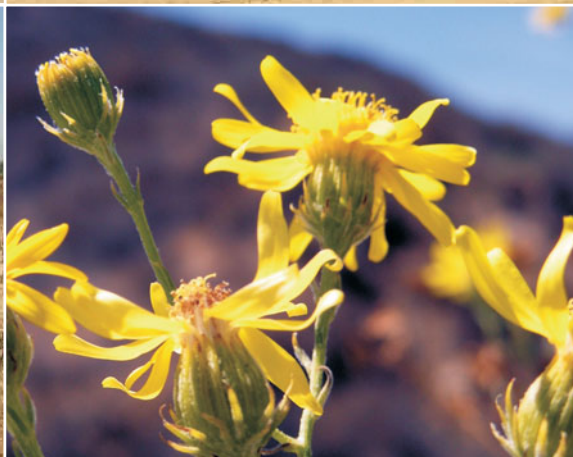

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2007 Sensitive Plant Survey Results

Valencia Commerce Center



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

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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 532-acre Valencia Commerce Center Site (VCC) for the 2007 field season. Surveys placed 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 VCC study area is located in an unincorporated portion of the Santa Clara River Valley in northwestern Los Angeles County (*Figure 1*). The VCC study area lies roughly in the northwest corner of the junction of Interstate 5 (I-5) and State Route 126 (SR-126) (*Figure 2*). The northwestern edge of the City of Santa Clarita is located east of I-5, east of the study area.

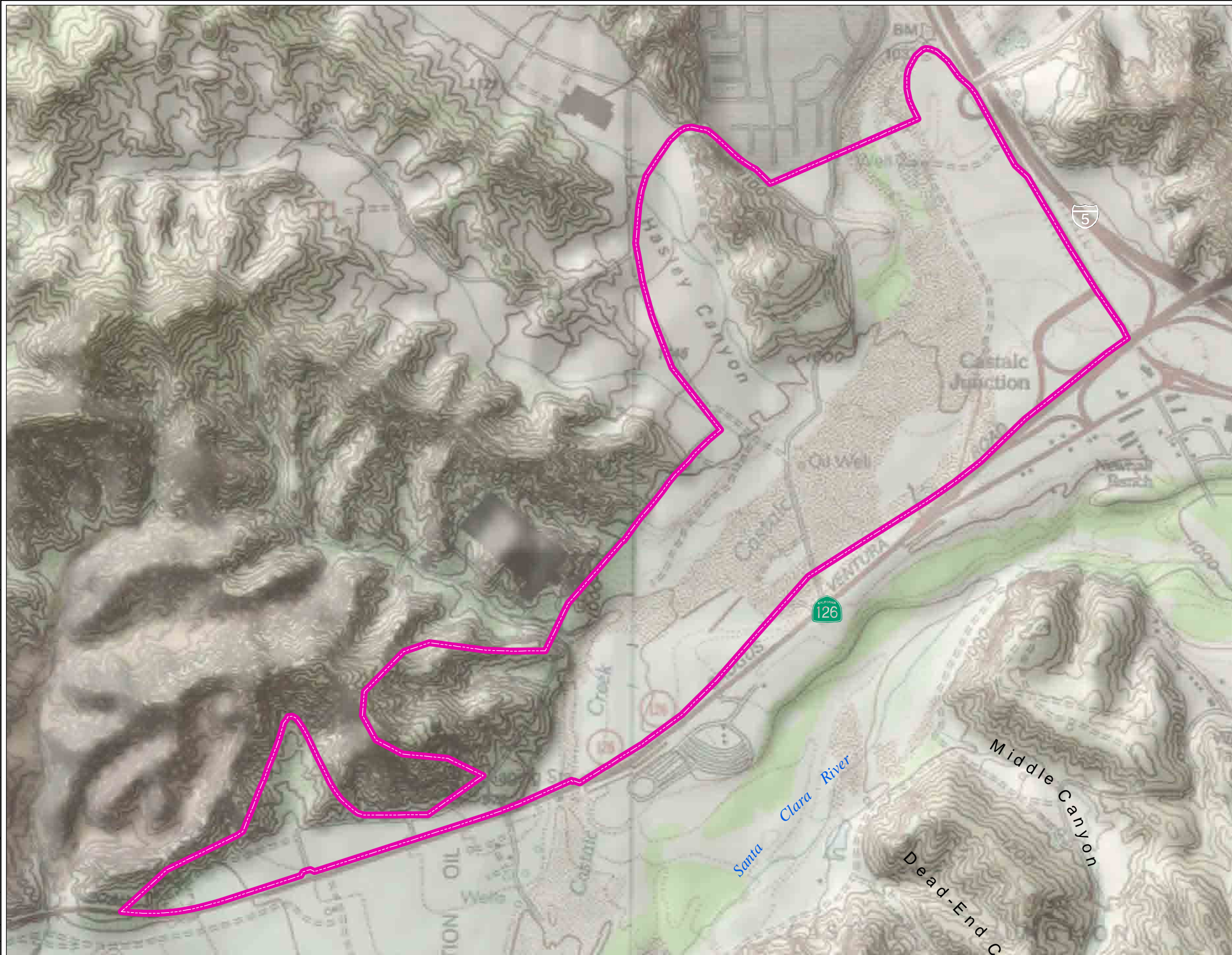
The VCC study area is dominated by north/south trending ridges that lie north of Castaic Creek, near the confluence with Hasley Canyon. Site elevations range from just under 1,000 feet above mean sea level (AMSL) in the Castaic Creek bottom, to just over 1,500 feet AMSL at the top of the western ridge (*Figure 2*). In addition to the ridges, Castaic Creek and Hasley Canyon wash areas on the project site contain numerous benches and braided channels with associated riparian and alluvial scrub vegetation communities. The ridges are generally rounded at the top with slopes that vary from steep to gentle.

2.1 Vegetation Communities and Land Covers

Dudek conducted a sensitive plant survey in the study area. Native and naturalized vegetation communities within the VCC study area include representative examples of those plant communities found in the Santa Susana, Topatopa, and Liebre mountains and the Santa Clara River and Castaic Creek ecosystems. Upland vegetation communities dominate the landscape within the study area (e.g., California sagebrush scrub, chaparral, and California grasslands); however, Hasley Canyon does support a variety of riparian plant communities (e.g., southern cottonwood-willow riparian forest and mulefat scrub).



Z:\Projects\37380\1\Spineflower Management Plan\arcmap\2007 Sensitive Plant Surveys\VCC\Figure 2 - VCC Vicinity Map.mxd -SL 1/21/2008





-  Valencia Commerce Center Boundary
-  County Boundary



IMAGE SOURCE: USGS 24K Quad

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Historically, Newhall Land leased out portions of the study area for sand and gravel production, cattle grazing, and agricultural operations; only agricultural operations are currently ongoing. All of these activities have had a noticeable effect on much of the natural vegetation communities on site (i.e., scrub communities have been displaced by California annual grasslands). Southern California Edison and Southern California Gas Company also have distribution lines and access roads within easements on site.

2.2 Geology and Soils

Geologically, the study area 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). The Holser fault traverses the site (Allan E. Seward 2002, 2004).

3.0 METHODS AND SURVEY LIMITATIONS

Data regarding botanical resources present on the project site were obtained through a review of the pertinent literature, field reconnaissance, and focused surveys for sensitive species, all of which are described below.

3.1 Literature Review

General floristic and sensitive botanical resources present or potentially present on the Entrada site 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, 2004f, 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*

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Assessment of the Proposed Santa Susana Mountains/Simi Hills Significant Ecological Area (PCR et al. 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 Rare 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 and Sapphos Environmental 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 were conducted by FLx sub-consultants Anuja Parikh and Nathan Gale. All surveys were conducted on foot. Resumes for survey personnel are provided in *Appendix A*.

Botanical surveys of the VCC study area were conducted in early June 2007 in accordance with the schedule provided in *Table 1*. Approximately 40 person-hours (four person-days) were spent conducting botanical surveys within the study area. The biologists were able to observe reference populations of the state-listed endangered SFVS and other sensitive species, in order to develop a search-image prior to conducting surveys of the project site. 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.

Latin and common names of plants follow *The Jepson Manual* (Hickman 1993) or other recently published taxonomic treatments. Where not listed in Hickman (1993), common names were taken from Abrams (1923). Where not found in these references, various other sources were used (e.g., Dale 1985; Roberts 1998).

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Table 1
Survey Schedule & Personnel:
Valencia Commerce Center Site

Date	Biologists	Purpose
June 8, 2007	FLx (Anujah Parikh , Nathan Gale)	Focused surveys for SFVS; other sensitive plant species noted as observed.
June 9, 2007	FLx (Anujah Parikh, Nathan Gale)	Focused surveys for SFVS; other sensitive plant species noted as observed.

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 SFVS 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. For each of the SFVS polygons, field data sheets were completed that included data on site conditions (i.e., plant number estimates, associated species). Polygons were analyzed in the lab and delineated based on a 4-meter minimum convex polygon rule (i.e., all polygons within four 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

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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 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 VCC study area 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.

Approximately 342 plant species were identified within the VCC study area. Of these, 262 species (77%) are native to the region and 80 species (23%) are non-native. The cumulative list of plant species identified on the site in 2002, 2003, 2004, 2005, 2006, and 2007 is provided as *Appendix B*.

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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 within the VCC study area, based on the presence of suitable habitat and soils, are listed in *Table 2*. The sensitive species listed in *Table 2* are 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, and 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).

Figure 3 depicts the locations of SFVS on the VCC study area 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 (CNPS 2006). 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 CNDDDB indicate 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.

Eight polygons were identified in the southwestern portion of the VCC study area. These polygons are depicted in *Figure 3*. Labels for each of the polygons in *Figure 3* correlate with those in *Table 3*, which contains estimates for the numbers of individuals within each polygon.

