* *Gnaphalium luteo-album* – white cudweed
Gnaphalium palustre – lowland cudweed
Hazardia squarrosa ssp. *grindelioides* – saw-toothed goldenbush
Helianthus annuus – common sunflower
Heterotheca grandiflora – telegraph weed
Heterotheca sessiliflora – golden aster
* *Hypochaeris glabrata* – smooth cat's ear
Isocoma menziesii – goldenbush
* *Lactuca serriola* – prickly lettuce
Lasthenia californica – coast goldfields
Lasthenia glabrata ssp. *coulteri* – Coulter's goldfields
Layia platyglossa – common tidy-tips
Lepidospartum squamatum – scale-broom
Lessingia filaginifolia – California aster
Lessingia filaginifolia var. *filaginifolia* – California aster
Lessingia glandulifera – valley vinegar-weed
Madia gracilis – slender tarweed
Malacothrix saxatilis var. *commutata* – cliff desert dandelion
Malacothrix saxatilis var. *tenuifolia* – cliff malacothrix
* *Matricaria matricarioides* – pineapple weed
Osmadenia tenella – southern rosinweed
* *Picris echioides* – bristly ox-tongue
Pluchea sericea – arrow weed
Rafinesquia californica – California chicory
Senecio californica – California groundsel
Senecio flaccidus var. *douglasii* – butterweed
* *Senecio vulgaris* – common groundsel
* *Silybum marianum* – milk thistle
* *Sonchus asper* – prickly sow-thistle
* *Sonchus oleraceus* – common sow-thistle
Stebbinsoseris heterocarpa – grassland stebbinsoseris
Stephanomeria virgata – twiggy wreathplant
Stylocline gnaphalioides – everlasting nest-straw
Tetradymia comosa – cotton thorn
Uropappus lindleyi – silver puffs

Xanthium spinosum – spiny cocklebur
Xanthium strumarium – cocklebur

BORAGINACEAE – BORAGE FAMILY

Amsinckia menziesii var. intermedia – common fiddleneck
Amsinckia menziesii var. menziesii – rigid fiddleneck
Amsinckia tessellata var. *tessellata* – devil's lettuce
Cryptantha sp. – forget-me-not
Cryptantha intermedia – common forget-me-not
Cryptantha micrantha – purple root cryptantha
Cryptantha microstachys – Tejon cryptantha
Cryptantha muricata – prickly cryptantha
Cryptantha nevadensis – Nevada catseye
Heliotropium curassavicum – wild heliotrope
Pectocarya linearis – slender pectocarya
Pectocarya penicillata – winged pectocarya
Pectocarya setosa – pectocarya
Plagiobothrys sp. – popcornflower
Plagiobothrys arizonicus – Arizona popcornflower
Plagiobothrys canescens – valley popcornflower
Plagiobothrys collinus – California popcornflower
Plagiobothrys fulvus – fulvous popcornflower
Plagiobothrys nothofulvus – rusty popcornflower

BRASSICACEAE – MUSTARD FAMILY

* *Brassica nigra* – black mustard
* *Capsella bursa-pastoris* – shepherd's purse
* *Cardaria draba* – heart-podded hoary cress
Erysimum capitatum ssp. *capitatum* – western wallflower
* *Hirschfeldia incana* – short-podded mustard
Lepidium virginicum – wild peppergrass
* *Raphanus sativus* – wild radish
* *Rorippa nasturtium-aquaticum* – water cress
* *Sisymbrium irio* – London rocket
* *Sisymbrium orientale* – Oriental mustard
Thysanocarpus curvipes – hairy fringepod
Thysanocarpus laciniatus – lacepod
Tropidocarpum gracile – slender dobie-pod

CACTACEAE – CACTUS FAMILY

Opuntia basilaris var. *basilaris* – beavertail
Opuntia californica var. *parkeri* – cane cholla
* *Opuntia ficus-indica* – Indian-fig
Opuntia littoralis – coastal prickly-pear
Opuntia parryi – snake cholla

CAPPARACEAE – CAPER FAMILY

Isomeris arborea – bladderpod

CAPRIFOLIACEAE – HONEYSUCKLE FAMILY

Lonicera subspicata – southern honeysuckle
Sambucus mexicana – Mexican elderberry

