



2002 Sensitive Plant Survey Report
Newhall Ranch



N O V E M B E R 2 0 0 2

PREPARED FOR:
The Newhall Land and Farming Company
23823 Valencia Blvd.
Valencia, CA 91355



PREPARED BY:
Dudek & Associates, Inc.
605 Third Street
Encinitas, CA 92024



2002 Sensitive Plant Survey Results

for

Newhall Ranch Specific Plan Area Los Angeles County, California

Prepared for:

The Newhall Land and Farming Company

23823 Valencia Boulevard
Valencia, CA 91355
Contact: Steve Zimmer

Prepared by:



Professional Teams for Complex Projects

605 Third Street
Encinitas, CA 92024
Contact: Mark A. Elvin (760) 942-5147

November 20, 2002

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE OF CONTENTS

<u>Section</u>	<u>Page No.</u>
1.0 INTRODUCTION.....	1
2.0 SITE DESCRIPTION.....	1
2.1 Plant Communities and Land Covers.....	4
2.2 Geology and Soils.....	4
3.0 METHODS AND SURVEY LIMITATIONS.....	6
3.1 Literature Review.....	6
3.2 Field Reconnaissance Methods.....	6
3.2.1 Sensitive Plant Species.....	11
3.2.2 Survey Limitations.....	12
4.0 RESULTS OF SURVEYS.....	13
4.1 Botany - Floral Diversity.....	13
4.2 Sensitive Plant Species.....	13
4.2.1 <i>Calochortus clavatus</i> (mariposa lily).....	45
4.2.2 <i>Calystegia peirsonii</i> (Peirson's morning glory).....	46
4.2.3 <i>Cercocarpus betuloides</i> var. <i>blancheae</i> (island mountain-mahogany) ...	46
4.2.4 <i>Chorizanthe parryi</i> var. <i>fernandina</i> (San Fernando Valley spineflower).....	47
4.2.5 <i>Dudleya cymosa</i> (dudleya).....	48
4.2.6 <i>Helianthus nuttallii</i> ssp. <i>parishii</i> (Los Angeles sunflower).....	48
4.2.7 <i>Juglans californica</i> (southern California black walnut).....	49
4.2.8 <i>Opuntia basilaris</i> var. <i>brachyclada</i> (short-joint beavertail).....	50
5.0 ACKNOWLEDGMENTS.....	51
6.0 LITERATURE CITED.....	51

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE OF CONTENTS (*Continued*)

APPENDICES

- Appendix A Resumes - Survey Personnel
Appendix B Vascular Plant Species Observed on Newhall Ranch (2002)
Appendix C California Natural Diversity Database Forms

LIST OF FIGURES

Page No.

Figure 1	Regional Map.....	2
Figure 2	Vicinity Map.....	3
Figure 3	Place Names - Newhall Ranch.....	5
Figure 4	2002 San Fernando Valley Spineflower - Grapevine Mesa Area	14
Figure 5	2002 San Fernando Valley Spineflower - Airport Mesa Area	15
Figure 6	2002 San Fernando Valley Spineflower - San Martinez Grande Canyon Area	16
Figure 7	2002 Sensitive Plant Species Survey Index Map - 1500-acre Survey Area	17
Figure 8	2002 Sensitive Plant Species Results - 1500-acre Survey Area	18
Figure 9	2002 Sensitive Plant Species Results - 1500-acre Survey Area	19
Figure 10	2002 Sensitive Plant Species Results - 1500-acre Survey Area	20
Figure 11	2002 Sensitive Plant Species Results Survey Index - 4000-acre Survey Area	21
Figure 12	2002 Sensitive Plant Species Results - 4000-acre Survey Area	22
Figure 13	2002 Sensitive Plant Species Results - 4000-acre Survey Area	23
Figure 14	2002 Sensitive Plant Species Results - 4000-acre Survey Area	24
Figure 15	2002 Sensitive Plant Species - 4000-acre Survey Area.....	25
Figure 16	2002 Sensitive Plant Species Results - 4000-acre Survey Area	26
Figure 17	2020 Sensitive Plant Species Results – 4000-acre Survey Area	27
Figure 18	2020 Sensitive Plant Species Results – 4000-acre Survey Area	28
Figure 19	2020 Sensitive Plant Species Results – 4000-acre Survey Area	29
Figure 20	2020 Sensitive Plant Species Results – 4000-acre Survey Area	30
Figure 21	2020 Sensitive Plant Species Results – 4000-acre Survey Area	31

2002 Sensitive Plant Survey Results

Newhall Ranch Specific Plan Area

TABLE OF CONTENTS (*Continued*)

LIST OF TABLES

Page No.

Table 1	Survey Schedule & Personnel	
	Newhall Ranch Specific Plan Area	7
Table 2	Sensitive Plant Species Subject of Field Surveys	10
Table 3	Sensitive Plant Species Observed or Potentially	
	Occurring at Newhall Ranch.....	32
Table 4	SFVS Estimates for the Airport Mesa Vicinity	42
Table 5	SFVS Estimates for the Grapevine Mesa Vicinity.....	43
Table 6	SFVS Estimates for the San Martinez Grande Canyon Facility	44
Table 7	SFVS Estimate Totals.....	45

2002 Sensitive Plant Survey Results

Newhall Ranch Specific Plan Area

1.0 INTRODUCTION

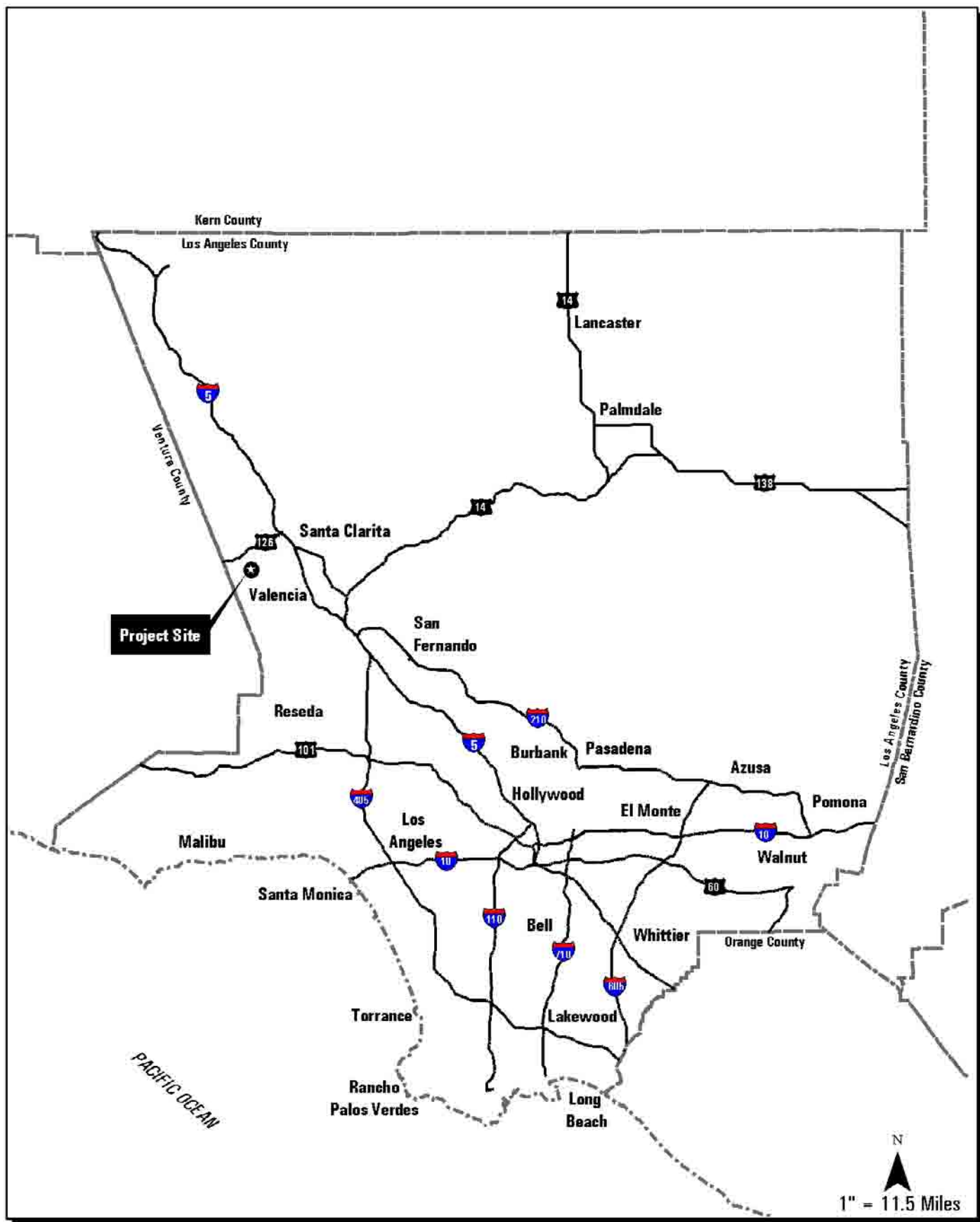
The purpose of this report is to document the results of surveys for sensitive plant species within the Newhall Ranch Specific Plan Area for the 2002 field season, with emphasis on the identification of populations of the state listed as endangered San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*; SFVS) and Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*) (a plant thought to be extinct until this rediscovery, however, work is currently being conducted to verify the identity of this plant).

2.0 SITE DESCRIPTION

The majority of the information in this section is summarized from the biota report prepared for the Newhall Ranch Specific Plan by RECON and Impact Sciences (1996), with soils and geology information obtained from a geologic evaluation prepared by Allan E. Seward Engineering Geology, Inc. (2002).

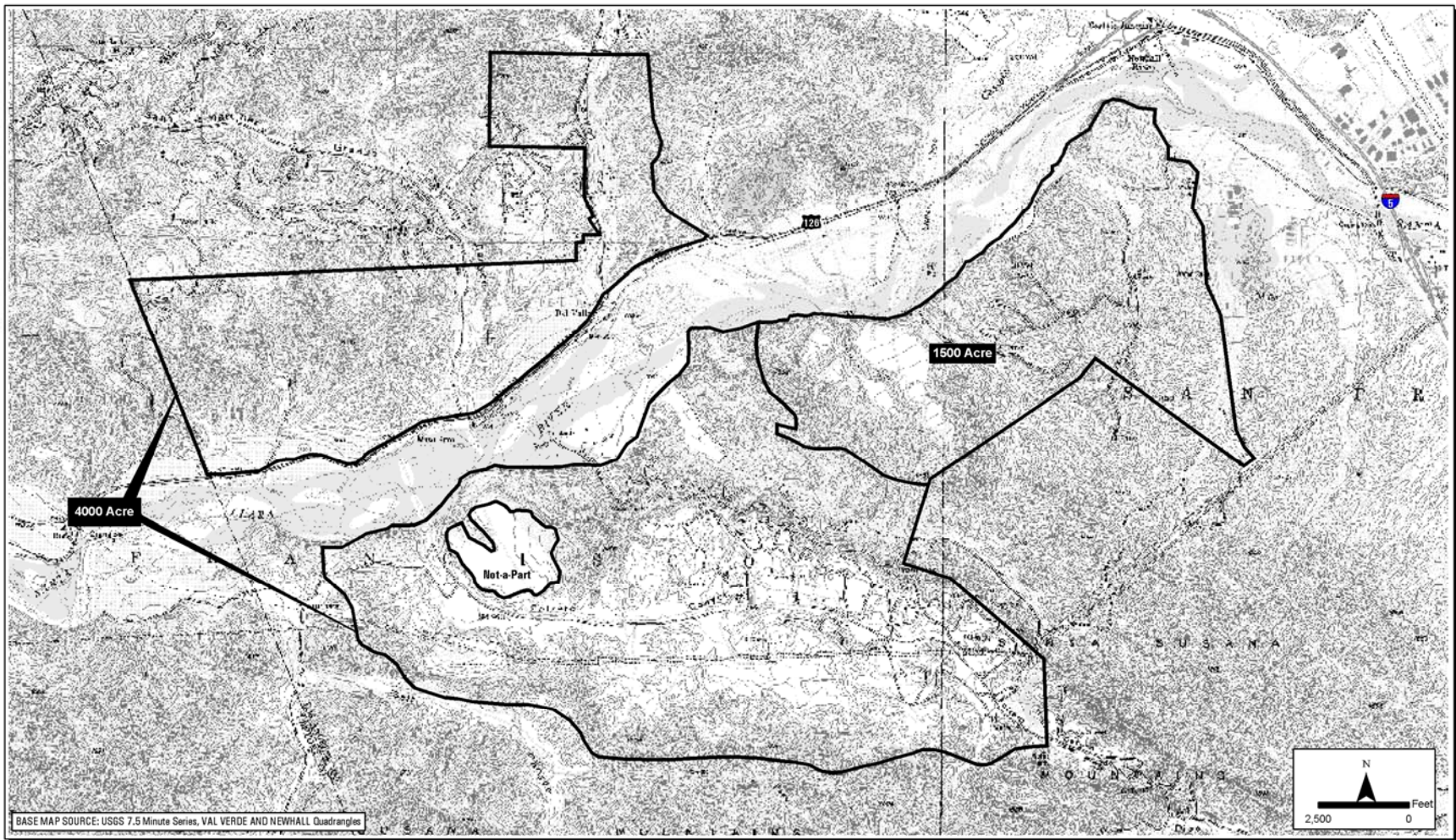
The Newhall Ranch Specific Plan study area is located in an unincorporated portion of the Santa Clara River Valley in northwestern Los Angeles County (*Figure 1*). It lies roughly one-half mile west of Interstate 5 and largely southwest of the junction of I-5 and State Route 126 (SR-126); with portions of the Specific Plan site located in San Martinez Grande and Chiquito canyons north of SR-126. The City of Santa Clarita is located to the east of the study area and its western border is the Ventura County/Los Angeles County line. Site elevations range from 825 feet above mean sea level (AMSL) in the Santa Clara River bottom at the Ventura County/Los Angeles County line to approximately 3,200 feet AMSL on the ridgeline of the Santa Susana Mountains along the southern boundary (*Figure 2*).

Dudek surveyed for sensitive plant species with varying levels of specificity within areas that are designated for development according to the approved Specific Plan. This area is approximately 6,229 acres and includes that area depicted as the “4,000-acre” and “1,500-acre” on *Figure 2*. For the most part, it includes all areas north of SR-126; however, it excludes the Santa Clara River, agriculture fields on Potrero Mesa, and areas proposed for conservation (most notably the “High Country” area). This study area is dominated by east-, west-, and northwest-trending primary ridges, with north- and south-trending secondary ridges. Site elevations range from approximately 850 feet AMSL in the Santa Clara River floodplain to approximately 2,000 feet AMSL along the ridgeline, which separates Potrero Canyon from Salt Creek Canyon and Grave Canyon. Slope gradients



Newhall Ranch
Regional Map

FIGURE
1



Newhall Ranch
Vicinity Map

FIGURE
2

2002 Sensitive Plant Survey Results

Newhall Ranch Specific Plan Area

range from moderate to very steep in the hillside areas to very gentle within the Santa Clara River floodplain, tributary canyons and associated mesas. Distinctive elevated geographic features include Sawtooth Ridge; Razorback Ridge; Windy Gap; Ayers Rock; and Potrero, Grapevine, and Airport Mesas. Place names referenced in this report are depicted on *Figure 3*.

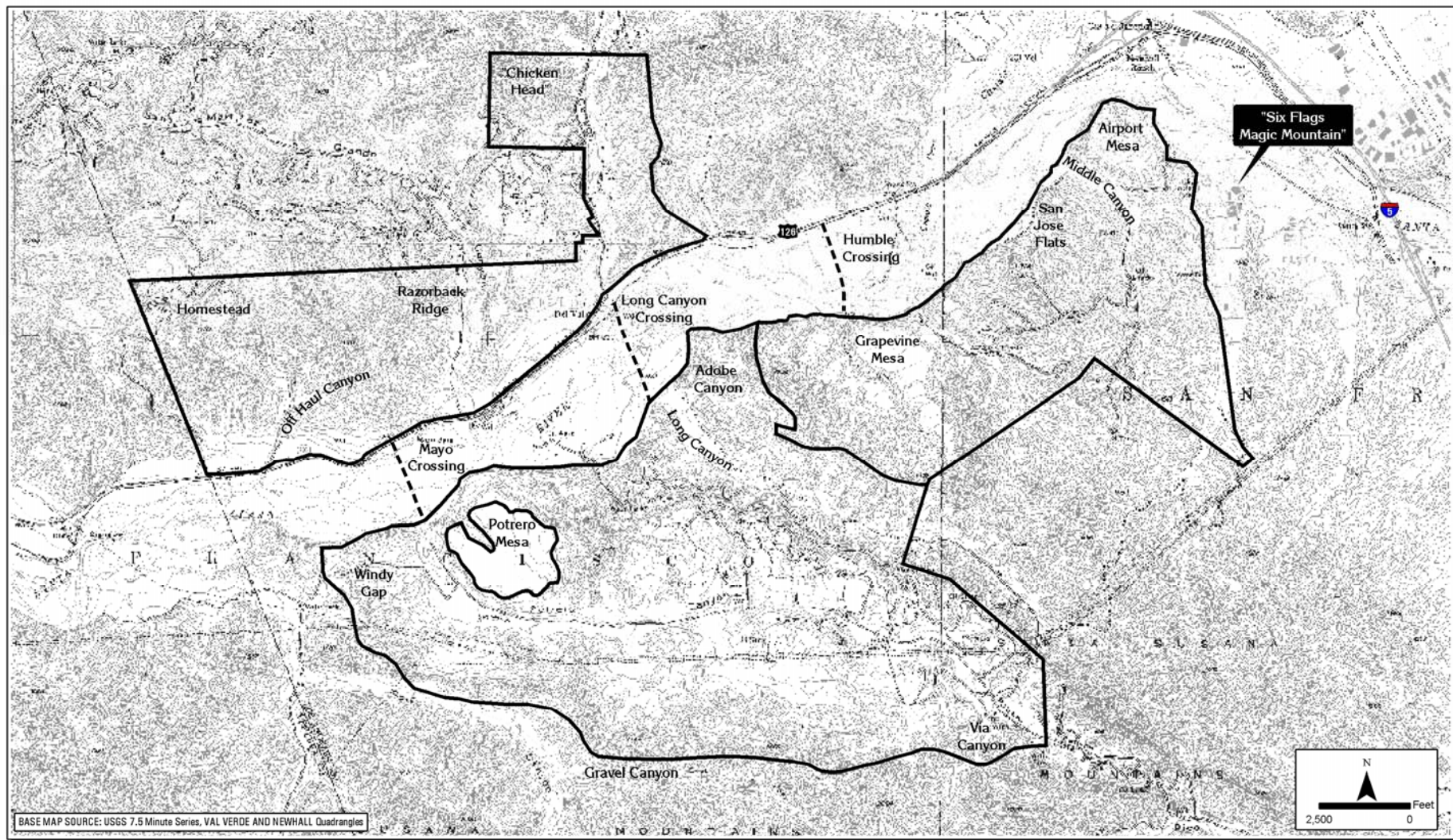
2.1 Plant Communities and Land Covers

Native and naturalized habitats within the study area are representative of those found in this region and provide high-quality examples of those plant communities found in the Santa Susana Mountains and the Santa Clara River ecosystems. Venturan coastal sage scrub, chamise and mixed chaparral, live and valley oak woodlands, and non-native grassland are the major upland plant communities both north and south of the Santa Clara River. Upland habitats dominate the landscape within the study area; however, the Santa Clara River supports a variety of riparian plant communities. These include southern cottonwood-willow riparian forest, southern willow scrub, mulefat scrub, arrow weed scrub, and freshwater marsh and seeps. Intermittent drainages onsite also provide habitat for alluvial and scalebroom scrubs.

The Newhall Land and Farming Company leases out portions of the study area for oil and natural gas production, as well as for cattle grazing and agricultural operations. All such operations are currently ongoing. Grazing activities have had a noticeable effect on much of the natural habitat onsite. Scrub habitats have been displaced by non-native grasslands as a result of grazing. Southern California Edison and Southern California Gas Company have distribution lines within easements onsite as well.

2.2 Geology and Soils

Geologically, the study area is located within the Transverse Ranges 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. They are cut by segments of the Del Valle and Salt Creek faults. Bedrock formations found onsite 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).



Newhall Ranch
Place Names

FIGURE
3

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

Information on soils contained herein is limited to that relevant to occurrences of SFVS and specifically excerpted from the Allen E. Seward letter report (2002) and will be discussed in *Section 4.3.4* below.

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, with varying levels of specificity; all of which are described below.

3.1 Literature Review

General floristic and sensitive botanical resources present or potentially present at Newhall Ranch 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 (CNDDDB, September 2002); *Biological Resource Assessment of the Proposed Santa Susana Mountains/Simi Hills Significant Ecological Area* (PCR, November 2000); CalFlora (University of California, Berkeley, May 2002); U.S. Fish and Wildlife Service (USFWS 1999); California Department of Fish and Game (CDFG 2002); *Inventory of Rare and Endangered 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* (Glen 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 Herbarium (UCR). General information regarding vegetation communities was obtained from Holland (1986) and Sawyer and Keeler-Wolf (1995). Plant species nomenclature follows Hickman (1993).

3.2 Field Reconnaissance Methods

Botanical surveys were conducted by Dudek & Associates, Inc. (DUDEK) staff biologists, with assistance provided by Kim L. Marsden (California State Parks, Southern Service Center, San Diego), Rick Reifner (Glen Lukos Associates, Inc.), and Andrew C. Sanders (University of California, Riverside). All surveys were conducted on-foot and remote areas were accessed using four-wheel drive vehicles. Survey teams typically consisted of

2002 Sensitive Plant Survey Results

Newhall Ranch Specific Plan Area

two people, at least one of whom was a senior-level botanist. Resumes for survey personnel are provided in *Appendix A*.

Botanical surveys of the site were conducted between May and August (and one day in September) of 2002 in accordance with the schedule provided in *Table 1*. A minimum of 1,064 person-hours (133 person-days) was spent conducting botanical surveys within the study area. These surveys were conducted with three separate goals and levels of specificity: (1) From May 24 through June 7, surveys were focused on the location of SFVS polygons in those areas which had been identified earlier in the month by staff from the California Department of Fish & Game (CDFG). These surveys were concentrated in the Grapevine Mesa and Airport Mesa areas (see *Figure 3*) where CDFG had focused their efforts (pers. comm. Crowder & Hee, May 2002). (2) Between June 18 and June 27, surveys were conducted within an approximately 1,500-acre area (see *Figure 2*) and included searches for all federally and state listed, proposed for listing, and candidate species and California Native Plant Society (CNPS) List 1A, 1B, and 2 species. This list of target species is found in *Table 2*; and (3) From July 16 to August 28, surveys were focused on the identification and location of populations of SFVS in the additional 4,000-acre area, which included areas north of SR-126 and south of SR-126 (see *Figure 2*). Other sensitive plants were recorded incidentally when observed.

TABLE 1
Survey Schedule & Personnel
Newhall Ranch Specific Plan Area

DATE	BIOLOGISTS	PURPOSE	GENERAL GEOGRAPHIC AREA
5-24-02	Mark Elvin, Andrew Thomson	Coordination with CDFG and Newhall regarding SFVS	Grapevine and Airport mesas
5-29-02	Mark Elvin, Julie Vanderwier, Tricia Wotipka, Andrew Thomson	Location of SFVS previously identified by CDFG	Grapevine Mesa area
5-30-02	Mark Elvin, Julie Vanderwier, Tricia Wotipka, Andrew Thomson	Location of SFVS previously identified by CDFG	Grapevine Mesa area
5-31-02	Mark Elvin, Julie Vanderwier, Tricia Wotipka, Andrew Thomson	Location of SFVS previously identified by CDFG	Grapevine Mesa area
6-5-02	Mark Elvin, Julie Vanderwier, Megan Enright, Scott Boczkiewicz	Location of SFVS previously identified by CDFG	Airport Mesa area
6-6-02	Mark Elvin, Julie Vanderwier, Megan Enright, Scott Boczkiewicz	Location of SFVS previously identified by CDFG	Airport Mesas area
6-7-02	Mark Elvin, Julie Vanderwier, Megan Enright, Scott Boczkiewicz	Location of SFVS previously identified by CDFG	Airport Mesa area
6-18-02	Mark Elvin, Julie Vanderwier, Andrew Sanders, Kim Marsden	Focused surveys for sensitive plant species -- 1,500-acre study area	Canyon west of Grapevine Mesa; canyons and mesas east of Sawtooth Ridge

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE 1
Survey Schedule & Personnel
Newhall Ranch Specific Plan Area

DATE	BIOLOGISTS	PURPOSE	GENERAL GEOGRAPHIC AREA
6-19-02	Mark Elvin, Julie Vanderwier, Andrew Sanders, Kim Marsden	Focused surveys for sensitive plant species -- 1,500-acre study area	Slopes associated with Grapevine Mesa and smaller mesas and canyons to the west
6-20-02	Mark Elvin, Julie Vanderwier, Andrew Sanders, Kim Marsden	Focused surveys for sensitive plant species - 1,500-acre study area	Lion Canyon; canyon east of Grapevine Mesa; south side of Santa Clara River west of Humble Crossing
6-25-02	Mark Elvin, Julie Vanderwier, Megan Enright	Focused surveys for sensitive plant species - 1,500-acre study area	East of Airport Mesa; canyon east of Sawtooth Ridge, Castaic Spring
6-26-02	Mark Elvin, Julie Vanderwier, Megan Enright	Focused surveys for sensitive plant species -- 1,500-acre study area	Middle Canyon; San Jose Flats; canyons south and east of Grapevine Canyon
6-27-02	Mark Elvin, Julie Vanderwier, Megan Enright	Focused surveys for sensitive plant species - 1,500-acre study area	Long Canyon; canyon east of Grapevine Mesa
7-16-02	Mark Elvin, Julie Vanderwier	Focused surveys for SFVS -- 4,000-acre study area	Long Canyon; habitat overview
7-17-02	Mark Elvin, Julie Vanderwier	Focused surveys for SFVS -- 4,000-acre study area	Potrero and Long Canyons
7-18-02	Mark Elvin, Julie Vanderwier	Focused surveys for SFVS -- 4,000-acre study area	Habitat and areas surrounding Potrero Mesa; ridgeline between Salt Creek Canyon and Potrero Canyon
7-26-02	Julie Vanderwier, Kim Marsden, Vipul Joshi	Focused surveys for SFVS -- 4,000-acre study area	Adobe Canyon and east side of Long Canyon
7-27-02	Julie Vanderwier, Kim Marsden, Vipul Joshi	Focused surveys for SFVS -- 4,000-acre study area	North side of lower Potrero Canyon
7-30-02	Mark Elvin, Andrew Sanders, Cathleen Weigand	Focused surveys for SFVS -- 4,000-acre study area	North side of upper Potrero Canyon
7-31-02	Mark Elvin, Andrew Sanders, Cathleen Weigand	Focused surveys for SFVS -- 4,000-acre study area	North side of Middle Potrero Canyon
8-1-02	Mark Elvin, Andrew Sanders, Cathleen Weigand	Focused surveys for SFVS -- 4,000-acre study area	North and south sides of middle Potrero Canyon; Adobe Canyon
8-6-02	Mark Elvin, Julie Vanderwier, Michelle Balk, Megan Enright, Andrew Sanders, Cathleen Weigand	Focused surveys for SFVS -- 4,000-acre study area	Chiquito Canyon and upper eastern San Martinez Grande Canyon; Long Canyon
8-7-02	Mark Elvin, Julie Vanderwier, Michelle Balk, Megan Enright, Andrew Sanders, Cathleen Weigand	Focused surveys for SFVS -- 4,000-acre study area	South side of Potrero Canyon; Long Canyon; between San Martinez Grande and Chiquito Canyons
8-8-02	Mark Elvin, Julie Vanderwier, Michelle Balk, Megan Enright, Andrew Sanders, Cathleen Weigand	Focused surveys for SFVS -- 4,000-acre study area	East side of San Martinez Grande Canon, south side of upper Potrero Canyon

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE 1
Survey Schedule & Personnel
Newhall Ranch Specific Plan Area

DATE	BIOLOGISTS	PURPOSE	GENERAL GEOGRAPHIC AREA
8-12-02	Mark Elvin, Julie Vanderwier, Scott Boczkiewicz, Tricia Wotipka, Michelle Balk, Cathleen Weigand	Focused surveys for SFVS -- 4,000-acre study area	South side of upper Potrero Canyon; Via Canyon; ridgeline between Salt Creek and Potrero Canyons
8-13-02	Mark Elvin, Scott Boczkiewicz, Tricia Wotipka, Michelle Balk, Cathleen Weigand	Focused surveys for SFVS -- 4,000-acre study area	South side of Lower Potrero Canyon; Peppertree Canyon
8-14-02	Mark Elvin, Scott Boczkiewicz, Tricia Wotipka, Michelle Balk, Cathleen Weigand	Focused surveys for SFVS -- 4,000-acre study area	Upper and lower Potrero Canyon
8-20-02	Mark Elvin, Julie Vanderwier, Tricia Wotipka, Cathleen Weigand	Focused surveys for SFVS -- 4,000-acre study area	East side of Chiquito Canyon; drainage on east side of road
8-21-02	Mark Elvin, Julie Vanderwier, Tricia Wotipka, Cathleen Weigand	Focused surveys for SFVS -- 4,000-acre study area	Upper west side San Martinez Grande Canyon; east side Chiquito Canyon
8-22-02	Mark Elvin, Julie Vanderwier, Tricia Wotipka	Focused surveys for SFVS -- 4,000-acre study area	West side of San Martinez Grande Canyon; Homestead Canyon
8-26-02	Mark Elvin, Julie Vanderwier, Andrew Sanders, Michelle Balk, Cathleen Weigand, Paul Lemons	Focused surveys for SFVS -- 4,000-acre study area	East side of San Martinez Grande Canyon; Homestead Canyon
8-27-02	Mark Elvin, Julie Vanderwier, Andrew Sanders, Michelle Balk, Cathleen Weigand, Paul Lemons	Focused surveys for SFVS -- 4,000-acre study area	East side of San Martinez Grande Canyon; Homestead and Off Haul Canyons
8-28-02	Mark Elvin, Julie Vanderwier, Andrew Sanders, Michelle Balk, Cathleen Weigand, Paul Lemons	Focused surveys for SFVS -- 4,000-acre study area	Ridgeline area, north side of Potrero Canyon; Razorback Ridge; the "chicken head"
9-5-02	Mark Elvin, Tricia Wotipka	Mapping surveys for SFVS -- 1,500-acre site	Grapevine and Airport Mesas

2002 Sensitive Plant Survey Results

Newhall Ranch Specific Plan Area

TABLE 2
Sensitive Plant Species Subject of Field Surveys

Scientific Name	Common Name
<i>Arenaria paludicola</i>	marsh sandwort
<i>Astragalus brauntonii</i>	Braunton's milk-vetch
<i>Atriplex coulteri</i>	Coulter's saltbush
<i>Atriplex serenana</i> var. <i>dauidsonii</i>	Davidson's saltscale
<i>Baccharis malibuensis</i>	Malibu baccharis
<i>Berberis nevini</i>	Nevin's barberry
<i>Brodiaea filifolia</i>	thread-leaved brodiaea
<i>Calochortus clavatus</i> var. <i>clavatus</i>	club-haired mariposa lily
<i>Calochortus clavatus</i> var. <i>gracilis</i>	slender mariposa lily
<i>Calochortus plummerae</i>	Plummer's mariposa lily
<i>Calochortus weedii</i> var. <i>vestus</i>	late-flowered mariposa lily
<i>Calystegia peirsonii</i>	Peirson's morning-glory
<i>Calystegia sepium</i> ssp. <i>binghamiae</i>	Santa Barbara morning-glory
<i>Centromadia</i> [= <i>hemizonia</i>] <i>parryi</i> ssp. <i>australis</i>	southern tarplant
<i>Cercocarpus betuloides</i> var. <i>blancheae</i>	island mountain-mahogany
<i>Chorizanthe parryi</i> var. <i>fernandina</i>	San Fernando Valley spineflower
<i>Deinandra</i> [= <i>Hemizonia</i>] <i>minthornii</i>	Santa Susana tarplant
<i>Dodecahema leptoceras</i>	slender-horned spineflower
<i>Dudleya blochmaniae</i> var. <i>blochmaniae</i>	Blochman's dudleya
<i>Dudleya cymosa</i> ssp. <i>agouensis</i>	Santa Monica Mountains dudleya
<i>Dudleya cymosa</i> ssp. <i>marcescens</i>	marcescent dudleya
<i>Dudleya cymosa</i> ssp. <i>ovatifolia</i>	Santa Monica Mountains dudleya
<i>Dudleya multicaulis</i>	Many-stemmed dudleya
<i>Dudleya parva</i>	Conejo dudleya
<i>Erodium macrophyllum</i>	round-leaved filaree
<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	Los Angeles sunflower
<i>Horkelia cuneata</i> var. <i>puberula</i>	mesa horkelia
<i>Juglans californica</i>	southern California black walnut
<i>Malacothamnus davidsonii</i>	Davidson's bush mallow
<i>Nama stenocarpum</i>	mud nama
<i>Nolina cismontana</i>	chaparral nolina
<i>Opuntia basilaris</i> var. <i>brachyclada</i>	short-joint beavertail
<i>Oxytheca parishii</i> var. <i>abramsii</i>	Abram's oxytheca
<i>Pentachaeta lyonii</i>	Lyon's pentachaeta
<i>Rorippa gambellii</i>	Gambel's water cress
<i>Senecio aphanactis</i>	rayless ragwort
<i>Sidalcea neomexicana</i>	salt spring checkerbloom
<i>Thelypteris puberula</i> var. <i>sonorensis</i>	Sonoran maiden fern

2002 Sensitive Plant Survey Results

Newhall Ranch Specific Plan Area

All plant species encountered during the field surveys were identified and recorded for inclusion in *Appendix B*. The majority of these were vouchered and will be repositied at the herbarium at the University of California, Riverside. 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.*, Abrams 1923, Dale 1986, or Roberts 1998).

Surveys for those additional sensitive plant species within the 1,500-acre study area (*Table 2*) were conducted based upon the habitat preference, habit, and phenology for each species, and using professional experience and information gathered from those sources discussed in *Section 2.1* above. Surveys for SFVS in the 1,500-acre and 4,000-acre study areas were focused in open areas of Venturan coastal sage scrub (purple sage series) and non-native grassland (California annual grassland series) on ridgelines, slopes, and escarpments with a southern, southwestern, or southeastern exposure based on information gathered during the documentation of SFVS populations flagged by CDFG; information contained in the report prepared by Glen Lukos Associates, Inc. (2002); the status report prepared for the Fish and Game Commission (CDFG 2000); and conversations with Rick Reifner, the botanist who re-discovered SFVS at Ahmanson Ranch in 1999. Chaparral and riparian communities, including the Santa Clara River floodplain, were not surveyed. Information regarding co-occurring plant species, general soils observations, and population estimates (based on counts of small areas and extrapolating an estimate for the polygon as a whole) were noted at those locations where SFVS was found, along with whether the plants were from the current year or before (pre-2002).

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 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 California Native Plant Society's *Inventory of Rare and Endangered Plants of California* (CNPS 2001; *Inventory*), and those plant species which are found on the list of "Threatened and Endangered Species and Species of Concern, Los Angeles County" (<http://www.losangelesalmanac.com/topics/Environment/ev14b.htm>). CNPS List 3 or List 4 species were included in discussions only when encountered during the field surveys.

2002 Sensitive Plant Survey Results

Newhall Ranch Specific Plan Area

3.2.2 Survey Limitations

Surveys were conducted in late spring and summer of 2002, which was the driest year in recorded history for Los Angeles County (It began keeping records in 1877). Less than 4.5" of rain fell on the County, which is less than a third of the "normal" amount (Los Angeles Times, June 30, 2002; Western Regional Climate Center 2002; www.wrcc.edu). Some surveys were conducted late in the season (*e.g.*, surveys for the 4,000-acre site ran until September). These factors affected the detection of annual plants and geophytic perennials more than most plants because few annuals or geophytes were observed growing this year (compared to the many stalks and/or dried remains of plants from the previous year). A number of the sensitive plants on our focused survey list were either annuals or geophytes and they either had a poor rate of detection or were not observed.