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Table 2
Sensitive Plant Species Observed or
Potentially Occurring at the Valencia Commerce Center 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
<i>Arenaria paludicola</i>	Marsh sandwort	FE/SE	1B	Dense freshwater marsh/perennial herb/May–August	Not observed during 2007 field season. No CNDDDB 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 in wash/riparian areas; very low likelihood of occurrence within the study area.
<i>Astragalus brauntonii</i>	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 CNDDDB records exist for the Newhall or Val Verde quads; nearest occurrence is in the Simi Hills. Suitable habitat exists on site. Low to moderate likelihood of occurrence within study area.
<i>Atriplex coulteri</i>	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 CNDDDB records exist for the Newhall or Val Verde quads. Suitable habitat exists on site in wash/riparian areas. Moderate likelihood of occurrence within study area.
<i>Atriplex serenana</i> var. <i>davidsonii</i>	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 CNDDDB records exist for the Newhall or Val Verde quads. Suitable habitat exists on site in wash/riparian areas. Low likelihood of occurrence within the study area.
<i>Baccharis malibuensis</i>	Malibu baccharis	None/None	1B	Chaparral, coastal sage scrub, cismontane woodland/deciduous shrub/August	Not observed during 2007 field season. No CNDDDB 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.
<i>Berberis nevinii</i>	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. CNDDDB records exist for San Francisquito Canyon at confluence with Santa Clara River; suitable habitat present on site in wash/riparian areas. Moderate likelihood of occurrence within study area.
<i>Brodiaea filifolia</i>	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 CNDDDB 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 study area.
<i>Calochortus clavatus</i> var. <i>gracilis</i>	Slender mariposa lily	None/None	1B	Chaparral and coastal sage scrub/perennial herb (geophyte)/ March–May	Not observed during 2007 field season. CNDDDB records exist for mouth of Pico Canyon. Moderate likelihood of occurrence within study area.

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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
<i>Calochortus plummerae</i>	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. No CNDDDB records exist for the Newhall or Val Verde quads; however, records exist for the Santa Susana Mountains and Simi Hills. Suitable habitat exists on site. High likelihood of occurrence within study area.
<i>Calochortus weedii</i> var. <i>vestus</i>	late-flowered mariposa lily	None/None	1B	Chaparral, cismontane and riparian woodland/perennial herb (geophyte)/ June–August	Not observed during 2007 field season. No CNDDDB records exist for the Newhall or Val Verde quads; however, habitat similar to where species occurs in eastern Ventura County is present on site. Moderate likelihood of occurrence within study area.
<i>Calystegia peirsonii</i>	Peirson's morning-glory	None/None	4	Chaparral, coastal sage scrub, cismontane woodland, grassland/ perennial herb/May–June	Not observed during 2007 field season. Observed in 2006 in annual grasslands and on roadside in ruderal areas within the study area.
<i>Calystegia sepium</i> ssp. <i>binghamiae</i>	Santa Barbara morning-glory	None/None	1A	Marshes and swamps/perennial herb/ April–May	Not observed during 2007 field season. No CNDDDB records exist for the Newhall or Val Verde quads. Limited suitable habitat present on site in wash/riparian areas. Low likelihood of occurrence within study area.
<i>Centromadia</i> [=Hemizonia] <i>parryi</i> ssp. <i>australis</i>	southern tarplant	None/None	1B	Mesic edges of marshes in grasslands/annual herb/May–November	Not observed during 2007 field season. No CNDDDB records exist for the Newhall or Val Verde quads. Suitable habitat exists on site in wash/riparian areas. Low likelihood of occurrence within study area.
<i>Cercocarpus betuloides</i> var. <i>blancheae</i>	Island mountain-mahogany	None/None	4	Chaparral, closed-cone coniferous forest/evergreen shrub/February–May	Not observed within study area during 2007 field season. Occurrences documented from surrounding areas in mixed chaparral. Limited suitable habitat present on site. Low likelihood of occurrence within study area.
<i>Chorizanthe parryi</i> var. <i>fernandina</i>	San Fernando Valley spineflower	FC/SE	1B	Coastal sage scrub, sandy soils/annual herb/April–June	Observed 8 polygons on site during 2007 field season. Total on-site population estimate is 60 individuals within occurrence polygons covering 0.004 acre of the site.
<i>Deinandra</i> [=Hemizonia] <i>minthornii</i>	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 CNDDDB records exist for the Newhall or Val Verde quads; however, records exist for the Simi Hills and Oat Mountain. Suitable habitat exists on site. Low likelihood of occurrence within study area.
<i>Delphinium parryi</i> ssp. <i>blochmaniae</i>	dune larkspur	None/None	1B	Maritime chaparral, coastal dunes/ perennial herb/ April–May	Not observed during 2007 field season although <i>Delphinium parryi</i> spp. <i>parryi</i> was observed within the study area. No likelihood of occurrence.

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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
<i>Dodecahema leptoceras</i>	slender-horned spineflower	FE/SE	1B	Alluvial scrub on sandy substrate/annual herb/April–June	Not observed during 2007 field season. Historic CNDDDB records exist for the Newhall or Val Verde quads in alluvial habitat similar to that present on site in wash/riparian areas. Moderate likelihood of occurrence on site.
<i>Dudleya blochmaniae</i> var. <i>blochmaniae</i>	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 CNDDDB records exist for the Newhall or Val Verde quads. Suitable habitat present on site. Low to moderate likelihood of occurrence within study area.
<i>Dudleya cymosa</i> ssp. <i>Marcescens</i>	marcescent dudleya	FT/CR	1B	Chaparral, often on volcanic substrate/perennial herb (geophyte)/ April–June	Not observed during 2007 field season. No CNDDDB records exist for Newhall and Val Verde quads. No suitable habitat observed in study area.
<i>Dudleya cymosa</i> ssp. <i>Ovatifolia</i>	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 CNDDDB records exist for Newhall and Val Verde quads. Suitable habitat present on site. Low to moderate likelihood of occurrence within study area.
<i>Dudleya multicaulis</i>	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 CNDDDB 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 study area.
<i>Dudleya parva</i>	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 CNDDDB records exist for the Newhall or Val Verde quads. Suitable habitat exists on site. Low likelihood of occurrence within study area.
<i>Erodium macrophyllum</i>	round-leaved filaree	None/None	2	Cismontane woodland and grasslands on clay substrate/annual herb/March–May	Not observed during 2007 field season. No CNDDDB 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 in study area.
<i>Helianthus nuttallii</i> ssp. <i>Parishii</i>	Los Angeles sunflower	None/None	1A	Marshes and swamps/perennial herb/ August–October	Not observed within study area during 2007 field season. A <i>Helianthus</i> 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 <i>Helianthus</i> species on Newhall Land property is a hybrid between <i>H. nuttallii</i> and <i>H. californicus</i> or an intermediate evolutionary step between the two species (Porter and Fraga 2004). No suitable habitat observed in study area.

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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
<i>Horkelia cuneata</i> var. <i>puberula</i>	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 CNDDDB records exist for the Newhall or Val Verde quads. Suitable habitat present on site in wash/riparian areas. Low likelihood of occurrence within study area.
<i>Juglans californica</i>	southern California black walnut	None/None	4	Chaparral, cismontane woodland, coastal sage scrub, alluvial scrub/deciduous tree/March–May	Not observed within study area during 2007 field season. Observed in 2006 off site in Coastal sage scrub and chaparral on site. Suitable habitat present on site. Low likelihood of occurrence within study area.
<i>Lasthenia glabrata</i> ssp. <i>Coulteri</i>	Coulter's goldfields	FSC/None	1B	Saltwater marsh and swamps, playas, vernal pools/annual herb/February–June	Not observed during 2007 field season. Observed in 2006 in two locations (approximately 160 square feet in size) within the study area during 2006 surveys. The occurrence contains individuals on a manufactured slope. No records of this subspecies are within Los Angeles or Ventura counties.
<i>Malacothamnus davidsonii</i>	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 study area.
<i>Nama stenocarpum</i>	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 Castaic Creek and Hasley Canyon and other mesic areas on site. No CNDDDB records exist for the Newhall or Val Verde quads. Limited suitable habitat present on site in wash/riparian areas. Low likelihood of occurrence within study area.
<i>Nolina cismontane</i>	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 CNDDDB records exist for the Newhall or Val Verde quads. Limited suitable habitat present on site. Low likelihood of occurrence within study area.
<i>Opuntia basilaris</i> var. <i>brachyclada</i>	short-joint beavertail	None/None	1B	Chaparral, Joshua tree woodland, Mojavean desert scrub/succulent shrub/ April–June	This variety was identified by Dudek in 2002 within coastal sage scrub at southwest portion of the ridge between Hasley Canyon and Castaic Creek; however, further investigation indicates that the on-site population more closely matches variety <i>racemosa</i> . This species was not mapped in 2007.
<i>Pentachaeta lyonii</i>	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 CNDDDB 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 study area.

2007 Sensitive Plant Survey Results Valencia Commerce Center

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
<i>Rorippa gambellii</i>	Gambel's watercress	FE/ST	1B	Marsh and swamps (freshwater and brackish)/ perennial herb/April–June	Not observed during 2007 field season. No CNDDDB records exist for the Newhall or Val Verde quads. Limited suitable habitat present on site in wash/riparian areas. Very low likelihood of occurrence within study area.
<i>Senecio aphanactis</i>	Rayless ragwort	None/None	2	Chaparral, coastal sage scrub, cismontane woodland on alkaline substrate/annual herb/January–April	Not observed during 2007 field season. Historic CNDDDB record for Saugus, south of Santa Clara River. Suitable habitat exists on site. Low likelihood of occurrence within study area.
<i>Sidalcea neomexicana</i>	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 CNDDDB records exist for the Newhall or Val Verde quads; suitable habitat exists on site. Moderate likelihood of occurrence within study area.
<i>Thelypteris puberula</i> var. <i>sonorensis</i>	Sonoran maiden fern	None/None	2	Meadows and seeps/perennial herb/ fertile January–September	Not observed during 2007 field season. No CNDDDB records exist for the Newhall or Val Verde quads; nearest occurrence at Point Dume. Limited suitable habitat present on site. Very low likelihood of occurrence within study area.