CARYOPHYLLACEAE – PINK FAMILY

Loeflingia squarrosa – California loeflingia
* *Silene gallica* – common catchfly
Spergularia sp. – sand-spurrey
* *Spergularia rubra* – sand-spurrey
* *Stellaria media* – common chickweed

CHENOPODIACEAE – GOOSEFOOT FAMILY

Atriplex canescens – four-winged saltbush
* *Atriplex heterosperma* – weedy orache
Atriplex lentiformis – big saltbush
* *Atriplex rosea* – redscale
* *Atriplex semibaccata* – Australian saltbush
Atriplex serenana var. *serenana* – bractscale
* *Atriplex suberecta* – peregrine saltbush
* *Bassia hyssopifolia* – five-hooked bassia
* *Chenopodium album* – lamb's quarters
* *Chenopodium ambrosioides* – Mexican tea
Chenopodium berlandieri – pitseed goosefoot
Chenopodium californicum – California goosefoot
* *Chenopodium murale* – nettle-leaved goosefoot
Chenopodium sp. – chenopod
* *Salsola tragus* – Russian-thistle

CONVOLVULACEAE – MORNING-GLORY FAMILY

Calystegia macrostegia ssp. *cyclostegia* – morning-glory
Calystegia peirsonii – Peirson's morning-glory
* *Convolvulus arvensis* – bindweed

CRASSULACEAE – STONECROP FAMILY

Crassula connata – dwarf stonecrop
Dudleya lanceolata – lanceleaf dudleya

CUCURBITACEAE – GOURD FAMILY

Cucurbita foetidissima – coyote-melon, calabazilla
Marah horridus – Sierran wild cucumber
Marah macrocarpus – wild cucumber

CUSCUTACEAE – DODDER FAMILY

Cuscuta californica – California dodder

EUPHORBIACEAE – SPURGE FAMILY

Chamaesyce albomarginata – rattlesnake spurge
Chamaesyce polycarpa – small-seed sand mat
Croton californicus – California croton
Eremocarpus setigerus – doveweed
Stillingia linearifolia – linear-leaved stillingia

FABACEAE – PEA FAMILY

Astragalus didymocarpus – common dwarf locoweed
Astragalus gambelianus – Gambell's dwarf locoweed
Astragalus trichopodus var. *phoxus* – Santa Barbara locoweed
Lotus hamatus – grab lotus
Lotus humistratus – hill lotus
Lotus purshianus – Spanish-clover
Lotus salsuginosus – coastal lotus
Lotus scoparius – deerweed
Lotus strigosus – strigose deerweed
Lotus wrangelianus – Chilean bird's-foot trefoil
Lupinus bicolor – Lindley's annual lupine
Lupinus excubitus var. *hallii* – grape soda lupine
Lupinus formosus var. *formosus* – lupine
Lupinus hirsutissimus – stinging lupine
Lupinus microcarpus – chick lupine

Lupinus microcarpus var. *densiflorus* – chick lupine
Lupinus sparsiflorus – Coulter's lupine
Lupinus succulentus – arroyo lupine
Lupinus truncatus – collar lupine
* *Medicago polymorpha* – California burclover
* *Melilotus alba* – white sweet-clover
* *Melilotus indica* – yellow sweet-clover
* *Robinia pseudoacacia* – black locust
Trifolium albopurpureum – Indian clover
Trifolium ciliolatum – tree clover
Trifolium gracilentum – pinpoint clover
Trifolium hirtum – rose clover
Trifolium sp. – clover
Trifolium willdenovii – valley clover
* *Vicia villosa* – winter vetch

FAGACEAE – BEECH FAMILY

Quercus agrifolia – coast live oak
Quercus berberidifolia – scrub oak
Quercus berberidifolia H *lobata* – NCN**
Quercus c.f. *douglasii* – blue oak
Quercus lobata – valley oak
* *Quercus ilex* – holly oak

GERANIACEAE – GERANIUM FAMILY

* *Erodium botrys* – broad-lobed filaree
* *Erodium cicutarium* – red-stemmed filaree
* *Erodium moschatum* – white-stemmed filaree