The few annual and geophyte species that were observed during the field work at Newhall Ranch represent a very small fraction of the density and/or diversity of these species which are known or are likely to occur onsite (Vanderwier 1995; RECON and Impact Sciences 1996). This may also be true of other perennial plants. Spring surveys during a year with a "normal" amount of rainfall will provide better conditions to determine the diversity of species (including sensitive plants) onsite and map their distributions more accurately (when necessary).

Additionally, the entire study area was not surveyed at an equal level of specificity. Within the 1,500-acre study area, surveys were directed towards the detection of all of the species identified in *Table 2*; however, within the remaining acreage, focused surveys were conducted for current-year SFVS plants. Other sensitive species were recorded when incidentally observed.

The focused surveys for SFVS concentrated on locating additional populations within the study area in order to determine the taxon's gross distribution within the Newhall Ranch Specific Plan boundaries. As SFVS populations were identified in an area, the occurrence/polygon was mapped using a GPS and then efforts were redirected to new areas. The predominant observations of SFVS on south-facing slopes may be an artifact of the search parameters used in this survey. We concentrated our efforts in areas that we felt had the highest likelihood to have SFVS. Focused spring surveys for SFVS (and other sensitive species) during a year with average rainfall will be needed to provide the detailed mapping necessary to determine impacts for project-specific plans as part of the environmental review for each implementing map.

2002 Sensitive Plant Survey Results

Newhall Ranch Specific Plan Area

4.0 RESULTS OF SURVEYS

4.1 Botany - Floral Diversity

The study area is situated at the nexus of the Transverse Ranges, Coast Ranges, Sierra Nevada, 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 average rainfall for the area.

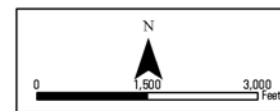
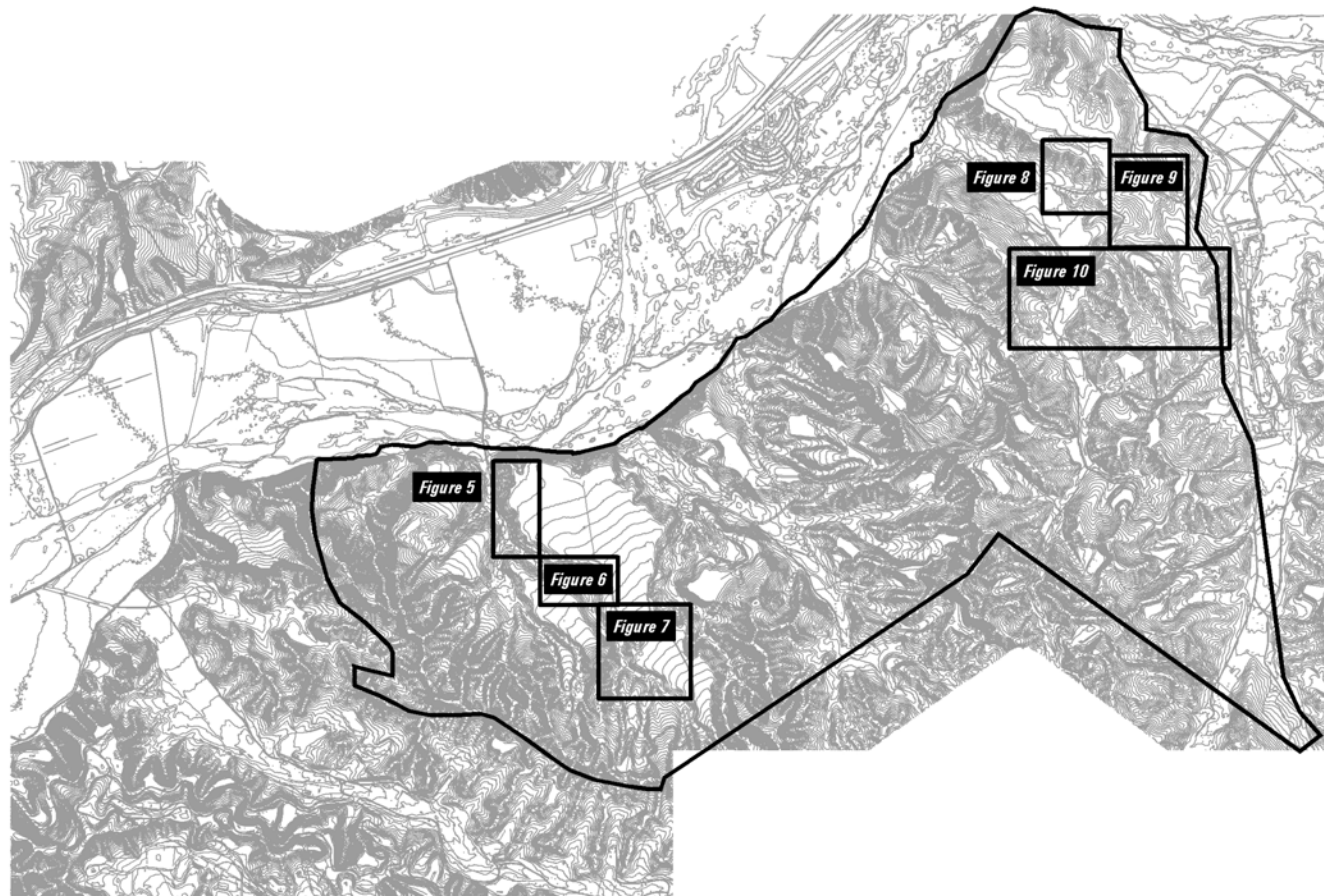
At least 431 plant species were identified within the Newhall Ranch study area. Of these, 291 species (or 68 percent) are native to the region and 140 species (or 32 percent) are non-native. It should be noted that agricultural or clearly disturbed areas were not thoroughly searched. The list of plant species identified within the study area in 2002 is provided as *Appendix B*.

4.2 Sensitive Plant Species

Eight sensitive plant species were identified within the study area. These and other sensitive species that have the potential to occur within the Newhall Ranch project area, based on the presence of suitable habitat and soils, are listed in *Table 3*. 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, those plant species found on Lists 1A, 1B, or 2 of the California Native Plant Society's *Inventory of Rare and Endangered Plants of California* (CNPS 2001). Those species that were observed during the 2002 field surveys are discussed in greater detail. A number of species found on CNPS Lists 3 or 4 also have the potential to occur onsite (e.g., *Calochortus catalinae*, *Acanthomintha obovata* ssp. *cordata*, *Mucronea californica*); however, due to their relatively low sensitivity level, they are only discussed in the following sections if observed onsite.

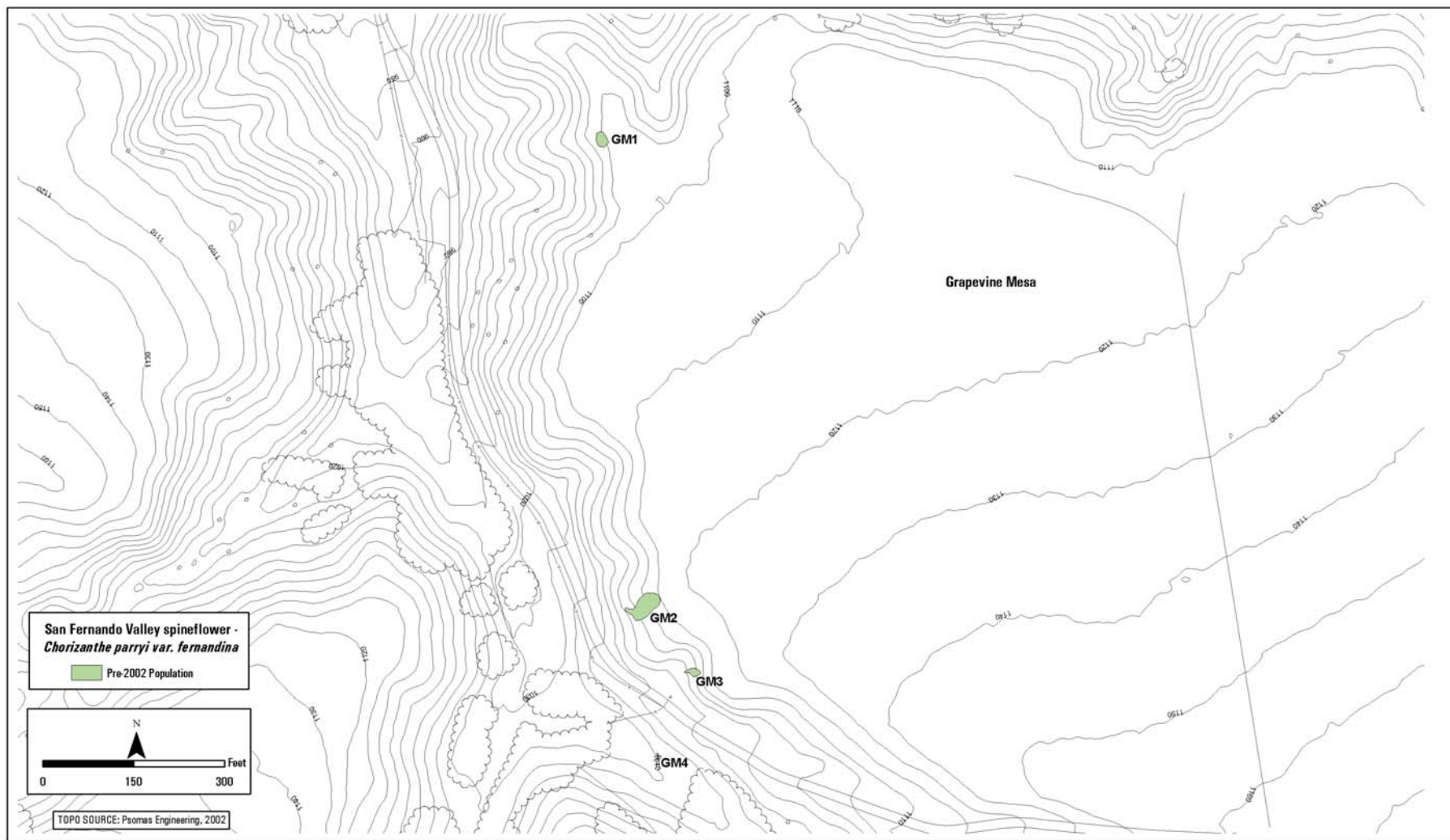
Figures 4 through 11 depict the locations of SFVS on Grapevine Mesa, Airport Mesa, and in San Martinez Grande Canyon, respectively. *Figures 12 through 15* depict other sensitive species identified in the 1,500-acre study area while *Figures 16 through 21* depict those sensitive species found in the 4,000-acre study area.

While surveying in the field and mapping SFVS, DUDEK used a 4-meter (13.1 feet) rule to separate polygons. We chose this distance based on the topography, vegetation, detectability of the plants, general accuracy of the GPS that we used, and time constraints. This distance does not have any known relevance to SFVS biology (i.e.,



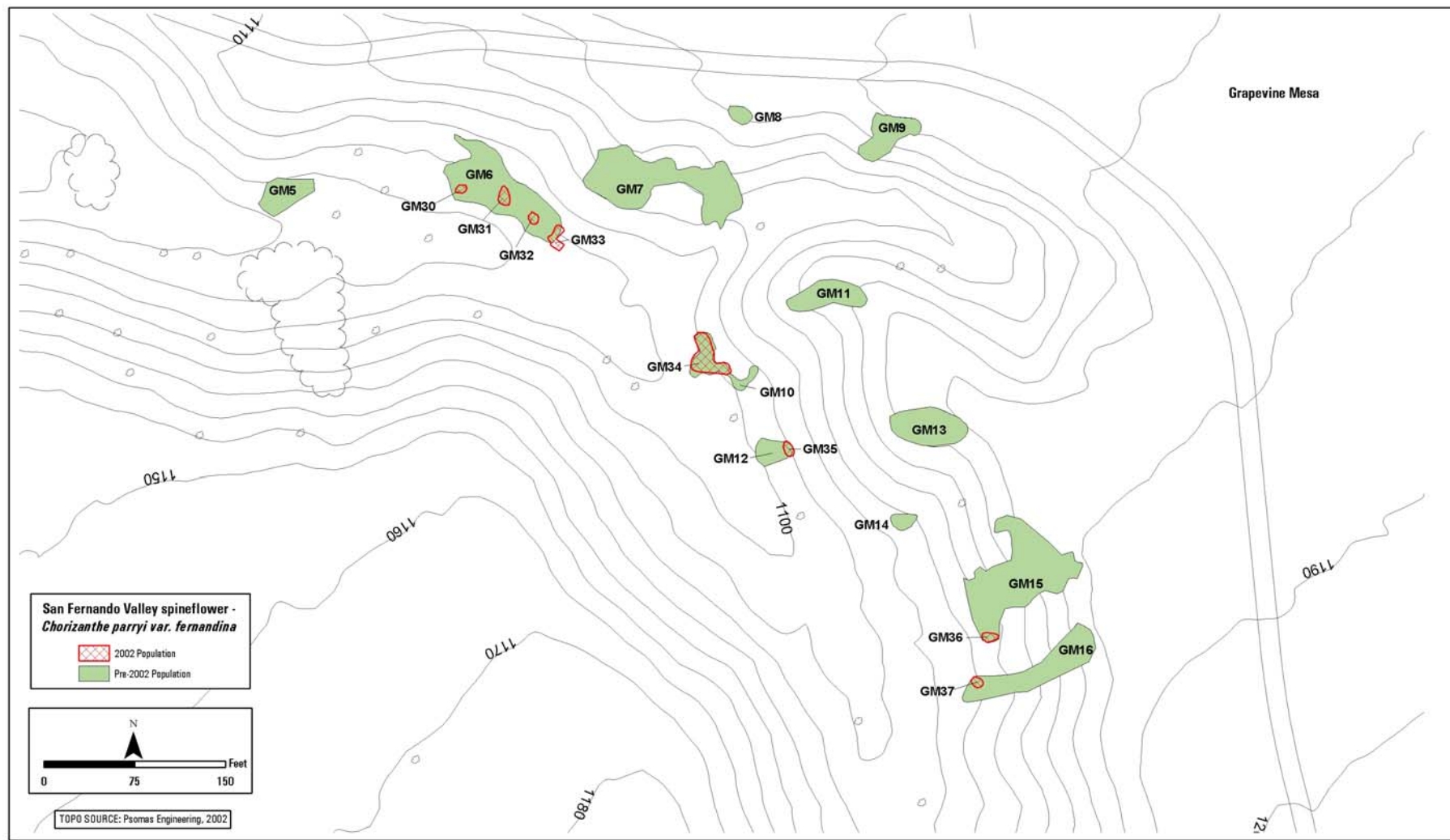
Newhall Ranch
San Fernando Valley spineflower Index - 1500-acre Survey Area

FIGURE
4



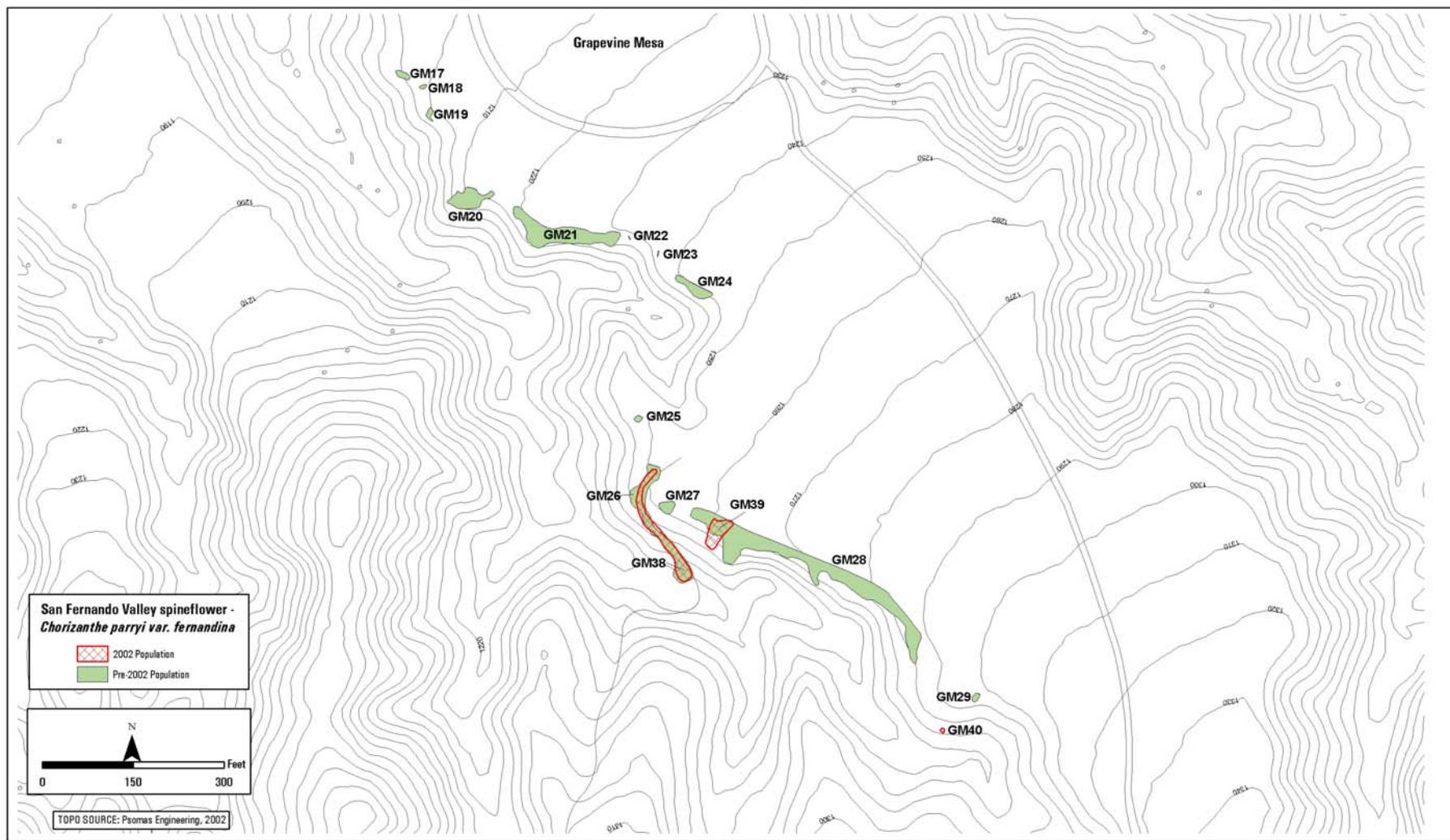
Newhall Ranch
San Fernando Valley spineflower - Grapevine Mesa Area

FIGURE
5

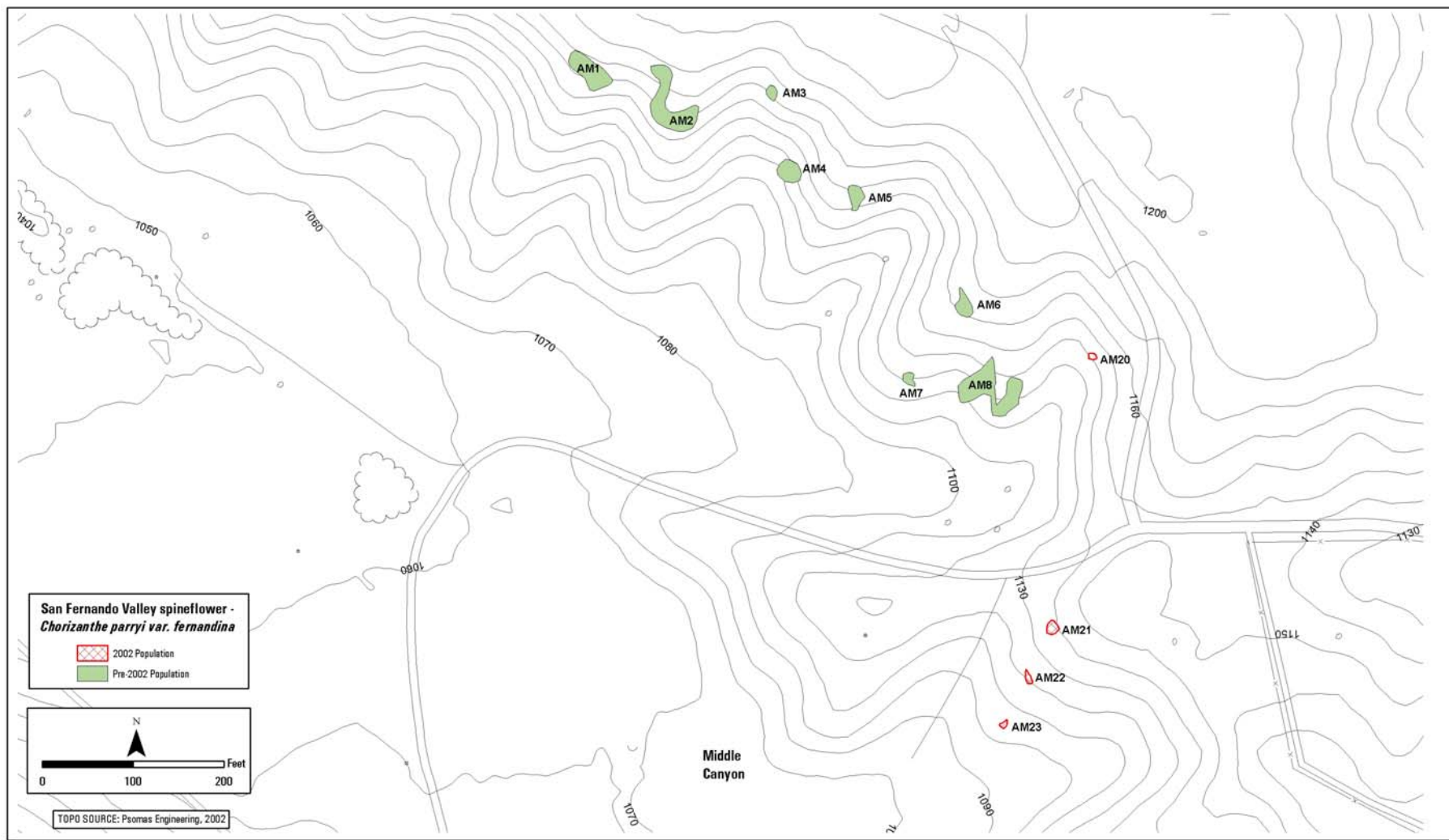


Newhall Ranch
San Fernando Valley spineflower - Grapevine Mesa Area

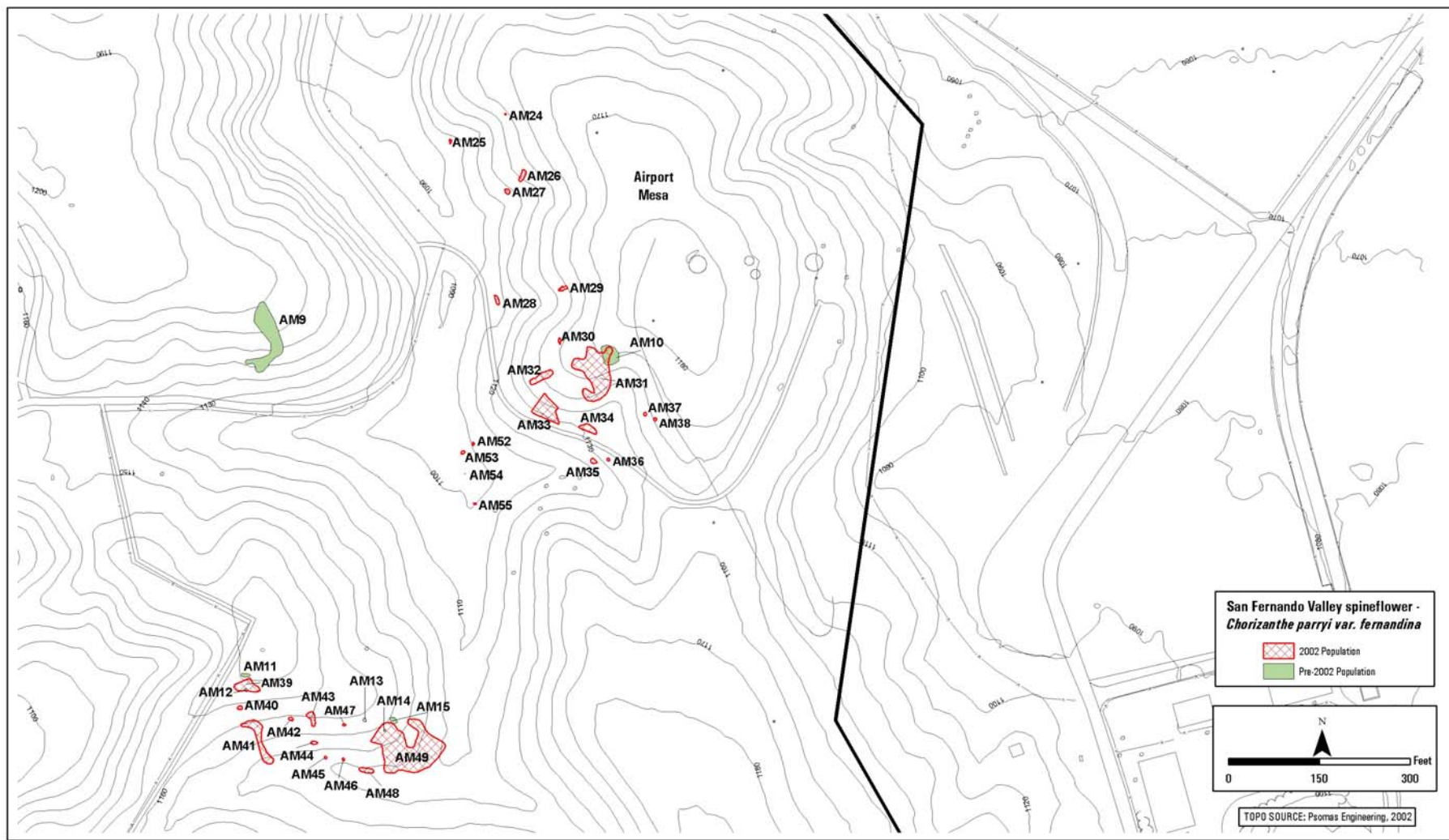
FIGURE
6



Newhall Ranch
 San Fernando Valley spineflower - Grapevine Mesa Area

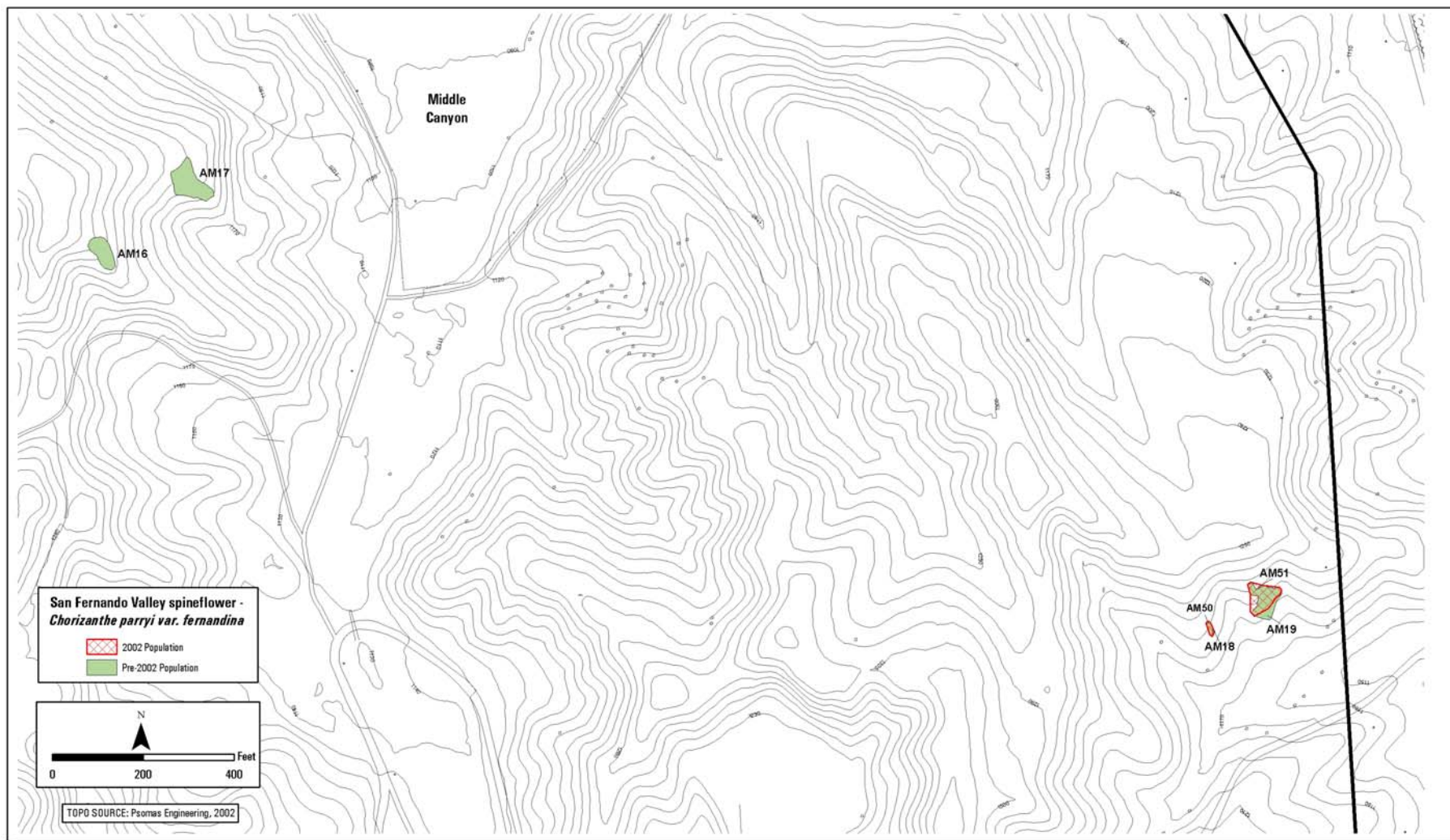


Newhall Ranch
San Fernando Valley spineflower - Airport Mesa Area



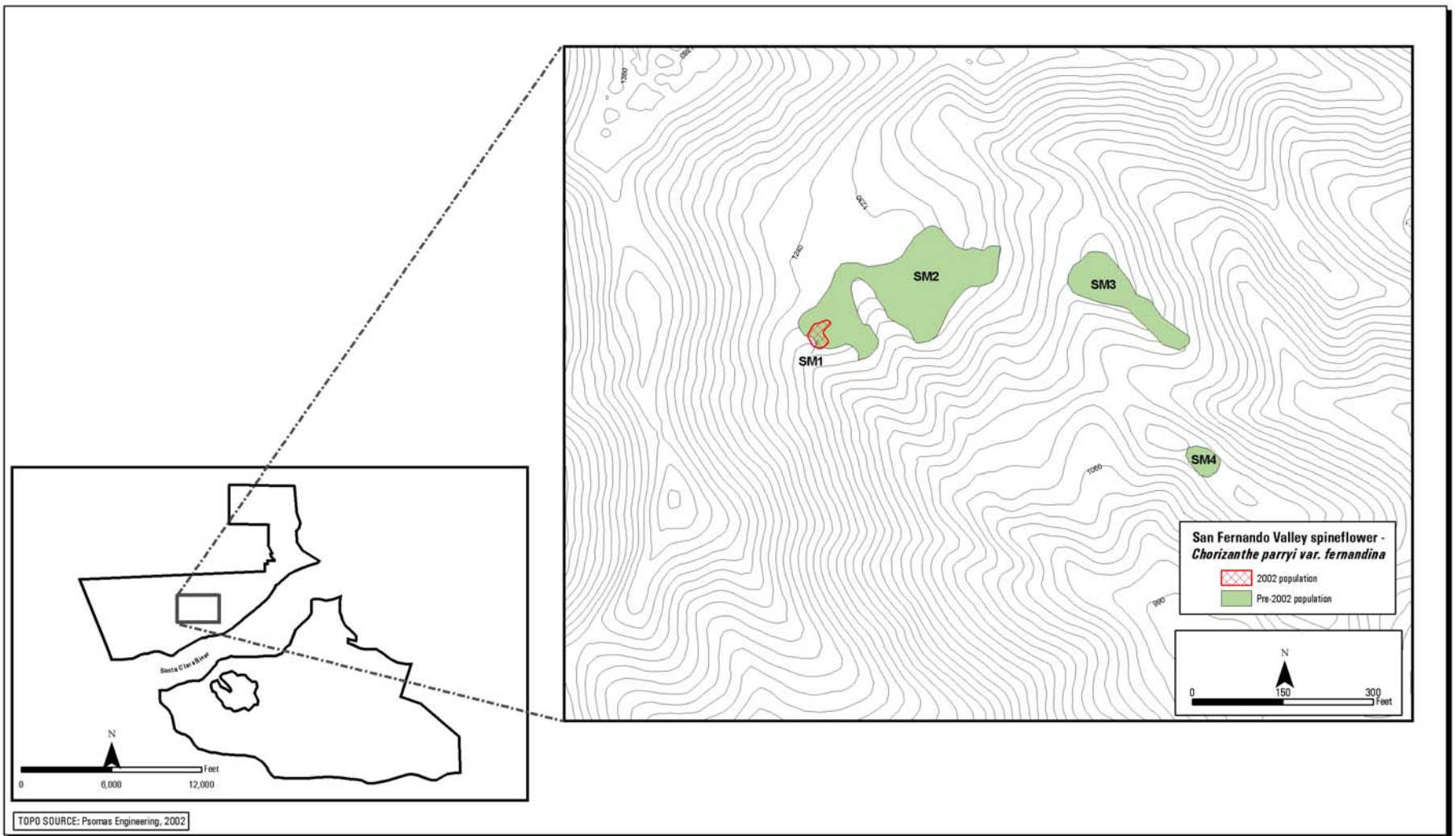
Newhall Ranch
San Fernando Valley spineflower - Airport Mesa Area