Legend

FE: Federally-listed as endangered

FT: Federally-listed as threatened

FC: Federal candidate for listing

SC: State candidate for listing

SE: State-listed as endangered

ST: State-listed as threatened

SR: State-listed as rare

CNPS List 1A: Plants presumed extinct in California

CNPS List 1B: Plants rare, threatened, or endangered in California and elsewhere

CNPS List 2: Plants rare, threatened, or endangered in California but more common elsewhere

CNPS List 3: Plants about which we need more information – a review list

CNPS List 4: Plants of limited distribution – a watch list

Table 3
San Fernando Valley Spineflower
Summary of Occurrence Data for the Valencia Commerce Center Study Area

Polygon Name	Polygon Area (sq. ft.)	Estimated Number of Individuals
523101	5	1
523102	66	11
523103	37	6
523104	25	16
523105	5	5

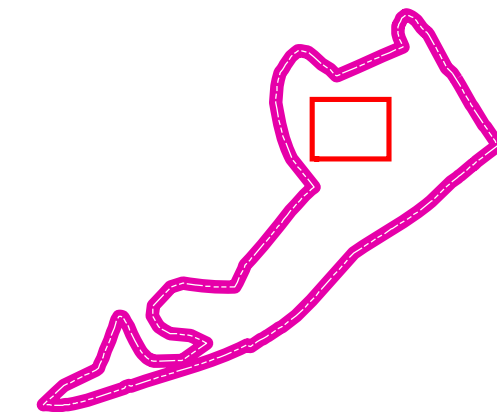
2007 Sensitive Plant Survey Results Valencia Commerce Center



Table 3
San Fernando Valley Spineflower
Summary of Occurrence Data for the Valencia Commerce Center Study Area

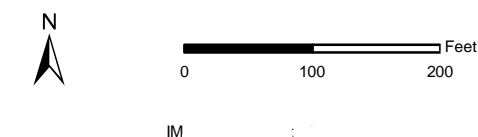
Polygon Name	Polygon Area (sq. ft.)	Estimated Number of Individuals
523106	12	15
523107	4	1
523108	7	5
Total	161	60

Most of the SFVS individuals were found on slopes with a south-facing component in California sagebrush/California buckwheat. Elevations of the SFVS polygons on this site ranged from approximately 1,070 to 1,160 feet AMSL. Vegetative cover in the area of SFVS occurrences ranged from 1% to 75%, but was more commonly between 10% and 15%. The soil type for all mapped SFVS occurrences on the project site consisted of clay loams. The size of the occurrence polygons ranged from four square feet to approximately 66 square feet. The number of individuals within each polygon ranged from one individual to approximately 16 individuals. A CNDDDB form for this occurrence is included in *Appendix C*.

Z:\Projects\37380\1\Spineflower Management Plan\arcmap\2007 Sensitive Plant Surveys\VCC\Figure 3 - VCC Results.mxd -SL 1/21/2008



-  Valencia Commerce Center Boundary
-  San Fernando Valley Spineflower



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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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Dudek and Associates, Inc. 2004j. *2004 Sensitive Plant Survey Results for Legacy, Los Angeles County, California*. Prepared for the Newhall Land and Farming Company by Dudek and Associates, Inc.

Dudek and Associates, Inc. 2004k. *2004 Sensitive Plant Survey Results for Newhall Ranch Specific Plan Area, Los Angeles County, California*. Prepared for the Newhall Land and Farming Company by Dudek and Associates, Inc.

Dudek and Associates, Inc. 2006a. *2005 Sensitive Plant Survey Results for the Newhall Ranch Specific Plan Area, Los Angeles County, California*. Prepared for The Newhall Land and Farming Company. Encinitas, California: Dudek and Associates, Inc. October 2006.

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APPENDIX A

Resumes of Survey Personnel

NATHAN GALE
Principal Scientist, FLx

EDUCATION AND CERTIFICATIONS

Ph.D., Geography, University of California, Santa Barbara, 1985.
M.A., Geography, University of California, Santa Barbara, 1980.
PWS, Certified Professional Wetland Scientist #1216, Society of Wetland Scientists, 1999.

SUMMARY OF QUALIFICATIONS

Dr. Gale has 26 years of experience managing and conducting multidisciplinary projects ranging from methodology development to applied environmental impact assessments, planning studies, and restoration programs. His management experience includes proposal preparation; contract negotiation and client relations; cost control and schedule monitoring; document production supervision; and quality assurance review. His specific technical work has involved experimental and sampling design; photographic documentation; and mapping of natural vegetation, sensitive species, environmental constraints, and land use. He also has field experience in quantitative vegetation sampling, environmental data collection, and wetland delineation. Dr. Gale is skilled in qualitative and quantitative data analysis for numerous applications including ecological and environmental impact assessment as well as mitigation and monitoring planning. He has been responsible for the preparation of NEPA/CEQA environmental documents, planning studies, and technical reports for the Department of Defense (DOD), the Department of Energy (DOE), the Department of Interior (DOI), and for state and local agencies. In addition, he has published extensively in the fields of geography, ecology, planning, and environmental studies.

EXPERIENCE

Rare Plant and Vegetation Surveys and Mapping, Newhall Ranch/Valencia Company Project Sites, Los Angeles and Ventura Counties, CA. Newhall Land and Farming Company, URS Corporation, Impact Sciences, Inc., and Dudek and Associates, Inc. General rare plant surveys and concentrated surveys for *Chorizanthe parryi* var. *fernandina* (San Fernando Valley spineflower), *Dodecahema leptoceras* (slender-horned spineflower), and *Helianthus* sp. (sunflower), vegetation surveys and mapping of plant communities, and report preparation for various sites, including the Santa Clara River and Castaic Creek. Surveys were carried out annually during six field seasons in the years 2000 through 2005. Participation in the development of a spineflower management plan, preserve design, and associated research activities.

Rare Plant and Vegetation Surveys and Mapping, Los Angeles and Riverside Counties, CA. Natural Resource Consultants. General rare plant surveys and concentrated surveys for *Chorizanthe parryi* var. *fernandina* (San Fernando Valley spineflower), *Dodecahema leptoceras* (slender-horned spineflower), *Orcuttia californica* (California Orcutt grass), and *Navarretia fossalis* (spreading navarretia), vegetation surveys, and report preparation for three sites in the year 2003 and two sites in 2004.

Restoration Planning and Implementation, Former Guadalupe Oil Field, San Luis Obispo County, CA. Unocal Corporation and Jordan Environmental Services. Preparation and implementation of site-specific restoration plans, including the development of revegetation specifications, monitoring methods, performance criteria, and performance evaluation. Development of general mitigation and restoration success criteria, including sampling design, data collection, statistical data analysis, and reporting for selected reference

wetlands for future comparison with wetland mitigation and restoration sites. Participation in activities related to uplands and wetlands habitat restoration with the Restoration Working Group, comprising regulatory agency representatives and Unocal consultants, for the long-term Guadalupe Restoration Project.

Vegetation and Rare Plant Surveys and Wetlands Delineations, Ventura and Los Angeles Counties, CA. Impact Sciences, Inc. Vegetation surveys and mapping of plant communities, rare plant surveys, field wetland surveys, delineation of jurisdictional wetlands, and report preparation for more than 35 sites in various locations in Ventura and Los Angeles counties.

Ventura River Estuary Enhancement Project, Ventura County, CA. California Department of Parks and Recreation. Design and implementation of a five-year vegetation monitoring program for restoration efforts at Emma Wood State Beach. The project involved monitoring four vegetation types: willow-cottonwood forest, saltbush scrub, dune scrub, and foredune vegetation. Activities included botanical surveys, survival and growth surveys, photodocumentation, data collection and comparative analysis of natural and revegetated areas, evaluation of exotics eradication, and recommendations for ongoing restoration.

Peacekeeper Rail Garrison Mitigation Program, San Antonio Terrace, Vandenberg AFB. U.S. Air Force and The Earth Technology Corporation. Technical advisor and senior data analyst for wetland creation, upland dune scrub habitat restoration, coast live oak revegetation, and vegetation monitoring for a five-year biological mitigation and monitoring program. Activities included initial planning, budgeting, methodology development, sampling design, vegetation sampling, data analysis, preparation and review of annual monitoring reports.

Guadalupe Oil Field Restoration. California Department of Fish and Game and Hagler Bailly Consulting, Inc. Initial restoration planning, including background research, historical air photo assessment, and analysis of restoration alternatives at the Guadalupe Oil Field. Results from these tasks were used in the evaluation of potential restoration options, and to anticipate biological, hydrological, ecological, logistical, economic, and other issues associated with each restoration option.

Restoration of Coastal Dunes and Associated Wetlands in California. California Department of Fish and Game and Hagler Bailly Consulting, Inc. Principal scientist responsible for compiling and annotating a comprehensive bibliography of restoration and revegetation projects in coastal California, with an emphasis on coastal dune habitats and coastal wetlands.

Recovery Plan for Two Federally Endangered Plant Species. U.S. Fish and Wildlife Service. Technical advisor responsible for developing strategy and task recommendations for the recovery plan for marsh sandwort (*Arenaria paludicola*) and Gambel's watercress (*Rorippa gambelii*). Key aspects of the plan included an outline of steps for habitat protection, species and habitat monitoring, biological and ecological research, and the establishment of new populations.

Implementation of Recovery Activities for Two Federally Endangered Plant Species. California Department of Fish and Game and University of California. Research on species biology and ecology, plant propagation, experimental establishment of new populations, and monitoring of existing and new populations of marsh sandwort (*Arenaria paludicola*) and Gambel's watercress (*Rorippa gambelii*). Reporting of species and habitat status and progress of recovery activities.

Rare Plant Census. All American Pipeline, L.P. Rare plant monitoring census for Gaviota tarplant (*Hemizonia increscens* ssp. *villosa*) in permanent plots established at Gaviota, CA.

UCSB Campus Lagoon Wetland Restoration. The Herbarium, Museum of Systematics and Ecology, University of California, Santa Barbara. Design and implementation of a five-year vegetation monitoring program for wetland plant communities restored at the UCSB Campus Lagoon, Santa Barbara County, CA, as required by the Streambed Alteration Agreement of the California Department of Fish and Game. The project included plant species identification, vegetation sampling, data analysis, photodocumentation, and report preparation.

Vernal Pool Restoration Monitoring, Isla Vista, CA. Isla Vista Recreation and Park District. Vegetation monitoring, data analysis, and publication preparation for a 10-year assessment of restored and created vernal pools at the Del Sol Open Space and Vernal Pool Reserve.

Plant Surveys and Wetland Delineations for Five Land Parcels, Isla Vista, CA. County of Santa Barbara Planning and Development. Field surveys and report preparation for botanical and wetland resources, including jurisdictional wetland delineations and mapping, in coastal mesa vernal pool habitat along Del Playa Drive, Isla Vista.