GROSSULARIACEAE – CURRANT FAMILY

Ribes aureum – golden currant

HYDROPHYLLACEAE – WATERLEAF FAMILY

Emmenanthe penduliflora – whispering bells
Eriodictyon crassifolium var. *nigrescens* – yerba santa
Eucrypta chrysanthemifolia – common eucrypta
Phacelia cicutaria – caterpillar phacelia
Phacelia distans – blue fiddleneck
Phacelia imbricata – imbricate phacelia

Phacelia minor – wild Canterbury bell
Phacelia ramosissima – shrubby phacelia
Phacelia tanacetifolia – tansy-leaved phacelia

JUGLANDACEAE – WALNUT FAMILY

Juglans californica – Southern California black walnut

LAMIACEAE – MINT FAMILY

* *Marrubium vulgare* – horehound
Salvia apiana – white sage
Salvia columbariae – chia
Salvia leucophylla – purple sage
Salvia mellifera – black sage
Trichostema lanceolatum – vinegar weed

MALVACEAE – MALLOW FAMILY

Malacothamnus fasciculatus – mesa bushmallow
* *Malva parviflora* – cheeseweed

NYCTAGINACEAE – FOUR O'CLOCK FAMILY

Mirabilis californica – California wishbone-bush

OLEACEAE – OLIVE FAMILY

* *Ligustrum lucidum* – glossy privet

ONAGRACEAE – EVENING-PRIMROSE FAMILY

Camissonia bistorta – California sun cup
Camissonia boothii var. *decorticans* – shredding evening primrose
Camissonia californica – mustard primrose
Camissonia hirtella – field suncup
Camissonia micrantha – miniature suncup
Camissonia robusta – robust suncup
Clarkia purpurea – winecup clarkia
Clarkia speciosa – red-spotted clarkia
Clarkia unguiculata – elegant clarkia
Epilobium brachycarpum – annual fireweed
Epilobium canum – California fuchsia

PAEONIACEAE – PEONY FAMILY

Paeonia californica – California peony

PAPAVERACEAE – POPPY FAMILY

Eschscholzia californica – California poppy
Platystemon californicum – cream cups

PLANTAGINACEAE – PLANTAIN FAMILY

Plantago erecta – dot-seed plantain
* *Plantago lanceolata* – English plantain
* *Plantago major* – common plantain
* *Plantago ovata* – woolly plantain

POLEMONIACEAE – PHLOX FAMILY

Eriastrum densifolium ssp. *densifolium* – dense eriastrum
Eriastrum densifolium ssp. *elongatum* – dense eriastrum
Eriastrum sapphirinum – sapphire eriastrum
Gilia angelensis – angel gilia
Gilia capitata – ball gilia
Leptodactylon californicum – prickly phlox
Linanthus androsaceus – common linanthus
Linanthus liniflorus – narrowflower flaxplower
Linanthus parviflorus – false babystars
Navarretia atractyloides – holly-leaf skunkweed

POLYGONACEAE – BUCKWHEAT FAMILY

Chorizanthe parryi var. *fernandina* – San Fernando Valley spineflower
Chorizanthe staticoides – turkish rugging
Eriogonum elongatum – long-stemmed buckwheat
Eriogonum fasciculatum ssp. *foliolosum* – California buckwheat
Eriogonum foliosum – leafy buckwheat
E. gracile var. *gracile* – slender woolly buckwheat
Eriogonum viridescens – twotooth buckweat
Lastarriaea coriacea – lastarriaea
* *Polygonum arenastrum* – common knotweed
Pterostegia drymarioides – California threadstem
Rumex hymenosepalus – desert rhubarb
* *Rumex crispus* – curly dock

PORTULACACEAE – PURSLANE FAMILY

Calandrinia ciliata – redmaids
Claytonia parviflora – streambank springbeauty
Claytonia perfoliata – miner's lettuce
* *Portulaca oleracea* – common purslane

RANUNCULACEAE – BUTTERCUP FAMILY

Clematis ligusticifolia – yerba de chiva
Delphinium parryi ssp. *parryi* – Parry's larkspur