FIGURE
9



Newhall Ranch
San Fernando Valley spineflower - Airport Mesa Area

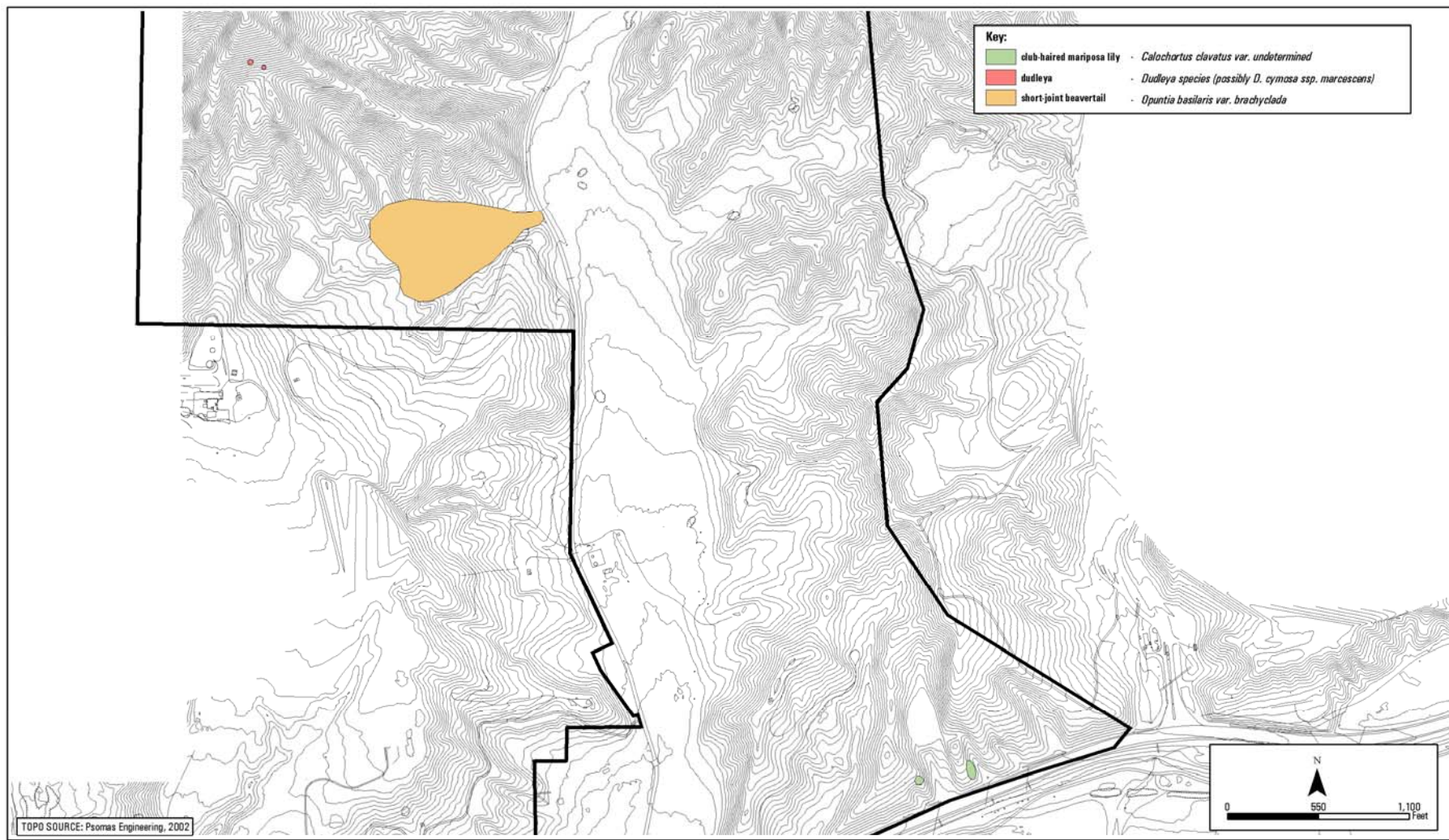
FIGURE
10



San Fernando Valley spineflower - San Martinez Grande Canyon Area

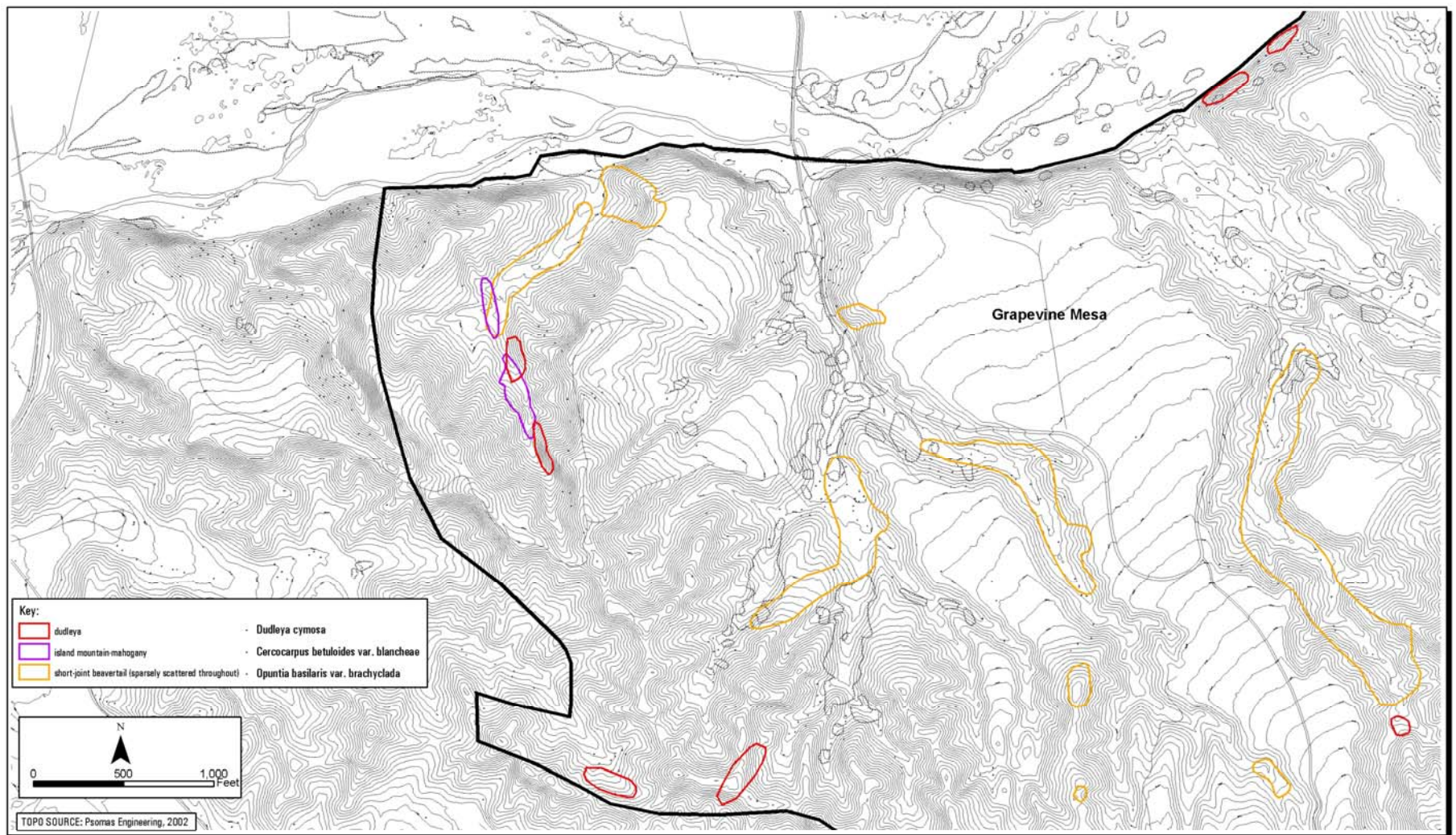
Newhall Ranch

FIGURE
11

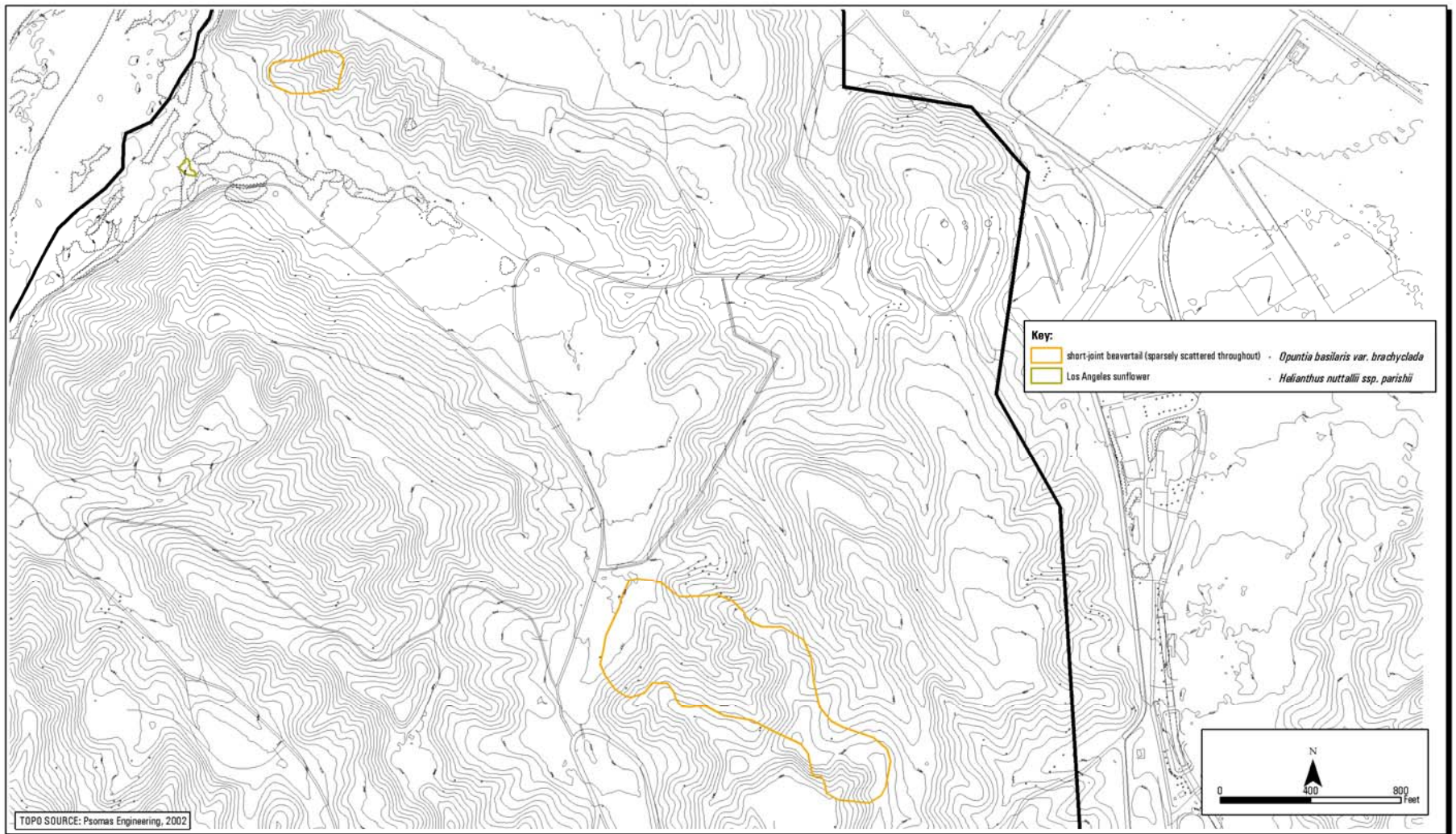


Newhall Ranch
2002 Sensitive Plant Species Results - 4000-acre Survey Area

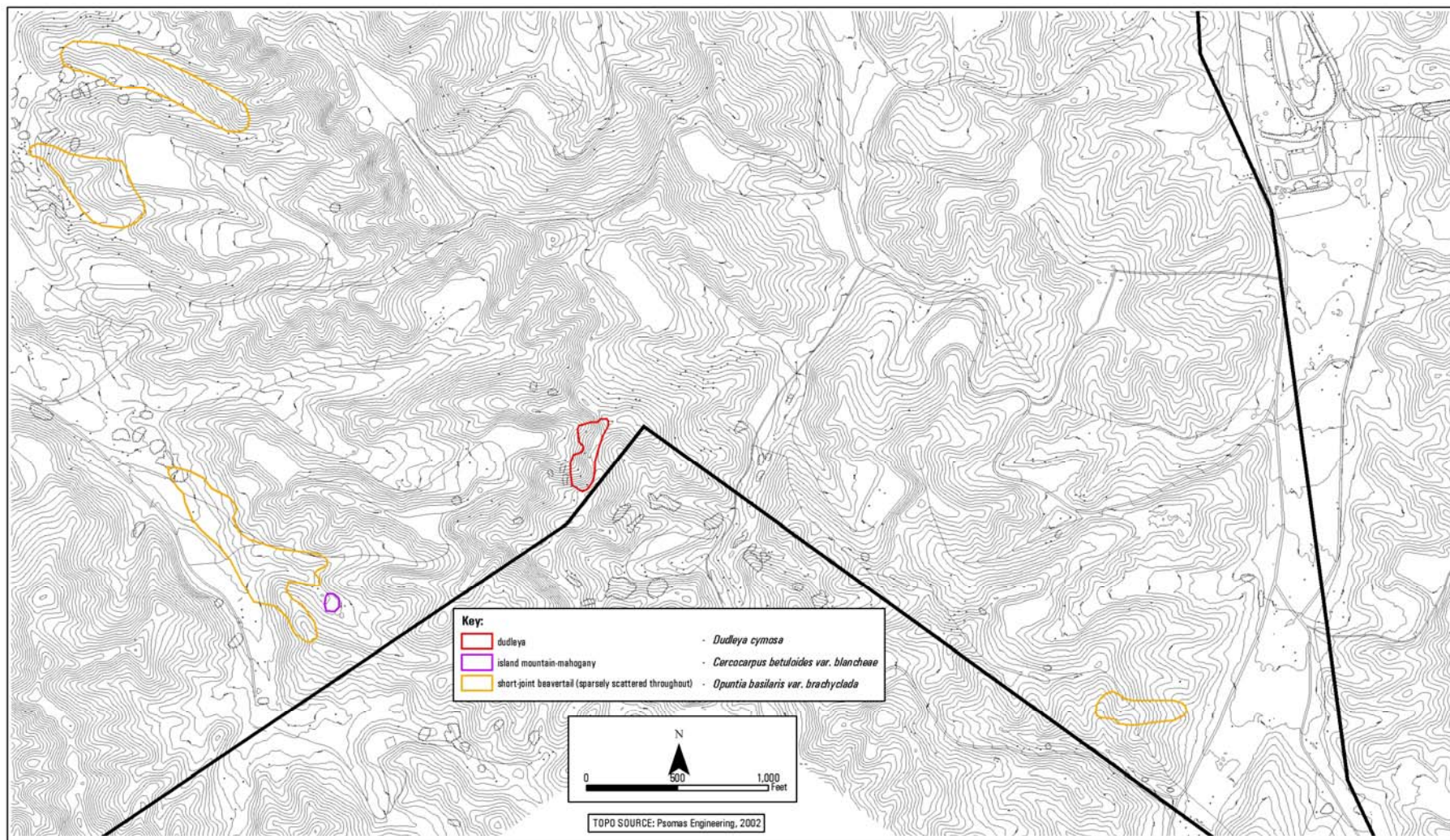
FIGURE
12



Newhall Ranch
2002 Sensitive Plant Species Results - 1500-acre Survey Area

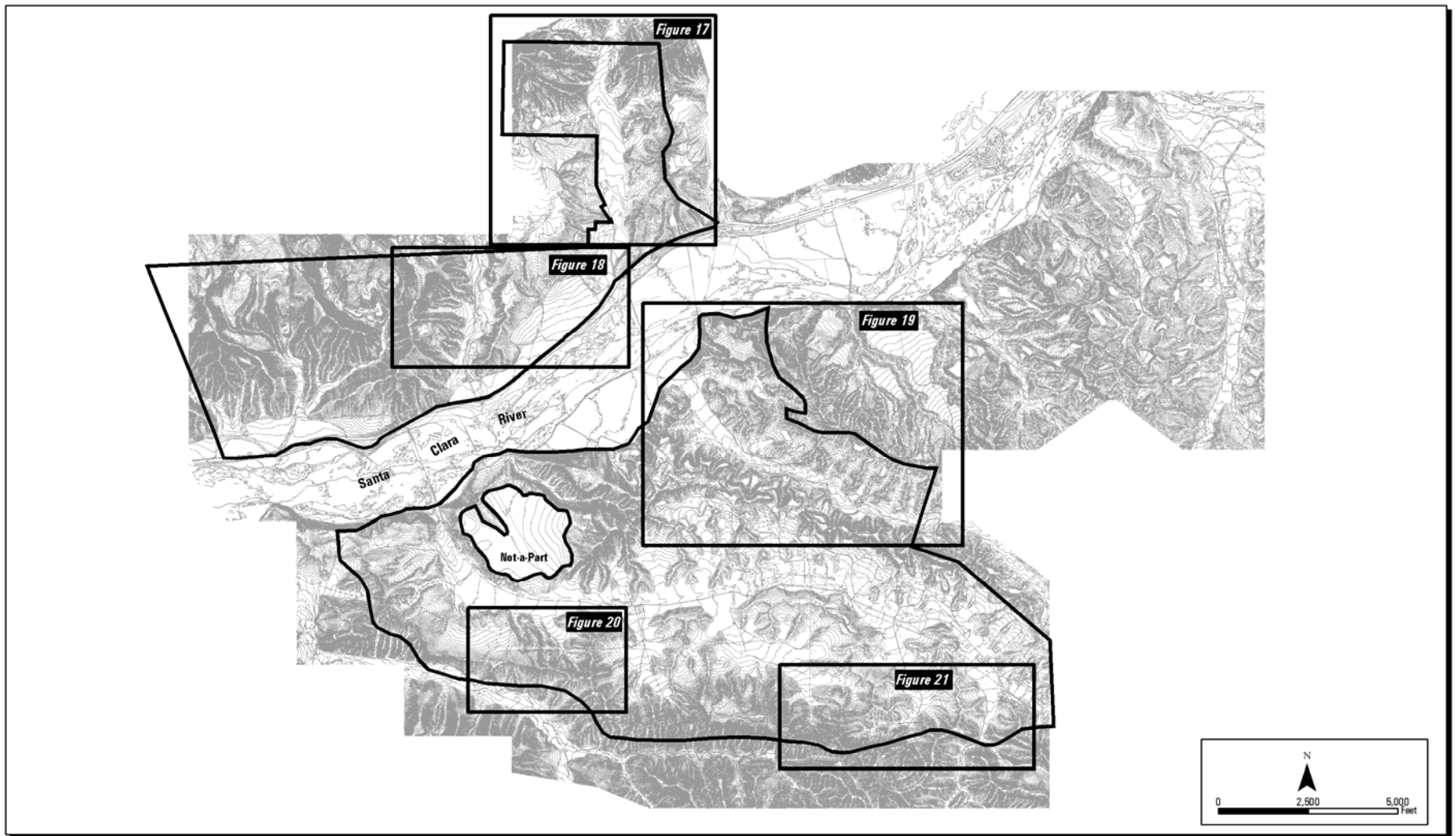


Newhall Ranch
2002 Sensitive Plant Species Results - 1500-acre Survey Area

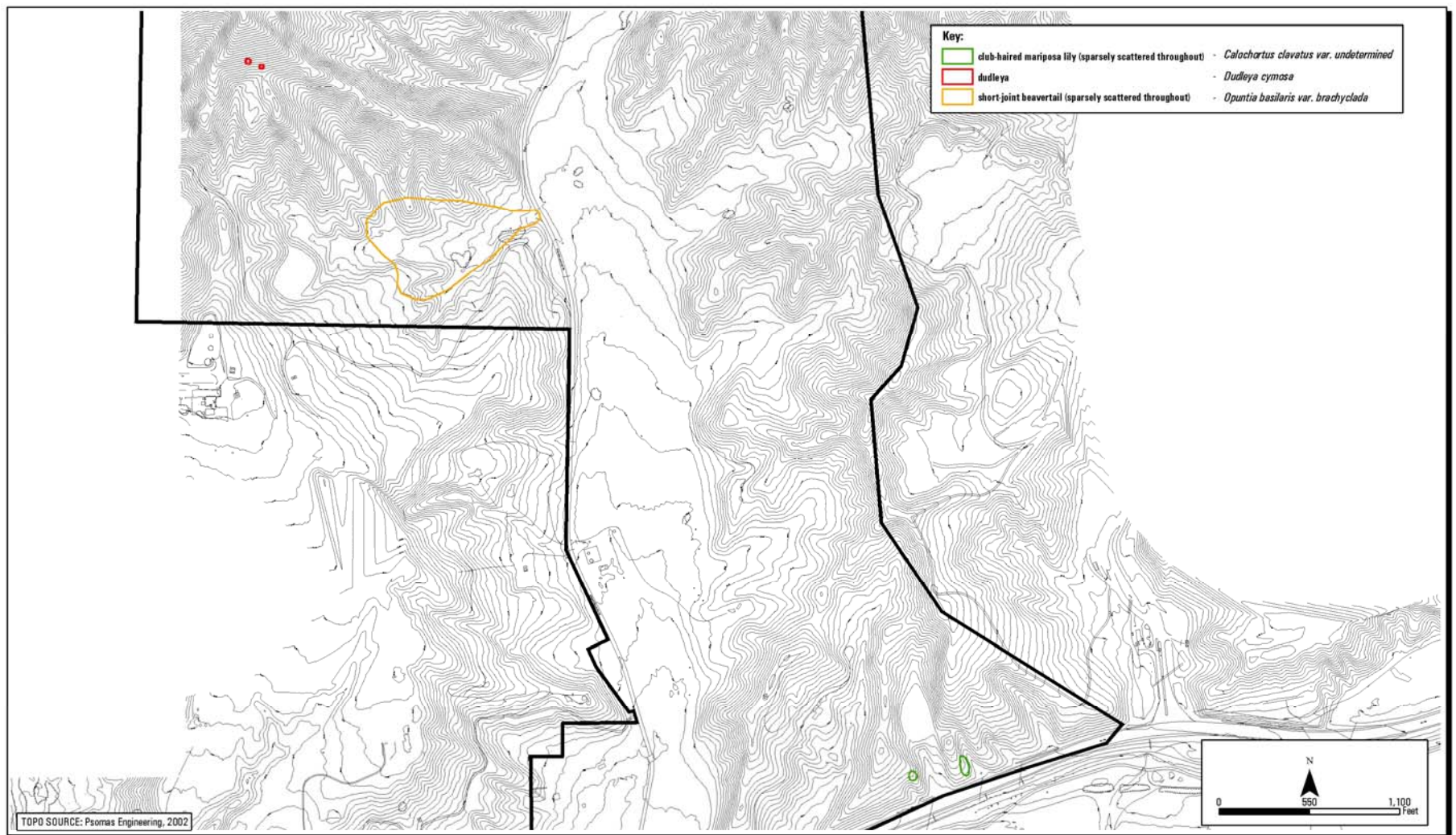


Newhall Ranch
 2002 Sensitive Plant Species Results - 1500-acre Survey Area

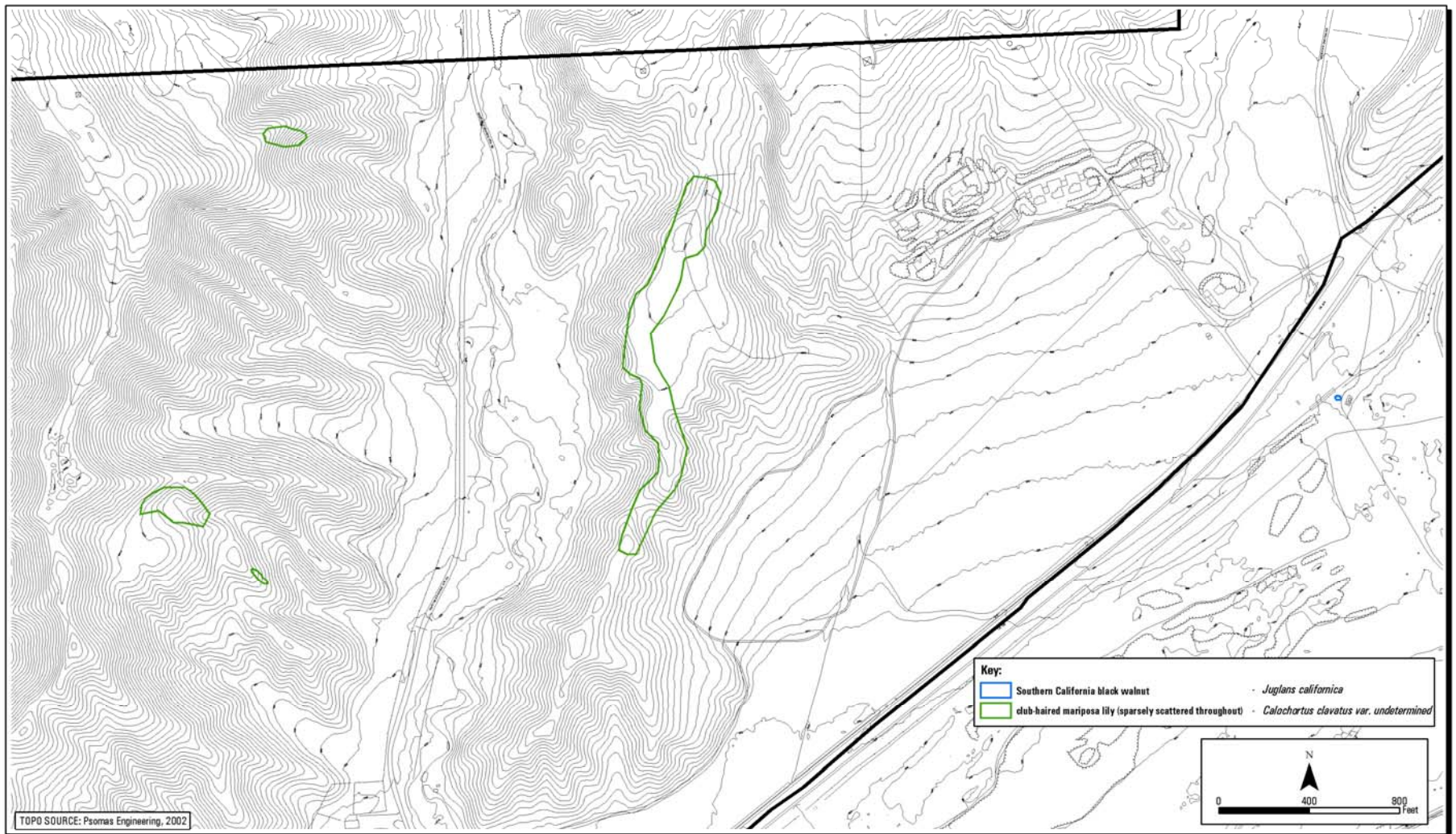
FIGURE
 15



Newhall Ranch
2002 Sensitive Plant Species Survey Index - 4000-acre Survey Area

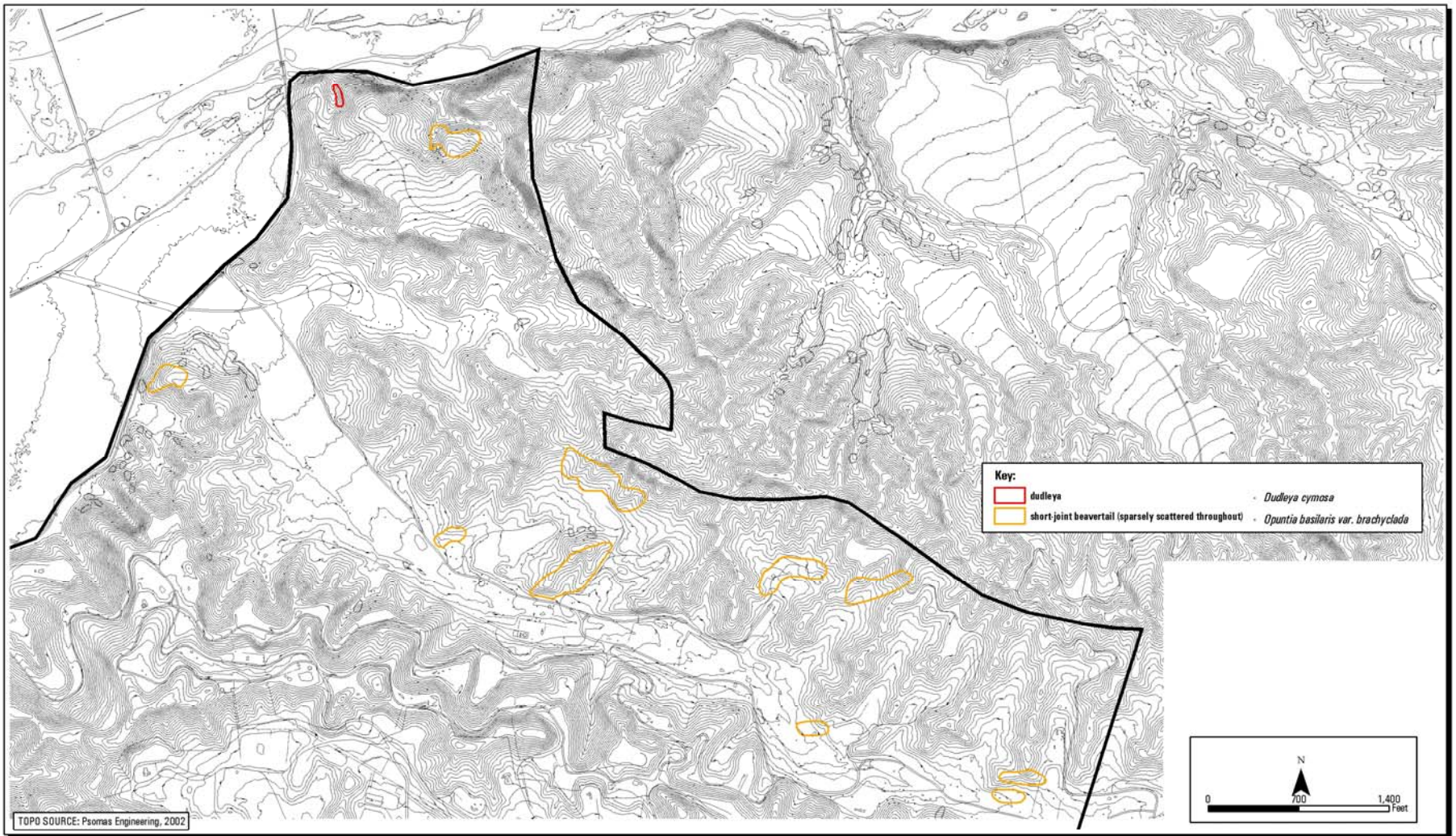


Newhall Ranch
2002 Sensitive Plant Species Results - 4000-acre Survey Area

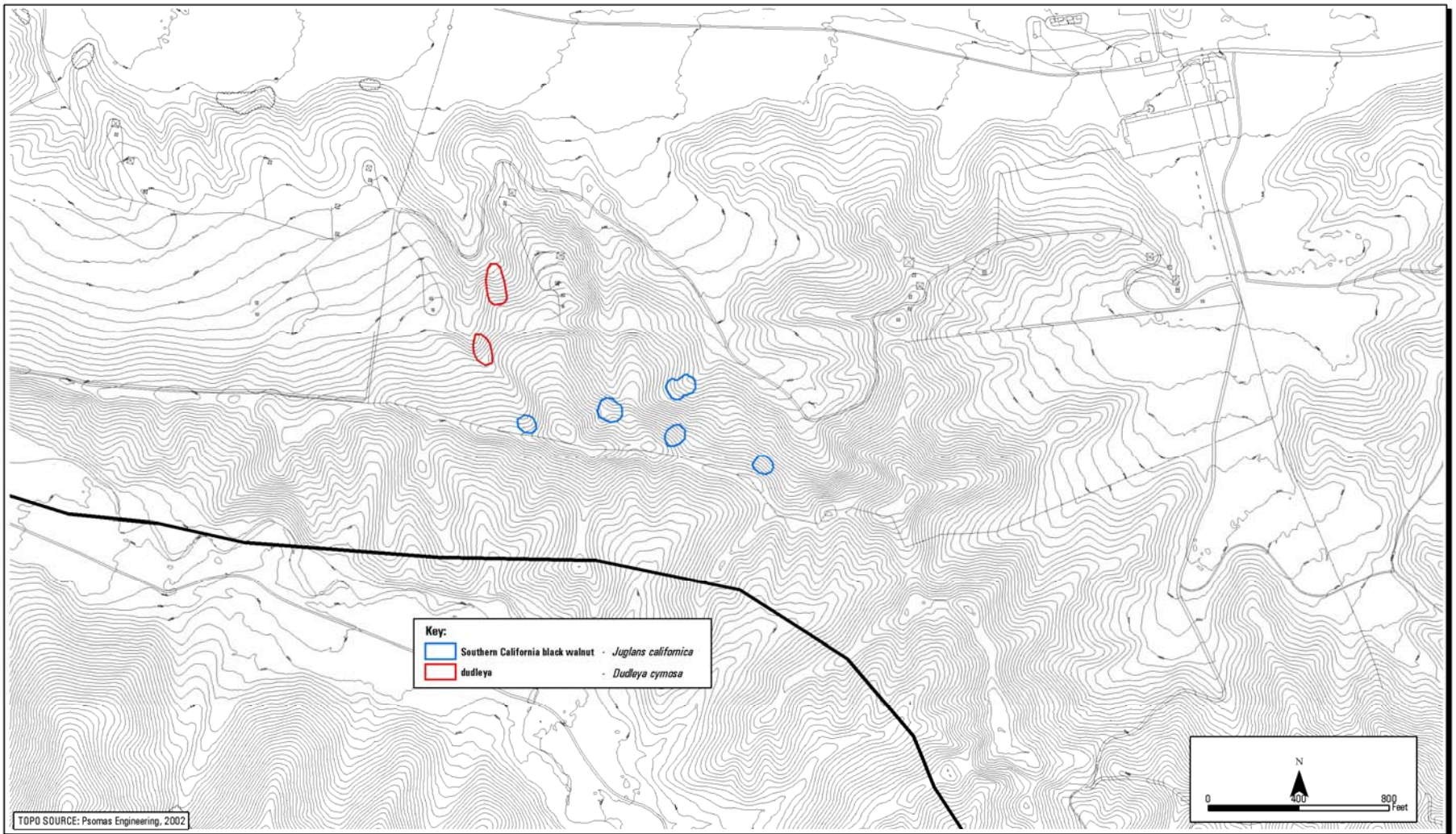


Newhall Ranch
2002 Sensitive Plant Species Results - 4000-acre Survey Area

FIGURE
18

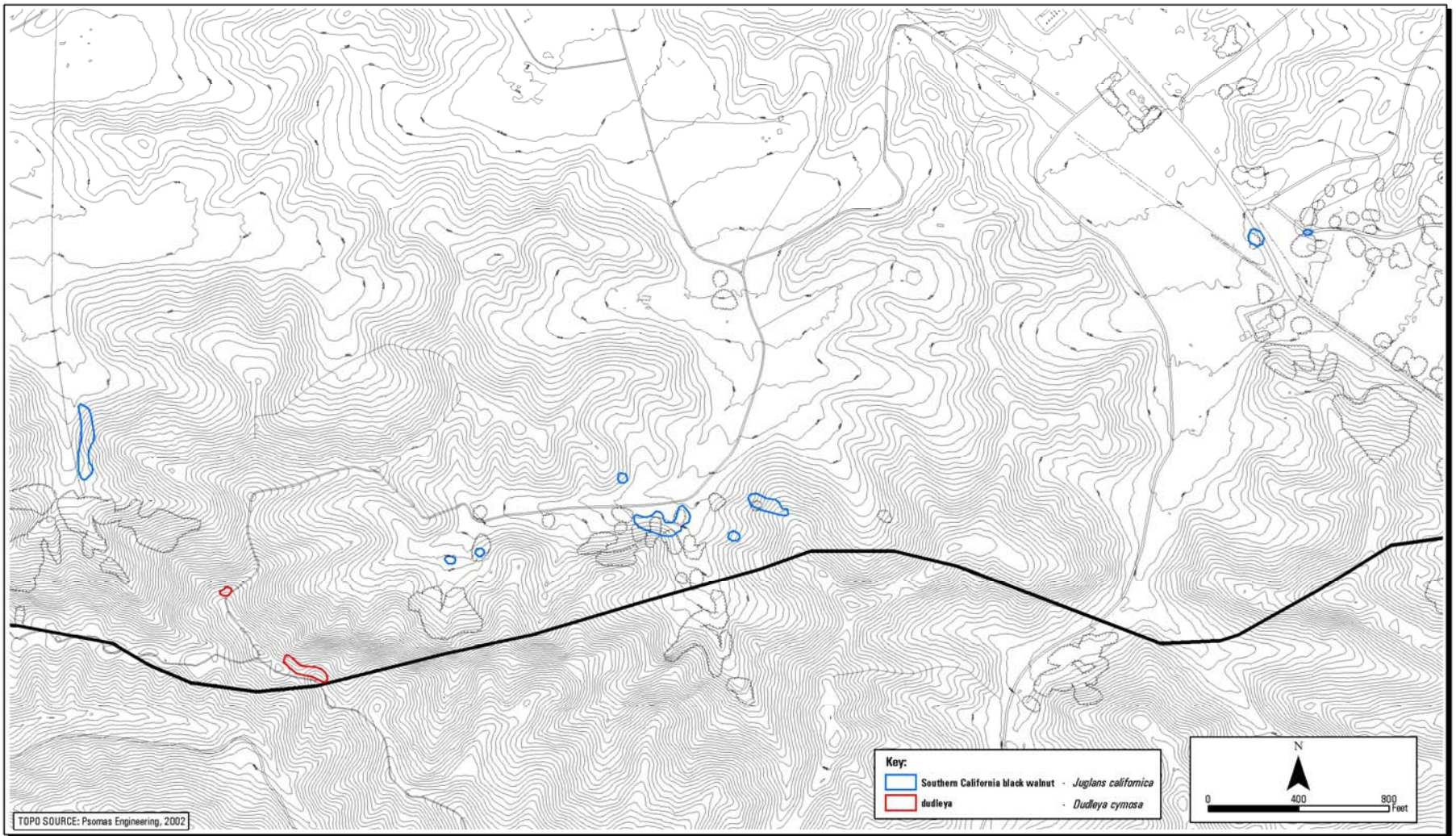


Newhall Ranch
2002 Sensitive Plant Species Results - 4000-acre Survey Area



Newhall Ranch
2002 Sensitive Plant Species Results - 4000-acre Survey Area

FIGURE
20



Newhall Ranch
2002 Sensitive Plant Species Results - 4000-acre Survey Area

FIGURE
21

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE 3
Sensitive Plant Species Observed or Potentially Occurring at Newhall Ranch

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Form/Blooming Period	Associations/Life	Presence or Likelihood of Occurrence Onsite
<i>Arenaria paludicola</i>	marsh sandwort	FE/SE	1B	dense freshwater marsh/perennial herb/May-August		Not observed during 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout entire study area. No CNDDDB records exist for the Newhall or Val Verde quads; nearest occurrence is in the Santa Ana River. Limited suitable habitat onsite; 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 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout entire study area. No CNDDDB records exist for the Newhall or Val Verde quads; nearest occurrence is in the Simi Hills. Suitable habitat exists onsite. 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 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout entire study area. No CNDDDB records exist for the Newhall or Val Verde quads; however, suitable habitat present onsite. Moderate likelihood of occurrence within study area.