Santa Barbara County Oak Restoration Program. University of California, Santa Barbara. Vegetation monitoring in savanna and woodland habitats of blue oak, valley oak, and coast live oak, for the long-term assessment of cattle grazing impacts on oak seedling recruitment at Sedgwick Ranch, Santa Barbara County, CA.

Restoration Plan, Naval Base Ventura County, Port Hueneme Site, CA. Naval Base Ventura County and The Environmental Company. Field visits and preparation of a habitat protection and restoration plan for four special interest natural areas.

Biological Surveys and Wetlands Delineation for the National Reconnaissance Office (NRO) Campus, Vandenberg AFB. U.S. Air Force and Titan Corporation. Field biological surveys, jurisdictional wetlands delineation, and preparation of an addendum to the environmental assessment for The General Plan for the Cantonment Area of the base.

Controlled Burn Monitoring, Vandenberg AFB. U.S. Air Force and Museum of Systematics and Ecology, University of California, Santa Barbara. Pre-burn monitoring of vegetation and plant species in coastal sage scrub and chaparral at two prescribed burn sites, South Vandenberg AFB.

Restoration Plans for Installation of VTS Fiber-Optic Cable System, Honda Ridge Road Repair, and El Rancho Road Bridge Project, Vandenberg AFB. U.S. Air Force and Tetra Tech, Inc. Preparation of restoration plans including sections on ecological background, revegetation measures, monitoring and maintenance methods, performance criteria for assessing success, and restoration schedule for sites at North and South Vandenberg AFB.

Implementation of Restoration Plans, South Base and VTS Fiber-Optic Cable Systems, Vandenberg AFB. U.S. Air Force and Foster Wheeler Environmental Corp. Native plant species restoration, long-term monitoring, and restoration evaluation at four sites at Vandenberg AFB, CA.

Natural Resources Surveys and Environmental Assessments, Vandenberg AFB. U.S. Air Force and Tetra Tech, Inc. Principal environmental scientist responsible for conducting field surveys and preparing report sections for vegetation, wildlife, and wetland resources for 17 environmental assessments of facility and infrastructure development projects, and for an EIS on San Antonio Creek.

Integrated Natural Resources Management Plan, Vandenberg AFB. U.S. Air Force and Tetra Tech, Inc. Principal scientist responsible for preparing sections on existing conditions, issues of concern, and management objectives for vegetation, wildlife, and wetland resources for a basewide five-year plan.

EIS and Environmental Assessments. U.S. Air Force. Program manager and contract administrator, under a contract with the Strategic Air Command (SAC), for eight environmental assessments and one EIS for proposed USAF real estate, facility construction, and training actions. Impact analyses were conducted for the full range of environmental and socioeconomic issues; major areas of focus involved endangered species' habitats, cultural and historical resources, and hazardous waste sites.

Goleta Revitalization EIR/EIS. County of Santa Barbara Planning and Development. Wetland delineations at sixteen creek crossings and plant surveys for street extensions, bikepaths and a multipurpose trail.

Oil and Gas Exploration and Facilities Development EIRs/EISs. Santa Barbara County and California State Lands Commission. Environmental analyst for EIRs/EISs of oil and gas development projects located offshore California.

Supplemental Environmental Impact Report for the 1990 Long Range Development Plan. University of California, Santa Barbara. Program manager for a supplemental EIR focussed on growth-related impacts to local school districts, and potential secondary environmental impacts to sensitive wetland habitats that could be caused by needed school facility expansion.

Biological Monitoring for Installation of CITS, VTS, South Base, and Tranquillon Mountain Fiber-Optic Cable Systems, Vandenberg AFB. U.S. Air Force, Tetra Tech, Inc., and Foster Wheeler Environmental Corporation. Onsite biological monitoring for cable installation activities to ensure avoidance of adverse impacts to sensitive biological and wetland resources.

Biological Surveys and Monitoring for Installation of Building 3000 Fiber-Optic Cable System, Vandenberg AFB. U.S. Air Force and System Technology Associates. Field surveys and onsite biological monitoring for cable installation activities to ensure avoidance of adverse impacts to sensitive biological and wetland resources.

Biological Monitoring for Honda Ridge Road Repair and Point Sal Road Repair, Vandenberg AFB. U.S. Air Force, Tetra Tech, Inc., and Ace Engineering, Inc. Onsite biological monitoring for road repair activities to ensure avoidance of adverse impacts to sensitive biological and wetland resources.

Biological Monitoring, Environmental Quality Assurance Program (EQAP), Santa Barbara County, CA. Storrer Environmental Services. Biological monitoring for the Level (3) fiber-optic cable installation project, the stabilization of oil wells for the Venoco State Lease 421 piers, and the AERA/Molino flowlines abandonment project.

MEMBERSHIPS

California Botanical Society; California Exotic Pest Plant Council; Society of Wetland Scientists; Society of Ecological Restoration; The International Mountain Society.

SELECTED PUBLICATIONS

Dr. Gale has been an author and collaborator on numerous academic publications, government research grant reports, and presentations at national and international professional conferences. In addition, he has contributed to environmental and planning documents. A summarized count of his work includes: Refereed Journal Articles - 28; Book Chapters - 5; Papers in Conference Proceedings - 3; Government Research Reports - 13; Contributions to Planning Studies - 44; Contributions to Environmental Documents - 55.

Journal Articles

"Coast Live Oak Revegetation on the Central Coast of California," (with A. Parikh), *Madroño*, 45(4), 1998, 301-309.

"Vegetation Monitoring of Created Dune Swale Wetlands, Vandenberg Air Force Base, California," (with A. Parikh), *Restoration Ecology*, 6(1), 1998, 83-93.

"The Analysis of Class Dispersion Patterns Using Matrix Comparisons," (with L.E. Harvey and F.W. Davis), *Ecology*, 69(2), 1988, 537-542.

"Tests of Randomness: Unidimensional and Multidimensional," (with L.J. Hubert, R.G. Golledge, and C.M. Costanzo), *Environment and Planning A*, 17, 1985, 373-385.

"Measuring Association Between Spatially Defined Variables: An Alternative Procedure," (with L.J. Hubert, R.G. Golledge, and C.M. Costanzo), *Geographical Analysis*, 17, 1985, 36-46.

"Unclassed Matrix Shading and Optimal Ordering in Hierarchical Cluster Analysis," (with W.C. Halperin and C.M. Costanzo), *Journal of Classification*, 1, 1984, 775-92.

Conference Proceedings

"Review of Ten Years of Vernal Pool Restoration and Creation in Santa Barbara, California," (with W.R. Ferren Jr., D.M. Hubbard, S. Wiseman, and A. Parikh), in C.W. Witham, E.T. Bauder, D. Belk, W.R. Ferren Jr., and R. Ornduff (Eds.) *Ecology, Conservation, and Management of Vernal Pool Ecosystems*, Proceedings from a 1996 Conference, California Native Plant Society, Sacramento, CA, 1998, 206-216.

"Vegetation Monitoring of Created Wetland Sites on the San Antonio Terrace, Vandenberg Air Force Base, California," (with A. Parikh), in M.C. Landin (Ed.) *Proceedings of the National Interagency Workshop on Wetlands: Technology Advances for Wetlands Science*, Technical Report, Wetlands Research and Technology Center, U.S. Army Engineers Waterways Experiment Station, Vicksburg, MS, 1995, 153-55.

"Wetland Creation and Vegetation Monitoring in a Stabilized Sand Dune Ecosystem, San Antonio Terrace, Vandenberg Air Force Base, California," (with A. Parikh and T. Waddell), in M.C. Landin (Ed.) Proceedings of the 13th Annual Meeting of the Society of Wetland Scientists (SWS), New Orleans, LA, 1993, 368-76.

"First-Year Vegetation Monitoring of Created Wetlands on the San Antonio Terrace, Vandenberg Air Force Base, California," (with A. Parikh and T. Waddell), in A.E. Leviton and M.L. Aldrich (Eds.) Proceedings of the Pacific Division, American Association for the Advancement of Science, University of California, Santa Barbara, June 1992, p. 46.

ANUJA K. PARIKH
Principal Ecologist, FLx

EDUCATION AND CERTIFICATIONS

Ph.D., Plant Geography, University of California, Santa Barbara, 1989.

M.S., Geography, University of Bombay, India, 1981.

B.S., Zoology and Geology, University of Bombay, India, 1979.

PWS, Certified Professional Wetland Scientist #841, Society of Wetland Scientists, 1995.

SUMMARY OF QUALIFICATIONS

Dr. Parikh has 22 years of field and research experience in the areas of botany, plant ecology, wetlands, biogeography, and earth resources. Her work has included environmental baseline inventories and impact assessments, rare and endangered plant species surveys, revegetation and mitigation plans, restoration and monitoring of native upland and wetland habitats, and coast live oak revegetation studies. She has expertise in field vegetation sampling, plant species identification, wetland delineation, and the collection of physical environmental data. Using aerial photography and field surveys, she has prepared vegetation maps based on classification and quantification of plant communities in a variety of habitats; she also has mapped environmental constraints, incorporating data on sensitive species, natural habitats, and physiographic and man-made features. Dr. Parikh is experienced with experimental design as well as processing and analyzing ecological data using statistical and graphics software.

EXPERIENCE

Rare Plant and Vegetation Surveys and Mapping, Newhall Ranch/Valencia Company Project Sites, Los Angeles and Ventura Counties, CA. Newhall Land and Farming Company, URS Corporation, Impact Sciences, Inc., and Dudek and Associates, Inc. General rare plant surveys and concentrated surveys for *Chorizanthe parryi* var. *fernandina* (San Fernando Valley spineflower), *Dodecahema leptoceras* (slender-horned spineflower), and *Helianthus* sp. (sunflower), plant species identification and comprehensive species lists, vegetation surveys and mapping of plant communities, and report preparation for various sites, including the Santa Clara River and Castaic Creek. Surveys were carried out annually during six field seasons in the years 2000 through 2005. Participation in the development of a spineflower management plan, preserve design, and associated research activities.

Rare Plant and Vegetation Surveys and Mapping, Los Angeles and Riverside Counties, CA. Natural Resource Consultants. General rare plant surveys and concentrated surveys for *Chorizanthe parryi* var. *fernandina* (San Fernando Valley spineflower), *Dodecahema leptoceras* (slender-horned spineflower), *Orcuttia californica* (California Orcutt grass), and *Navarretia fossalis* (spreading navarretia), vegetation surveys, and report preparation for three sites in the year 2003 and two sites in 2004.