RHAMNACEAE – BUCKTHORN FAMILY

Ceanothus crassifolius – hoary-leaved ceanothus
Rhamnus crocea – redberry
Rhamnus ilicifolia – holly-leaf redberry

ROSACEAE – ROSE FAMILY

Adenostoma fasciculatum – chamise
Cercocarpus betuloides var. *betuloides* – birch-leaf mountain-mahogany
Cercocarpus betuloides var. *blancheae* – island mountain-mahogany
Fragaria sp. – strawberry
Heteromeles arbutifolia – toyon
Prunus ilicifolia – holly-leaf cherry

RUBIACEAE – MADDER FAMILY

* *Galium aparine* – goose grass
Galium angustifolium – narrow-leaved bedstraw
Galium porrigens – climbing bedstraw

SALICACEAE – WILLOW FAMILY

Populus fremontii – Fremont cottonwood
Salix exigua – narrow-leaved willow
Salix laevigata – red willow
Salix lasiolepis – arroyo willow

SAURURACEAE – LIZARD'S-TAIL FAMILY

Anemopsis californica – yerba mansa

SCROPHULARIACEAE – FIGWORT FAMILY

Castilleja exserta – common owl's-clover
Castilleja foliolosa – indian painbrush

Keckiella cordifolia – heart-leaf penstemon
Mimulus aurantiacus – bush monkeyflower
Penstemon centranthifolius – scarlet bugler
* *Veronica anagalis-aquatica* – water speedwell

SOLANACEAE – NIGHTSHADE FAMILY
Datura wrightii – western jimsonweed
* *Nicotiana glauca* – tree tobacco
Solanum americanum – small-flowered nightshade
Solanum parishii – nightshade
Solanum xanti – chaparral nightshade

STERCULIACEAE – CACAO FAMILY
* *Fremontodendron californicum* H *mexicanum* – flannelbush cultivar (ornamental planting observed adjacent to Six Flags Magic Mountain Amusement Park)

TAMARICACEAE – TAMARISK FAMILY
* *Tamarix ramosissima* – Mediterranean tamarisk

URTICACEAE – NETTLE FAMILY
Urtica dioica – giant creek nettle
* *Urtica urens* – dwarf nettle

VIOLACEAE – VIOLET FAMILY
Viola pedunculata – Johnny jump-up

VITACEAE – GRAPE FAMILY
Parthenocissus vitacea – woodbine

ZYGOPHYLLACEAE – CALTROP FAMILY
* *Tribulus terrestris* – puncture vine

ANGIOSPERMAE (MONOCOTYLEDONES)

CYPERACEAE – SEDGE FAMILY
Cyperus esculentus – nutsedge

LILIACEAE – LILY FAMILY
Bloomeria crocea – common goldenaster

Brodiaea terrestris ssp. *kernensis* – brodiaea
Calochortus c.f. *catalinae* – Catalina mariposa lily
Calochortus c.f. *plummerae* – Plummer's mariposa lily
Calochortus clavatus var. *gracilis* – slender mariposa lily
Calochortus venustus – mariposa lily
Chlorogalum pomeridianum – wavy-leaf soap-plant
Dichelostemma capitatum – blue dicks
Muilla maritima – common muilla
Yucca schidigera – Mohave yucca
Yucca whipplei – Our Lord's candle

POACEAE – GRASS FAMILY

* *Avena barbata* – slender oat
* *Avena fatua* – wild oat
* *Avena sativa* – cultivated oat
Bromus arizonicus – Arizona chess
Bromus catharticus – rescue grass
* *Bromus diandrus* – ripgut grass
* *Bromus hordeaceus* – soft chess
* *Bromus madritensis* ssp. *rubens* – foxtail chess
* *Bromus sterilis* – poverty brome
* *Bromus tectorum* – cheat grass
* *Cynodon dactylon* – Bermuda grass
Distichlis spicata – salt grass
Elymus glaucus – western wild rye
Hordeum brachyantherum – meadow barley
* *Hordeum murinum* – glaucous foxtail barley
* *Hordeum vulgare* – cultivated barley
* *Lamarckia aurea* – goldentop
Leptochloa uninervia – Mexican sprangletop
Leymus tritocoides – beardless wild rye
Melica imperfecta – California melic
Nassella cernua – nodding needlegrass
Nassella lepida – foothill stipa
Nassella pulchra – purple needlegrass
* *Piptatherum miliaceum* – smilo grass
Poa secunda – Malpais bluegrass
Polypogon interruptus – ditch beard grass
* *Polypogon monspeliensis* – rabbit's-foot grass