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE 3
Sensitive Plant Species Observed or Potentially Occurring at Newhall Ranch

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence Onsite
<i>Atriplex serenana</i> <i>var. 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 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout entire study area. No CNDDDB records exist for the Newhall or Val Verde quads. <i>Atriplex serenana var. serenana</i> observed onsite. 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 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout entire study area. No CNDDDB records exist for the Newhall or Val Verde quads; closest known populations in the western Santa Monica Mountains near Malibu. Not expected to occur within the study area.
<i>Berberis nevadensis</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 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout entire study area. CNDDDB records exist for San Francisquito Canyon at confluence with Santa Clara River; suitable habitat present onsite. Moderate likelihood of occurrence within study area.

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE 3
Sensitive Plant Species Observed or Potentially Occurring at Newhall Ranch

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence Onsite
<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 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout entire study area. No CNDDDB records exist for the Newhall or Val Verde quads; nearest occurrence is in San Dimas. Suitable habitat present onsite. Low likelihood of occurrence within study area.
<i>Calochortus clavatus</i> <i>var. clavatus</i>	club-haired mariposa lily	None/None	4	chaparral and coastal sage scrub/ perennial herb (geophyte)/March-May	No CNDDDB records exist for Newhall and Val Verde quads. Unidentified <i>Calochortus</i> <i>clavatus</i> subspecies observed in the 1,500- acre survey area. Need current year flowers to determine. Moderate to high likelihood of occurrence in study area.
<i>Calochortus clavatus</i> <i>var. gracilis</i>	slender mariposa lily	None/None	1B	chaparral and coastal sage scrub/perennial herb (geophyte)/March- May	CNDDDB records for mouth of Pico Canyon. Unidentified <i>Calochortus clavatus</i> subspecies observed in the 1,500-acre survey area. Need current year flowers to determine. Moderate to high likelihood of occurrence in study area.
<i>Calochortus</i> <i>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 within study area during 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area 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 onsite. High likelihood of occurrence within study area.

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE 3
Sensitive Plant Species Observed or Potentially Occurring at Newhall Ranch

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence Onsite
<i>Calochortus weedii</i> <i>var. vestus</i>	late-flowered mariposa lily	None/None	1B	chaparral, cismontane & riparian woodland/perennial herb (geophyte)/ June-August	Not observed during 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. No CNDDDB records exist for the Newhall or Val Verde quads; however, habitat similar to where species occurs in eastern Ventura County is present onsite. 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	Observed in chaparral and Venturan sage scrub throughout the survey area.
<i>Calystegia sepium</i> <i>ssp. binghamiae</i>	Santa Barbara morning-glory	None/None	1A	marshes and swamps/perennial herb/ April-May	Not observed during 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. No CNDDDB records exist for the Newhall or Val Verde quads; however, limited suitable habitat present onsite. Low likelihood of occurrence within study area.
<i>Centromadia</i> [= <i>Hemizonia</i>] <i>parryi</i> <i>ssp. australis</i>	southern tarplant	None/None	1B	mesic edges of marshes in grasslands/annual herb/May-November	Not observed during 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. No CNDDDB records exist for the Newhall or Val Verde quads; however, suitable habitat present onsite. Low likelihood of occurrence within study area.

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE 3
Sensitive Plant Species Observed or Potentially Occurring at Newhall Ranch

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence Onsite
<i>Cercocarpus betuloides</i> var. <i>blancheae</i>	island mountain-mahogany	None/None	4	chaparral, closed-cone coniferous forest/evergreen shrub/February-May	Observed in mixed chaparral in the 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 in three general areas within the survey area: Grapevine Mesa, Airport Mesa, and San Martinez Grande Canyon.
<i>Deinandra</i> [= <i>Hemizonia</i>] <i>minthornii</i>	Santa Susana tarplant	None/SR	1B	chaparral and coastal sage scrub on rocky substrate/deciduous shrub/July-November	Not observed during 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. No CNDDDB records exist for the Newhall or Val Verde quads; however, records exist for the Simi Hills and Oat Mountain. Suitable habitat exists onsite. Moderate likelihood of occurrence within study area.
<i>Dodecahema leptoceras</i>	slender-horned spineflower	FE/SE	1B	alluvial scrub on sandy substrate/annual herb/April-June	Not observed during 2002 field season; however, Santa Clara River bottom excluded from survey area. Historic CNDDDB records exist for the Newhall or Val Verde quads in alluvial habitat similar to those present onsite. Moderate likelihood of occurrence within study area.
<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 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. No CNDDDB records exist for the Newhall or Val Verde quads. Suitable habitat present onsite. Low likelihood of occurrence within study area.

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE 3
Sensitive Plant Species Observed or Potentially Occurring at Newhall Ranch

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence Onsite
<i>Dudleya cymosa</i> ssp. <i>marcescens</i>	marcescent dudleya	FT/CR	1B	chaparral, often on volcanic substrate/perennial herb (geophyte)/April-June	No CNDDDB records exist for Newhall and Val Verde quads. Unidentified <i>Dudleya cymosa</i> observed on vertical sandstone cliffs and slopewash throughout study area. Need current year flowers to determine.
<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	No CNDDDB records exist for Newhall and Val Verde quads. Unidentified <i>Dudleya cymosa</i> observed on vertical sandstone cliffs and slopewash throughout study area. Need current year flowers to determine.
<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 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. No CNDDDB records exist for the Newhall or Val Verde quads; closest known occurrences are in Calabasas and San Dimas. Suitable habitat exists onsite. 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 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. No CNDDDB records exist for the Newhall or Val Verde quads. Suitable habitat exists onsite. Low likelihood of occurrence within study area.

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE 3
Sensitive Plant Species Observed or Potentially Occurring at Newhall Ranch

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence Onsite
<i>Erodium macrophyllum</i>	round-leaved filaree	None/None	2	cismontane woodland and grasslands on clay substrate/annual herb/March- May	Not observed during 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. No CNDDDB records exist for the Newhall or Val Verde quads; however records exist for Simi Valley. Suitable habitat present onsite; moderate likelihood of occurrence in study area.
<i>Helianthus nuttallii</i> <i>ssp. parishii</i>	Los Angeles sunflower	None/None	1A	marshes and swamps/perennial herb/ August-October	A <i>Helianthus</i> population, discovered in 2002 by Elvin and Sanders at Castaic Spring, on the south side of the Santa Clara River between Middle Canyon and San Jose Flats, was determined to be this species. The final determination of the identity of this species is still being worked on.
<i>Horkelia cuneata var.</i> <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 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. No CNDDDB records exist for the Newhall or Val Verde quads. Suitable habitat present onsite. 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	Observed in Venturan coastal sage scrub and chaparral onsite.

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE 3
Sensitive Plant Species Observed or Potentially Occurring at Newhall Ranch

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence Onsite
<i>Malacothamnus davidsonii</i>	Davidson's bush mallow	None/None	1B	chaparral, coastal sage scrub, riparian woodland/ deciduous scrub/June-January	Not observed during 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. occurrences are in San Fernando and Sunland. Suitable habitat present onsite. 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 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. Moderate likelihood of occurrence on banks of Santa Clara River and other mesic areas onsite. No CNDDDB records exist for the Newhall or Val Verde quads. Limited suitable habitat present onsite. 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 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. No CNDDDB records exist for the Newhall or Val Verde quads. Suitable habitat present onsite. 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	Small groups observed in chaparral and coastal sage scrub throughout the site.

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE 3
Sensitive Plant Species Observed or Potentially Occurring at Newhall Ranch

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence Onsite
<i>Oxytheca parishii</i> <i>var. abramsii</i>	Abram's oxytheca	None/None	1B	chaparral (sandy or shale)/June-August	Not observed during 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. No CNDDDB records exist for the Newhall or Val Verde quads; nearest occurrences are in the Topatopa Mountains. Suitable habitat present onsite. Moderate likelihood of occurrence within study area.
<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 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. No CNDDDB records exist for the Newhall or Val Verde quads; nearest occurrences are in the Simi Valley. Suitable habitat present onsite. Moderate likelihood of occurrence within study area.
<i>Rorippa gambellii</i>	Gambel's watercress	FE/ST	1B	Marsh and swamps (freshwater and brackish)/ perennial herb/April-June	Not observed during 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. No CNDDDB records exist for the Newhall or Val Verde quads. Limited suitable habitat present onsite. 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 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. Historic CNDDDB record for Saugus, south of Santa Clara River. Suitable habitat onsite. Moderate likelihood of occurrence within study area.

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE 3
Sensitive Plant Species Observed or Potentially Occurring at Newhall Ranch

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/Life Form/Blooming Period	Presence or Likelihood of Occurrence Onsite
<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 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. No CNDDDB records exist for the Newhall or Val Verde quads; suitable habitat present onsite. Moderate likelihood of occurrence within study area.
<i>Thelypteris puberula</i> <i>var. sonorensis</i>	Sonoran maiden fern	None/None	2	meadows and seeps/perennial herb/ fertile January-September	Not observed during 2002 field season; however, all acreage not subject to similar level of survey effort for this species throughout study area. No CNDDDB records exist for the Newhall or Val Verde quads; nearest occurrence at Point Dume. Limited suitable habitat present onsite. Low likelihood of occurrence within study area.

Legend

FE: Federally-listed as endangered SE: State-listed as endangered
 FT: Federally-listed as threatened ST: State-listed as threatened
 FC: Federal candidate for listing SR: State-listed as rare
 SC: State candidate for listing

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

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

reproductive biology, dispersal). *Figures 5 through 11* contain labels for each of the polygons to correlate with *Tables 4, 5, 6, and 7*, which contain estimates for the numbers of individuals within each polygon. To obtain these estimates, we either directly counted all individuals in a polygon or conducted a clumped counting and extrapolation method, which involved counting individual plants in small areas of a polygon, then extrapolating out over other areas of the polygon, until a total was obtained. Most of the polygon estimates were conducted by two botanists, independently, then compared for consistency.

Polygons for other sensitive species were mapped either with a GPS unit or by drawing polygons on 7.5-minute USGS quadrangle maps. Dudek used professional judgment to delineate these polygons based on the detectability of the species, topography, and vegetation. Information regarding the mapping for each sensitive species is included in the sections below (*Sections 4.2.1 through 4.2.8*).

TABLE 4
SFVS Estimates for the Airport Mesa Vicinity

Polygon Name	Plant Year	Estimate # Individuals	
		Minimum	Maximum
AM1	Pre-2002	150	350
AM10	Pre-2002	250	500
AM11	Pre-2002	10	3
AM13	Pre-2002	25	25
AM14	Pre-2002	25	25
AM15	Pre-2002	25	25
AM16	Pre-2002	2500	5000
AM17	Pre-2002	500	1,000
AM19	Pre-2002	250	500
AM19	Pre-2002	750	1,500
AM2	Pre-2002	1,000	1,500
AM3	Pre-2002	50	100
AM4	Pre-2002	500	750
AM5	Pre-2002	5	5
AM6	Pre-2002	300	600
AM7	Pre-2002	500	750
AM8	Pre-2002	6,500	10,000
AM9	Pre-2002	6,000	8,750
AM20	2002	1	1
AM21	2002	10	25
AM22	2002	1	1
AM23	2002	1	1
AM24	2002	2	2
AM25	2002	2	2
AM26	2002	4	4
AM27	2002	2	2
AM28	2002	3	3
AM29	2002	7	7

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE 4
SFVS Estimates for the Airport Mesa Vicinity

Polygon Name	Plant Year	Estimate # Individuals	
		Minimum	Maximum
AM30	2002	1	1
AM31	2002	40	50
AM32	2002	6	6
AM33	2002	11	11
AM34	2002	8	8
AM35	2002	2	2
AM36	2002	1	1
AM37	2002	1	1
AM38	2002	1	1
AM39	2002	9	9
AM40	2002	1	1
AM41	2002	11	11
AM42	2002	3	3
AM43	2002	4	4
AM44	2002	3	3
AM45	2002	1	1
AM46	2002	1	1
AM47	2002	4	4
AM48	2002	7	7
AM49	2002	159	159
AM50	2002	10	25
AM51	2002	50	100
AM52	2002	2	2
AM53	2002	1	1
AM54	2002	2	2
AM55	2002	1	1

TABLE 5
SFVS Estimates for the Grapevine Mesa Vicinity

Polygon Name	Plant Year	Estimate # Individuals	
		Minimum	Maximum
GM1	Pre-2002	1,000	1,000
GM10	Pre-2002	3,000	20,000
GM11	Pre-2002	3,000	5,000
GM12	Pre-2002	500	900
GM13	Pre-2002	2,000	4,000
GM14	Pre-2002	500	1,000
GM15	Pre-2002	75,000	250,000
GM16	Pre-2002	5,000	10,000
GM17	Pre-2002	500	1,000
GM18	Pre-2002	100	200
GM19	Pre-2002	250	500
GM2	Pre-2002	1,000	1,000
GM20	Pre-2002	3,000	5,000

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE 5
SFVS Estimates for the Grapevine Mesa Vicinity

Polygon Name	Plant Year	Estimate # Individuals	
		Minimum	Maximum
GM21	Pre-2002	15,000	30,000
GM22	Pre-2002	400	500
GM23	Pre-2002	500	700
GM24	Pre-2002	500	500
GM25	Pre-2002	20	50
GM26	Pre-2002	2,000	3,000
GM27	Pre-2002	500	500
GM28	Pre-2002	5,000	20,000
GM29	Pre-2002	200	500
GM3	Pre-2002	250	350
GM4	Pre-2002	50	50
GM5	Pre-2002	1,200	1,200
GM6	Pre-2002	10,000	15,000
GM7	Pre-2002	50	100
GM8	Pre-2002	100	200
GM9	Pre-2002	500	500
GM30	2002	50	50
GM31	2002	20	25
GM32	2002	25	50
GM33	2002	300	300
GM34	2002	3,000	5,000
GM35	2002	10	10
GM36	2002	100	150
GM37	2002	250	500
GM38	2002	420	420
GM39	2002	650	750
GM40	2002	1	1

TABLE 6
SFVS Estimates for the San Martinez Grande Canyon Vicinity

Polygon Name	Plant Year	Estimate # Individuals	
		Minimum	Maximum
SM1	2002	50	75
SM2	Pre-2002	950,000	1,250,000
SM3	Pre-2002	50,000	100,000
SM4	Pre-2002	200	500

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

TABLE 7
SFVS Estimate Totals

Polygon Name	Plant Year	Estimate # Individuals	
		Minimum	Maximum
Airport Mesa	Pre-2002	19,343	31,393
Airport Mesa	2002	373	463
Grapevine Mesa	Pre-2002	131,120	371,751
Grapevine Mesa	2002	4,826	7,256
San Martinez Grande Canyon	Pre-2002	1,000,200	1,350,500
San Martinez Grande Canyon	2002	50	75

4.2.1 *Calochortus clavatus* (mariposa lily)

One of the mariposa lilies observed within the study area was identified to species level from parts still in evidence from a previous year (*i.e.*, capsule, bulb coat). It is likely that it is one of two varieties: *Calochortus clavatus* var. *clavatus* (club-haired mariposa lily) or *C. clavatus* var. *gracilis* (slender mariposa lily). *Calochortus clavatus* var. *gracilis* is found on List 1B of the CNPS Inventory and *C. clavatus* var. *clavatus* is found on List 4 of the CNPS. Slender mariposa lily has been documented to occur at the mouth of Pico Canyon and other canyons in the vicinity (Newhall Quad; CNDDDB 2002). Both varieties are typically found in chaparral, coastal scrub, and grasslands, often on clay, and/or rocky soils. The club-haired mariposa lily is usually found on serpentine soils.

Within the 4,000-acre study area, the unidentifiable variety of *Calochortus clavatus* found by DUDEK occurs on ridges and slopes in Venturan coastal sage scrub and grasslands, most often north of SR-126 (see *Figures 12 and 13*). The likelihood is greater that it is the slender mariposa lily, due to its presence within nearby habitat and the plant stalks were generally smaller in habit than the larger club-haired mariposa lily. Focused surveys were not conducted in the 4,000-acre study area for this species. DUDEK mapped *C. Clavatus* either with a GPS unit or by drawing polygons on USGS 7.5-minute quadrangle maps or aerial photography with topographic contours printed at a 1 inch = 200 feet scale. Discontinuous groupings of *Calochortus* plants were mapped as discrete/separate polygons. *Calochortus* plants were randomly scattered within these polygons. *Calochortus* varied in densities within and among the different locations/polygons from widely scattered to dense clusters. Population sizes were not determined for each location. CNDDDB forms were not completed for this species because we were not able to determine which taxon, *Calochortus clavatus* var. *clavatus* or *C. clavatus* var. *gracilis*, is present due to the lack of flowering material.

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

4.2.2 *Calystegia peirsonii* (Peirson's morning glory)

Peirson's morning-glory has no state or federal status, but is found on List 4 of the CNPS *Inventory*. This morning-glory is rhizomatous perennial that typically is found in more desert-like areas (e.g., creosote bush scrub, Joshua tree woodland) at elevations which exceed 3,000 feet AMSL, although there are records in the CNDDDB for lower elevations in the local area. It was RECON's opinion (1996) that chaparral morning-glory (*Calystegia macrostegia* ssp. *cyclostegia*) was the more common species; however, after reviewing the floral bracts, leaf shape, and its glabrous nature, it is DUDEK's opinion that the morning-glory observed in the study area is Peirson's morning-glory. This species was also recorded onsite during limited focused surveys for sensitive plant species conducted in 1992 (Dames and Moore 1993).

While never abundant, Peirson's morning-glory is widespread onsite and was observed on virtually all ridges and slopes, weakly climbing over mixed chaparral, Venturan coastal sage scrub, and in grasslands throughout the 1,500-acre study area. It also occurs within the 4,000-acre study site, although it was not the subject of focused surveys. Due to the widespread nature of Peirson's morning-glory at Newhall Ranch, it is not specifically depicted on the report figures. CNDDDB forms were not completed for this species because of the widespread and sparse nature of its distribution onsite and the relatively low sensitivity of this species.

4.2.3 *Cercocarpus betuloides* var. *blancheae* (island mountain-mahogany)

Island mountain-mahogany has no state or federal status, but is found on List 4 of the CNPS *Inventory*. It is an evergreen shrub that occurs as part of the chaparral in Los Angeles and Ventura counties, as well as on several of the Channel Islands (CNPS 2001). This species was not observed during limited focused surveys for sensitive plant species conducted in 1992 (Dames and Moore 1993) or general botany surveys conducted in 1995 (RECON and Impact Sciences 1996).

Onsite, island mountain-mahogany occurs as an occasional component of chaparral at the base of north-facing slopes in the 1,500-acre survey area (see *Figures 8 and 10*). Focused surveys were not conducted in the 4,000-acre study area for this species. DUDEK mapped *Cercocarpus betuloides* var. *blancheae* locations by drawing polygons on USGS 7.5-minute quadrangle maps or aerial photography with topographic contours printed at a 1 inch = 200 feet scale. Discontinuous *Cercocarpus* groupings were mapped as discrete/separate polygons. *Cercocarpus* polygons typically represent the canopy cover of an undetermined

2002 Sensitive Plant Survey Results

Newhall Ranch Specific Plan Area

number of individuals. _CNDDDB forms were not completed for this species because of the relatively low sensitivity of this species.

4.2.4 *Chorizanthe parryi* var. *fernandina* (San Fernando Valley spineflower)

San Fernando Valley spineflower is state-listed as endangered, a candidate for federal listing, and found on List 1B of the CNPS *Inventory*. 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. Munz (1974) provides distribution information to include Orange and San Diego counties. SFVS was not observed onsite during limited focused surveys for sensitive plant species conducted in 1992 (Dames and Moore 1993) or general botany surveys conducted in 1995 (RECON and Impact Sciences 1996).

Populations of SFVS were identified in three areas of the study area for the Newhall Ranch Specific Plan. Two of these are located south of SR-126 in the vicinities of Grapevine and Airport mesas, and the third is located north of SR-126 in San Martinez Grande Canyon. These locations are depicted on *Figures 4, 5, and 6*, along with the distribution of observed polygons of SFVS within the generalized areas. While surveying in the field and mapping SFVS, DUDEK used a 4-meter (13.1 feet) rule to separate polygons. We chose this distance based on the topography, vegetation, detectability of the plants, general accuracy of the GPS that we used, and time constraints. This distance does not have any known relevance to SFVS biology (*i.e.*, reproductive biology, dispersal). *Figures x, y, and z* contain labels for each of the polygons to correlate with *Tables 4, 5, 6, and 7*, which contain estimates for the numbers of individuals within each polygon. To obtain these estimates, we either directly counted all individuals in a polygon or conducted a clumped counting and extrapolation method, which involved counting individual plants in small areas of a polygon, then extrapolating out over other areas of the polygon, until a total was obtained. Most of the polygon estimates were conducted by two botanists, independently, then compared for consistency. For the Airport Mesa vicinity, we estimated that there were approximately between 373 and 463 individual plants from the 2002 cohort and between 19,343 and 31,393 individual plants from the pre-2002 cohort. For the Grapevine Mesa vicinity, we estimated that there were between 4,826 and 7,256 individual plants from the 2002 cohort and between 131,120 and 371,751 individual plants from the pre-2002 cohort. For the San Martinez Grande Canyon vicinity, we estimated that there were between 50 and 75 individual plants from the 2002 cohort

2002 Sensitive Plant Survey Results

Newhall Ranch Specific Plan Area

and between 1,000,200 and 1,350,500 individual plants from the pre-2002 cohort. Approximately 99.5 percent of the SFVS observed during DUDEK's 2002 surveys were the remnants of pre-2002 plants indicating that the germination and flowering of this species was very poor in 2002.

Most of the SFVS were found on slopes with a south-facing component in habitat that was either open Venturan coastal sage scrub, ecotone between Venturan coastal sage scrub and grasslands, or at the edge of agricultural fields on mesas. Nearly all of the observed SFVS were found on soils mapped by the USDA (1969) as slightly eroded to eroded Castaic-Balcom silty clay loam (30-50 percent slopes) or Terrace Escarpments. Plants in the vicinities of Grapevine and Airport mesas were observed down slope of terrace surfaces capped by Zamora clay loam (2-9 percent slopes). Elevations at SFVS locations onsite range from approximately 1,000 to 1,300 feet AMSL. CNDDDB forms are included in *Appendix C*.

4.2.5 *Dudleya cymosa* (dudleya)

An unidentifiable subspecies of *Dudleya cymosa* was found at numerous locations within the study area (see *Figures 8, 10, 12, 14, 15* and *16*). These plants could not be identified to subspecies level due to their current condition after this record dry year. The poor material from this year keyed, with difficulty, to *Dudleya cymosa* ssp. *marcescens* (federally listed as threatened and state listed as rare); however, positive identification is not possible at this time. This dudleya could be one of the several *Dudleya* taxa known from the area, such as *D. cymosa* ssp. *ovatifolia* (federally listed as threatened) or it could also be a new species that has not been described. The locations of the dudleya are noted and should be checked in the future in order to make a positive identification. Population sizes were not determined for each location, but were estimated to generally range between 10-50 (100) individuals. DUDEK mapped *Dudleya cymosa* locations by drawing polygons on USGS 7.5-minute quadrangle maps or aerial photography with topographic contours printed at a 1 inch = 200 feet scale. Discontinuous *Dudleya cymosa* groupings were mapped as discrete/separate polygons. CNDDDB forms were not completed for this species because the precise taxon has not been determined yet.

4.2.6 *Helianthus nuttallii* ssp. *parishii* (Los Angeles sunflower)

The Los Angeles sunflower was last seen in 1937 and had been thought to be extinct since that time (CNPS 2001). It is currently a CNPS list 1A plant with no state or federal status. Historic information indicates that this sunflower was only known to occur at five locations in Los Angeles, Orange, and San Bernardino counties (CNPS 2001, CNDDDB

2002 Sensitive Plant Survey Results

Newhall Ranch Specific Plan Area

2002, and RSA). Los Angeles sunflower is considered to have been extirpated from each of these sites.

On June 25, 2002, DUDEK botanist Mark A. Elvin, accompanied by Andrew C. Sanders (UCR), discovered vegetative plants growing in a seep area south of the Santa Clara River between Middle Canyon and San Jose Flats (see *Figure 9*). Periodic checks were conducted to obtain flowers, which are necessary to confirm the identity of this taxon. Once the plants began to flower in the last week of August 2002, Elvin and Sanders identified the plants as Los Angeles sunflower. A specimen was collected independently by a representative of The Newhall Ranch Land and Farming Company and sent to the Herbarium at the University of California, Berkeley, where it was subsequently determined to be consistent with the taxon known as the Los Angeles sunflower by Dr. John Strother (Barbara Errter, memo to Ken Koch; September 12, 2002). This specimen, along with others, were sent to Drs. Loren Rieseberg and Charles Heiser at the University of Indiana, Bloomington and were identified as *Helianthus nuttallii* ssp. *nuttallii*. Work is currently ongoing to verify the identity of this plant.

The population of Los Angeles sunflower occurs on the edge of a slight rise in the middle of a one-acre spring/marsh complex ("Castaic Spring") that drains into the south side of the Santa Clara River just upstream of its confluence with Castaic Creek. This rhizomatous perennial grows to a height of up to sixteen feet and there appears to be three to five clumps of this species. The sunflower inflorescences are taller than the adjacent vegetation and remain in the sun throughout most of the day. Within these groups, there appear to be multiple individuals based on observed differences in leaf and bract lengths, widths, shape, and hairiness (Elvin and Sanders, pers. obs. 2002). Sanders estimated that there are more than 300 flower stems (see attached CNDDDB form, *Appendix C*). Honey bees, cabbage white butterflies, and damsel flies have been observed visiting the flowers (Elvin and Weigand, DUDEK, pers. obs. 2002). The ground was cool and completely wet in September of the driest year in recorded history; therefore, the area is likely to be wet all year long. A CNDDDB form is included in *Appendix C*. DUDEK mapped a minimum convex polygon around all of the sunflower clumps using a Trimble GeoExplorer 3 GPS unit. Focused surveys were not conducted in the 4,000-acre study area for this species.

4.2.7 *Juglans californica* (southern California black walnut)

Southern California black walnut has no state or federal status, but is found on List 4 of the CNPS *Inventory*. Within its distributional range in southern California, this species is found as scattered occurrences throughout chaparral, cismontane woodlands, and coastal and alluvial scrub habitats (CNPS 2001). Southern California walnut was not observed

2002 Sensitive Plant Survey Results

Newhall Ranch Specific Plan Area

during limited focused sensitive plant surveys conducted in 1992 (Dames and Moore 1993) or general botany surveys conducted in 1995 (RECON and Impact Sciences 1996).

This large shrub to tree was incidentally observed as an occasional component of mixed chaparral, Venturan coastal sage scrub, and alluvial scrub primarily along the north slope of the ridge between Potrero Canyon and Graves/Salt Creek Canyons (see *Figures 13, 15, and 16*). Focused surveys were not conducted in the 4,000-acre study area for this species. DUDEK mapped *Juglans californica* locations with a Trimble Geo Explorer 3 GPS unit or by drawing polygons on USGS 7.5-minute quadrangle maps or aerial photography with topographic contours printed at a 1 inch = 200 feet scale. *Juglans* polygons typically represent the canopy cover of an undetermined number of individuals. Some polygons represent one tree and some represent multiple trees (up to twenty). Discontinuous *Juglans californica* groupings were mapped as discrete/separate polygons. CNDDDB forms were not completed for this species because of the relatively low sensitivity of this species.

4.2.8 *Opuntia basilaris* var. *brachyclada* (short-joint beavertail)

Short-joint beavertail has no state or federal status but is found on List 1B of the CNPS *Inventory*. Throughout its range, it is found in a variety of scrub and woodland habitats on the north side of the Transverse Range along the edge of the Mojave Desert. The beavertail cactus identified within the study area keys to *Opuntia basilaris* var. *brachyclada* in *The Jepson Manual* (Hickman 1993), which identifies pad lengths as more than twice as long as their width. Pads on the observed beavertail cactus in the study area range in length from 3-15 inches, which was considerably longer than the pad width of 1-4 inches. It should be noted that in the past, beavertail cactus in the Newhall area that were of this size were ascribed to *O. basilaris* var. *ramosa*; however, this variety was subsumed into variety *O. basilaris* var. *brachyclada* in *The Jepson Manual* (Hickman 1993). Further attention is likely warranted to determine the taxonomic classification of the beavertail cactus at Newhall Ranch.

Within the study area, short-joint beavertail was observed in sparsely scattered clumps/patches on ridges, slopes, and in alluvial areas. DUDEK mapped these locations by drawing polygons on USGS 7.5-minute quadrangle maps or aerial photography with topographic contours printed at a 1 inch = 200 feet scale or occasionally with a Trimble Geo Explorer 3 GPS unit. Discontinuous beavertail groupings were mapped as discrete/separate polygons. The polygons depicting the distribution of short-joint beavertail (see *Figures 8, 9, 10, 12, and 14*) represent single to multiple (~25-50) individuals, regardless of the size of the polygon.

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

It should also be noted that a few beavertail clumps were found in Long Canyon that were problematic in terms of identification. These plants appear to be some form of *Opuntia basilaris*, possibly a hybrid or mutant. Some of the plants have spines in the areoles, which is a characteristic of *Opuntia basilaris* var. *treleasei* (Bakersfield cactus), a state and federally listed taxon. Focused surveys were not conducted in the 4,000-acre study area for *Opuntia basilaris*. CNDDB forms are included in Appendix C.

5.0 ACKNOWLEDGMENTS

Mark A. Elvin and Julie M. Vanderwier prepared this report, with review by Sherri L. Miller, Philip R. Behrends Ph.D., and staff at The Newhall Land and Farming Company. Mark McGinnis provided graphics and GIS mapping analyses. Tonette S. Foster provided word processing.

6.0 LITERATURE CITED

- Abrams, L. 1923. Illustrated Flora of the Pacific States. Stanford University Press, Stanford, California.
- Allan E. Seward Engineering, Inc. 2002. Geological Evaluation, San Fernando Valley Spineflower Occurrences. Letter report prepared for Gatzke, Dillon and Balance, LLP, October 2002.
- Boyd, S. 1999. Vascular Flora of the Liebre Mountains, Western Transverse Ranges, California. *Aliso* 18(2): 93-129.
- CalFlora (www.CalFlora.org).
- California Department of Fish and Game. 2001. Report to the Fish and Game Commission on the Status of San Fernando Valley Spineflower (*Chorizanthe parryi* var. *fernandina*). Prepared by Mary Meyer, Plant Ecologist and Melanie Gogol-Prokurat, Assistant Botanist. Habitat Conservation Planning Branch, Status Report 2001-1
- California Natural Diversity Data Base. California Department of Fish and Game. 2002. Special Plants. Sacramento, California. January.

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

- California Natural Diversity Data Base. California Department of Fish and Game. 2002. Rarefind survey results 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 Quadrangles. March.
- CNPS. 2001. Inventory of Rare and Endangered Vascular Plants of California (sixth edition). Rare Plant Scientific Advisory Committee, David Pl Tibor, Convening Editor. California Native Plant Society. Sacramento, CA. 388pp.
- Dale, N. 1985. *Flowering Plants: The Santa Monica Mountains, Coastal & Chaparral Regions of Southern California*. Capra Press, Santa Barbara. 239 pp.
- Dames and Moore. 1993. Biological Resources of the Upland Areas of the West Ranch. Unpublished report prepared for the Newhall Land and Farming Company, Planning Department, Valencia, California. Prepared by Dames and Moore, Santa Barbara. July.
- Glen Lukos Associates, Inc. 2000. Revised Report: Biology of the San Fernando Valley Spineflower, Ahmanson Ranch, Ventura County, California. Unpublished report prepared for the Ahmanson Land Company by Glen Lukos Associates, Inc. and revised by Sapphos Environmental, Inc.
- Hickman, J. C. 1993. *The Jepson Manual: Higher plants of California*. University of California Press, Berkeley. 1400 pp.
- Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Non-game-Heritage Program, California Department of Fish and Game.
- Los Angeles Times. 2002 *Dry Cycle May Spin On for Years; Weather: Region's drought could be augering a longer trend, scientists warn*. June 30.
- Magney, D. 2002. Checklist of Ventura County Rare Plant Species. California Native Plant Society, Channel Islands Chapter. 23 pp.
- Munz, P.A. 1974. *A Flora of California*. University of California Press, Berkeley. 1086 pp.

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

- PCR et al. 2002. Biological Resources Assessment of the Proposed Santa Susana Mountains/Simi Hills Significant Ecological Area, including Existing SEA No. 13, 14, 20, 21, 63, and 64, Los Angeles County, California. November.
- Raven, P., H.J. Thompson, and B.A. Prigge. 1986. *A Flora of the Santa Monica Mountains, California*. Southern California Botanists Special Publication No. 2. 181 pp.
- RECON and Impact Sciences, Inc. 1996. Biota Report, Newhall Ranch Specific Plan, Santa Clara River Valley, California, Tentative Tract Map 44831. Unpublished report prepared for Los Angeles County, Department of Regional Planning. September 7, 1995; revised July 1996.
- Roberts, F. R. 1998. A Checklist of the Vascular Plants of Orange County, California. Second edition, F.R. Roberts Publications, Encinitas, CA
- Sawyer, J.O. and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society. 471 pp.
- Smith, C.F. 1976. Flora of the Santa Barbara Region, California. Santa Barbara Botanic Garden and Capra Press. 391 pp.
- United States Fish and Wildlife Service (USFWS). 1999. Federal Register, Part 8, Endangered and Threatened Wildlife and Plants; Plant and Animal Taxa. 50 CFR Part 17. Department of the Interior. December.
- U.S. Department of Agriculture (USDA). 1969. Soil Survey, Antelope Valley Area, California. 187 pp.
- Vanderwier, J.M. 1995. Field notes taken during surveys of Newhall Ranch, April 11-13.
- Western Regional Climate Center. 20002. 12-month Accumulated Precipitation from Normal through end of August 2002; 12-month Accumulated Precipitation Departure from Normal through the end of August 2002; 12-month Percent of Average Precipitation through the end of August 2002; and 12-month Standardized Precipitation Index through the end of August 2002.