Restoration Planning and Implementation, Former Guadalupe Oil Field, San Luis Obispo County, CA. Unocal Corporation and Jordan Environmental Services. Preparation and implementation of site-specific restoration plans, including the development of revegetation specifications, monitoring methods, performance criteria, and performance evaluation. Development of general mitigation and restoration success criteria, including sampling design, data collection, statistical data analysis, and reporting for selected reference wetlands for future comparison with wetland mitigation and restoration sites. Participation in activities

related to uplands and wetlands habitat restoration with the Restoration Working Group, comprising regulatory agency representatives and Unocal consultants, for the long-term Guadalupe Restoration Project.

Vegetation and Rare Plant Surveys and Wetlands Delineations, Ventura and Los Angeles Counties, CA. Impact Sciences, Inc. Vegetation surveys and mapping of plant communities, rare plant surveys, field wetland surveys, delineation of jurisdictional wetlands, and report preparation for more than 35 sites in various locations in Ventura and Los Angeles counties.

Peacekeeper Rail Garrison Mitigation Program, San Antonio Terrace, Vandenberg AFB, CA. U.S. Air Force and The Earth Technology Corporation. Project biologist responsible for directing, planning, and implementing biological field activities related to wetlands creation, upland habitat restoration, coast live oak revegetation, and vegetation monitoring for all mitigation and restoration sites.

Recovery Plan for Two Federally Endangered Plant Species. U.S. Fish and Wildlife Service. Ecologist and principal author responsible for background research and all botanical elements of the recovery plan for marsh sandwort (*Arenaria paludicola*) and Gambel's watercress (*Rorippa gambelii*).

Implementation of Recovery Activities for Two Federally Endangered Plant Species. California Department of Fish and Game and University of California. Research on species biology and ecology, plant propagation, experimental establishment of new populations, and monitoring of existing and new populations of marsh sandwort (*Arenaria paludicola*) and Gambel's watercress (*Rorippa gambelii*). Reporting of species and habitat status and progress of recovery activities.

Rare Plant Census. All American Pipeline, L.P. Rare plant monitoring census for Gaviota tarplant (*Hemizonia increscens* ssp. *villosa*) in permanent plots established at Gaviota, CA.

Ventura River Estuary Enhancement Project, Ventura County, CA. California Department of Parks and Recreation. Design and implementation of a five-year vegetation monitoring program for restoration efforts at Emma Wood State Beach. The project involved monitoring four vegetation types: willow-cottonwood forest, saltbush scrub, dune scrub, and foredune vegetation. Activities included botanical surveys, survival and growth surveys, photodocumentation, data collection and comparative analysis of natural and revegetated areas, evaluation of exotics eradication, and recommendations for ongoing restoration.

Santa Barbara County Oak Restoration Program. University of California, Santa Barbara. Plant identification and vegetation monitoring in savanna and woodland habitats of blue oak, valley oak, and coast live oak, for the long-term assessment of cattle grazing impacts on oak seedling recruitment at Sedgwick Ranch, Santa Barbara County, CA.

Vernal Pool Restoration Monitoring, Isla Vista, CA. Isla Vista Recreation and Park District. Vegetation monitoring, data analysis, and publication preparation for a 10-year assessment of restored and created vernal pools at the Del Sol Open Space and Vernal Pool Reserve.

Plant Surveys and Wetland Delineations for Five Land Parcels, Isla Vista, CA. County of Santa Barbara Planning and Development. Field surveys and report preparation for botanical and wetland resources, including jurisdictional wetland delineations and mapping, in coastal mesa vernal pool habitat along Del Playa Drive, Isla Vista.

Rare and Endangered Plant Species Surveys. Metropolitan Water District and ERC Environmental and Energy Services Co. Plant species identification and sensitive plant species surveys at proposed reservoir and mitigation sites (Potrero Creek, Harford Springs, Crown/Rawson Valleys, Motte Rimrock Reserve, Domenigoni Valley, Santa Rosa Plateau Preserve, Lake Skinner, and Vail Lake) for the Metropolitan Water District's Eastside Reservoir Project, Riverside County, CA.

Vegetation Mapping and Plant Species Surveys. Santa Barbara County, CA. Vegetation mapping using aerial photographs of riparian communities along the Santa Ynez River, Santa Barbara County; field vegetation and topographical data collection from transects, species identification, rare and endangered plant species surveys, and report preparation for the County Flood Control District.

Rare and Endangered Plant Species Surveys. California Department of Water Resources. Rare and endangered plant species identification and mapping along a proposed aqueduct route in the Lompoc and Lake Cachuma areas in Santa Barbara County, and near Santa Margarita, San Luis Obispo County; field verification, ground truthing and mapping of vegetation communities along the Santa Ynez River, CA.

Floristic and Vegetation Surveys. U.S. Department of Agriculture, Forest Service. Preparation of floras and vegetation surveys in the Los Padres National Forest at Mt. Pinos, a subalpine community in Ventura and Kern counties, and at Alder Creek Botanical Area, Monterey County, CA. Identification of plant species and collection of vegetation and site data in permanent plots established in blue oak woodland in San Luis Obispo County, CA, as part of a Forest Service project on vegetation and habitat inventory and classification.

Wetland Vegetation Surveys, Mapping, and Monitoring. Dames & Moore. Vegetation mapping using aerial photographs, calculations of riparian habitat acreages, and field botanical surveys for a land development project along the Santa Clara River, Los Angeles County, CA. Biological construction monitoring for an archaeological site investigation in the Los Carneros wetlands, Goleta, CA. Field surveys and mapping of wetlands and vernal pools at Beale AFB, CA.

Rare and Endangered Plant Species Surveys and Vegetation Mapping. Jones and Stokes Associates, Inc. Field surveys for rare and endangered plant species at the proposed Los Vaqueros Reservoir site near Livermore, Contra Costa and Alameda counties, CA, and along ephemeral drainages near Taft in the Central Valley, Kern County, CA, for a project involving clean-up of oil and brea deposits. Habitat mapping and field surveys of riparian vegetation and plant species on transects along the Lower Ventura River, for an aquatic biology survey.

Ecological Survey Reports for Candidate Research Natural Areas. U.S. Department of Agriculture, Forest Service. Field work, literature reviews, and document preparation for the San Emigdio Mesa and Sawmill Mountain Candidate Research Natural Areas, Los Padres National Forest, Ventura County, CA.

Restoration Plan, Naval Base Ventura County, Port Hueneme Site, CA. Naval Base Ventura County and The Environmental Company. Field visits and preparation of a habitat protection and restoration plan for four special interest natural areas.

Biological Surveys and Wetlands Delineation for the National Reconnaissance Office (NRO) Campus, Vandenberg AFB. U.S. Air Force and Titan Corporation. Field biological surveys, jurisdictional wetlands delineation, and preparation of an addendum to the environmental assessment for The General Plan for the Cantonment Area of the base.

Controlled Burn Monitoring, Vandenberg AFB. U.S. Air Force and Museum of Systematics and Ecology, University of California, Santa Barbara. Pre-burn monitoring of vegetation and plant species in coastal sage scrub and chaparral at two prescribed burn sites, South Vandenberg AFB.

Restoration Plans for Installation of VTS Fiber-Optic Cable System, Honda Ridge Road Repair, and El Rancho Road Bridge Project, Vandenberg AFB. U.S. Air Force and Tetra Tech, Inc. Preparation of restoration plans including sections on ecological background, revegetation measures, monitoring and maintenance methods, performance criteria for assessing success, and restoration schedule for sites at North and South Vandenberg AFB.

Implementation of Restoration Plans, South Base and VTS Fiber-Optic Cable Systems, Vandenberg AFB. U.S. Air Force and Foster Wheeler Environmental Corp. Native plant species restoration, long-term monitoring, and restoration evaluation at four sites at Vandenberg AFB, CA.

Integrated Natural Resources Management Plan, Vandenberg AFB. U.S. Air Force and Tetra Tech, Inc. Principal ecologist responsible for preparing sections on existing conditions, issues of concern, and management objectives for vegetation, wildlife, and wetland resources for a basewide five-year plan.

Natural Resources Surveys and Environmental Assessments, Vandenberg AFB. U.S. Air Force and Tetra Tech, Inc. Principal environmental scientist responsible for conducting field surveys and preparing report sections for vegetation, wildlife, and wetland resources for 17 environmental assessments of facility and infrastructure development projects, and for an EIS on San Antonio Creek.

Natural Resources Management Plans. U.S. Air Force and Higginbotham/Briggs & Associates. Participation in data collection, field visits, agency coordination, document preparation and review for Natural Resources Management Plans prepared for Kaena Point Satellite Tracking Station, HI, and Onizuka AFB, CA.

Biological Monitoring, Environmental Quality Assurance Program (EQAP), Santa Barbara County, CA. Storrer Environmental Services. Biological monitoring for the Level (3) fiber-optic cable installation project, the All-American Pipeline relocation at Gaviota Creek, and the stabilization of oil wells for the Venoco State Lease 421 piers.

Goleta Revitalization EIR/EIS. County of Santa Barbara Planning and Development. Wetland delineations at sixteen creek crossings and plant surveys for street extensions, bikepaths and a multipurpose trail.

UCSB Campus Lagoon Wetland Restoration. The Herbarium, Museum of Systematics and Ecology, University of California, Santa Barbara. Design of a five-year vegetation monitoring program for wetland plant communities restored at the UCSB Campus Lagoon, Santa Barbara County, CA, as required by the Streambed Alteration Agreement of the California Department of Fish and Game. The monitoring project included plant species identification, vegetation sampling, data analysis, photodocumentation, and report preparation.

Vegetation Surveys and Analysis. The Herbarium, Department of Biological Sciences, University of California, Santa Barbara. Plant species identification and vegetation sampling in upland and wetland areas for baseline data inventory of botanical resources and rare plants at Fish Slough, Inyo and Mono

counties, CA. Project design and field surveys of topography, riparian vegetation, and plant species in the Ventura River estuary, Ventura County, CA; computer graphics, analysis, and document preparation of environmental relationships and distribution of species and vegetation communities. Computer analysis for a project on the botanical wetland resources of the Carpinteria salt marsh, Santa Barbara County, CA.