* *Schismus barbatus* – abumashi
* *Triticum aestivum* – cereal wheat
Vulpia microstachys – small fescue
* *Vulpia myuros* – rattail fescue

TYPHACEAE – CATTAIL FAMILY

Typha latifolia – broad-leaved cattail

* signifies introduced (non-native) species
** NCN = no common name

APPENDIX C

California Natural Diversity Database Form

CALIFORNIA NATIVE SPECIES FIELD SURVEY FORM

OFFICE USE ONLY

Document Code _____ Quad Code _____
Index Code _____ Occurrence #_____
Copy Sent To _____

PLEASE ENTER ALL INFORMATION AVAILABLE TO YOU. USE THE BACK FOR COMMENTS IF NECESSARY. ***PLEASE ATTACH OR DRAW A MAP ON BACK.***

Scientific name (no codes): *Chorizanthe parryi* var. *fernandina*

Reporter: C.Ford, B. Strittmater, G. Hagen, D. Gettinger, T. Smith, B. Wood, and F.M. Obregon Phone: (760) 942-5147

Address: Dudek, 605 Third Street, Encinitas, California 92024

Date of Field Work: June 5-8, 12-13, 2007 **County**: Los Angeles **Collection**: No If yes, # **Mus./Herb**

Location: Northern Santa Susana Mountains; Entrada site (formerly Magic Mountain Entertainment site); south of the Santa Clara River, east/ south of Airport Mesa and adjacent mesas, west of Interstate 5.

Quad Name: Newhall X 7½' ___ 15' **Elevation**: 1160-1240' T 4N R 16W Sec 20

Landowner/Manager: Newhall Land, 23823 Valencia Boulevard, Valencia, California 91355

Species Found? X Yes ___ No If not, reason:

Is this a new location record? ___ Yes X No ___ Unknown

Total # of Individuals = 258 Is this a subsequent visit? X Yes __ No Compared to your last visit: __ more ___same __X__ fewer

Phenology (plants): ___% vegetative ___% flowering ____% fruiting (not reported)

Population Age Structure (animals): ____ # adults ____ # juveniles ____ # others

Site Function for Species (animals): ____ breeding ____ foraging ____ wintering ____ roosting ____ denning ____ other

Habitat Description (plant communities, dominants, associates, other rare spp., substrate/soils, aspect/slope):

Predominantly found on disturbed habitat and alluvial scrub located on northwest facing slopes and flat areas (2 to 5% slopes) on Metz loam soil.

Current Land Use/Visible Disturbances/Possible Threats: Current Land Use: Cattle grazing, utility access road; Visible Disturbances: cattle grazing, farming, grading/clearing, utility access road; Possible Threats: proposed residential/commercial development, utility access road.

Overall Site Quality:____ Excellent ____ Good __X__ Fair ____ Poor

Comments: This report summarizes 8 discrete locations with estimated abundances of one to 155 individuals.

Should/Could this site be protected? How?

Other comments: This year had less rainfall than recent years.

DETERMINATION (Check one or more, fill in blanks)

___ Keyed in a site reference:
___ Compared with specimen housed at:
___ Compared with photo/drawing in:
___ By another person (name):
X Other: personal knowledge

PHOTOGRAPHS (Check one or more)

Subject	**Type**
___ Plant/Animal	___ Slide
___ Habitat	___ Print
___ Diagnostic Feature	
___ Other	

OTHER KNOWLEDGEABLE INDIVIDUALS (Name/Address/Phone)

May we obtain duplicates at our cost?
____ Yes __X__ No

San Fernando Valley spineflower - Chorizanthe parryi var. fernandina

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Entrada

2007 Sensitive Plant Survey Results