APPENDIX A
RESUMES OF SURVEY PERSONNEL

MICHELLE L. BALK
Environmental Specialist

EDUCATION / REGISTRATION

- University of Akron
M.S., Biology with emphasis Ecology and Evolution, 1999
- Iowa State University
B.S., Zoology, 1997

PROFESSIONAL CERTIFICATIONS

- Quino Checkerspot Butterfly 10a Survey Permit
(USFWS Federal Permit)

EXPERIENCE SUMMARY

Ms. Balk has over a year of experience in environmental document preparation and resource conservation planning. Project experience includes biological resource surveys, data collection and analysis, environmental assessments, wetland delineations, permitting, mitigation design and monitoring, and endangered species surveys. Ms. Balk has engaged in interagency coordination and public outreach efforts due to the complexities of each project. Ms. Balk has also participated in the development of habitat conservation plans pursuant to Section 10 of the Federal Endangered Species Act.

PROFESSIONAL ASSIGNMENTS

- **Residential Development.** Irvine, California. Assisted in USFWS protocol surveys for the Coastal California Gnatcatcher.
- **Conservation Planning.** Assisted in the development of the MSHCP for western Riverside County. Project involvement included reserve design, document preparation, interagency coordination and public outreach.
- **Residential Development.** Riverside County, California. Conducted wetland delineation and prepared permit applications for 51-unit housing development.
- **Public University Student Housing Project.** San Marcos, California. Conducted vegetation mapping and wetland delineation, prepared permit applications, and coordinated with resource agencies for student housing project.
- **Residential Development.** Rancho Santa Fe, California. Performed environmental assessments and prepared encroachment permit applications for open space encroachments.
- **Creek Maintenance Project.** Poway, California. Performed wetland delineation and vegetation mapping for creek maintenance project.

- **Sewer Realignment.** Carlsbad, California. Assisted in the wetland delineation and vegetation mapping for sewer realignment project.
- **Residential Developments.** Laguna Beach and Oxnard, California. Mapped vegetation, surveyed for sensitive plants, and wrote biological resources reports for residential developments.
- **Utility Pole Maintenance Project.** San Bernardino Mountains, California. Conducted botanical surveys and surveyed for sensitive plants at pole replacement locations.
- **Salt Marsh Restoration Project.** San Diego, California. Performed vegetation mapping and prepared biological resources report for marsh restoration project.
- **Focused Botanical Survey.** Newhall Ranch, Los Angeles County, California. As team botanist, performed focused survey for San Fernando Valley spineflower on a 6,000-acre project site.

PUBLICATIONS

- "Phenotypic effects of leptin in an ectotherm: a new tool to study the evolution of life histories and endothermy?", with P.H. Niewiarowski and R.L. Londrville. *The Journal of Experimental Biology* 203:295-300, 2000.
- "Sprint speed variation in hatchling fence lizards as a function of ontogenetic stage and population," with P.H. Niewiarowski and J.M. Engelhardt. In preparation.
- "Phylogenetic Analysis of Reaction Norm Evolution in North American Softshell Turtles," with F.J. Janzen. In preparation.

RELEVANT EXPERIENCE

- Volunteer, Project Wildlife, San Diego, CA. Cared for injured wildlife and reared baby birds at wildlife rescue organization.
- "Sunday Birds" field ornithology course with San Dieguito Adult School, Encinitas, CA.

SCOTT BOCZKIEWICZ
BIOLOGIST/ENVIRONMENTAL SPECIALIST

EDUCATION

- B.S. / 1994 / Biological Conservation
- B.F.A. / 1994 / Painting and Drawing

PROFESSIONAL AFFILIATIONS

- Member of the Society for Wetland Scientists
- Member of the Society for Conservation Biology
- Member of the Society for Ecological Restoration

EXPERIENCE SUMMARY

Scott has a diverse range of work experience in the biological sciences, with emphasis in conservation biology, wetland science, and restoration ecology. He has experience in many ecosystems including riparian, wetland, grassland, prairie, desert, and montane forested areas. Scott has progressive experience evaluating impacts to sensitive, rare, threatened and endangered plant and wildlife species in Southern California. He has conducted sensitive species assessments, biological resource inventories, vegetation mapping, and wetland delineations for large public and private land holdings, and also has experience conducting focused surveys for botanical and wildlife species. Scott conducts biological monitoring of construction and infrastructure maintenance projects occurring in environmentally sensitive and/or protected areas throughout San Diego and Orange County. Scott has produced assessments of wetlands and uplands to support management plans and planning studies, designed mitigation plans and habitat restoration and monitoring plans for riparian, wetland, and upland habitats, identified regulatory issues for development and infrastructure projects to guide project designs, and completed permit applications supporting project compliance with federal, state, and local environmental regulations.

PROFESSIONAL ASSIGNMENTS

- **SR-56 Wetlands Mitigation and Environmental Permitting - San Diego, CA.** Provided mitigation site analysis including an HGM-based wetland assessment and designed a conceptual wetland creation and enhancement plan to mitigate impacts to jurisdictional wetlands resulting from construction of State Route 56 (SR-56). The 25-acre El Cuervo Norte riparian creation and enhancement project will occur in the west end of the Los Peñasquitos Canyon Preserve beginning in March of 2003. Secured an ACOE 404 Individual Permit, USFWS Take Authorization for least Bell's Vireo, RWQCB 401 Water Quality Certification, and CDFG 1601 Streambed Alteration Agreement for Phase 2 of SR-56 construction.
- **Biological Resource Surveys - Escondido Creek Conservancy, CA.** Conducted biological resources surveys and a wetland delineation to provide baseline biological site information supporting development of a long-term management plan for a 75-acre preserve property along Escondido Creek in unincorporated San Diego County.
- **Adobe Falls Supplemental Environmental Project - San Diego, CA.** Provided a biological resources assessment and designed a restoration plan including streambank erosion control for a 4-acre riparian wetland site along Alvarado Creek in San Diego. The restoration plan was designed to fit a predetermined budget amount of \$310,000, and to meet all federal and state regulatory requirements.

- **Laborde Canyon OHV Park Study - Riverside, CA.** Assisted with herptile trap array installation and monitoring on a 2600 acre site in the badlands of western Riverside county. The data supported a biological constraints analysis for development of an Off Highway Vehicle Park.
- **Rare Plant Surveys - Newhall Ranch, Valencia, CA.** Assisted with focused rare plant surveys for San Fernando Valley Spine flower (*Chorizanthe parryi* var. *fernandina*) and a general botanical inventory on portions of Newhall Ranch.
- **Rare Plant Surveys - Great Oak Ranch, Western Riverside County, CA.** Assisted with rare plant surveys and a general botanical inventory of the San Diego Pipeline #6 alignment through the Great Oak Ranch.
- **Collier Marsh Wetland Delineation - Western Riverside County, CA.** Conducted a wetland delineation and plant inventory of Collier Marsh, a 50+ acre wetland site immediately north of Lake Elsinore in Riverside County.

MARK ELVIN
SENIOR BIOLOGIST/BOTANIST

EDUCATION

- University of California, Irvine
M.S. Ecology and Evolutionary Biology, 1992
- University of North Carolina, Chapel Hill
B.A. Biology and Philosophy, 1986

PROFESSIONAL CERTIFICATIONS

- California Department of Fish and Game State listed plants collecting permit

PROFESSIONAL AFFILIATIONS

- California Native Plant Society
- Southern California Botanists

EXPERIENCE SUMMARY

Mr. Elvin has 16 years experience as a biological resource specialist in southern California. As a Fish and Wildlife Biologist at the U.S. Fish and Wildlife Service (USFWS) he was responsible for conducting scientific reviews and analyses of species statuses for proposing and designating critical habitat within court ordered deadlines for listed fauna and flora; conducting scientific reviews and analyses of species statuses and developing recovery plans for listed species; and was the lead staff biologist for the USFWS for the implementation of the City of San Diego Multiple Species Conservation Plan (MSCP). In addition, he was the lead staff biologist at the USFWS for Quino checkerspot butterfly survey work conducted within San Diego County. Through his years of experience he has conducted sensitive species surveys in various habitat types throughout central and southern California including coastal strand, dune, coastal marsh, estuarine, coastal bluff scrub, coastal sage scrub, maritime succulent scrub, southern maritime chaparral, chaparral, valley grass lands, vernal pools, riparian scrub, riparian woodland, southern oak woodlands, alluvial fan sage scrub, montane coniferous forest, pebble plains, montane meadows, pinyon-juniper woodland, joshua tree woodland, sagebrush scrub, creosote bush scrub, alkali flats, desert mountains, creosote bush scrub, Mojavean desert scrub, and Sonoran desert scrub.

Mr. Elvin has also worked as a seed and conservation program coordinator, seed technologist, museum scientist, and conservation collection manager.

PROFESSIONAL ASSIGNMENTS

- Serves on the DUDEK project team preparing the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) that covers approximately 1.2 million acres. Mr. Elvin primarily is responsible for the adaptive management plan of the reserve system. Mr. Elvin also provides input on the sensitive plants component of the plan that addresses 59 plants, including 13 that are state and/or federally listed, and species monitoring studies.
- Conducted onsite ecological and biological investigations and surveys of complex development proposals to determine their effects on flora and fauna throughout southern California.

- Conducted field surveys for state and federally listed and MSCP-covered plant species for the City of San Diego's Multiple Species Conservation Program (MSCP).
- Conducted surveys for and collections of plants throughout Orange, San Diego, Riverside, San Bernardino, and Los Angeles counties and Baja California, Mexico.
- Conduct onsite ecological and biological investigations and surveys for threatened and endangered plant species throughout Los Angeles, Orange, San Diego, San Bernardino, Riverside, Imperial, Baja California (Mexico), Ventura, Monterey, San Benito, and San Luis Obispo counties.
- Participated in surveys for sensitive plants (including *Delphinium variegatum* ssp. *kinkiense* (San Clemente Island larkspur), *Lithophragma maximum* (San Clemente Island woodland star), *Lotus dendroideus* var. *traskiae* (San Clemente Island lotus), *Malacothamnus clementinus* (San Clemente Island bush mallow), *Sibara filifolia* (Santa Cruz Island rock cress)) on San Clemente and Santa Catalina Islands Los Angeles County.

Monitoring Programs

- Conducted demographic and ecological data collection surveys for the federally listed as threatened *Deinandra conjugens* (Otay tarplant) and the federally proposed as endangered *Ambrosia pumila* (San Diego ambrosia) and focused surveys for the federally listed as endangered Quino checkerspot butterfly (*Euphydryas editha quino*) in San Diego County for the MSCP.

Threatened and Endangered Species

- Conducted many surveys for State and/or federally listed plants in San Diego, Orange, Los Angeles, Riverside, and San Bernardino counties.

SELECTED PUBLICATIONS

- Elvin, M. 2002. Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for Five Carbonate Plants From the San Bernardino Mountains in Southern California. 67 FR 6577.
- Elvin, M. 2001. Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for *Deinandra conjugens* (Otay tarplant). 66 FR 32052.
- Koopowitz, H., M. Elvin, and L. Keenan. (1996). In vivo visualization of living flatworm neurons using Lucifer Yellow intracellular injections. J. Neurosci. Meth. 69: 83-89.
- Koopowitz, H., M. Elvin, and T. Bae. (1995). Comparison of the nervous system of the rhabdocoel, *Mesostoma ehrenbergii*, with that of the polyclad, *Notoplana acticola*. Hydrobiologia. 305: 127-133.
- Elvin, M., H. Koopowitz (1994). Neuroanatomy of the rhabdocoel flatworm *Mesostoma ehrenbergii* (Focke, 1836) I: Neuronal diversity in the brain. J. Comp. Neurol. 343: 319-331.

MEGAN S. ENRIGHT

Environmental Analyst / Biologist

EDUCATION

- University of California, San Diego
Bachelor's of Science in Biology-Ecology, Behavior and Evolution, 1997

PROFESSIONAL AFFILIATIONS

- Member, California Native Plant Society
- Member, Women's Environmental Council

EXPERIENCE SUMMARY

Ms. Enright is a biologist with five years experience in habitat restoration and biological assessments. She participated in coastal sage scrub restoration at the City of San Diego Miramar Landfill. The project included restoration design, native plant nursery management, and revegetation monitoring. Her current role at Dudek & Associates includes biological resources assessments and impact analyses, wetland delineations and permitting, vegetation mapping and rare plant surveys.

PROFESSIONAL ASSIGNMENTS

Wetlands Delineation, Wetlands Permitting and Biological Resources Reports

- **Transportation Corridor.** North County Transportation District - Oceanside to Escondido Rail Project, City of Oceanside, California. Delineated wetlands and prepared vegetation map within the Loma Alta Creek, Buena Vista Creek, Buena Creek, Agua Hedionda Creek, San Marcos Creek, and Escondido Creek Watersheds. Prepared Section 401 and Section 404 permit applications and 1601 Streambed Alteration Agreement for impacts to non-tidal, adjacent wetlands; impacts were associated with the rail system. Prepared alternatives analysis, functional values assessment, and Conceptual Wetlands Mitigation Plan. Assisted in the preparation of the biological resources report and CEQA documentation.
- **Roadway Corridor.** Camino Ruiz Road Alignment, San Diego-Future Urbanizing Area Subarea IV, California. Delineated wetlands, prepared vegetation map, and conducted rare plant surveys. Prepared Section 401 and Section 404 permit applications and 1603 Streambed Alteration Agreement for impacts to non-tidal, adjacent wetlands; impacts were associated with the roadway corridor. Prepared functional values assessment.
- **Roadway Improvements and Flood Protection Project.** City of San Marcos, California. Delineated wetlands, prepared vegetation map, and conducted rare plant surveys along San Marcos Creek from State Route 78 to Lake San Marcos.
- **Residential Subdivision.** The Irvine Company Planning Area 1, County of Orange, California. Prepared vegetation map and conducted rare plant surveys within the 4,000-acre project site. Prepared biological resources report for CEQA purposes.
- **Residential Subdivision and Commercial Development.** The Irvine Company Planning Areas 18 and 39, City of Irvine, California. Delineated wetlands and prepared vegetation map within the 1,200-acre project site. Developed wetlands permitting strategies with client.
- **Constraints Analyses.** Vista Unified School District, City of Vista and County of San Diego, California. Delineated wetlands and prepared vegetation map for three potential school sites. Other field

investigations included surveys for state- and federally-listed threatened or endangered plant and wildlife species. Field investigations were incorporated into reports discussing biological constraints on the three potential school sites.

- **Landfill Closure and Embankment and Scour Protection.** Kern Valley Sanitary Landfill Closure Project, Kern County, California. Delineated wetlands and prepared Section 401 and Section 404 Letter of Permission permit applications and 1601 Streambed Alteration Agreement for impacts to non-tidal, adjacent wetlands; impacts were associated with the embankment and scour protection. Prepared functional values assessment.
- **Dredging Impact Analysis.** Old Mission Dam, San Diego, California. Prepared wetland delineation and vegetation map upstream of the historic Old Mission Dam. Prepared biological resources report for CEQA purposes. Coordinated with regulatory agencies regarding proposed dredging.
- **Focused Rare Plant Surveys.** Newhall Ranch, Los Angeles County, California. Conducted focused surveys for the state-listed endangered San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) on approximately 6,000 acres.

Habitat Restoration and Enhancement

- Monitored salt marsh and riparian creation and enhancement efforts at Rancho Santa Fe Road Bridge, Sorrento Valley Utilities Improvement (City of San Diego, Tijuana River Emergency Channel Mitigation, Green Valley Mobile Home Park Slope Stabilization and North Metro Interceptor Sewer Projects in San Diego, California. Conducted data analysis to determine success of restoration and enhancement efforts in terms of predetermined performance standards. Prepared subsequent monitoring reports which included the assessment of revegetation efforts and recommendations for further remedial actions.
- Monitored upland vegetative communities including coastal sage scrub revegetation efforts at Top of the World Reservoir and Pump Station, Laguna Beach, California. Prepared subsequent monitoring reports.
- Prepared Conceptual Wetland Mitigation Plan for the Emergency Sewer Repairs at various sites along Escondido Creek and for the Hale Avenue Resource Recovery Facility (HARRF) for the City of Escondido, California. Prepared Conceptual Wetland Mitigation and Revegetation Plan for the Torrey Del Mar Project within the City of San Diego Future Urbanizing Area Subarea I, California.
- Prepared Conceptual Vernal Pool Mitigation Plan including restoration and enhancement for the Manzanita Partners Property in Carlsbad, California. Project included delineating existing vernal pools for enhancement and mapping historical vernal pools for restoration.
- Assisted in the research and documentation for mitigation alternatives for SR-125-Caltrans. Focused on mitigation through the restoration of habitat for the federally-endangered Quino Checkerspot Butterfly (*Euphydryas editha quino*).

Construction and Erosion Control Monitoring

- Performed construction monitoring for the Sorrento Valley Utilities Improvement Project which included precise grading for the restoration of salt marsh and other riparian habitats.
- Inspected the North Reservoir Project which includes erosion/sediment methods to verify the project was in accordance with the Storm Water Pollution Prevention Program for the Laguna Beach County Water District in the City of Laguna Beach, California. Project included weekly monitoring visits to assess the

function of the installed Best Management Practices for erosion control and subsequent observation reports, water quality sampling, and storm event monitoring.

Conservation Planning

- Assisted in the development of the Multiple Species Habitat Conservation Plan (MSHCP) for western Riverside County. Project involvement included research on potentially covered plant species followed by syntheses of ecological information.

PAUL LEMONS

Biologist

EDUCATION

- San Diego State University
B.S. Biological Sciences, Emphasis in Ecology 2001

PROFESSIONAL CERTIFICATIONS

- Quino Checkerspot Butterfly Section 10(a)(1)(A) Recovery Permit
(USFWS Federal Permit # TE051248-0)

EXPERIENCE SUMMARY

Mr. Lemons has a background in biology and environmental policy and regulation. As an undergraduate he worked as an intern at Mission Trails Regional Park in San Diego County. Paul assisted in the creation of a Habitat Conservation Plan for Mission Trails Regional Park in accordance with the City of San Diego and state guidelines.

Before working at Dudek and Associates, Inc. (DUDEK), Mr. Lemons worked as an intern for the San Diego Regional Water Quality Control Board where his duties included processing and review of Section 401 Water Quality Certification Applications and California Environmental Quality Act (CEQA) documents.

Since joining DUDEK, Mr. Lemons has been primarily involved with Biological monitoring and the preparation of Biological Technical Reports, Wetlands Mitigation and Monitoring Plans, and Environmental Permit Packages. Mr. Lemons was recently permitted to survey for the federally endangered Quino checkerspot butterfly, and will therefore be carrying out these surveys for future Dudek projects.

PROFESSIONAL ASSIGNMENTS

Mr. Lemons is currently providing monitoring, report writing, and/or support on the following projects:

- **University Commons Development Project, Biological monitoring, Carlsbad, CA.** Responsible for monitoring the clearing of native habitat to ensure clearing activities only occur within approved boundaries and that Best Management Practices are implemented.
- **Requeza Street Project, Encinitas, CA** Assisted in identifying plant species and mapping vegetation communities onsite.
- **Gordon Property, Vista, CA.** Project manager. Wrote Biological Constraints Analysis. Assisted with vegetation mapping and general wildlife surveys.
- **Torrey Ranch Project, San Diego, CA.** Responsible for preparation of the environmental permit package for this project. Prepared and submitted complete permit applications to the Regional Water Quality Control Board for section 401 Water Quality Certification, California Department of Fish and Game Section 1600 Streambed Alteration Agreement, and to the Army Corps of Engineers for Section 404.

- **Otay Ranch Village Two Biological Resources Report & Impact Analysis, Chula Vista, CA.**
Conducted Quino checkerspot butterfly surveys within the project area.

Kim L. Marsden
4243 Copeland Avenue #3
San Diego, California 92105-1234
Phone (619) 563-6492

Kim L. Marsden
Botanist/Biologist

As a biologist with ten years of experience, Ms. Marsden has successfully conducted a diverse range of botanical and zoological surveys, including focused searches for rare and endangered species in coastal, mountain and desert plant communities. She has developed excellent botanical skills from not only a broad range of field identification experiences throughout the southwestern United States and northwestern Mexico, but training in botanical laboratory techniques used for plant identification, as well. Ms. Marsden has extensive experience in the analyses of potential impacts to species and habitats from proposed development projects. She prepares and reviews technical reports, which provide alternatives recommendations to mitigate these impacts. She has a thorough working knowledge of regulatory issues and applicable laws including the California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), and the Clean Water Act as part of her resource agency experience working as a Botanist/Biologist for the California Department of Fish and Game, U.S. Fish and Wildlife Service, and through her project manager experience in the regulatory branch of the U. S. Army Corps of Engineers. Ms. Marsden has reviewed and commented on numerous proposed mitigation and monitoring plans for sensitive species. She is knowledgeable of, and skilled in, vegetation mapping, mitigation monitoring, and the design of habitat restoration plans. She also has extensive experience in conducting rare, threatened, and endangered animal surveys.

EDUCATION

Completed all required coursework for the Master's Program in Systematic Botany, San Diego State University, 1992-1994. Master's Research Topic: Systematics, ecology and natural history of Northwest American *Eryngium* species (Apiaceae).
Bachelor of Science, Biology, San Diego State University, 1992.
Associate of Science, Medical Laboratory Technology, San Diego Mesa College, 1988.

PUBLICATIONS

Marsden, Kim L. and Michael G. Simpson. 1999. *Eryngium pendletonensis* (Apiaceae), A New Species from Southern California. *Madroño*, 46:1, 61-64.

EXPERIENCE

1/01-present Associate Resource Ecologist, California Department of Parks and Recreation, Southern Service Center, San Diego.

Design long-term monitoring studies to assess the status and condition of vegetation communities, exotic species infestations, and rare plant populations. Conduct vegetation and rare plant inventories within State Parks in southern California. Assess the impacts of maintenance and development projects on biological resources within state park units. Provide technical botanical expertise to Service Center staff when requested. Assist in project environmental clearance under CEQA, ESA, and CESA. Assist other resources section staff in biological survey work and data analysis when necessary.

1/00 –1/01 Associate Biologist in Botany, California Department of Fish and Game, Region 5, San Diego Office.

Provided technical assistance in developing Habitat Conservation Plans to applicants/jurisdictions seeking take authorization under Section 2835 of the Fish and Game Code (Natural Community Conservation Program). Coordinated with the U.S. Fish and Wildlife Service Habitat Conservation Program staff to ensure HCP conformity with the Federal Endangered Species Act and the California Fish and Game code and other state and federal laws.

9/97-1/00 Fish and Wildlife Biologist/Botanist-U.S. Fish and Wildlife Service, Branch of Habitat Conservation Planning, Ecological Services, Carlsbad Field Office.

Provided technical assistance in developing Habitat Conservation Plans to applicants/jurisdictions seeking take authorization under section 10 of the Endangered Species Act. Coordinated with California Department of Fish and Game Natural Community Conservation Program (NCCP) staff to ensure HCP conformity with the Endangered Species Act and the Fish and Game code.

Evaluated and commented on projects impacting U.S. Army Corps of Engineers' jurisdictional Waters of the United States pursuant to the Fish and Wildlife Coordination Act. Consulted and conferred with other federal agencies under section 7 of the Endangered Species Act (Act) to analyze effects of federal actions on species proposed for listing or listed as endangered, threatened under the Act.

Provided technical expertise to Field Office staff in evaluation of revegetation, restoration and enhancement projects of upland, riparian, and wetland habitats. Provided general botanical expertise to Field Office staff biologists when needed.

7/96-9/97 Botanist-U.S. Fish and Wildlife Service-Branch of Federal Projects, Ecological Services, Carlsbad Field Office.

Conducted complete biological surveys for plants and wildlife for impact assessments of proposed land and water development projects. Prepared biological technical reports, including analyses of project alternatives developed from the results of directed sensitive species and community surveys. Developed sampling protocols for vegetation communities; provided botanical expertise to staff biologists and made recommendations for resource protection and enhancement. Surveyed for, and monitored the status of, federal candidate, proposed, and listed plant and animal taxa. Assisted in amphibian and reptile pit-fall trapping survey efforts. Provided technical expertise to Field Office staff biologists for evaluation of revegetation, restoration and enhancement efforts of upland, riparian, and wetland habitats.

11/95-7/96 Biologist/Project Manager, U. S. Army Corps of Engineers, Regulatory Branch, San Diego Field Office.

Project management, including evaluation of impacts to jurisdictional Waters of the United States, including wetlands, associated with permit requests pursuant to section 404 of the Clean Water Act, section 10 of the Rivers and Harbors Act, and section 103 of the Marine Sanctuaries Act. Processed permit applications, composed letters to applicants, evaluated compliance with permit conditions and coordinated with other agencies regarding proposed permit activities affecting biological, historical and water resources.

3/95-10/97 Botanist (Seasonal), Lake Cuyamaca Recreation and Park District, Julian, CA.

Project Manager of the Lake Cuyamaca downingia, Lake Cuyamaca larkspur, and Parish's meadowfoam monitoring program. Developed sampling and monitoring protocols for sensitive plant species. Coordinated rare plant monitoring activities in accordance with interagency Memorandum of Understanding guidelines, including mapping of rare plant populations using Geographic Information System (GIS) technology to assess annual boundary changes of plant subpopulations; prepared annual biological technical reports. Supervised and trained field personnel in established survey methodology; ensured thorough documentation of survey and monitoring activities through complete field notes.

4/94-10/94 Research Assistant II, San Diego State University Foundation; Contract biologist for U.S. Air Force, Luke Air Force Base, Gila Bend, Arizona. Small mammal monitoring (Dr. Lee McClenaghan).

Live-trapped small mammals, recorded life history data, tagged/marked animals, and recorded animal locations for home range determination. This project assessed the effects of low-altitude jet noise on predator-prey (kit foxes/rodents) relationships in a desert scrub community.

4/94-12/94 Environmental Services Intern, California Department of Parks and Recreation, Southern Service Center, San Diego, CA

Performed vegetation sampling, and conducted reptile, bird (including least Bell's vireo), and small mammal surveys for incorporation into a GIS database for the Anza Borrego Desert State Park General Plan. Developed sampling protocols for sensitive plant species; mapped vegetation, evaluated plant community composition and classified vegetation types according to several classification schemes; identified unknown plant species using dichotomous plant keys; conducted literature searches on sensitive plant, wildlife, and vegetation communities; entered vegetation/wildlife data into databases.

6/93-11/96 Research Assistant II, San Diego State University Foundation; Contract biologist for CALTRANS District 11, San Diego, CA

Conducted biological field surveys for plant, wildlife, and vegetation inventories within proposed transportation project corridors, including focused surveys for sensitive plant and animal taxa. Supervised and coordinated other field personnel, evaluated proposed projects for impacts to biological resources; used microscope and dichotomous plant keys to identify unknown plant species; mapped and evaluated plant communities for classification using several vegetation classification schemes. Collected, prepared and cataloged plant voucher specimens, verified taxonomic status of plant specimens, and maintained the onsite herbarium. Mapped sensitive biological resources, prepared biological technical reports; monitored sensitive plants reintroduction projects including *Dudleya viscida*, *Dudleya variegata*, and *Muilla clevelandii*; monitored riparian mitigation projects. Performed literature and database searches for sensitive plants, wildlife and habitats.

5/93-10/95 Botanist (Seasonal)- Regional Environmental Consultants (RECON), San Diego.

Conducted focused surveys for vernal pools and their associated rare plant species. Mapped vernal pools and associated watersheds for incorporation into GIS database; collected baseline species inventory and ecological data for vernal pool restoration monitoring projects; performed literature and database searches;

and mapped exotic pest plant populations for the Fallbrook Naval Weapons Center Noxious Weed Management Program.

8/92-6/93 Graduate Teaching Assistant, San Diego State University, Department of Biology.

Taught bi-weekly laboratory classes in Human Anatomy, supervised two undergraduate teaching assistants, developed study aids, wrote and graded practical exams.

4/92-10/92 Botanist-Research Assistant II, San Diego State University Foundation (for Dr. Paul Zedler).

Mapped sensitive plant species, monitored rare plant growth and distribution; collected, prepared and cataloged plant voucher specimens, verified taxonomic status of plant specimens, wrote species accounts and created botanical illustrations for final report.

6/91-6/92 Botanical Research Assistant II, San Diego State University Foundation (for Dr. Michael Simpson).

Prepared plant materials using histological techniques including plant dissection, paraffin embedding, and sectioning of plant floral material for preparation and mounting on microscope slides. Other duties included botanical illustration, data entry on PC and MacIntosh computers, computerized video image analysis, photographic darkroom work, including developing and printing of black and white film.

PERM

ITS & SURVEY EXPERIENCE

California Department of Fish and Game, Rare, Threatened, and Endangered Plant Collection Permit.

Extensive field work as a U.S. Fish and Wildlife Service employee participating in field surveys for rare, threatened and endangered species including plants, invertebrates (e.g., fairy shrimp species and Delhi Sands flower-loving fly), birds (e.g., light-footed clapper rail, coastal California gnatcatcher, and least Bell's vireo), and mammals (e.g., pacific pocket mouse).

RICK RIEFNER
Biologist/Botanist
Wetlands Specialist And Habitat Restoration Ecologist

SUMMARY OF QUALIFICATIONS:

Mr. Riefner is a field and research biologist, botanist, and wetlands specialist with additional advanced training in habitat restoration and the geomorphology of vernal pools. In the course of his professional experience, Mr. Riefner has published numerous peer-reviewed articles for scientific journals and professional conferences. He has most recently been studying the ecology of Mediterranean-type climates, describing altered fire regime impacts to late-succession species, soil-landform indicators of ephemeral wetlands, habitat ecologies isolating vegetation in California's white oak savannas, nitrate immobilization to control exotic plants, and the role of biological soil crusts in maximizing biodiversity of endangered/threatened species habitats, such as coastal bluff outcrops for Verity's Dudleya, and open-habitat soils for the Quino Checkerspot Butterfly. As a botanist, Mr. Riefner has diverse field experience in both the cryptogamic and phanerogamic vegetation communities of cismontane southern California. He is an expert on the lichens of California, and has discovered and characterized species new to science, reported taxa new to North America, and discovered a new population of an extremely rare species, *Texosporium santi-jacobi*. With the vascular plants, he has discovered a native annual presumed extinct, *Chorizanthe parryi* var. *fernandina*, an African grass new to North America, *Dinebra retroflexa*, and a disjunct population of an extremely rare shrub, *Baccharis malibuensis*. As a restoration ecologist, he was the first to utilize land imprinting and mycorrhizal inoculum in southern California for large-scale restoration of coastal sage scrub, and also was the first to incorporate biological pollution control techniques using submerged aquatic plants, without chemicals, in order to establish and maintain aquatic functions in constructed lakes for wetland mitigation programs in golf courses. He has also designed and implemented a successful large-scale eradication of giant reed (*Arundo donax*) using an hydroax to restore native riparian and alluvial scrub vegetation. Mr. Riefner has particular expertise in the geomorphology/ecology of southern California vernal pools and playas, and has described fluctuations in vegetation, new interpretation of mima mound landforms, and nutrient cycling in these ecosystems that have not been previously studied. He has also served as project manager for numerous wetland delineations, permitting for Section 404 of the Clean Water Act and Section 1600 of the California Fish and Game Code, biological assessment of endangered species, and the design and implementation of mitigation and habitat monitoring programs for clients throughout southern California.

SELECTED RECENT PROFESSIONAL EXPERIENCE:

The 3M Corona Plant Project: Task manager for wetland delineation, vegetation mapping, and assessment of impacts to coastal sage scrub and Stephens' kangaroo rat (*Dipodomys stephensii*); prepared riparian mitigation design and implementation, application for a Department of the Army 404 individual permit, 401 and 1603 regulatory permitting, Section 7 nexus for the threatened California gnatcatcher (*Polioptila californica californica*), and environmental

alternatives analysis for a quarry development project at the 1,321-acre 3M Corona Plant in Riverside County.

Owens Lake Project: Conducted an inventory of algae, cyanobacteria, and biological crusts at Owens Lake to assess potential use of soil-binding organisms to reduce erosion, control particulate emissions, and restore element cycling functions to the dry lake for the Great Basin Unified Air Pollution Control District.

North Peak Project: Task manager for wetland delineation, application for a Department of the Army individual permit and 401 water quality certification pursuant to Section 404 of the Clean Water Act, and State of California 1603 streambed alteration agreement; helped design a chemical-free lake management program utilizing submerged aquatic plants to control pollutants, and designed a riparian forest mitigation plan for a 1,800-acre golf course community / 800-acre conservation bank project near Lake Elsinore, Riverside County.

Liberty Project: Task manager for preparing 404 permits, 401 certification and 1603 Streambed Alteration Agreement, and environmental alternatives analysis for a master-planned community in Lake Elsinore, western Riverside County. Prepared a 120-acre wetlands habitat enhancement project consisting of an operations and management plan, a multi-habitat planting plan, and a monitoring plan incorporating technical aspects of HGM and an ecosystem functional analysis for the back basin of Lake Elsinore. Performed and defended a wetland delineation of potential wetland/jurisdictional habitats associated with the back basin of Lake Elsinore. Delineation defended non-hydric lakebed soils and potentially jurisdictional features including: micro-depressions, desiccation cracks, algal crusts, playa-like habitat, and historic watershed analysis.

California Department of Parks and Recreation - Orange Coast District: Assisted Dr. Roy Shlemon (R.J. Shlemon Associates) and Gerald G. Kuhn (International Foundation for Applied Research in the Natural Sciences) with geotechnical field investigations of a mimosa mound field at San Clemente State Park, Orange County, to study the formation of mounds and identify features effecting the formation of vernal pools.

- Prepared a bio-technical report and CEQA analysis for a coastal bluff revegetation project / rare plant management program for Blochman's dudleya (*Dudleya blochmaniae*) at San Clemente State Beach.
- Conducted protocol presence/absence and nest monitoring surveys for the coastal California gnatcatcher on the 2,676-acre San Onofre State Park lands in Orange and San Diego counties, and Crystal Cove State Park and San Clemente State Beach in Orange County.

Land Imprinting to Restore Coastal Sage Scrub: Designed, implemented, and monitored approximately 50 acres of coastal sage scrub restoration in Orange, Riverside, and San Diego counties using a land imprinter and mycorrhizal inoculum.

Arundo Removal: Designed and implemented a successful large-scale eradication of giant reed (*Arundo donax*) using an hydroax, nitrate immobilization techniques, a multi-habitat planting

palette, and creation of micro-topographic diversity in order to restore riparian and alluvial scrub habitats along Temescal Wash at the 3M Plant in Corona, Riverside County.

NCCP North Ranch Policy Plan Area in Orange County: Helped to design and implement a drift-fence/pitfall trapping study to document the herpetofauna, and conducted focused surveys and a habitat assessment for the federally listed Arroyo Toad and Red-Legged Frog at this 9,500-acre property.

Botanical Surveys: Performed numerous focused surveys for sensitive and endangered plant species in southern and central California such as (but not limited to) Lyon's pentachaeta (*Pentachaeta lyonii*), Braunton's milk-vetch (*Astragalus brauntonii*), ditch navarretia (*Navarretia fossalis*), Laguna Beach dudleya (*Dudleya stolonifera*), big-leaved crown beard (*Verbesina dissita*), Orcutt's grass (*Orcuttia californica*), salt marsh bird's-beak (*Cordylanthus maritimus* & *C. palustris*), slender-horned spine-flower (*Dodecahema leptoceras*), Parish's meadowfoam (*Limnanthes gracilis parishii*), Conejo buckwheat (*Eriogonum crocatum*); and the many-stemmed dudleya (*Dudleya multicaulis*), beargrass (*Nolina cismontana*), and Coulter's saltbush (*Atriplex coulteri*) for the NCCP's Southern Subregion Reserve, the 9,500-acre North Ranch Policy Plan Area, and the 13,000-acre East Orange Project.

California Environmental Quality Act Project: Prepared a CEQA analysis of indirect impacts, and designed mitigation measures that would reduce potentially significant secondary impacts to the federally-listed threatened Conejo Dudleya (*Dudleya parva*) to a level of insignificance at a single-family dwelling site in the City of Thousand Oaks, Ventura County.

Mr. Riefner has also conducted numerous wetland delineations, provided regulatory services, and/or designed and implemented bio-tech surveys, and mitigation and habitat monitoring programs for clients throughout southern California, including: the Carlsberg Project, Oak Park, Ahmanson Ranch, Big Sky, and Stevenson Ranch in Ventura County; Paloma del Sol, Audi Murphy Ranch, Greer Ranch in Riverside County; and Sunny Creek and Sunny Terraces, Del Mar Highlands Estates, the Future Urban Planning Areas in San Diego County, the Irvine Ranch Water District in Orange County, and the Inland Feeder Project in Riverside County and San Bernardino County for the Metropolitan Water District of Southern California.