Wetlands Management Plan. Department of Geography and Campus Wetlands Committee, University of California, Santa Barbara. Field and literature surveys of hydrology and sedimentation of the campus-owned wetland resources in Devereux Slough and the Storke Campus wetlands.

Watershed Surveys. U.S. Department of Agriculture, Forest Service. Geomorphological, botanical, and hydrological field work in preliminary watershed surveys in Santa Barbara and Ventura counties, CA.

Research Activities. Department of Geography, University of California, Santa Barbara. Sampling and monitoring regeneration of tree and herbaceous species in the riparian zone of a chaparral watershed recovering from wildfire (N. Fork Matilija Creek, Ventura County); topographic channel surveys, computer plotting, ecological and botanical field, laboratory and greenhouse experiments, literature review, and data analysis. Vegetation sampling, inventory and analysis, and topographical surveys in chaparral ecosystems and oak woodlands in Burton Mesa chaparral, Santa Barbara County. Field sampling in coniferous forests of the Mendocino National Forest Reserve, CA.

MEMBERSHIPS

California Native Plant Society; Society of Wetland Scientists; Society of Ecological Restoration; California Botanical Society.

SELECTED PUBLICATIONS AND REPORTS

"Coast Live Oak Revegetation on the Central Coast of California," (with N. Gale), *Madroño*, 45(4), 1998, 301-309.

"Vegetation Monitoring of Created Dune Swale Wetlands, Vandenberg Air Force Base, California," (with N. Gale), *Restoration Ecology*, 6(1), 1998, 83-93.

"Review of Ten Years of Vernal Pool Restoration and Creation in Santa Barbara, California," (with W.R. Ferren Jr., D.M. Hubbard, S. Wiseman, and N. Gale), in C.W. Witham, E.T. Bauder, D. Belk, W.R. Ferren Jr., and R. Ornduff (Eds.) *Ecology, Conservation, and Management of Vernal Pool Ecosystems*, Proceedings from a 1996 Conference, California Native Plant Society, Sacramento, CA, 1998, 206-216.

"Peacekeeper Rail Garrison and Small ICBM Mitigation Program, San Antonio Terrace, Vandenberg AFB, California—Annual Wetlands Monitoring Report, Annual Upland Monitoring Report, Year 5," Prepared for the U.S. Department of the Air Force, Detachment 10, Space and Missile Systems Center, San Bernardino, CA, February 1996.

"Vegetation Monitoring of Created Wetland Sites on the San Antonio Terrace, Vandenberg Air Force Base, California," (with N. Gale), in M.C. Landin (Ed.) *Proceedings of the National Interagency Workshop on Wetlands: Technology Advances for Wetlands Science*, Technical Report, Wetlands Research and Technology Center, U.S. Army Engineers Waterways Experiment Station, Vicksburg, MS, 1995, 153-55.

"Recovery Plan for Marsh Sandwort (*Arenaria paludicola*) and Gambel's Watercress (*Rorippa gambelii*)," (with N. Gale), U.S. Fish and Wildlife Service, Ventura, CA, August 1994.

"Wetland Creation and Vegetation Monitoring in a Stabilized Sand Dune Ecosystem, San Antonio Terrace, Vandenberg Air Force Base, California," (with N. Gale and T. Waddell), in M.C. Landin (Ed.) Proceedings of the 13th Annual Meeting of the Society of Wetland Scientists (SWS), New Orleans, LA, 1993, 368-76.

"First-Year Vegetation Monitoring of Created Wetlands on the San Antonio Terrace, Vandenberg Air Force Base, California," (with N. Gale and T. Waddell), in A.E. Leviton and M.L. Aldrich (Eds.) Proceedings of the Pacific Division, American Association for the Advancement of Science, University of California, Santa Barbara, June 1992, p. 46.

"Biotic Inventory and Ecosystem Characterization for Fish Slough, Inyo and Mono Counties, California," (with the Fish Slough Research Team), Report to State of California, The Resources Agency, Department of Fish and Game, by the Departments of Biological Sciences, Geography, and Geological Sciences, University of California, Santa Barbara, June 1991.

"Ecology of a Mediterranean-Climate Estuarine Wetland at Carpinteria, California: Plant Distributions and Soil Salinity in the Upper Marsh," (with R. Callaway, S. Jones, W. Ferren), *Canadian Journal of Botany*, 68, 1990, 1139-1146.

"Botanical Resources at Emma Wood State Beach and the Ventura River Estuary, California: Inventory and Management," (with W. Ferren, M. Capelli, D. Magney, K. Clark, and J. Haller), Report to the State of California Department of Parks and Recreation, Environmental Report No. 15, The Herbarium, Department of Biological Sciences, University of California, Santa Barbara, August 1990.

"UCSB Campus Wetlands Management Plan, Part II—Technical Report—Hydrology, Water Quality, and Sedimentation of West and Storke Campus Wetlands," (with F. Davis, D. Theobald, and R. Harrington), Report to the California Coastal Conservancy and Campus Wetlands Committee, University of California, Santa Barbara, CA, 1990.

"Recovery of the Chaparral Riparian Zone After Wildfire," (with F. Davis, E. Keller, and J. Florsheim), Proceedings of the California Riparian Systems Conference, September 22-24, 1988, Davis, CA, Protection, Management, and Restoration for the 1990s, Gen. Tech. Rep. PSW-110, U.S. Department of Agriculture, Forest Service, Pacific Southwest Forest and Range Experiment Station, 1989, 194-203.

"Plant Communities and Flora of the Proposed Botanical Reserve on Mt. Pinos, Ventura and Kern counties, CA," (with D. Capralis), Survey Report, U.S. Department of Agriculture, Forest Service, Los Padres National Forest Headquarters, Goleta, CA, August 1988.

"Terrestrial Vegetation of Rattlesnake Canyon," (with F. Davis), Proceedings of the Chaparral Ecosystems Research Conference, Santa Barbara, CA, Report No. 62, California Water Resources Center, University of California, Davis, CA, 1986, 13-17.

APPENDIX B

*Vascular Plant Species Observed at the
Valencia Commerce Center Site
(2002, 2003, 2004, 2005, 2006, and 2007)*

APPENDIX B
Vascular Plant Species Observed at the
Valencia Commerce Center Site

LYCOPODIAE

SELAGINELLACEAE – SPIKE-MOSS FAMILY

Selaginella bigelovii – Bigelow's spike-moss

FILACEAE

PTERIDACEAE – BRAKE FAMILY

Pellaea andromedifolia var. *andromedifolia* – coffee fern

Pentagramma triangularis ssp. *viscosa* – goldenback fern

CONIFERAE

PINACEAE – PINE FAMILY

Pinus sp. – pine

ANGIOSPERMAE (DICOTYLEDONES)

AIZOACEAE – CARPET-WEED FAMILY

* *Mesembryanthemum crystallinum* – crystalline ice plant

* *Mesembryanthemum nodiflorum* – small-flowered ice plant

AMARANTHACEAE – AMARANTH FAMILY

Amaranthus albus – tumbleweed

Amaranthus blitoides – prostrate amaranth

* *Amaranthus retroflexus* – rough pigweed

ANACARDIACEAE – SUMAC FAMILY

Rhus ovata – sugar-bush

Rhus trilobata – squaw bush

APIACEAE – CARROT FAMILY

Apiastrum angustifolium – wild celery

Bowlesia incana – bowlesia

* *Conium maculatum* – poison-hemlock

Daucus pusillus – rattlesnake weed

* *Foeniculum vulgare* – sweet fennel

APPENDIX B (Cont.)

APOCYNACEAE – DOGBANE FAMILY

- * *Nerium oleander* – oleander

ASCLEPIADACEAE – MILKWEED FAMILY

Asclepias eriocarpa – Indian milkweed

ASTERACEAE – SUNFLOWER FAMILY

- Achillea millefolium* var. *californica* – yarrow
- Acourtia microcephala* – sacapellote
- Agoseris grandiflora* – mountain dandelion
- Ambrosia acanthicarpa* – annual burweed
- Ambrosia confertifolia* – weak-leaved burweed
- Ambrosia dumosa* – white bursage
- Ambrosia psilostachya* – western ragweed
- Artemisia californica* – coastal sagebrush
- Artemisia tridentata* ssp. *tridentata* – Great Basin sagebrush
- * *Arctotis hisuta* – African daisy
- Artemisia dracunculus* – tarragon
- Artemisia douglasiana* – California mugwort
- 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
- * *Centaurea solstitialis* – yellow star thistle
- Chaenactis glabriuscula* – yellow pincushion
- * *Chamomilla suaveolens* – pineapple weed
- Chrysothamnus nauseosus* – rubber rabbitbrush
- Cirsium occidentale* var. *californicum* – California thistle
- * *Cirsium vulgare* – Bull thistle
- * *Cnicus benedictus* – blessed thistle
- Conyza canadensis* – horseweed
- Coreopsis bigelovii* – tickseed
- * *Cotula australis* – brass buttons
- * *Dimorphotheca sinuata* – Cape-marigold
- Encelia californica* – California bush sunflower
- Encelia farinosa* – brittlebush, incensio

APPENDIX B (Cont.)

- Ericameria palmeri* var. *pachylepis* – Goldenbush
- Erigeron foliosus* var. *stenophyllus* – leafy daisy
- Eriophyllum confertiflorum* – long-stem golden yarrow
- Filago californica* – California fluffweed
- * *Filago gallica* – narrow-leaf filago
- * *Gazania linearis* – African daisy
- Gnaphalium* sp. (undescribed) – everlasting
- Gnaphalium californicum* – California everlasting
- Gnaphalium canescens* ssp. *Microcephalum* – white everlasting
- Gnaphalium luteo-album* – white cudweed
- Hazardia* sp. – goldenbush
- Helianthus annuus* – common sunflower
- Hemizonia fasciculata* – fascicled tarweed
- Heterotheca grandiflora* – telegraph weed
- Heterotheca psammophila* – camphor weed
- Heterotheca sessiliflora* – golden aster
- Heterotheca sessiliflora* ssp. *fastigiata* – telegraph weed
- * *Hypochaeris glabra* – smooth cat's-ear
- Isocoma menziesii* ssp. *veneta* – coastal Goldenbush
- * *Lactuca serriola* – prickly lettuce
- Lasthenia californica* – coast goldfields
- Lasthenia glabrata* ssp. *coulteri* – Coulter's goldfields
- Lepidospartum squamatum* – scale-broom
- Lessingia filaginifolia* – virgate cudweed aster
- Madia gracilis* – slender tarweed
- Malacothrix saxatilis* var. *commutata* – cliff desert dandelion
- Malacothrix saxatilis* var. *tenuifolia* – cliff malacothrix
- * *Matricaria marticarioides* – pineapple weed
- Micropus californicus* – slender cottonweed
- Microseris douglasii* – Douglas' microseris
- Microseris lindleyi* – Lindley's microseris
- * *Picris echioides* – bristly ox-tongue
- Pluchea odorata* – marsh-fleabane
- Pluchea sericea* – arrow weed
- * *Pulicaria paludosa* – Spanish sunflower
- Rafinesquia californica* – California chicory
- Senecio californica* – California groundsel
- Senecio californicus* – California butterweed
- Senecio flaccidus* var. *douglasii* – butterweed

APPENDIX B (Cont.)

- * *Senecio vulgaris* – common groundsel
- Silybum marianum* – milk thistle
- Solidago californica* – California goldenrod
- * *Sonchus asper* – prickly sow-thistle
- * *Sonchus oleraceus* – common sow-thistle
- Stephanomeria* sp. – wreathplant
- Stephanomeria virgata* – twiggy wreathplant
- Stylocline gnaphalioides* – everlasting nest-straw
- Tetradyma comosa* – hairy horsebrush
- Uropappus lindleyi* – silver puffs
- Xanthium strumarium* – cocklebur

BORAGINACEAE – BORAGE FAMILY

- Amsinckia menziesii* – yellow fiddleneck
- Amsinckia intermedia* – common fiddleneck
- Cryptantha intermedia* – common forget-me-not
- Cryptantha micrsthachys* – Tejon cryptantha
- Cryptantha muricata* – prickly cryptantha
- Cryptantha nevadensis* – Nevada cryptantha
- Cryptantha* spp. – forget-me-not
- Heliotropium curassavicum* – wild heliotrope
- Pectocarya linearis* – slender pectocarya
- Pectocarya recurvata* – pectocarya
- Plagiobothrys canescens* – rusty popcorn flower
- Plagiobothrys nothofulvus* – popcorn flower
- Plagiobothrys fulvus* – popcorn flower
- Plagiobothrys* sp. – popcorn flower

BRASSICACEAE – MUSTARD FAMILY

- * *Brassica nigra* – black mustard
- * *Brassica rapa* – turnip
- * *Brassica tournefortii* – mustard
- Erysimum capitatum* – western wallflower
- Capsella bursa pastoris* – shepherd's purse
- Erysimum capitatum* ssp. *capitatum* – western wallflower
- * *Hirschfeldia incana* – short-podded mustard
- * *Lobularia maritime* – sweet alyssum
- * *Sisymbrium altissimum* – tumble mustard
- * *Sisymbrium irio* – London rocket

APPENDIX B (Cont.)

- * *Sisymbrium orientale* – Oriental mustard
- Stanleya pinnata* var. *pinata* – prince's plume
- Thysanocarpus curvipes* – hairy fringedpod
- Thysanocarpus laciniatus* – narrow-leaved fringedpod

CACTACEAE – CACTUS FAMILY

- Opuntia basilaris* var. *ramosa* – beavertail cactus
- Opuntia littoralis* – coastal prickly-pear
- Opuntia parryi* – valley cholla

CAPPARACEAE – CAPER FAMILY

- Isomeris arborea* – bladderpod

CAPRIFOLIACEAE – HONEYSUCKLE FAMILY

- Lonicera subspicata* – southern honeysuckle
- Sambucus mexicana* – Mexican elderberry

CARYOPHYLLACEAE – PINK FAMILY

- * *Silene gallica* – common catchfly
- * *Stellaria media* – common chickweed

CHENOPODIACEAE – GOOSEFOOT FAMILY

- Atriplex canescens* – four-winged saltbush
- Atriplex lentiformis* – big saltbush, quail brush
- Atriplex semibaccata* – Australian saltbush
- Atriplex suberecta* – Australian saltbush
- Chenopodium album* – lamb's quarters
- Chenopodium berlandieri* – pitseed goosefoot
- Chenopodium californicum* – California goosefoot
- Chenopodium murale* – nettle-leaved goosefoot
- * *Salsola tragus* – Russian-thistle

CRASSULACEAE – STONECROP FAMILY

- Crassula connata* – dwarf stonecrop
- Dudleya lanceolata* – lanceleaf dudleya

CONVOLVULACEAE – MORNING-GLORY FAMILY

- Calystegia macrostegia* – western bindweed
- Calystegia peirsonii* – Peirson's morning-glory
- Convolvulus arvensis* – bindweed

APPENDIX B (Cont.)

CRASSULACEAE – STONECROP FAMILY

Crassula connata – dwarf stonecrop

Dudleya lanceolata – lanceleaf dudleya

CUCURBITACEAE – GOURD FAMILY

Cucurbita foetidissima – coyote-melon, calabazilla

* *Marah fabaceus* – 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

Euphorbia spathulata – reticulate-seeded spurge

Stillingia linearifolia – linear-leaved stillingia

FABACEAE – PEA FAMILY

Astragalus trichopodus – Santa Barbara locoweed

Lotus hamatus – grab lotus

Lotus purshianus – Spanish-clover

Lotus salsuginosus – coastal lotus

Lotus scoparius – deerweed

Lotus strigosus – strigose deerweed

Lotus wrangelianus – California lotus

Lupinus bicolor – Lindley's annual lupine

Lupinus arizonicus – Arizona lupine

Lupinus hirsutissimus – stinging lupine

Lupinus excubitus var. *hallii* – grape soda lupine

Lupinus formosus var. *formosus* – no common name

Lupinus microcarpus var. *densiflorus* – chick lupine

Lupinus microcarpus var. *microcarpus* – chick lupine

Lupinus sparsiflorus – Coulter's lupine

Lupinus succulentis – arroyo lupine

Lupinus truncatus – collar lupine

* *Medicago sativa* – alfalfa

APPENDIX B (Cont.)

- * *Medicago polymorpha* – California burclover
- * *Melilotus alba* – white sweet-clover
- * *Melilotus indica* – yellow sweet-clover
- Trifolium albopurpureum* – Indian clover
- Trifolium ciliolatum* – tree clover
- Trifolium gracilentum* – clover
- Trifolium willdenovii* – wildcat clover
- * *Vicia benghalensis* – purple vetch
- Vicia hassei* – slender vetch
- * *Vicia villosa* var. *varia* – hairy vetch

FAGACEAE – BEECH FAMILY

- Quercus* sp. – scrub oak
- Quercus agrifolia* – coast live oak
- Quercus john-tuckerii* – Tucker's oak
- Quercus lobata* – valley oak

GERANIACEAE – GERANIUM FAMILY

- * *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* var. *hispida* – caterpillar phacelia
- Phacelia distans* – wild heliotrope
- Phacelia parryi* – Parry's phacelia
- Phacelia ramosissima* – shrubby phacelia
- Phacelia tanacetifolia* – phacelia

JUGLANDACEA – WALNUT FAMILY

- Juglans californica* – Southern California black walnut

APPENDIX B (Cont.)

LAMIACEAE – MINT FAMILY

- * *Lamium amplexicaule* – dead nettle
- * *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

ONAGRACEAE – EVENING-PRIMROSE FAMILY

- Camissonia bistorta* – California sun cup
- Camissonia boothii* – desert lantern
- Camissonia californica* – mustard primrose
- Camissonia cheiranthifolia* – beach evening primrose
- Camissonia hirtella* – field sun cup
- Camissonia micrantha* – miniature sun cup
- Camissonia strigulosa* – sandy soil sun cup
- Clarkia purpurea* – winecup clarkia
- Clarkia unguiculata* – elegant clarkia
- Epilobium ciliatum* – California cottonweed
- Oenothera californica* – California evening primrose
- Oenothera elata* – evening primrose

PAPAVERACEAE – POPPY FAMILY

- Eschscholzia californica* – California poppy
- Platystemon californicus* var. *crinitus* – cream cups
- Stylomecon heterophylla* – wind poppy

PLANTAGINACEAE – PLANTAIN FAMILY

- Plantago erecta* – dot-seed plantain
- Plantago* sp. – plantain

APPENDIX B (Cont.)

POLEMONIACEAE – PHLOX FAMILY

- Eriastrum densifolium* ssp. *densifolium* – woolly star
- Eriastrum densifolium* ssp. *elongatum* – chaparral woolly-star
- Eriastrum sapphirinum* – sapphire eriastrum
- Gilia angelensis* – angel gilia
- Gilia capitata* – ball gilia
- Leptodactylon californicum* – prickly phlox
- Linanthus pygmaeus* – linanthus

POLYGONACEAE – BUCKWHEAT FAMILY

- Chorizanthe parryi* var. *fernandina* – San Fernando Valley spineflower
- Chorizanthe staticoides* – turkish rugging
- Eriogonum baileyi* – Bailey’s buckwheat
- Eriogonum brachyanthum* – short-flowered buckwheat
- Eriogonum elongatum* – long-stemmed buckwheat
- Eriogonum fasciculatum* ssp. *foliolosum* – California buckwheat
- Eriogonum angulosum* – wild buckwheat
- Eriogonum gracile* – slender woolly buckwheat
- Lastarriaea coriacea* – lastarriaea
- Polygonum arenastrum* – common knotweed
- Pterostegia drymarioides* – California threadstem
- * *Rumex crispus* – curly dock
- Rumex hymenosepalus* – wild rhubarb
- * *Rumex obtusifolius* – dock

PORTULACACEAE – PURSLANE FAMILY

- Calandrinia ciliata* var. *menziesii* – redmaids
- Calyptridium monandrum* – common calyptridium
- Claytonia perfoliata* var. *perfoliata* – miner’s-lettuce
- * *Portulaca oleracea* – common purslane

RANUNCULACEAE – CROWFOOT FAMILY

- Delphinium parryi* ssp. *parryi* – Parry’s larkspur

RHAMNACEAE – BUCKTHORN FAMILY

- Ceanothus megacarpus* – big-podded Ceanothus
- Rhamnus ilicifolia* – holly-leaf redberry

APPENDIX B (Cont.)