PROFESSIONAL EMPLOYMENT HISTORY:

10/2001 - Present	Botanist, Wetland Specialist, and Habitat Restoration Ecologist; Glenn Lukos Associates, 29 Orchard, Lake Forest, CA 92630-8300.
1/2001 - 10/200	Consulting Biologist; Rick Riefner Associates, Tustin, CA 92780.
9/2000 - 1/2001	Senior Biologist; Psomas Inc., 3187 Red Hill Ave, Coasta Mesa, CA 92626.
11/1999 - 8/2000	Senior Botanist & Wetlands Specialist; Harmsworth Associates, Dove Canyon, CA.
8/1995 - 10/1999	Habitat Restoration Specialist; Glenn Lukos Associates, 23441 South Pointe Dr., Laguna Hills, CA 92653.

4/1994 - 7/1999	Environmental Services Intern; California Park Service, Orange coast District, San Clemente, CA 92672.
5/1992 - 8/1992	Museum Scientist; Museum of Systematic Biology, University of California, Irvine, CA 92679.
1982 - 1990	Night Manager-Bartender; Crazy Horse Steakhouse, Santa Ana, CA.
1977 - 1981	Lab Technician: Analytical Chemistry & Microbiology; Joseph E. Seagram & Sons, Relay, Maryland.
1976 - 1977	Biologist; Maryland Department of Natural Resources, Land Planning Services, Annapolis, Maryland.

EDUCATION:

1981	Post graduate studies - University of Michigan Biological Station
1980	Post graduate studies - University of Maryland, College Park
1975	B.S. - Biology - Towson State University, Maryland

AWARDS:

1999. *Outstanding Contribution to Field Botany in Southern California: Rediscovery of Chorizanthe parryi var. fernandina.* Presented by Southern California Botanists, Biodiversity Conference, California State University, Fullerton, 23 October 1999.

SPECIAL PERMITS:

U.S. Fish and Wildlife Service Endangered Species Permit 10(a)1(A) PRT-827494, renewal: TE-827494-1; presence/absence surveys and nest monitoring of Coastal California Gnatcatcher (*Polioptila californica californica*); expires 10-19-2003.

CA Department of Fish and Game, State Resident Scientific Collecting Permit; marine algae - tidal invertebrates, and special concern reptiles and amphibians; PRT No. 801029-05; renewal 801046-01, expires 4-11-03.

PROFESSIONAL AFFILIATIONS:

American Geophysical Union
 CalEPPC
 California Botanical Society
 California Native Plant Society
 California Lichen Society
 Natural Areas Association
 Rancho Santa Ana Botanic Garden - *Research Associate*

Sigma Xi, The Scientific Research Society – *University of California, Riverside*
Society for Ecological Restoration
Southern California Botanists

SYMPOSIA / CONFERENCE PARTICIPANT:

2000. *Trends and Lessons in Ecological Restoration*. SERCAL Conference 2000. "Biological Crusts and Rock-Loving Lichens Enhance Seedling Establishment of Rare *Dudleya* Species [Crassulaceae] in Southern California." Poster presented October 26-29, Santa Barbara. R.E. Riefner, Jr. and Carl Wishner.

2000. *Exotic Plants in the Landscape: Processes and Patterns*. CalEPPC Symposium 2000. "Biological Exclusion of Exotic Weeds from Open-Soil Habitats and the Conservation of Endangered Species." Poster presented October 6-8, Concord. R.E. Riefner, Jr. and T. St. John.

1997. *Restoration As Process*. SERCAL Sixth Conference, San Luis Obispo. "Native Grasses, Mycorrhizae, and Soil-Surface Processes Restore Ecosystem Function." T. St. John, R.E. Riefner, Jr., and D.R. Pryor.

1997. *Annual Association Of Engineering Geologists*, Portland. "Origin of Mima-Mound Fields." R. Shlemon, G. Kuhn, B. Boka, and R.E. Riefner, Jr.

1997. *Second Interface Between Ecology And Land Development In California*, Occidental College, Los Angeles. "Prescribed Burning Impacts to Late Succession Species." P.A. Bowler and R.E. Riefner, Jr.

1984. *Threatened And Endangered Plants And Animals Of Maryland*. Maryland Natural Heritage Program - The Nature Conservancy. "Ecology and Floristics of Limestone Habitats in Maryland." Baltimore, Maryland. R.E. Riefner, Jr. and S.R. Hill.

SELECTED ADDITIONAL TRAINING:

2002 *Invasive Plant School*: University of California, USDA Cooperative Extension, San Diego. Certificate of Completion.

2002 *Laboratory Methods for Identification of Mycorrhizal Infection*: St. John Consulting, Riverside.

2000 *CEQA and Strategic Planning*: UCLA Extension, Universal City.

2000 *Field Biology in the New Century: Changing roles for the public and private sector*: The Wildlife Society, Riverside.

- 1999 *Neotectonics in North Coastal San Diego County, California*: American Geological Society, Carlsbad; and South Coast Geological Society, Santa Ana.
- 1998 *Declining Amphibians in California*: San Diego Natural History Museum.
- 1997 *The Elfin Forest: Southern California Chaparral*: Southern California Botanists, California State University, Fullerton.
- 1997 *California Coastal Geology*: International Foundation for Applied Research in the Natural Sciences, Carlsbad.
- 1996 *CalEPPC Symposium '96*: California Exotic Pest Plant Council, San Diego.
- 1996 *Ecology, Conservation, and Management of Vernal Pool Ecosystems*: CNPS, Society for Ecological Restoration, and The Wildlife Society, Sacramento.
- 1996 *Wetland Delineation*: Army Corps of Engineers, 1987 Manual. The Wetland Training Institute, Sacramento. Certificate of Completion.
- 1995 *Native Grassland Vegetation*: California Native Grass Association. Santa Ana Botanic Garden, Claremont. Certificate of Completion.
- 1994 *Brushfires in California Wildlands: Ecology and Resource Management*. Southern California Academy of Sciences, University of California, Irvine.
- 1994 *Habitat Restoration Case Studies*: University of California, Riverside.

PUBLICATIONS:

- Riefner, R.E., Jr. and D.R. Windler. 1979. *Polygonum perfoliatum* L. established in Maryland. *Castanea* 44:19-23.
- Riefner, R.E., Jr. 1979a. *Leucothoe axillaris* var. *editorum* (Fern. & Schub.) Ahles new to Maryland. *Castanea* 44: 59.
- Riefner, R.E., Jr. 1979b. Additions to the vascular flora of Maryland. *Castanea* 44: 186-187.

- Riefner, R.E., Jr. and J. Tremper. 1980. *Magnolia macrophylla* Michaux naturalized in Maryland. *Phytologia* 46: 283-284.
- Riefner, R.E., Jr. and D.R. Windler. 1980. Devil's tail invades Maryland. *Maryland Conservationist* 56: 8-11.
- Riefner, R.E., Jr. 1981a. Notes on some proposed rare and endangered vascular plant species in Maryland. *Phytologia* 47: 397-403.
- Riefner, R.E., Jr. 1981b. Studies on the Maryland flora VII: Addition of *Cyperus houghtonii* Torrey and *Juncus trifidus* var. *monanthos* (Jacq.) Bluff & Fing. to the state flora. *Phytologia* 48: 146-150.
- Riefner, R.E., Jr. 1981c. Studies on the Maryland flora VIII: Range extensions of *Polygonum perfoliatum* L., with notes on introduction and dispersal in North America. *Phytologia* 50: 152-159.
- Riefner, R.E., Jr. 1982. Studies on the Maryland flora IX: *Cakile maritima* Scop. naturalized in the Chesapeake Bay region. *Phytologia* 50: 207-208.
- Hill, S.R. and R.E. Riefner, Jr. 1982. New records and distributional notes on Maryland pteridophytes. *American Fern Journal* 72: 45-58.
- Riefner, R.E., Jr. and S.R. Hill. 1983. Notes on infrequent and threatened plants of Maryland including new state records. *Castanea* 48: 117-137.
- Voss, E.G. and R.E. Riefner, Jr. 1983. A pyralid moth (Lepidoptera) as pollinator of blunt-leaf orchid. *Great Lakes Entomologist* 16: 57-60.
- Riefner, R.E., Jr. and S.R. Hill. 1984. Ecology and floristics of limestone areas: An important habitat for Maryland plants. In: Norden A.D., D. Forester and G.H. Fenwick (eds.). Threatened and endangered plants and animals of Maryland. *Maryland Natural Heritage Program Special Pub.* 84-1: 161-193. Maryland Dept. of Natural Resources.
- Riefner, R.E., Jr. 1989. *Punctelia punctilla* (Hale) Krog new to North America. *Phytologia* 67: 254-257.
- Riefner, R.E., Jr. 1990. *Pertusaria pseudocorallina* and *Ramalina fastigiata* new to North America. *Mycotaxon* 39: 31-41.

- Bowler, P.A. and R.E. Riefner, Jr. 1990. A preliminary lichen checklist of the University of California, Irvine campus and the San Joaquin Wetlands. *Crossosoma* 16(6): 1-10.
- Riefner, R.E., Jr. and P.A. Bowler. 1994. *Ramalina baltica* and *Ramalina canariensis* in North America. *Mycotaxon* 51: 495-501.
- Riefner, R.E., Jr. and P.A. Bowler. 1994. *Ramalina puberulenta*: A new lichen from California. *Mycotaxon* 52: 247-257.
- Bowler, P.A., R.E. Riefner, Jr., J. Marsh, T.H. Nash III, and P. Rundel. 1994. New species of *Niebla* (Ramalinaceae) from North America. *Phytologia* 77: 23-37.
- Riefner, R.E., Jr. and P.A. Bowler. 1995. Cushion-like fruticose lichens as *Dudleya* seed traps and nurseries in coastal communities. *Madroño* 42: 81-82.
- Riefner, R.E., Jr., P.A. Bowler, J. Marsh, and T.H. Nash III. 1995. *Niebla tuberculata* (Ramalinaceae): A new lichen from California. *Mycotaxon* 54: 397-401.
- Bowler, P.A. and R.E. Riefner, Jr. 1995. Notes on the *Ramalinaceae* and current related research in California, U.S.A. *Bulletin of the California Lichen Society* 2: 1-5.
- Riefner, R.E., Jr., P.A. Bowler, and B. Ryan. 1995. New and interesting records of lichens from California. *Bulletin of the California Lichen Society* 2: 1-11.
- Bowler, P.A., W.A. Weber, and R.E. Riefner, Jr. 1996. A lichen checklist of San Clemente Island, California. *Bulletin of the California Lichen Society* 3:1-8.
- Riefner, R.E., Jr. and D. Pryor. 1996. New locations and interpretation of vernal pools in southern California. *Phytologia* 80: 296-327.
- Shlemon, R.J., G.G. Kuhn, B. Boka, and R.E. Riefner, Jr. 1997. Origin of a mima-mound field, San Clemente State Park, Orange County, California: A test of the seismic hypothesis. In: Program with Abstracts - 40th Annual Association of Engineering Geologists - pages 148-149, Portland.

- Bowler, P.A. and R.E. Riefner, Jr. 1997. Prescribed burning impacts to late successional species. J. Keeley (ed.) *Proceedings for the Second Interface Between Ecology and Land Development in California*. Poster presented: Occidental College, Los Angeles.
- St. John, T., R.E. Riefner, Jr., and D.R. Pryor. 1997. Native grasses, mycorrhizae, and soil-surface processes restore ecosystem function. *In: Program with Abstracts - Restoration as Process through Philosophy, Ecology and Community* - page 70, SERCAL Sixth Annual Conference, San Luis Obispo.
- Riefner, R.E., Jr., D.R. Pryor, and T. St. John. 1998. Effects of Mycorrhizae: Restoration at San Onofre State Beach, California. *Land and Water* 42: 15-18.
- Riefner, R.E., Jr., J. Tiszler, and S. Boyd. 1999. Noteworthy Collection: *Navarretia mellita* in Ventura County, CA. *Crossosoma* 25: 83-84.
- Riefner, R.E., Jr. 1999. [Cover Photograph]. *CalEPPC News*. Spring 7: 1
- Riefner, R.E., Jr. and C. Wishner. 2000. Biological crusts and rock-loving lichens enhance seedling establishment of rare *Dudleya* species (Crassulaceae) in southern California. J. St. John and S. Clark (eds.). *Trends & Lessons in Ecological Restoration*. *In: Program with Abstracts*, pg. 39, *The Seventh Annual Conference of SERCAL*. Poster Presented: October 26-29, 2000, University of California at Santa Barbara.
- Riefner, R.E., Jr. 2000. Noteworthy Collection: *Xanthoparmelia angustiphylla* in the Santa Ana Mountains, Orange County, CA. *Crossosoma* 26: 15-16.
- Bowler, P.A. and R.E. Riefner, Jr. 2000. Prescribed burning impacts to late successional species. Pp 71-73. J. Keeley, M. Baer-Keeley, and C.J. Fotheringham (eds.) *Second Interface Between Ecology and Land Development in California*. U.S. Geological Survey Open-File Report 00-62.
- Riefner, R.E., Jr. 2002. [Cover Photograph]. Nature's perfect erosion control plants. *CyanoNet*, BioNet LLC, Marina, CA.

- Riefner, R.E., Jr., S. Boyd, and R.J. Shlemon. 2002. *Eleocharis obtusa* var. *engelmannii* new to southern California. *Crossosoma* 27: 52-54.
- Riefner, R.E., Jr. and T. St. John. In press. Biological exclusion of exotic weeds from open-soils habitats and the conservation of endangered species. J. DiTomaso (ed.). Exotic Plants in the Landscape: Patterns and Process. In: Proceedings for the *California Exotic Pest Plant Council Symposium 2000*. Poster presented October 6-8, 2000, Concord.
- Riefner, R.E., Jr., and S. Boyd. In Press. *Malacothrix saxatilis* var. *saxatilis* discovered in Orange County, southern California. *Crossosoma*.
- Riefner, R.E., Jr., C. Wishner, P.A. Bowler, and T. Mulroy. In press. Rock-inhabiting lichens and biological crusts enhance recruitment success of rare *Dudleya* species [Crassulaceae] in southern California. *Crossosoma*.
- Riefner, R.E., Jr., G. Pratt, R. J. Shlemon. In review. *Texosporium santi-jacobi*, a new record of a rare soil lichen and the importance of preserving open-habitat soils in southern California. *Madroño*.
- Columbus, J.T., R.E. Riefner, Jr., and S. Boyd. In Preparation. *Dinebra retroflexa*, an African grass new to North America. *Madroño*.

Andrew C. Sanders
Herbarium Curator

Department of Botany & Plant Sciences
University of California
Riverside, CA 92521-0124
(909) 787-3601

Home: 422 Campus View Dr.
Riverside, CA 92507
(909) 787-0168

Education

B.Sc. in Biology, specializing in Botany;
University of California, Riverside. June 1975.

Employment

1. U.S. Department of the Interior, Bureau of Land Management (Riverside and Bakersfield Districts and California Desert Plan Staff). Aug. 1975 to Apr. 1978 During this period I held positions as a Wildlife Biologist, Natural Resource Technician, and Range Conservationist and worked on the following projects:

California Desert Plan
Geothermal Energy Leasing Environmental Impact Statements
 East Mesa
 N. Salton Sea
 Red Mountain
 Yuha Basin
McCain Valley Habitat Management Plan
Owens Valley Range Program
Sun Desert Transmission Line E.I.S.

In the course of these projects I conducted extensive field surveys of vegetation and wildlife in the desert of southern California and in the Owens Valley.

2. University of California, Riverside. Dept. of Biology. Staff Research Associate and resident biologist at the James Reserve in the San Jacinto Mountains of Riverside County California. April 1978 to Sept. 1979. While at the James Reserve I surveyed the flora and fauna of the San Jacinto Mtns. and began the compilation of a list of the plants of the reserve, which was later completed in cooperation with Ken Berg, my successor.
3. University of California, Riverside. Dept. of Botany & Plant Sciences. Since September 1979 I have been Museum Scientist and curator of the Herbarium. This has involved extensive work with the flora of the southwestern U.S. and adjacent areas. I have identified literally tens of thousands of plant specimens and have enlarged the UCR

collection to ten times its former size. I have personally collected over 24,000 plant specimens in western North America. As a result of my work at the herbarium, I have come to be extremely familiar with the flora of southern California and can identify the overwhelming majority of plant species from this area on sight.

Additional Experience

I have contributed botanical/biological inventories for the following projects in California. This list is not comprehensive, but is representative.

Imperial Co.

Botanical Survey for U.S. Navy, Chocolate Mtns. Aerial Gunnery Range. 1988-1991.

Kern Co.

Biological Survey for a parcel near Rosamond, prepared for Land Concepts, Inc. 1988.

Botanical Survey for Silver Peak Mine Expansion, prepared for Weber & Weber Mining Consultants. 1989.

Botanical Survey of the Wind Wolves Preserve (San Emigdio Ranch), prepared for the Wildlands Conservancy. In progress.

Los Angeles Co.

Botanical Survey for Portuguese Bend Land Use Plan, prepared for England and Nelson Environmental Consultants. 1976.

Botanical survey of El Segundo Dunes, for L.A. International Airport, through Agresearch, Inc. 1987-1988.

Botanical surveys for several projects in the Lancaster vegetation management zone, prepared for the Dept. of Community Development, City of Lancaster. 1988-1989.

Orange Co.

Botanical survey for Land Use Plan for the Silverado-Santiago area of the Santa Ana Mtns., prepared for England & Nelson Environmental Consultants. 1976.

Riverside Co.

Botanical survey for the Riverside Co. Southwest Territory General Plan, for Riverside Co. Planning Dept. 1977.

Botanical survey for the Army Corps of Engineers Whitewater Flood Control Project. 1980.

Botanical Survey for Kacor Realty Wolf Valley Development, prepared through L. LaPré, consultant. 1981.

Botanical survey of the U. C. Motte Reserve near Perris. 1982.

Botanical survey of 500 ac. property near Murrieta, prepared for P. Principe, consultant. 1988.

Botanical survey of the Nature Conservancy Oasis de Los Osos Preserve. 1985-1988.

Biological Survey for Proposed Sanderson Ave. Bridge and Realignment, near San Jacinto, prepared for Myra L. Frank and Associates. 1990.

Rare plant Survey for the Coachella Valley Multi-Species Habitat Conservation Plan, prepared through Thomas Olson & Associates. 1995.

Botanical Survey of a pipeline route along the San Jacinto River, prepared through KDJ and Associates. 1996.

Botanical Survey of the Shipley Multi-species Reserve at Lake Skinner. In progress.

San Bernardino Co.

Biological survey for Big River Development, Colorado River near Parker. 1980.

Botanical Survey for Cactus Hill Mine, Ivanpah Mtns, prepared for J. McMains, consultant. 1985.

Biological survey of 640 ac. parcel near Pioneertown prepared for The Nature Conservancy. 1986.

Botanical Survey for Don Brown Racing Facility, Cajon Pass area. 1986.

Botanical Survey for Hart Mine expansion, Mojave Desert, prepared for J. McMains, consultant. 1986.

Scoping Report for Santa Ana River Resource Management Plan, prepared for the County of San Bernardino Dept. of Environmental Public Works. 1987.

Biological survey for Devil Canyon Powerplant expansion, prepared for the California Dept. of Water Resources. 1987.

Botanical survey for Glen Helen Sheriff's Academy expansion, prepared for the San Bernardino County Sheriff's Dept. 1987.

Biological Survey for the Daley Transit Mix Property near Ft. Irwin, Mojave Desert. 1988

Botanical Survey for proposed Davis Ranch Mine, Cajon Pass, prepared for Weber & Weber Mining Consultants. 1989.

Botanical Survey for Silver Peak Mine Expansion, prepared for Weber & Weber Mining Consultants. 1990.

Botanical Survey for Cajon East (Cleghorn) Mine Expansion, prepared for Weber & Weber Mining Consultants. 1990.

Botanical Survey for National Can Parcel, Verdemont, prepared for McClelland Associates. 1990.

Biological Survey of Birmingham Ranch, prepared for the City of Yucaipa. 1992.

Biological Survey of Porter Ranch, prepared for the City of Yucaipa. 1993.

Biological Survey of the Yount/Mitchell property near Yucaipa, prepared for Robin Isakson & Associates. 1993.

Biological Survey of 100 acre property in Yucaipa, prepared for George Polycrates and Associates. 1996.

Botanical Survey of the central Avawatz Mtns., Mojave Desert, prepared for Gordon F. Pratt, consulting entomologist. 1997.

Outside of California I have done extensive field work and made numerous plant collections throughout the southwestern U.S., but particularly in Nevada and Arizona. I have also worked extensively in Mexico and am presently involved in three floristic projects in that country. I spent 12 weeks doing botanical survey work in Costa Rica during 1995 and 1996.

In addition to the above, I regularly make plant identifications (including fossils) for professional biological consultants, for scientific researchers, and for the general public. I commonly make plant identifications for biological consultants, and over the years have literally made thousands of such determinations. I have identified plants on one or more occasions for the following Riverside County Qualified Environmental Consulting Firms and have done so regularly for several of them (*):

AMEC Earth & Envir., Inc.*
Beaman Biological Consulting
Biological Resource Specialists
Campbell Biological Consulting
CH2M Hill*
David E. Bramlet
Glen Lukos Assoc.
Harmsworth Assoc.
James Cornett Ecol. Cons
Joan R. Callahan
Kelly Volansky*

Ken Osborne
LSA Assoc.*
Natural Resource Assessment, Inc.*
P. & D. Environmental*
PCR Inc.
Principe and Assoc.
San Bernardino Co., Museum
Statistical Research Inc.
Ted Rado
TeraCor Resource Mgmt.*
TetraTech
Thomas Olsen & Assoc. *
Tierra Madre Consultants*
Tom Dodson & Assoc.*
VHBC Consulting
W.D. Wagner
White & Leatherman*

I am generally recognized as one of the foremost authorities on the flora of Southern California and am regularly contacted by the US Fish & Wildlife Service and California Dept. of Fish and Game for information on the status and distribution of threatened and endangered plant species. In particular, I was queried regularly about species covered by the Riverside County MSHCP. I am regularly called upon to identify plant fragments which represent evidence in criminal cases.

Publications

- Boyd, S. and A.C. Sanders. 1999. "Noteworthy Collections, California – *Dicentra chrysantha*, *Euphorbia anramsiana*, *Holocarpha heermannii*, Madroño 46 (2): 112.
- Costea, M., A.C. Sanders & J. G. Waines. 2001. Preliminary results toward a revision of the *Amaranthus hybridus* species complex (Amaranthaceae) Sida 19 (4): 931-974
- Costea, M., A.C. Sanders & J. G. Waines. 2001 Notes on some little known *Amaranthus* taxa (Amaranthaceae) in the United States Sida 19 (4): 975-992.
- Costea, M., A.C. Sanders & J. G. Waines. 2002? *Amaranthus* Aliso In press
- Cudney, D., C. Bell & A. C. Sanders. 1997. Weedy spurge in California, U. C. Extension Circular. Revised 2002.
- Friedman, S. L., T. R. Van Devender, V. W. Steinmann, A. C. Sanders, P. D. Jenkins, S. A. Meyer, A. L. Reina Guerrero, D. A. Yetman, R. S. Felger & R. A. Lopez Estudillo. 1996. "Noteworthy Collections, Sonora, Mexico -- *Brickellia brandegei*, *Cordia globosa*, *Bromelia alsodes*, *Selenicereus vagans*, *Capparis flexuosa*, *Ipomoea imperati*, *Operculina*

pennatifida, Doyera emetocathartica, Momordica charantia, Bergia texana, Caesalpinia sclerocarpa, Mimosa asperata, Pholisma culiacanum, Nesaea longipes, Malpighia glabra, Bastardia viscosa, Okenia hypogea, Oenothera drummondii var. thalassaphila, Ophioglossum nudicaule, Luziola gracillima, Panicum antidotale, Tridens eragrostoides, Amyris balsamifera, Capraria biflora, Solanum azureum, Citharexylum scabrum, Lippia graveolens", Madroño 43(4):532-538.

Hrusa, F., B. Ertter, A. Sanders, G. Leppig, E. Dean. 2002? Catalogue of non-native vascular plants occurring spontaneously in California beyond those addressed in The Jepson Manual, Part 1. Madroño, in press.

Jones, C. E., A. C. Sanders, et al. 1979. "Noteworthy Collections, California -- Physalis lobata, Madroño 29 (2): 101.

Krantz, T. P., R. F. Thorne & A. C. Sanders. 2003?, A Flora of the San Bernardino Mountains, California, nearing completion.

Minnich, R. A. and A. C. Sanders, 2000, Sahara Mustard (*Brassica tournefortii*), in California's Wildland Weeds: Identification and Control, C. Bossard, J. Randall, & M. Hoshovsky, eds, University of California Press

Sanders, A. C., 1996. "Noteworthy Collections, California -- *Acrachne racemosa*, *Aegilops cylindrica*, *Atriplex mulleri*, *Baileya multiradiata*, *Bromus secalinus*, *Cenchrus ciliaris*, *Centaurea diffusa*, *Centaurea maculosa*, *Ceratonia siliqua*, *Chloris truncata*, *Cynanchum louiseae*, *Ephedra funerea*, *Eragrostis curvula* var. *conferta*, *Fatoua villosa*, *Linanthus orcuttii*, *Matricaria globifera*, *Melica californica*, *Melissa officinalis*, *Panicum antidotale*, *Panicum maximum*, *Pistacia atlantica*, *Schinus polygamus*, *Schoenus nigricans*, *Scribneria bolanderi*, *Senna obtusifolia*, *Solanum mauritianum*, *Triteleia hyacinthina*", Madroño 43(4):524-532.

Sanders, A. C., 1997. "Noteworthy Collections, California -- *Gaura parviflora*, *Crepis tectorum*", Madroño 44 (3) 306-307.

Sanders, A.C. 1998. Polygonaceae in Martin, P., et al (revised & ed.). 1998. Gentry's Río Mayo Plants: the tropical deciduous forest & environs of northwest Mexico, University of Arizona Press.

Sanders, A.C. 1999. Invasive Exotics in California: a Perspective from Inland Southern California. In: M. Kelly, E. Wagner, and P. Warner (eds.). Proceedings of the California Exotic Pest Plant Council Symposium. Vol 4: 1998. Pp. 7-10.

Sanders, A. C. 2003?, "A Flora of the Box Springs Mountains and Vicinity, Riverside and San Bernardino Counties, California", Crossosoma, in preparation.

- Sanders, A. C., 2003?. "Noteworthy Collections, California --*Allium vineale*, *Celtis sinensis*, *Cestrum nocturnum*, *Colutea arborescens*, *Crepis nana*, *Cynosurus echinatus*, *Desmodium tortuosum*, *Eruca vesicaria* var. *sativa*, *Gilia maculata*, *Gnaphalium purpureum*, *Gypsophila elegans*, *Horkelia cuneata* ssp. *puberula*, *Leonotus nepetifolia*, *Nerium oleander*, *Phaseolus filiformis*, *Pinus attenuata*, *Pinus jeffreyi*, *Rhamnus alaternus*, *Salvia reflexa*, *Ziziphus obtusifolia*", Madroño, submitted.
- Sanders, A. C., D. L. Banks & S. Boyd , 1997 "Rediscovery of *Hemizonia mohavensis* Keck (Asteraceae) and addition of two new localities", Madroño 44 (2): 203-210.
- Sanders, A. C. and S. Boyd, 1996. "Noteworthy Collections, California, -- *Brassica fruticulosa*", Madroño 43(4):523-524.
- Sanders, A.C. and S. Boyd. 1999. "Noteworthy Collections, California, -- *Chloris truncata*, *Galium parisiense*, *Ranunculus testiculatus*", Madroño 46(2):113.
- Sanders, A. C. and D. Cudney, 1991. "Key to the Families of Weeds of the West", in Weeds of the West, T. D. Whitson, ed., Western Society of Weed Science.
- Sanders, A. C. and D. Koutnik, 1997. "Noteworthy Collections, California, -- *Euphorbia dendroides*, *E. esula*, *E. hirta*, *E. nutans*, *E. oblongata*, *E. revoluta*, *E. terracina*", Madroño 44(2): 203-210.
- Skinner, M. W., D. P. Tibor, R. L. Bittman, B. Ertter, T. S. Ross, S. Boyd, A. C. Sanders, J. R. Shevock & D. W. Taylor, 1995. "Research Needs for Conserving California's Rare Plants", Madroño 42(2): 211-241.
- Van Devender, T. R., A. C. Sanders, R. K. Wilson, & S. A. Meyer. "Vegetation, Flora, and Seasons of the Rio Cuchujaqui, A Tropical Deciduous Forest near Alamos, Sonora, Mexico", in The Tropical Deciduous Forest of the Alamos, Sonora, Region: Ecology and Conservation of a Threatened Ecosystem, ed. by R. H. Robichaux.
- Van Devender, T. R., A. C. Sanders, V. W. Steinmann, R. K. Van Devender, S. A. Meyer, S. L. Friedman, J. F. Wiens, D. A. Yetman, P. D. Jenkins, E. Lopez-Saavedra, R. A. Lopez-Estudillo & J. D. Freeh, 1995. "Noteworthy Collections, Sonora, Mexico -- *Blechnum pyramidatum*, *Begonia palmeri*, *Acmea oppositifolia*, *Blumea viscosa*, *Elephantopus spicatus*, *Eupatorium odoratum*, *Pectis uniaristata*, *Cuscuta boldinghii*, *C. potosina*, *Ipomoea meyeri*, *Merremia quinquefolia*, *Cyperus difformis*, *Euphorbia ocymoidea*, *Bothriochloa pertusa*, *Bouteloua alamosana*, *Desmodium scopulorum*, *D. scorpiurus*, *Mimosa diplotricha*, *Phaseolus lunatus*, *Polypremum procumbens*, *Passiflora suberosa*, *Piper jaliscanum*, *Crusea coronata*, *C. psyllioides*, *Diodia sarmentosa*, *Hedyotis vegrandis*, *Anemia affinis*, *Nicotiana plumbaginifolia*, *Phylla strigulosa*", Madroño 42 (3): 411-418.

- Vasek, F. C. & A. C. Sanders, 1983. "Distribution of *Polygala acanthoclada*", Madroño 30 (3): 193-194.
- White, S. and A. C. Sanders, 1997. "Clarification of Three *Camissonia Boothii* Subspecies' Distributions in California", Madroño 44 (1): 106-112
- White, S., A. C. Sanders & M. Wilcox 1996. "Noteworthy Collections, California, -- *Androstephium breviflorum*, *Claytonia lanceolata*, *Nicotiana acuminata*, *Ranunculus scleratus*", Madroño 43 (2): 334-335.

ANDREW THOMSON
ENVIRONMENTAL SPECIALIST

EDUCATION

- Washington State University
M.S., Environmental Science, 2000
- Utah State University
B.S., Biology, 1997

EXPERIENCE SUMMARY

Mr. Thomson has a Master of Science degree in Environmental Science and a Bachelor's degree in Biology. He has worked on a variety of habitat restoration projects with the U.S. Forest Service and has been involved with threatened and endangered plant species surveys and sensitive habitat protection in the Big Bear area. He is currently working on a variety of habitat restoration projects with various responsibilities at DUDEK.

PROFESSIONAL ASSIGNMENTS

Sensitive Plant Habitat Projects

Mr. Thomson is currently involved with three separate sensitive plant habitat projects. He has been responsible for monitoring the progress of the following projects as well as documenting that progress in annual project reports:

- **4S Ranch Thread-Leaved Brodiaea and San Diego Goldenstars Mitigation/Transplantation Program, Rancho Bernardo, CA.** Mr. Thomson assisted with the plant monitoring and was responsible for preparing the annual progress report for this project.
- **Kumeyaay Campground San Diego Ambrosia Transplantation Project, San Diego County, CA.** Mr. Thomson was responsible for the biological monitoring and the preparation of a status report for this project.
- **State Route 125 Otay Tarplant Salvage and Habitat Replacement Project, San Diego County, CA.** Mr. Thomson is involved with ensuring successful plant salvage and relocation of Otay tarplant for the construction of SR125. He is also assisting with the determination of suitable receptor sites for salvaged Otay tarplant seed and accompanying soil.

Habitat Restoration and Habitat Monitoring Plan Writing

- **Arroyo Trabuco Golf Course Coastal Sage Scrub and Valley Needlegrass Grassland Revegetation Plan, Orange County, CA.** Mr. Thomson was responsible for drafting the habitat restoration plan for the 230-acre Arroyo Trabuco Golf Course project in Orange County. For this project he prepared a revegetation plan that included both coastal sage scrub and Valley needlegrass grassland restoration.
- **Sorrento Creek Flood Control Channel Monitoring Plan, City of San Diego, CA.** Mr. Thomson assisted with the preparation of the Sorrento Creek Flood Control Channel Monitoring Plan for the City of San Diego, California. The Plan included methodology and rationale for monitoring adverse effects resulting from the creation and maintenance of the Sorrento Creek flood control channel.

Vegetation Mapping and Rare Plant Surveys

Mr. Thomson has been involved with both vegetation mapping and rare plant surveying in the following projects:

- **Finger Canyon Vegetation Mapping, San Diego County, CA.** Mr. Thomson was involved with mapping habitat types including coastal sage scrub, southern maritime chaparral, willow woodland, and fresh water marsh within the preserved habitat in Finger Canyon.
- **Irvine Ranch Housing Development Project, Orange County, CA.** Mr. Thomson assisted in the rare plant surveys for the sensitive plant, intermediate mariposa lily.

Vegetation Monitoring and Reporting

Mr. Thomson has been involved in a number of projects requiring vegetation monitoring and reporting. He has been responsible for setting up monitoring transects and gathering qualitative and quantitative biological data for use in reporting in the following projects:

- **North City Raw Sludge and Water Pipelines Revegetation Project, San Diego County, CA.** Responsible for biological monitoring and report preparation.
- **Sorrento Valley Utilities Improvement Revegetation Project, San Diego County, CA.** Assisted with biological monitoring, data management, and report preparation.
- **North Metro Revegetation Project, San Diego County, CA.** Assisted with biological monitoring.
- **Rolling Hills Ranch Wetland Mitigation Project, Chula Vista, CA.** Assisted with biological monitoring and report preparation.
- **Encinitas Ranch Golf Course Revegetation, Permitting & Chaparral Revegetation, Encinitas, CA.** Assisted with biological monitoring.

Construction and plant installation monitoring

Mr. Thomson has been involved with monitoring construction activities in sensitive habitats and installation of plants for the following restoration projects:

- **Brookview Senior Housing Project, Poway, CA.** Assisted with construction monitoring during the plant installation and seed application processes.
- **Ocean Trails Golf Course Revegetation Project, Los Angeles County, CA.** Assisted with plant installation monitoring and quantitative analysis for coastal sage scrub habitat.
- **City of San Diego Metropolitan Wastewater Department (MWWD) as Needed Biologist, City of San Diego, CA.** Assisted with construction monitoring, impact analyses, biological report preparation and mitigation recommendations for MWWD projects involving necessary sewer line maintenance and emergency sewer break repair.

PRIOR WORK EXPERIENCE

Biological Technician

Mr. Thomson provided ecological restoration work for the U.S. Forest Service involving native seed collection and germination, plant propagation and pest management, outplanting to damaged sites; designing experimental plots, maintaining records and monitoring restoration success, adapting methods

as necessary; organizing and supervising volunteer groups that contribute time to wildlife and plant habitat improvement projects; participating as a crew member to complete biological surveys including threatened, endangered, and sensitive plant species; mapping locations using Global Positioning System (GPS) units, entering points and creating maps with Geographic Information System (GIS); and writing ecological restoration program grants.

Field Research Assistant

As a field research assistant in the Biology Department at Utah State University, Mr. Thomson was responsible for surveying plant populations for research site selection; setting up research plots; sampling and mapping a noxious weed species, using GPS technology; processing GPS field data using Pathfinder software; preparing statistical summaries and maps using Excel and ArcView software for review by other team members on the biological control project; and working with team members to monitor and record study results.