ROSACEAE – ROSE FAMILY

- Adenostoma fasciculatum* – chamise
- Heteromeles arbutifolia* – toyon
- Physanocarpus alteranus* – ninebark
- Prunus ilicifolia* – holly-leaf cherry
- Rubus ursinus* – California blackberry

RUBIACEAE – MADDER FAMILY

- Galium angustifolium* – narrow-leaved bedstraw
- * *Galium aparine* – goose grass
- Galium nuttallii* – Nuttall's bedstraw

SALICACEAE – WILLOW FAMILY

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

SCROPHULARIACEAE – FIGWORT FAMILY

- Antirrhinum coulterianum* – white snapdragon
- Antirrhinum kelloggii* – climbing snapdragon
- Castilleja affinis* – coast paintbrush
- Castilleja exserta* – common owl's-clover
- Castilleja foliolosa* – wooly Indian paintbrush
- Collinsia heterophylla* – Chinese houses
- Mimulus aurantiacus* – bush monkeyflower
- Mimulus brevipes* – wide-throat monkeyflower
- Penstemon centranthifolius* – scarlet bugler
- Scrophularia californica* var. *floribunda* – coast figwort
- Veronica anagallis-aquatica* – water speedwell

SOLANACEAE – NIGHTSHADE FAMILY

- Datura wrightii* – western jimsonweed
- * *Nicotiana glauca* – tree tobacco
- Nicotiana quadrivalvis* – Wallace's tobacco
- Solanum americanum* – small-flowered nightshade
- Solanum douglasii* – white nightshade
- Solanum umbelliferum* – blue witch
- Solanum xanti* – chaparral nightshade

APPENDIX B (Cont.)

TAMARICACEAE – TAMARISK FAMILY

- * *Tamarix* sp. – tamarisk
- * *Tamarix gallica* – French tamarisk
- * *Tamarix ramosissima* – saltcedar

URTICACEAE – NETTLE FAMILY

- Urtica dioica* – giant creek nettle
- * *Urtica urens* – dwarf nettle

VISCACEAE – MISTLETOE FAMILY

Phoradendron macrophyllum – big leaf mistletoe

ZYGOPHYLLACEAE – CALTROP FAMILY

- * *Tribulus terrestris* – puncture vine

ANGIOSPERMAE (MONOCOTYLEDONES)

ARECACEAE – PALM FAMILY

- * *Washingtonia robusta* – Mexican fan palm

CYPERACEAE – SEDGE FAMILY

Cyperus esculentus – yellow nut-grass

LILIACEAE – LILY FAMILY

Calochortus clavatus var. *gracilis* – slender mariposa lily
Chlorogalum pomeridianum – soap plant
Dichelostemma capitatum – blue dicks
Yucca whipplei – Our Lord's candle

POACEAE – GRASS FAMILY

- Achnatherum coronatum* – giant needlegrass
- * *Arundo donax* – giant reed
- * *Avena barbata* – slender oat
- * *Avena fatua* – wild oat
- * *Avena sativa* – common oat
- Bromus carinatus* – California brome
- * *Bromus diandrus* – ripgut grass
- * *Bromus hordeaceus* – soft chess
- * *Bromus madritensis* ssp. *rubens* – foxtail chess

APPENDIX B (Cont.)

- * *Bromus tectorum* – cheat grass
- * *Cortaderia selloana* – pampas grass
- Cynodon dactylon* – Bermuda grass
- Distichlis spicata* – salt grass
- Elymus glaucus* – western wild rye
- * *Hordeum murinum* – glaucous foxtail barley
- * *Hordeum brachyantherum* ssp. *brachyantherum* – no common name
- Leymus condensatus* – giant ryegrass
- Leymus triticoides* – beardless wild rye
- Lolium multiflorum* – Italian ryegrass
- Lolium perenne* – perennial ryegrass
- Melica imperfecta* – California melic
- Melica subulata* – Alaska onion grass
- Muhlenbergia microsperma* – littleseed muhly
- Nassella cernua* – nodding needlegrass
- Nassella lepida* – foothill needlegrass
- Nassella pulchra* – purple needlegrass
- * *Parapholis incurva* – sickle grass
- * *Pennisetum clandestinum* – kikuyu grass
- * *Phalaris minor* – Mediterranean canary grass
- * *Piptatherum miliaceum* – smilo grass
- * *Poa annua* – annual bluegrass
- * *Polypogon monspeliensis* – rabbit’s-foot grass
- * *Schismus arabicus* – Arabian schismus
- * *Schismus barbatus* – abumashi
- * *Triticum aestivum* – common wheat
- * *Vulpia myuros* – rattail fescue

TYPHACEAE – CATTAIL FAMILY

- Typha domingensis* – slender cattail
- Typha latifolia* – broad-leaved cattail

- * signifies introduced (non-native) species

APPENDIX C

California Natural Diversity Database Form

CALIFORNIA NATIVE SPECIES FIELD SURVEY FORM

OFFICE USE ONLY

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

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

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

Reporter: Anuja Parikh, Nathan Gale

Phone: (760) 942-5147

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

Date of Field Work: June 8-9, 2007

County: Los Angeles

Collection: No If yes, #

Mus./Herb

Location: Santa Clarita Valley, north-facing canyon north of the junction of Commerce Center Drive and SR 126.

Quad Name: Newhall X 7½' ___ 15' **Elevation:** 1000-1120' T 4N R 17W Sec 12

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 = 60 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):

Coastal scrub –*Artemisia californica*. Observed individuals occurred on both south and south-east facing slopes between 2 and 9% within clay loam soils.

Current Land Use/Visible Disturbances/Possible Threats: Current Land Use: vacant; Visible Disturbances: detention basin at base of slope; Possible Threats: proposed residential/commercial development.

Overall Site Quality: ___ Excellent X Good ___ Fair ___ Poor

Comments: This report summarizes 8 discrete locations with estimated abundances of one to 16 individuals.

Should/Could this site be protected? How?

Other comments: This year had lower 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

OTHER KNOWLEDGEABLE INDIVIDUALS (Name/Address/Phone)

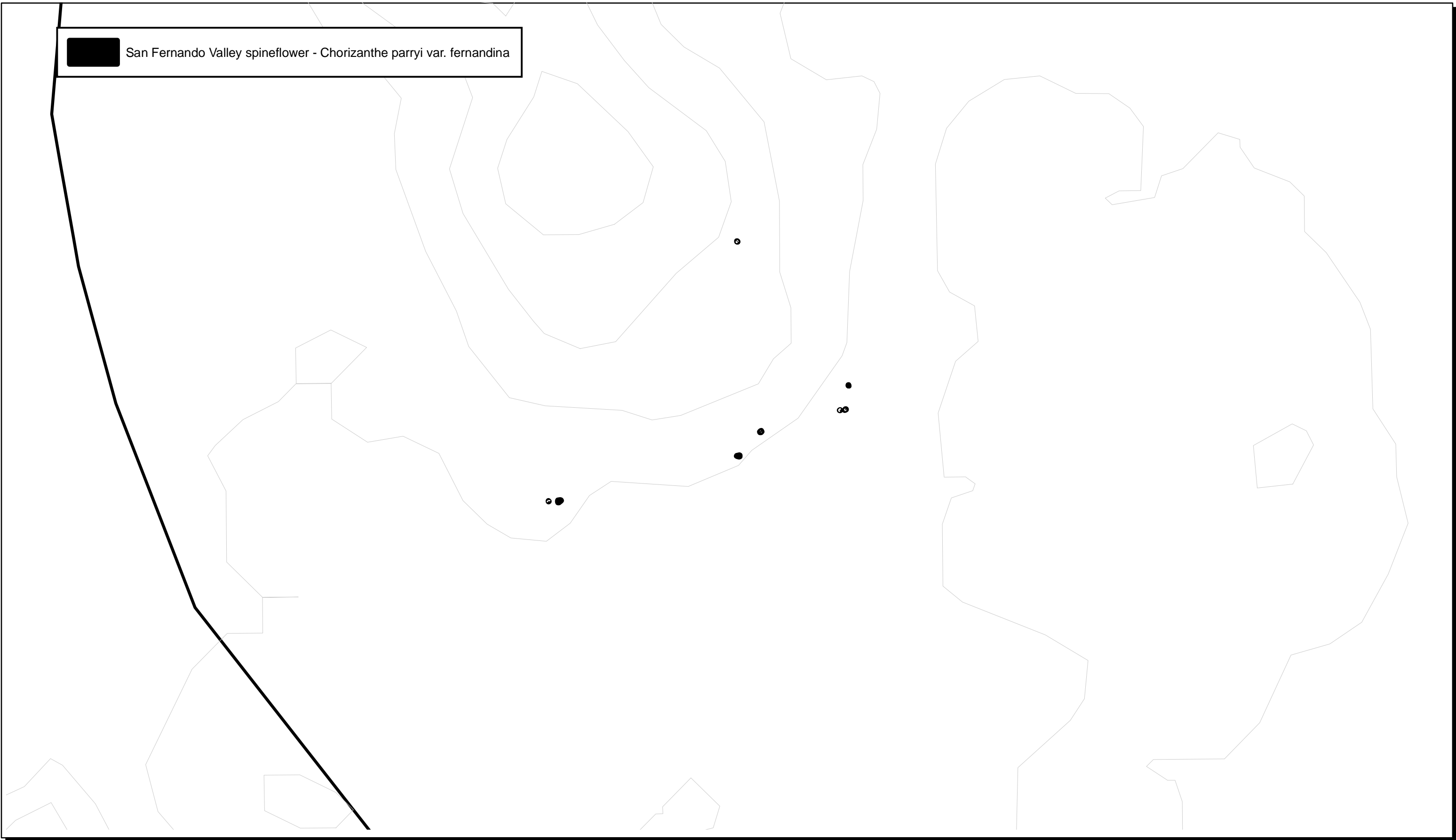
PHOTOGRAPHS (Check one or more)

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

May we obtain duplicates at our cost?
___ Yes X No

Z:\Projects\373801\Newhall Ranch\arcmap\2007 SPSR\CNDDDB_AirportMesa.mxd 11/15/2007

San Fernando Valley spineflower - *Chorizanthe parryi* var. *fernandina*



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