Field Technician Assistant

As a field technician assistant with the U.S. Department of Agriculture and Utah State University, Mr. Thomson was responsible for germinating several varieties of grasses and legumes utilizing various scarification techniques; propagating plants in greenhouses; caring for plants including pest control and fertilization; collecting and analyzing field data; operating machinery; maintaining plots through cultivation of grasses and control of weeds; and preparing samples for nutrient analysis.

JULIE M. VANDERWIER

Senior Biologist

EDUCATION

- California Polytechnic State University,
San Luis Obispo
M.S. Biological Sciences (Plant Ecology and Taxonomy) 1987
- California Polytechnic State University,
San Luis Obispo
B.S. Biological Sciences (Field Biology) 1977

EXPERIENCE SUMMARY

Ms. Vanderwier has 20 years of experience as a field ecologist and regulatory biologist in central and southern California. Although trained as a plant ecologist, she also has considerable field experience with a number of sensitive and listed animal species, particularly those which occur in vernal pools, coastal salt marsh, and sage scrub habitats. Plant communities with which she has specific expertise include coastal sage scrub, maritime chaparral, coastal salt marsh, and vernal pools, as well as the flora of the California Channel Islands and the Baja California peninsula. In 1991, she was the lead botanist on a five-week survey throughout Baja to determine the presence and distribution of the California gnatcatcher and its habitat. In concert with her field experience, Ms. Vanderwier has 16 years of regulatory experience, and has prepared numerous technical documents, including biological constraints reports, environmental and biological assessments, biological opinions, and habitat conservation plans. Work experience with the Department of Defense, California Department of Fish and Game, local jurisdictions, University of California Natural Reserve System, U.S. Fish and Wildlife Service, and the private sector has provided Ms. Vanderwier with an extremely diverse biological background.

At DUDEK, Ms. Vanderwier serves as a senior biologist in the Environmental Sciences Division. In that capacity, she is responsible for conducting sensitive plant surveys, plant community identification and mapping, preparation of biological constraints and technical reports, and conservation analyses for target species as part of the preparation of large-scale conservation plans. She is also responsible for quality assurance and review of work completed by other DUDEK biologists, and for technical training of staff.

Ms. Vanderwier is authorized by the California Department of Fish and Game (pursuant to Sections 1907a and 2081a of the Fish and Game Code) to collect state-designated endangered, threatened, and rare plants .

PROFESSIONAL ASSIGNMENTS

Focused Surveys and Plant Community Mapping

- Botanist, and one of two team leaders, responsible for the coordination and conducting of focused surveys for the state-listed endangered San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) on approximately 6,000 acres at Newhall Ranch, Los Angeles County.

- Conducted field surveys and mapping of native grasslands on approximately 4,800 acres of Rancho Mission Viejo lands in Orange County. Surveys were concentrated in the areas of Chiquita, Cristianitos, and Upper and Lower Gabino Canyons.
- Conducted field surveys for state and federally listed, and MSCP-covered plant species, along with vegetation mapping, for over 1,000 acres of coastal sage and chaparral at Black Mountain City Park, Paraiso Cumbres, and Montaña Mirador, City of San Diego, Multiple Species Conservation Program (MSCP).
- Lead botanist responsible for conducting field surveys for sensitive, proposed, or listed plant species and the classification and mapping of vegetation for hundreds of projects throughout central and southern California (San Luis Obispo, Santa Barbara, Kern, Ventura, Orange, San Diego, Riverside, and Imperial counties).
- Conducted protocol surveys for listed plant and anostracan species as part of data collection for numerous vernal pool projects in San Diego and Riverside counties.
- Botanist, and one of two team leaders, providing botanical support during a five-week presence-absence survey for California gnatcatchers in Baja California, Mexico. Vegetation transect data were collected and analyzed for over 100 sites throughout the northern two-thirds of the peninsula.
- Conducted demographic studies and ecological data collection and analysis for the federally-listed endangered salt marsh bird's beak (*Cordylanthus maritimus* ssp. *maritimus*) at Mugu Lagoon, Ventura County, pursuant to a section 7 consultation with the U.S. Fish & Wildlife Service. Additional data was collected at Newport Back Bay, Orange County; Ormond Beach, Ventura County; Carpinteria Marsh, Santa Barbara County; and Sweetwater Marsh, San Luis Obispo County.
- Conducted protocol-level presence-absence surveys for the federally threatened coastal California gnatcatcher (*Polioptila californica californica*) and other sensitive coastal sage scrub species for numerous projects throughout Los Angeles, Orange, San Diego, San Bernardino, and Riverside Counties, and Baja California, Mexico.
- Conducted rare plant surveys, desert tortoise presence-absence surveys, and tortoise movement studies (radio-tracking) at Eagle Mountain and on Chuckawalla Bench (BLM lands), Riverside County.
- Participated in surveys for sensitive plants and wildlife (including island fox and island night lizard) on San Nicolas Island, and listed saltmarsh birds (including light-footed clapper, California least tern, and Belding's savannah sparrow) at Mugu Lagoon, Ventura County.
- Conducted field work and participated in the preparation of vegetation maps for the City of San Diego's pilot vegetation mapping for the Clean Water program.

Habitat Conservation Planning

- Lead staff biologist responsible for federal resource agency oversight in the preparation of the Multiple Habitats Conservation Plan (MHCP) and the City of Carlsbad's Habitat Management Plan (HMP).

- Assisted in the conservation analysis for 87 target species proposed for coverage in the MSCP (City and County of San Diego) pursuant to criteria necessary for the issuance of a section 10(a)(1)(B) permit pursuant to the federal Endangered Species Act (ESA).
- Participated in data collection and analysis in support of the identification of critical habitat for the coastal California gnatcatcher, San Diego fairy shrimp, Riverside fairy shrimp, and southern maritime chaparral plants. Provided input regarding existing conservation areas and strategies.
- Lead staff biologist responsible for resource agency oversight and permit processing for a single-species (California gnatcatcher) section 10(a)(1)(B) permit for a residential project in San Marcos, including preparation of all necessary NEPA documentation (*e.g.*, biological opinion, finding of no significant impact, statement of findings).

Habitat Restoration and Monitoring

- Assisted in the development of revegetation and monitoring programs for the First San Diego River Improvement Project (FSDRIP) as compensation for impacts to riparian and freshwater marsh habitats as a result of flood control measures along a one-mile reach of the San Diego River.
- Assisted in the collection and analysis of floral, faunal, and hydrological data for the Brown Parcel (Lopez Ridge) Vernal Pool Remediation Plan in Peñasquitos Canyon, Parcel C (Beazer) Vernal Pool Restoration Plan on Marine Corps Air Station (MCAS) Miramar, and vernal pools created by Caltrans along Highway 163 adjacent to MCAS Miramar.

TRAINING

Vegetation Rapid Assessment Method

California Native Plant Society

Julie Evens, CNPS Vegetation Ecologist

Location: Volcan Mountain, San Diego County, CA

Date: June 29, 2001

Measuring and Monitoring Plant Populations

Bureau of Land Management Course 1730-05

Drs. Caryl Elzinga, Dan Salzer, and John Willoughby

Location: Lake Tahoe, CA

Date: July 2000

Habitat Conservation Planning for Endangered Species

U.S. Fish & Wildlife Service

Location: Carlsbad, CA

Date: February 2000

Interagency Consultation (Section 7) for Endangered Species

U.S. Fish & Wildlife Service

Location: Carlsbad, CA

Date: January 2000

Anostracan (Fairy Shrimp) Identification Course Dr. Denton Belk

Location: Jones & Stokes, Sacramento, CA

Date: November, 1995

PUBLICATIONS

"Scrub Descriptions of the Baja California Peninsula, Mexico." Zippin, David B. and Vanderwier, Julie M. *Madroño* 41(2):85-119, 1994.

"Observations of Haustoria and Host Preference in *Cordylanthus maritimus* ssp. *maritimus* (Scrophulariaceae) at Mugu Lagoon, Ventura County, California." Newman, Judith C. and Vanderwier, Julie M. *Madroño* 31(1):185-186, 1984.

CATHLEEN M. WEIGAND
Botanist / Biologist

EDUCATION/REGISTRATION

- Humboldt State University
B.S., Botany and Biology, 2000
- New Dawn Center (Finca Alba Nueva), San Isidro, Costa Rica
Senior Thesis Study, 1997

PROFESSIONAL CERTIFICATIONS

- Certified Wetland Delineator (#2133) - Army Corps of Engineers Wetland Delineation & Management Training Program - 2002
- U.S.F.S. Wildland Firefighter Red Card Certified

EXPERIENCE SUMMARY

Ms. Weigand is a botanist/biologist with over three years experience in field studies, environmental document preparation, and habitat restoration and conservation. Project experience includes biological resource surveys, data collection and analysis, environmental assessments, wetland delineations, permitting, mitigation design, implementation and monitoring, and endangered and sensitive plant species surveys. Projects include issues relative to the California Coastal Act, the California Department of Fish and Game Code (Sections 1601 and 1603), and the federal Clean Water Act (Sections 401 and 404). Ms. Weigand has engaged in interagency coordination and public outreach efforts due to the complexities of each project. Her current role at Dudek & Associates includes biological resources assessment and impact analysis, wetland delineations and permitting, and habitat restoration and monitoring.

PROFESSIONAL ASSIGNMENTS

- Experience with seed and plant propagation.
- Greenhouse work (Humboldt State University- volunteer): watering, caring and maintenance of plants, re-potting/propagation, nomenclature of species housed in greenhouse, and preparation of species used for classroom and experimental purposes.
- Horticulture and nursery experience: watering, fertilizing, caring and maintenance of plants, propagation (plant cuttings, roots, and seeds), re-potting, installation and design of irrigation systems.
- Experience with growth chambers, preparation and implementation of fertilizers and composts, and the irrigation of greenhouses and farm properties.
- Riparian and wetland revegetation implementation.
- Seed and pollen collection.

- Supervising of farm and revegetation crews.
- Implementation of farm crops, community and personal gardens using sustainable agricultural practices.
- Revegetation and landscape design and implementation, monitoring, maintenance, and data collection.

TRICIA L. WOTIPKA
Environmental Specialist

EDUCATION

- Pennsylvania State University
B.S. Wildlife and Fisheries Science (2000)
(Dean's Honor List, Fall 1998 - Spring 2000)

PROFESSIONAL AFFILIATIONS

- Audobon Society, 2000
- Women's Environmental Council, past Secretary, 2001 and Newsletter Chair, 2002

EXPERIENCE SUMMARY

Ms. Wotipka has over two years experience in environmental document preparation and resource conservation planning. Project experience includes rare plant surveys, biological resource surveys, data collection and analysis, environmental assessments, wetlands delineations, permitting, mitigation design and monitoring, and endangered species surveys. Projects include issues relative to the California Fish and Game Code, the federal Clean Water Act (Sections 401 and 404), the National Environmental Policy Act (NEPA), the Migratory Bird Treaty Act, and the Endangered Species Act (ESA). Ms. Wotipka has also trained with the Wetlands Training Institute, Inc. and has successfully completed a course in basic wetlands delineation.

PROFESSIONAL ASSIGNMENTS

- **Sewer Line Relocation and Park Improvements.** Aliso Creek Emergency Sewer and Park Improvements Project, Orange County, California. Assisted in focused rare plant surveys for the federally-listed threatened and state-listed endangered thread-leaved brodiaea (*Brodiaea filifolia*). Prepared a Section 404 and 401 permit application in accordance with the federal Clean Water Act and a 1603 Streambed Alteration Agreement in accordance with California Fish and Game Code. Prepared and processed a Section 404 and 401 permit application in accordance with the federal Clean Water Act and a 1603 Streambed Alteration Agreement in accordance with California Fish and Game Code. Negotiated with resource agencies to identify appropriate mitigation measures, including the creation and enhancement of southern willow scrub and mule fat scrub wetlands within the reserve.
- **Railway Expansion Project.** Sorrento-Miramar Curve Realignment and Second Main Track Project. City of San Diego, California. Conducted field surveys for sensitive, state- and federally-listed plant species on approximately 190 acres.
- **Church Development Project.** St. Jerome's Catholic Church Project. City of San Diego, California. Conducted field surveys for state- and federally-listed species on approximately 18 acres.

- **Residential Subdivision and Roadway Improvements Project.** University Commons Development Project, City of San Marcos, California. Performed a delineation of “waters of the United States” and wetlands under the jurisdiction of the U.S. Army Corps of Engineers and California Department of Fish and Game. Prepared and processed a Section 404 and 401 permit application in accordance with the federal Clean Water Act and a 1603 Streambed Alteration Agreement in accordance with California Fish and Game Code.
- **Residential Subdivision.** Goodwin Drive Residential Development, City of Vista, California. Conducted a delineation of “waters of the United States” and wetlands under the jurisdiction of the U.S. Army Corps of Engineers (ACOE) and California Department of Fish and Game (CDFG). Obtained a Section 401 permit application in accordance with the federal Clean Water Act and a 1603 Streambed Alteration Agreement in accordance with California Fish and Game Code. Negotiated with resource agencies to identify appropriate mitigation measures, including the creation of southern willow scrub wetlands.
- **Conservation Planning.** Assisted in the development of the Multiple Species Habitat Conservation Plan (MSHCP) for western Riverside County. Project involvement included research on potentially covered plant species followed by syntheses of ecological information and the preparation of sensitive species conservation analysis.

RELEVANT EXPERIENCE

- Restoration/Maintenance volunteer - Habitat West, Vista, California. Assisted in the restoration and management of native habitats for the coastal California gnatcatcher.
- Restoration/Maintenance volunteer - Habitat West, Vista, California. Evaluated the health of newly planted vegetation; identified and removed pestilent species when necessary; identified shrubs and native scrub communities.
- Pennsylvania Cooperative Fish & Wildlife Service Unit. Flushed and recorded the location of ruffed grouse to note the effects of timber harvest on grouse management.
- Pennsylvania Wildlife Habitat Evaluation Project. Judged over 60 kids aged 8-18 years old in a multi-county wildlife evaluation competition in Pennsylvania.
- Pennsylvania Wildlife Habitat Evaluation Project. Evaluated students based on their knowledge of PA wildlife habitats, correct identification of wildlife foods, oral presentations, and on-site written management plans.

PUBLICATIONS

- Researched and prepared the introduction of the "Spring Creek Watershed Water Sampling Protocol" for the Clearwater Conservancy - Fall 1999.

- Designed and produced a web page in Spring 2000 (now out of service) entitled "Beaks and Buds". It was located at <http://www.personal.psu.edu/tlw188>.

APPENDIX B
VASCULAR PLANT SPECIES OBSERVED
AT NEWHALL RANCH (2002)

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B

VASCULAR PLANT SPECIES - NEWHALL RANCH

LYCOPODIAE

SELAGINELLACEAE - SPIKE-MOSS FAMILY

Selaginella bigelovii - Bigelow's spike-moss

EQUISETAE

EQUISETACEAE - HORSETAIL FAMILY

Equisetum laevigatum - smooth scouring-rush

Equisetum telmateia - giant horsetail

FILACEAE

AZOLLACEAE - MOSQUITO FERN FAMILY

Azolla filiculoides - duckweed fern

DENNSTAEDTIACEAE - BRAKEN FAMILY

Adiantum jordanii - California maiden-hair

Pellaea andromedifolia var. *andromedifolia* - coffee fern

Pellaea mucronata var. *mucronata* - bird's-foot fern

Pentagramma triangularis - goldenback fern

POLYPODIACEAE - POLYPODY FAMILY

Polypodium californicum - California polypody

CONIFERAE

CUPRESSACEAE - CYPRESS FAMILY

* *Cedrus deodara* - Deodar cedar

Juniperus californica - California juniper

2002 Sensitive Plant Survey Results

Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

PINACEAE - PINE FAMILY

- * *Pinus halepensis* - Aleppo pine
- * *Pinus pinea* - stone pine

ANGIOSPERMAE (DICOTYLEDONES)

AIZOACEAE - FIG-MARIGOLD FAMILY

- * *Aptenia cordifolia* - baby sun-rose
- * *Carpobrotus* sp. - sea-fig

AMARANTHACEAE - AMARANTH FAMILY

- * *Amaranthus albus* - tumbleweed
- Amaranthus blitoides* - prostrate amaranth
- * *Amaranthus hybridus* - amaranth
- Amaranthus palmeri* - Palmer's amaranth
- Amaranthus powellii* - Powell's amaranth
- * *Amaranthus retroflexus* - rough pigweed

ANACARDIACEAE - SUMAC FAMILY

- Malosma laurina* - laurel sumac
- Rhus ovata* - sugar-bush
- Rhus trilobata* - squaw bush
- * *Schinus molle* - Peruvian pepper-tree
- Toxicodendron diversilobum* - poison-oak

APIACEAE - CARROT FAMILY

- * *Anethum graveolens* - dill
- Apiastrum angustifolium* - wild celery
- * *Apium graveolens* - celery
- Berula erecta* - cutleaf water-parsnip
- * *Coriandrum sativum* - cilantro
- Lomatium utriculatum* - common lomatium

APOCYNACEAE - DOGBANE FAMILY

- Apocynum cannabinum* - Indian hemp
- * *Vinca major* - periwinkle

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

ASCLEPIADACEAE - MILKWEED FAMILY

Asclepias fascicularis - narrow-leaf milkweed

ASTERACEAE - SUNFLOWER FAMILY

Achillea millefolium - yarrow

Acourtia microcephala - sacapellote

Ambrosia acanthicarpa - annual burweed

Ambrosia confertifolia - weak-leaved burweed

Ambrosia psilostachya - western ragweed

Artemisia californica - coastal sagebrush

Artemisia douglasiana - California mugwort

Artemisia dracunculus - tarragon

Artemisia tridentata - Great Basin sagebrush

Baccharis douglasii - marsh baccharis

Baccharis pilularis - coyote brush

Baccharis salicifolia - mule fat

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

* *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 - horseweed

Conyza coulteri - Coulter's conyza

* *Cotula coronopifolia* - African brass-buttons

Encelia actoni - Acton's encelia

Encelia californica - California bush sunflower

Encelia farinosa - brittlebush, incensio

Ericameria palmeri var. *pachylepis* - goldenbush

Ericameria pinifolia - pine-bush

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

- Erigeron foliosus* - leafy daisy
- Eriophyllum confertiflorum* - long-stem golden yarrow
- Euthamia occidentalis* - western goldenrod
- Filago californica* - California fluffweed
- * *Filago gallica* - narrow-leaf filago
- Gnaphalium bicolor* - bicolor cudweed
- 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
- Helianthus nuttallii* c.f. ssp. *parishii* - Los Angeles sunflower
- Hemizonia fasciculata* - fascicled tarweed
- Heterotheca grandiflora* - telegraph weed
- Heterotheca sessiliflora* - golden aster
- Isocoma menziesii* - goldenbush
- Iva axillaris* - poverty weed
- * *Lactuca serriola* - prickly lettuce
- Lasthenia californica* - coast goldfields
- Lepidospartum squamatum* - scale-broom
- Lessingia filaginifolia* - virgate cudweed aster
- Lessingia glandulifera* - lessingia
- Malacothrix saxatilis* - cliff malacothrix
- * *Matricaria matricarioides* - pineapple weed
- Micropus californicus* - slender cottonweed
- Pluchea odorata* - marsh-fleabane
- Pluchea sericea* - arrow weed
- * *Pulicaria paludosa* - Spanish sunflower
- Rafinesquia californica* - California chicory
- Senecio flaccidus* var. *douglasii* - butterweed
- * *Senecio vulgaris* - common groundsel
- * *Silybum marianum* - milk thistle
- * *Sonchus asper* - prickly sow-thistle
- * *Sonchus oleraceus* - common sow-thistle

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

Stephanomeria exigua - small wreathplant
Stephanomeria pauciflora - wire-lettuce
Stephanomeria virgata - twiggy wreathplant
Stylocline gnaphaloides - everlasting nest-straw
Wyethia ovata - mule ears
Xanthium spinosum - spiny cocklebur
Xanthium strumarium - cocklebur

BORAGINACEAE - BORAGE FAMILY

Amsinckia menziesii - yellow fiddleneck
Cryptantha sp. - forget-me-not
Cryptantha intermedia - common forget-me-not
Heliotropium curassavicum - wild heliotrope
Pectocarya linearis - slender pectocarya
Pectocarya penincillata - pectocarya
Pectocarya setosa - pectocarya
Plagiobothrys arizonicus - popcorn flower
Plagiobothrys canescens - rusty popcorn flower

BRASSICACEAE - MUSTARD FAMILY

- * *Brassica nigra* - black mustard
- * *Capsella bursa-pastoris* - shepard's purse
- * *Hirschfeldia incana* - short-podded mustard
- Lepidium lasiocarpum* - peppergrass
- * *Lepidium latifolium* - peppergrass
- Lepidium virginicum* - wild peppergrass
- * *Raphanus sativus* - wild radish
- * *Rorippa nasturtium-aquaticum* - water cress
- * *Sisymbrium altissimum* - tumble mustard
- * *Sisymbrium irio* - London rocket
- * *Sisymbrium officinale* - hedge mustard
- * *Sisymbrium orientale* - Oriental mustard
- Thysanocarpus curvipes* - fringe-pod

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

CACTACEAE - CACTUS FAMILY

- * *Cereus peruvianus* - Peruvian apple cactus
- Opuntia basilaris* var. *brachyclada* - short-joint beavertail
- Opuntia californica* var. *parkeri* - cane cholla
- Opuntia littoralis* - coastal prickly-pear
- * *Trichocereus spachianus* - golden torch cactus

CAPPARACEAE - CAPER FAMILY

- Isomeris arborea* - bladderpod

CAPRIFOLIACEAE - HONEYSUCKLE FAMILY

- Lonicera subspicata* - southern honeysuckle
- Sambucus mexicana* - Mexican elderberry
- Symphoricarpos* c.f. *mollis* - spreading snowberry

CARYOPHYLLACEAE - PINK FAMILY

- * *Cerastium glomeratum* - sticky mouse-ear
- * *Herniaria cinerea* - gray herniaria
- Loeflingia squarrosa* - no common name
- * *Silene gallica* - common catchfly
- Spergularia* sp. - stickwort, starwort
- * *Spergularia rubra* - sand-spurrey
- * *Spergularia* c.f. *villosa* - villous sand-spurrey
- * *Stellaria media* - common chickweed

CASURINACEAE - SHEET OAK FAMILY

- * *Casuarina cunninghamiana* - Australian Pine

CHENOPODIACEAE - GOOSEFOOT FAMILY

- Atriplex canescens* - four-winged saltbush
- * *Atriplex heterosperma* - weedy orache
- Atriplex lentiformis* - big saltbush, quail brush
- * *Atriplex rosea* - tumbling orache
- * *Atriplex semibaccata* - Australian saltbush
- Atriplex serenana* var. *serenana* - bractscale

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

- Atriplex suberecta* - Australian saltbush
- Atriplex triangularis* - spearscale
- * *Bassia hyssopifolia* - five-hooked bassia
- * *Chenopodium album* - lamb's-quarters
- * *Chenopodium ambrosioides* - Mexican tea
- Chenopodium berlandieri* - pitseed goosefoot
- * *Chenopodium botrys* - goosefoot
- Chenopodium californicum* - California goosefoot
- * *Chenopodium murale* - nettle-leaved goosefoot
- Chenopodium rubrum* - red goosefoot
- * *Salsola tragus* - Russian-thistle

CONVOLVULACEAE - MORNING-GLORY FAMILY

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

CRASSULACEAE - STONECROP FAMILY

- Crassula connata* - dwarf stonecrop
- Dudleya cymosa* - unidentified dudleya
- Dudleya lanceolata* - lanceleaf dudleya

CUCURBITACEAE - GOURD FAMILY

- Cucurbita foetidissima* - coyote-melon, calabazilla
- Marah macrocarpus* - wild cucumber

CUSCUTACEAE - DODDER FAMILY

- Cuscuta californica* - California dodder
- Cuscuta subinclusa* - dodder

DATISCAEAE - DASTICA FAMILY

- Dastica glomerata* - Durango root

ERICACEAE - HEATH FAMILY

- Arctostaphylos glauca* - bigberry manzanita

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

EUPHORBIACEAE - SPURGE FAMILY

- Chamaesyce albomarginata* - rattlesnake spurge
- Chamaesyce polycarpa* - small-seed sand mat
- Croton californicus* - California croton
- Eremocarpus setigerus* - doveweed
- * *Ricinus communis* - castor-bean
- Stillingia linearifolia* - linear-leaved stillingia

FABACEAE - PEA FAMILY

- * *Acacia baileyana* - golden wattle
- Astragalus trichopodus* - Santa Barbara locoweed
- Glycyrrhiza lepidota* - wild licorice
- Lathyrus laetiflorus* - wild sweet pea
- Lathyrus vestitus* - wild pea
- * *Lotus corniculatus* - bird's-foot lotus
- Lotus humistratus* - lotus
- Lotus purshianus* - Spanish-clover
- Lotus salsuginosus* - coastal lotus
- Lotus scoparius* - deerweed
- Lotus strigosus* - strigose deerweed
- Lupinus bicolor* - Lindley's annual lupine
- Lupinus excubitus* var. *hallii* - grape soda lupine
- Lupinus hirsutissimus* - stinging lupine
- Lupinus microcarpus* - chick lupine
- Lupinus sparsiflorus* - Coulter's lupine
- Lupinus succulentis* - arroyo lupine
- Lupinus truncatus* - collar lupine
- * *Medicago polymorpha* - California burclover
- * *Medicago polymorpha* var. *brevispina* - short-spined California burclover
- * *Medicago sativa* - alfalfa
- * *Melilotus alba* - white sweet-clover
- * *Melilotus indica* - yellow sweet-clover
- * *Robinia pseudoacacia* - black locust
- Trifolium* sp. - clover
- * *Trifolium fragiferum* - strawberry clover

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

- * *Trifolium hirtum* - rose clover
- * *Trifolium repens* - white clover

FAGACEAE - BEECH FAMILY

- Quercus agrifolia* - coast live oak
- Quercus berberidifolia* - scrub oak
- Quercus douglasii* - blue oak
- Quercus lobata* - valley oak

GERANIACEAE - GERANIUM FAMILY

- * *Erodium cicutarium* - red-stemmed filaree
- * *Erodium botrys* - filaree

GROSSULARIACEAE - CURRANT FAMILY

- Ribes aureum* - golden currant
- Ribes malvaceum* - chaparral 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

JUGLANDACEAE - WALNUT FAMILY

- Juglans californica* - southern California black walnut

LAMIACEAE - MINT FAMILY

- * *Marrubium vulgare* - horehound
- Mentha citrata* - orange mint
- Salvia apiana* - white sage
- Salvia columbariae* - chia

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

Salvia leucophylla - purple sage
Salvia mellifera - black sage
Stachys ajugoides var. *rigida* - rigid hedge-nettle
Stachys albens - white hedge-nettle
Trichostema lanceolatum - vinegar weed

LAURACEAE - LAUREL FAMILY

Umbellularia californica - California laurel

LOASACEAE - STICK-LEAF FAMILY

Mentzelia laevicaulis - blazing star
Mentzelia micrantha - small-flowered stick-leaf

LYTHRACEAE - LOOSESTRIFE FAMILY

Lythrum californicum - California loosestrife

MALVACEAE - MALLOW FAMILY

Malacothamnus fasciculatus - mesa bushmallow
* *Malva neglecta* - common mallow
* *Malva parviflora* - cheeseweed

MELIACEAE - MAHOGANY FAMILY

* *Melia azedarach* - China berry

MORACEAE - FIG FAMILY

* *Ficus carica* - fig

MYRTACEAE - MYRTLE FAMILY

* *Eucalyptus globulus* - blue gum
* *Eucalyptus leucoxylon* - white ironbark
* *Eucalyptus sideroxylon* - red ironbark

NYCTAGINACEAE - FOUR O'CLOCK FAMILY

Mirabilis californica - California wishbone-bush

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

OLEACEAE - OLIVE FAMILY

- Fraxinus dipetala* - California ash
- * *Fraxinus uhdei* - tropical ash
- * *Ligustrum lucidum* - glossy privet
- * *Olea europaea* - mission olive

ONAGRACEAE - EVENING-PRIMROSE FAMILY

- Camissonia boothii* - sun cup
- Camissonia californica* - mustard primrose
- Camissonia hirtella* - sun cup
- Camissonia strigulosa* - sun cup
- Clarkia purpurea* - winecup clarkia
- Clarkia speciosa* - clarkia
- Clarkia unguiculata* - elegant clarkia
- Epilobium brachycarpum* - willow herb
- Epilobium canum* - California fuchsia
- Epilobium ciliatum* - California cottonweed
- Ludwigia peploides* - yellow waterweed
- Ludwigia repens* - water primrose
- Oenothera elata* - evening primrose

OROBANCHACEAE - BROOM-RAPE FAMILY

- Orobanche parishii* - broom-rape

PAEONIACEAE - PEONY FAMILY

- Paeonia californica* - California peony

PAPAVERACEAE - POPPY FAMILY

- Eschscholzia californica* - California poppy

PLANTAGINACEAE - PLANTAIN FAMILY

- Plantago erecta* - dot-seed plantain
- * *Plantago indica* - plantain
- * *Plantago lanceolata* - English plantain
- * *Plantago major* - common plantain

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

PLATANACEAE - SYCAMORE FAMILY

Platanus racemosa - western sycamore

POLEMONIACEAE - PHLOX FAMILY

Eriastrum densifolium ssp. *mohavense* - Mohave eriastrum

Eriastrum sapphirinum - sapphire eriastrum

Gilia angelensis - angel gilia

Leptodactylon californicum - prickly phlox

Linanthus pygmaeus - linanthus

Navarretia atractylodes - holly-leaf skunkweed

POLYGONACEAE - BUCKWHEAT FAMILY

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

Chorizanthe staticoides - turkish rugging

Eriogonum sp. #1 - buckwheat

Eriogonum sp. #2 - buckwheat

Eriogonum elongatum - long-stemmed buckwheat

Eriogonum fasciculatum ssp. *foliolosum* - California buckwheat

Eriogonum gracile - slender woolly buckwheat

Eriogonum viridescens - buckwheat

Lastarriaea coriacea - lastarriaea

* *Polygonum arenastrum* - common knotweed

* *Polygonum argyrocoleon* - smartweed

Polygonum lapathifolium - willow weed

Polygonum punctatum - perennial smartweed

* *Rumex conglomeratus* - whorled dock

* *Rumex crispus* - curly dock

Rumex hymenosepalus - wild rhubarb

Rumex obtusifolius - dock

Rumex salicifolius - willow dock

PORTULACACEAE - PURSLANE FAMILY

Calandrinia ciliata - redmaids

Claytonia parviflora - small-leaved montia

* *Portulaca oleracea* - common purslane

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

RANUNUCULACEAE - BUTTERCUP FAMILY

Clematis ligusticifolia - yerba de chiva

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

Heteromeles arbutifolia - toyon

Prunus ilicifolia - holly-leaf cherry

Rosa californica - California rose

Rubus ursinus - California blackberry

* *Sangwisorba minor* – garden burnet

RUBIACEAE - MADDER FAMILY

Galium angustifolium - narrow-leaved bedstraw

* *Galium aparine* - goose grass

Galium porrigens - climbing bedstraw

SALICACEAE - WILLOW FAMILY

Populus fremontii - Fremont's cottonwood

Salix exigua - narrow-leaved willow

Salix gooddingii - black willow

Salix laevigata - red willow

Salix lasiolepis - arroyo willow

Salix lucida ssp. *lasiandra* - golden willow

SAURURACEAE - LIZARD'S-TAIL FAMILY

Anemopsis californica - yerba mansa

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

SCROPHULARIACEAE - FIGWORT FAMILY

- Antirrhinum coulterianum* - white snapdragon
- Castilleja affinis* - coast paintbrush
- Castilleja densiflora* - dense-flowered owl's-clover
- Castilleja exserta* - common owl's-clover
- Castilleja foliolosa* - woolly Indian paintbrush
- Keckiella cordifolia* - heart-leaf penstemon
- Linaria canadensis* - toadflax
- Mimulus aurantiacus* - bush monkeyflower
- Mimulus guttatus* - seep monkeyflower
- Penstemon centranthifolius* - scarlet bugler
- * *Verbascum thapsus* - woolly mullein
- * *Verbascum virgatum* - wand mullein
- * *Veronica anagallis-aquatica* - water speedwell

SIMAROUBACEAE - QUASSIA FAMILY

- * *Ailanthus altissima* - tree of heaven

SOLANACEAE - NIGHTSHADE FAMILY

- * *Datura wrightii* - western jimsonweed
- * *Nicotiana glauca* - tree tobacco
- * *Solanum americanum* - small-flowered nightshade
- Solanum douglasii* - white nightshade
- * *Solanum eleagnifolium* - silver leaf horse-nettle
- * *Solanum sarrachoides* - hairy nightshade
- Solanum xanti* - chaparral nightshade

TAMARICACEAE - TAMARISK FAMILY

- * *Tamarix* sp. - tamarisk

ULMACEAE - ELM FAMILY

- * *Ulmus pumila* - Siberian elm

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

URTICACEAE - NETTLE FAMILY

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

VERBENACEAE - VERVAIN FAMILY

- Verbena lasiostachys* - western verbena

VISCACEAE - MISTLETOE FAMILY

- Phoradendron macrophyllum* - big leaf mistletoe
- Phoradendron villosum* - oak mistletoe

VITACEAE - GRAPE FAMILY

- Parthenocissus vitacea* - woodbine, Virginia creeper
- Vitis girdiana* - desert wild grape

ZYGOPHYLLACEAE - CALTROP FAMILY

- * *Tribulus terrestris* - puncture vine

ANGIOSPERMAE (MONOCOTYLEDONES)

ARECACEAE - PALM FAMILY

- * *Washingtonia robusta* - Mexican fan palm

CYPERACEAE - SEDGE FAMILY

- Carex* sp. - sedge
- Cyperus eragrostis* - tall cyperus
- Cyperus esculentus* - yellow nut-grass
- * *Cyperus involucratus* - nutsedge
- Cyperus odoratus* - coarse cyperus
- Eleocharis montevidensis* - slender creeping spike-rush
- Eleocharis parishii* - spike-rush
- Scirpus acutus* - hard-stemmed bulrush
- Scirpus americanus* - winged three-square
- Scirpus microcarpus* - bulrush
- Scirpus robustus* - Pacific coast bulrush

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

JUNCACEAE - RUSH FAMILY

- Juncus balticus* - wire rush
- Juncus bufonius* - toad rush
- Juncus longistylis* - rush
- Juncus rugulosus* - wrinkled rush
- Juncus textilis* - Indian rush
- Juncus torreyi* - rush
- Juncus xiphioides* - iris-leaved rush

LEMNACEAE - DUCKWEED FAMILY

- Lemna valdiviana* - duckweed

LILIACEAE - LILY FAMILY

- * *Allium cepa* - onion
- Allium porrum* - onion
- * *Amaryllis bella-donna* - naked lady
- * *Asparagus officinalis* - asparagus
- Brodiaea terrestris* ssp. *kernensis* - brodiaea
- Calochortus clavatus* - club-haired mariposa lily
- Calochortus venustus* - mariposa lily
- Dichelostemma capitatum* - blue dicks
- Muilla maritima* - common muilla
- Yucca whipplei* - Our Lord's candle

POACEAE - GRASS FAMILY

- Achnatherum coronatum* - giant needlegrass
- * *Agrostis* sp. - bentgrass
- * *Agrostis viridis* - water bent
- * *Arundo donax* - giant reed
- * *Avena barbata* - slender oat
- * *Avena fatua* - wild oat
- Bromus catharticus* - California brome
- * *Bromus diandrus* - ripgut grass
- * *Bromus hordeaceus* - soft chess
- * *Bromus madritensis* ssp. *rubens* - foxtail chess

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

- * *Bromus tectorum* - cheat grass
- * *Cortaderia jubata* - pampas grass
- * *Crypsis schoenoides* - prickly grass
- * *Cynodon dactylon* - Bermuda grass
- * *Digitaria sanguinalis* - hairy crabgrass
- Distichlis spicata* - salt grass
- * *Echinochloa colonum* - jungle-rice
- * *Echinochloa crus-galli* - barnyard grass
- Elymus glaucus* - western wild rye
- Eragrostis mexicana* - lovegrass
- * *Festuca arundinacea* - tall fescue
- * *Hordeum marinum* - Mediterranean barley
- * *Hordeum murinum* - glaucous foxtail barley
- * *Lamarckia aurea* - goldentop
- * *Leptochloa uninerva* - Mexican sprangletop
- Leymus condensatus* - giant ryegrass
- Leymus triticoides* - beardless wild rye
- Leptichloa uninervia* - Mexican sprangletop
- * *Lolium perenne* - perennial ryegrass
- Melica imperfecta* - California melic
- Muhlenbergia microsperma* - littleseed muhly
- Nassella cernua* - nodding needlegrass
- Nassella lepida* - foothill needlegrass
- Paspalum distichum* - knotgrass
- * *Phalaris minor* - Mediterranean canary grass
- * *Piptatherum miliaceum* - smilo grass
- * *Poa annua* - annual bluegrass
- Poa secunda* - Malpais bluegrass
- * *Polypogon interruptus* - ditch beard grass
- * *Polypogon monspeliensis* - rabbit's-foot grass
- * *Schismus barbatus* - abumashi
- * *Sorghum halepense* - Johnsongrass
- * *Vulpia myuros* - rattail fescue
- Vulpia octoflora* - six-weeks fescue

2002 Sensitive Plant Survey Results Newhall Ranch Specific Plan Area

APPENDIX B (*Continued*)

POTAMOGETONACEAE - PONDWEED FAMILY

Potamogeton foliosus - leafy pondweed

TYPHACEAE - CATTAIL FAMILY

Typha domingensis - slender cattail

Typha latifolia - broad-leaved cattail

* signifies introduced (non-native) species

APPENDIX C
CALIFORNIA NATURAL DIVERSITY
DATABASE FORMS

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: Mark A. Elvin, Julie Vanderwier

Phone: (760) 942.5147

Address: DUDEK & Associates, 605 Third Street, Encinitas, CA 92024

Date of Field Work: 06 Jun 2002

County: Los Angeles

Collection: If yes, #

Mus./Herb:

Location: Northern Santa Susana Mountains, Newhall Ranch, southeast of confluence of the Santa Clara River and Castaic Creek, east, south, and west edges of Airport Mesa and adjacent mesas.

Quad Name: Newhall
X 7 1/2' 15' Elevation: 1075-1250' T 4N R 16W W 1/4 of W 1/4 Sec3
T 4N R 17W E 1/4 of E 1/4 Sec3

Landowner/Manager: The Newhall Land and Farming Company, 23823 Valencia Boulevard, Valencia, CA 91355

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

Is this a new location record? ___ Yes X* No ___ Unknown * surveys performed here in 2001 by FLx; species believed identified during those surveys

Total # of Individuals = ~300 plants (2002); ~20,000 plants (pre-2002) Is this a subsequent visit? ___ Yes X No ___ Compared to your last visit: ___ more ___ same ___ fewer

Phenology (plants): ___ % vegetative 2 % flowering 98 % fruiting

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):

Zamora clay loam and terrace escarpment soils; ridges and slopes down from mesa tops and from agricultural areas. Primarily on southeast- to south- to southwest-facing slopes with macro-slope gradients typically ranging between 5 degrees and 35 degrees; micro-slope gradients are typically slightly shallower (2 degrees to 20 degrees), but are locally steeper. Soils color is generally brown (10YR 5/3). Venturan coastal sage scrub with *Artemisia californica*, *Eriogonum fasciculatum*, *E. elongatum*, *E. gracile*, *Salvia leucophylla*, *Ericameria palmeri* var. *pachypus*, *Mirabilis californica*.

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

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

Comments: Surveys were conducted until September 2002. The rainfall for this growing year was ~one-third of the normal.

Should/Could this site be protected? How?

Other comments:

DETERMINATION (Check one or more, fill in blanks)

X Keyed in a site reference:

X Compared with specimen housed at: UCR

___ Compared with photo/drawing in:

X By another person (name): Andy Sanders, Rick Riefner

X Other: compared with materials identified by CDFG in May 2002 and documented occurrence on Grapevine Mesa [EO 14]

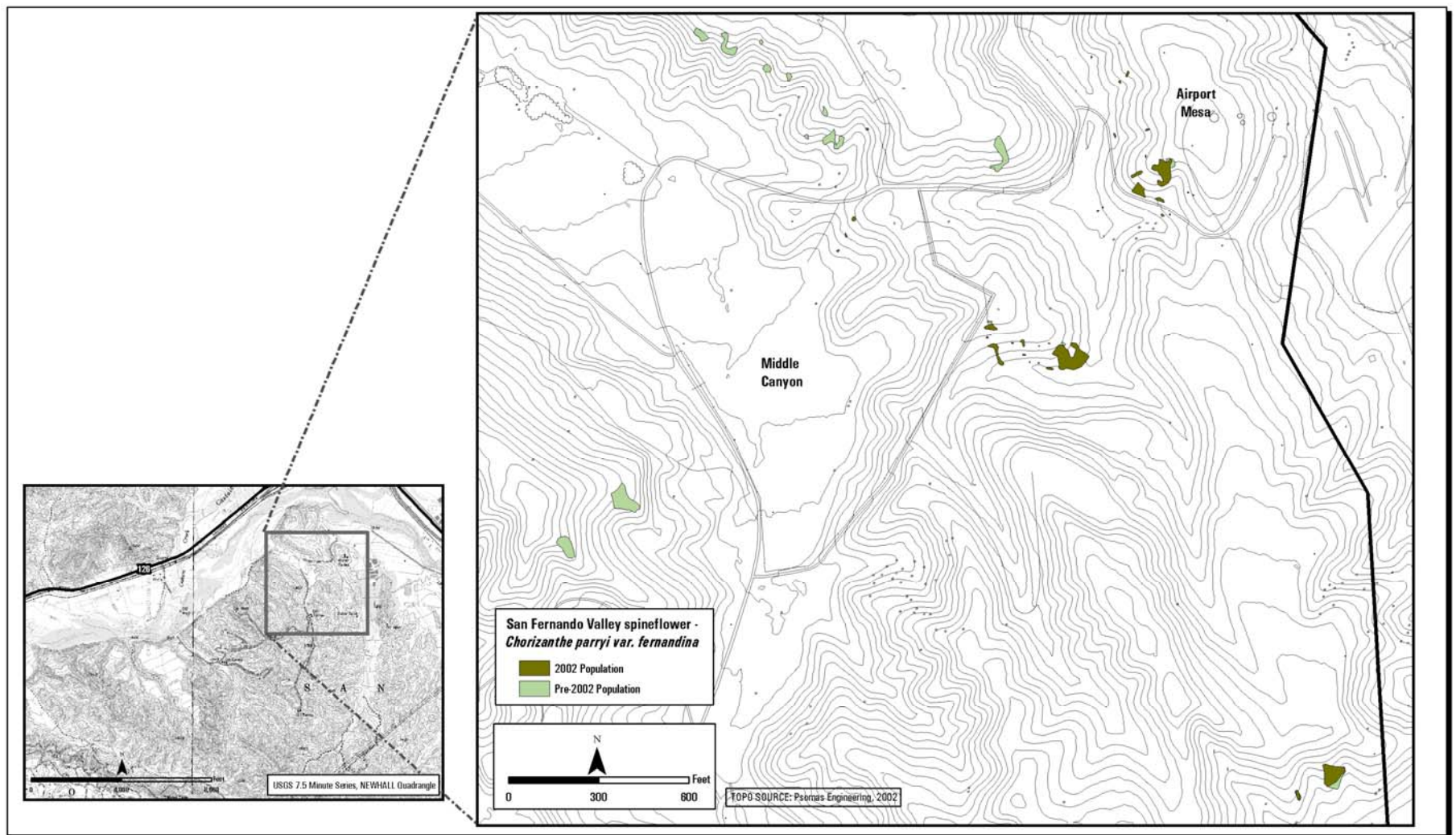
OTHER KNOWLEDGEABLE INDIVIDUALS (Name/Address/Phone) Kim Marsden

PHOTOGRAPHS (Check one or more)

Subject	Type
<u>X</u> Plant/Animal	<u>X</u> Slide
<u>X</u> Habitat	___ Print
<u>X</u> Diagnostic Feature	
___ Other	

May we obtain duplicates at our cost?

X Yes ___ No



Newhall Ranch
2002 San Fernando Valley spineflower - Airport Mesa Area

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: Mark Elvin & Julie Vanderwier

Phone: (760) 942-5147

Address: DUDEK & Associates, 605 Third Street, Encinitas, CA 92024

Date of Field Work:

County: Los Angeles

Collection: yes

If yes, #

Mus./Herb:

Location: Northern Santa Susana Mountains, Newhall Ranch, south of confluence of the Santa Clara River and Castaic Creek, south and western edge of Grapevine Mesa.

Quad Name: Val Verde

X 7 1/2 15'

Elevation: 1040-1290'

T 17W

R 4N

1/4 o

1/4 Sec

Landowner/Manager: The Newhall Land and Farming Company, 23823 Valencia Boulevard, Valencia, CA 91355

Species Found? ☒ Yes ☐ No If not, reason:

Is this a new location record? ☒ Yes ☐ No ☐ Unknown [*some new polygons were located near extant EO 14]

Total # of Individuals = 5,000 plants (2002); 200,000 plants (pre-2002) Is this a subsequent visit? ☐ Yes ☒ No Compared to your last visit: ☐ more ☐ same ☐ fewer

Phenology (plants): ☐ % vegetative ☒ 3 % flowering* ☒ 97 % fruiting** *2002 plants ** pre-2002 plants

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):

Zamora clay loam and terrace escarpment soils; west side of the mesa immediately adjacent to, and downslope of, agricultural areas. Primarily on south- to southwest-facing slopes with macro-slope gradients typically ranging between 8 degrees and 35 degrees; micro-slope gradients are typically slightly shallower (2 degrees to 16 degrees), but are locally steeper, particularly at two locations where plants were observed on the eroded banks of a dry creek (slope gradients 60 to 68 degrees). Soils color is generally brown (10YR 5/3) Venturan coastal sage scrub with *Artemisia californica*, *Eriogonum fasciculatum*, *E. elongatum*, *E. gracile*, *Salvia leucophylla*, *Ericameria palmeri* var. *pachypus*, *Mirabilis californica*

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

Overall Site Quality: ☐ Excellent ☒ Good ☐ Fair ☐ Poor

Comments: Surveys were conducted until September 2002. The rainfall for this growing year was one-third of the normal.

Should/Could this site be protected? How?

Other comments:

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): Andy Sanders, Rick Riefner

☒ Other: compared with materials identified by CDFG in May 2002 and documented occurrence on Grapevine Mesa [EO 14]

PHOTOGRAPHS (Check one or more)

Subject

Type

☒ Plant/Animal

☒ Slide

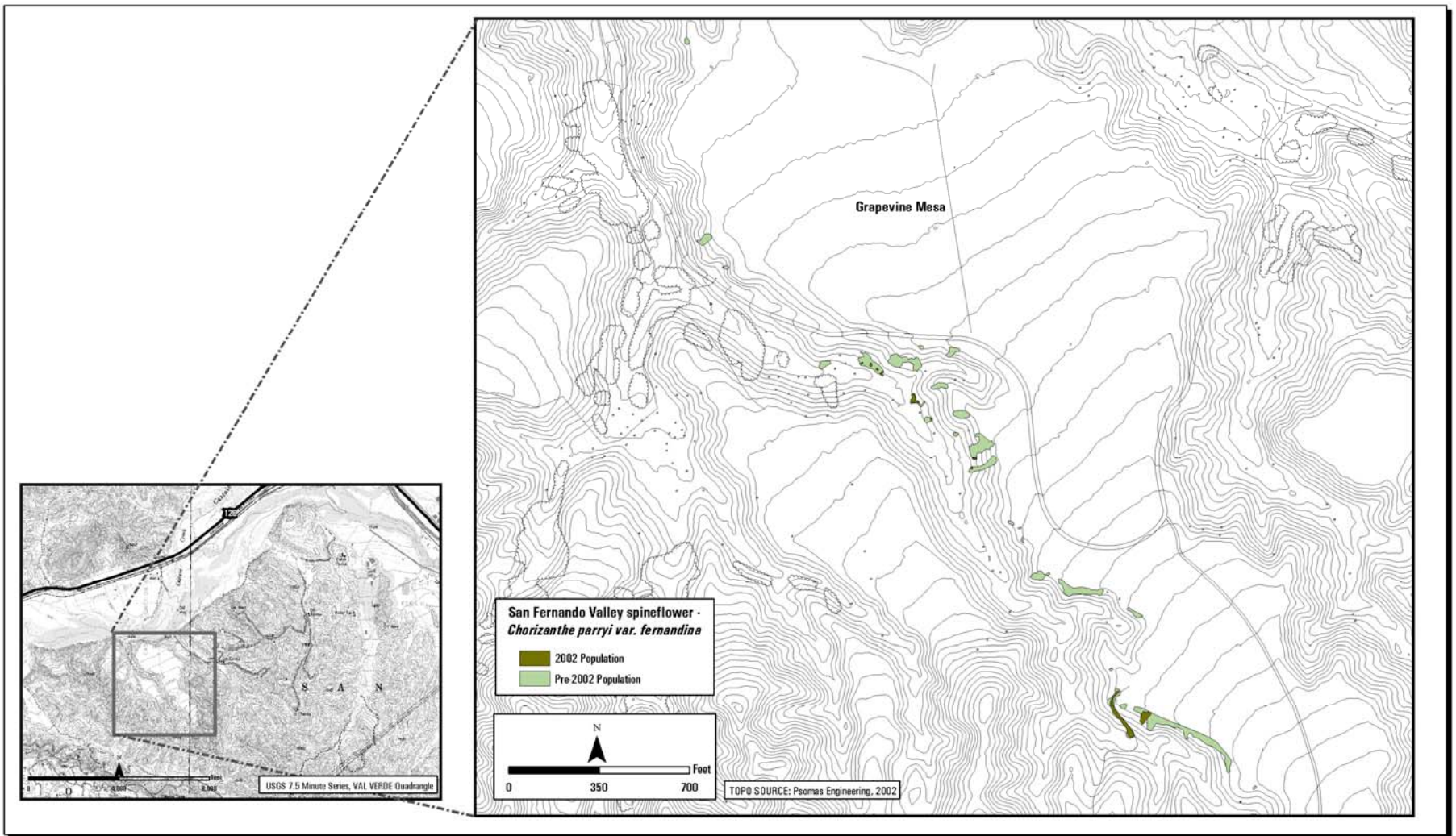
☒ Habitat

☐ Print

☒ Diagnostic Feature

☐ Other

OTHER KNOWLEDGEABLE INDIVIDUALS (Name/Address/Phone) Kim Marsden, Rick Riefner May we obtain duplicates at our cost? ☒ Yes ☐ No



Newhall Ranch
2002 San Fernando Valley spineflower - Grapevine Mesa Area

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: Mark A. Elvin, Julie Vanderwier

Phone: (760) 942.5147

Address: DUDEK & Associates, 605 Third Street, Encinitas, CA 92024

Date of Field Work: July & August 2002 County: Los Angeles Collection: yes If yes, # Elvin 2138 Mus./Herb: UCR

Location: Northern Santa Susana Mountains, Newhall Ranch: north of State Route 126, west of San Martinez Grande Canyon Road

Quad Name: Val Verde T 17W R 4W 1/4 of 1/4 Sec 20
X 7 1/2' 15' Elevation: 1090-1235' T R 1/4 of 1/4 Sec

Landowner/Manager: The Newhall Land and Farming Company, 23823 Valencia Boulevard, Valencia, CA 91355

Species Found? ☒ Yes ☐ No If not, reason:

Is this a new location record? ☒ Yes ☐ No ☐ Unknown * surveys performed here in 2001 by FLx; species believed identified during those surveys

Total # of Individuals = 50 plants (2002); 1,050,000 plants (pre-2002) Is this a subsequent visit? ☒ Yes ☐ No Compared to your last visit: ☐ more ☐ same ☐ fewer

Phenology (plants): ☐ % vegetative ☒ 1 % flowering ☒ 99 % fruiting (pre-2002 inflorescences)

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):

Elevated slopes and rounded ridge tops underlain by a large ancient landslide that involves bedrock of the marine Pico Formation; soil unit (per Antelope Valley Soil Survey (USDA 1969) is eroded Castaic-Balcom silty clay loam (CmF2), with the organic (O) soil horizon generally absent. Dry Munsell soil color is typically brown (10YR 5/3) and varies from grayish-brown (10YR 5/2) to pale brown (10YR 6/3). Slopes faced to the south or east with bearing ranging from S80W to N78E. Macro-slope gradients range from 5 degrees to 33 degrees, with micro-slope gradients being generally shallower (1 degree to 20 degrees). The substrate is undisturbed; however, extensive cattle grazing has occurred in the past. Vegetation is open Venturan coastal scrub composed of *Salvia leucophylla*, *Artemisia californica*, *Eriogonum fasciculatum*, *E. elongatum*, *E. gracile*, *Sambucus mexicana*.

Current Land Use/Visible Disturbances/Possible Threats: Current Land Use: Cattle grazing, farming; Visible Disturbances: cattle grazing, fire in recent past (5-10 years); Possible Threats: Currently proposed for estate residential development.

Overall Site Quality: ☐ Excellent ☒ Good ☐ Fair ☐ Poor

Comments: Surveys were conducted until September 2002. The rainfall for this growing year was one-third of the normal.

Should/Could this site be protected? How?

Other comments:

DETERMINATION (Check one or more, fill in blanks)

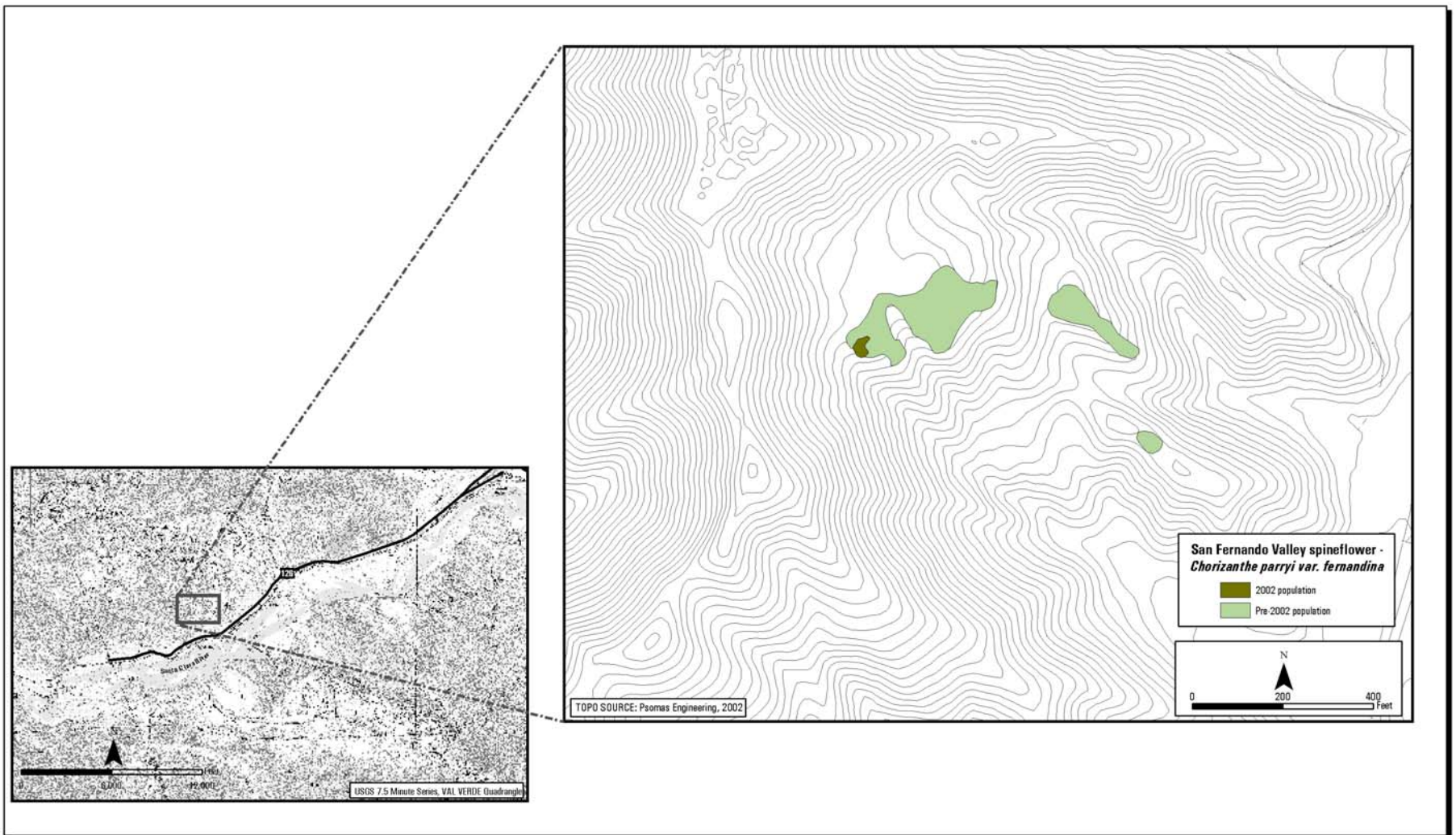
- ☒ Keyed in a site reference: Hickman 1993
☒ Compared with specimen housed at: UCR
☐ Compared with photo/drawing in:
☒ By another person (name): Andy Sanders
☒ Other: compared with materials identified by CDFG in May 2002 and documented occurrence on Grapevine Mesa (EO 14)

OTHER KNOWLEDGEABLE INDIVIDUALS (Name/Address/Phone)
 Julie M. Vanderwier

PHOTOGRAPHS (Check one or more)

Subject	Type
☒ Plant/Animal	☒ Slide
☒ Habitat	☐ Print
☒ Diagnostic Feature	
☐ Other	

May we obtain duplicates at our cost?
☒ Yes ☐ No



Newhall Ranch
2002 San Fernando Valley spineflower - San Martinez Grande Canyon Area

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): *Helianthus nuttallii* ssp. *parishii*

Reporter: Mark A. Elvin, Julia Vanderwier

Phone: (760) 942.5147

Address: DUDEK & Associates, 605 Third Street, Encinitas, CA 92024

Date of Field Work: 29 Aug 2002

County: Los Angeles

Collection: If yes, #25257 AC Sanders and MA Elvin

Mus./Herb: UCR

Location: Northern Santa Susana Mountains, Newhall Ranch, southeast of confluence of the Santa Clara River and Castaic Creek, in a seep area south of the Santa Clara River between Middle Canyon and San Jose Flats on the edge of a slight rise in the middle of a one-acre spring/marsh complex ("Castaic Spring").

Quad Name: Newhall X 7 1/2' 15' Elevation: 990-1010' T 4N R 17W E 1/4 of E 1/4 Sec 3

Landowner/Manager: The Newhall Land and Farming Company, 23823 Valencia Boulevard, Valencia, CA 91355

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

Is this a new location record? X Yes ___ No ___ Unknown ___ * see Comments below

Total # of Individuals = 5-20 plants Is this a subsequent visit? ___ Yes X No Compared to your last visit: ___ more ___ same ___ fewer

Phenology (plants): 5 % vegetative 90 % flowering 5 % fruiting

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):

slight n aspect (1 to 5 degrees); soils dark-brown to black loamy on base of pebbly alluvial; in an opening of fresh water marsh surrounded by southern willow riparian woodland with *Urtica dioica*, *Salix lasiolepis*, *S. laevigata*, *Vitis girdiana*, *Mimulus guttatus*, *Berula erecta*, *Juncus balticus*.

Current Land Use/Visible Disturbances/Possible Threats: Current Land Use: Cattle grazing; Visible Disturbances: trampling (human); Possible Threats: over-collection, apparent continued expansion of the *Vitis girdiana*, proposed nearby residential/commercial development, potential changes in groundwater hydrology.

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

Comments: A specimen was collected independently by a representative of The Newhall Ranch Land and Farming Company and sent to the Herbarium at the University of California, Berkeley, where Dr. John Strother determined it to be consistent with *Helianthus nuttallii* ssp. *parishii* by (Barbara Errter, memo to Ken Koch, September 12, 2002). This specimen, along with others, were sent to Drs. Loren Rieseberg and Charles Heiser at the University of Indiana, Bloomington. They questioned the previous determination of *Helianthus nuttallii* ssp. *parishii*. Work is currently ongoing to verify the identity of this plant.

Should/Could this site be protected? How? This site and its hydrology should be protected.

Other comments:

DETERMINATION (Check one or more, fill in blanks)

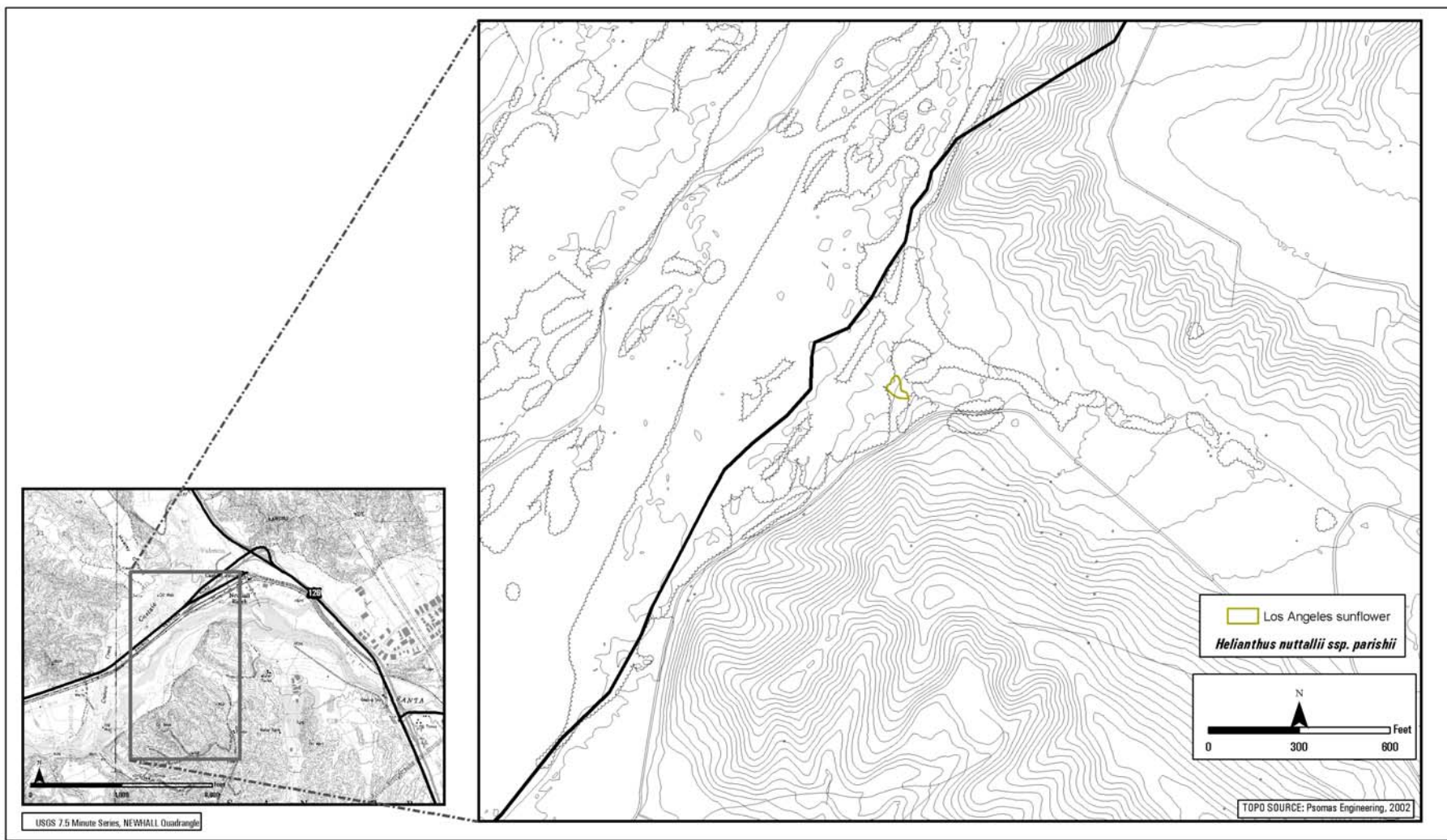
- X Keyed in a site reference: Hickman 1993, Heiser 1969
X Compared with specimen housed at: RSA
 ___ Compared with photo/drawing in:
X By another person (name): Andy Sanders, Steve Boyd, John Strother
 ___ Other:

PHOTOGRAPHS (Check one or more)

- | Subject | Type |
|-----------------------------|----------------|
| <u>X</u> Plant/Animal | <u>X</u> Slide |
| <u>X</u> Habitat | ___ Print |
| <u>X</u> Diagnostic Feature | |
| ___ Other | |

OTHER KNOWLEDGEABLE INDIVIDUALS (Name/Address/Phone) Daryl Koutnik, Mary May we obtain duplicates at our cost? X Yes ___ No

.*



Newhall Ranch
Los Angeles sunflower

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): *Opuntia basilaris* var. *brachyclada*

Reporter: Mark Elvin & Julie Vanderwier

Phone: (760) 942-5147

Address: DUDEK & Associates, 605 Third Street, Encinitas, CA 92024

Date of Field Work: June-July 2002

County: Los Angeles

Collection: yes If yes, #

Mus./Herb:

Location: Northern Santa Susana Mountains, Newhall Ranch, southeast of confluence of the Santa Clara River and Castaic Creek, east, south, and west edges of Airport Mesa and adjacent mesas.

Quad Name: Newhall

X 7 1/2' 15'

Elevation: 1000-1300'

T 4N

R 16W

W

1/4 of W 1/4 Sec 3

T 4N

R 17W

E

1/4 of E 1/4 Sec 3

Landowner/Manager: The Newhall Land and Farming Company, 23823 Valencia Boulevard, Valencia, CA 91355

Species Found? X Yes No If not, reason:

Is this a new location record? X Yes No Unknown

Total # of Individuals = 200-1,000 Is this a subsequent visit? Yes X No Compared to your last visit: more same fewer

Phenology (plants): 90 % vegetative 5 % flowering* 5 % fruiting

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):

Venturan coastal sage scrub with *Artemisia californica*, *Eriogonum fasciculatum*, *E. elongatum*, *E. gracile*, *Salvia leucophylla*, *Ericameria palmeri* var. *pachypus*, *Mirabilis californica*

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

Overall Site Quality: Excellent X Good Fair Poor

Comments: Plants were sparsely distributed with the polygons.

Should/Could this site be protected? How?

Other comments:

DETERMINATION (Check one or more, fill in blanks)

X Keyed in a site reference: Hickman 1993

X Compared with specimen housed at: RSA

 Compared with photo/drawing in:

 By another person (name):

 Other:

OTHER KNOWLEDGEABLE INDIVIDUALS (Name/Address/Phone) Kim Marsden

PHOTOGRAPHS (Check one or more)

Subject

Type

X Plant/Animal

X Slide

X Habitat

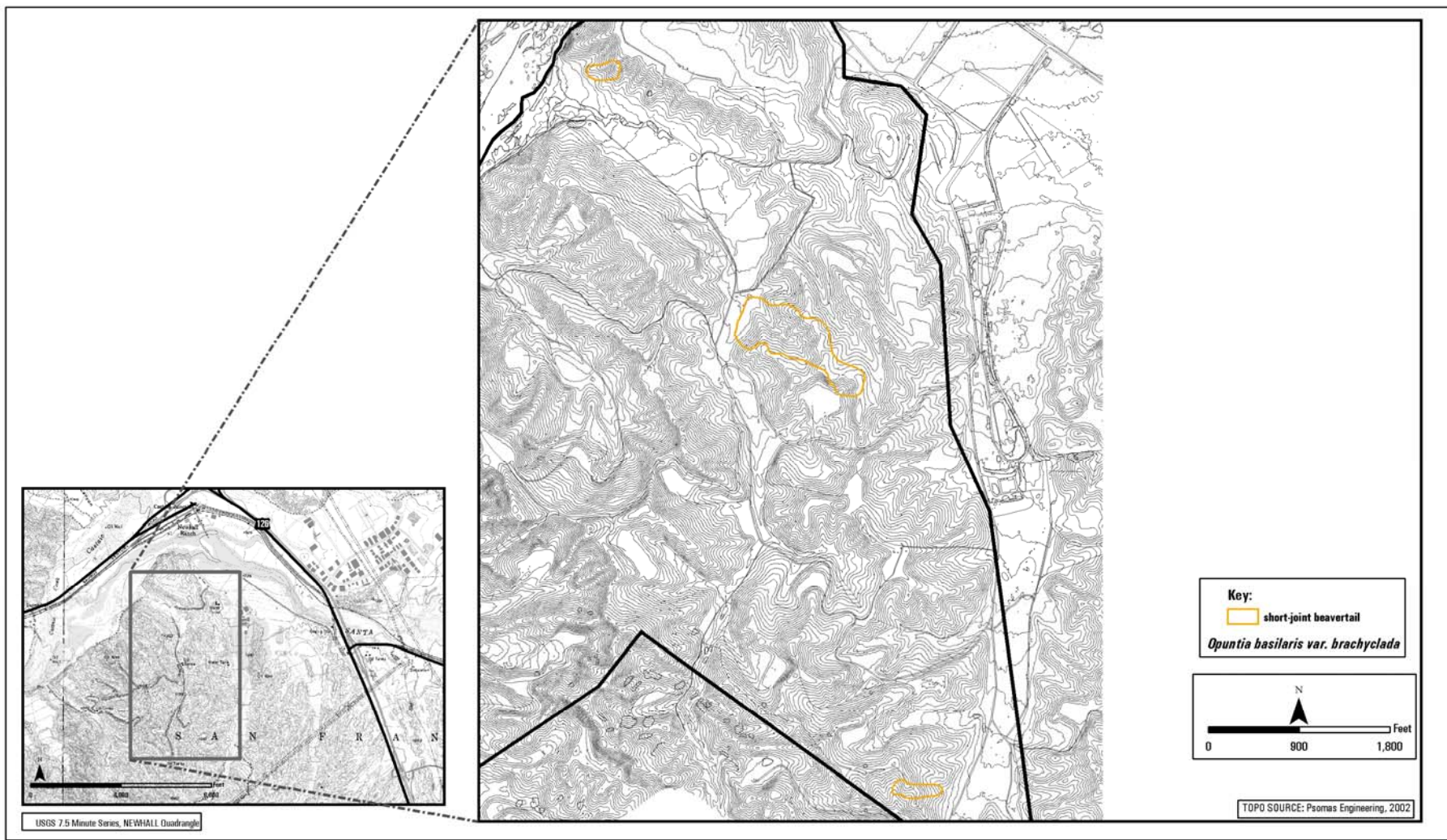
 Print

X Diagnostic Feature

 Other

May we obtain duplicates **at our cost**?

X Yes No



Newhall Ranch
2002 short-joint beavertail - Airport Mesa Area

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): *Opuntia basilaris* var. *brachyclada*

Reporter: Mark Elvin & Julie Vanderwier

Phone: (760) 942-5147

Address: DUDEK & Associates, 605 Third Street, Encinitas, CA 92024

Date of Field Work: June-July 2002

County: Los Angeles

Collection: yes

If yes, #

Mus./Herb:

Location: Northern Santa Susana Mountains, Newhall Ranch, south of confluence of the Santa Clara River and Castaic Creek, the vicinity of Grapevine Mesa.

Quad Name: Val Verde

X 7 1/2' 15'

Elevation: 1000-1300'

T 17W

R 4N

1/4 o _____

1/4 Sec _____

Landowner/Manager: The Newhall Land and Farming Company, 23823 Valencia Boulevard, Valencia, CA 91355

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

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

Total # of Individuals = 200-1,000 Is this a subsequent visit? _____ Yes X No Compared to your last visit: _____ more _____ same _____ fewer

Phenology (plants): 90 % vegetative 5 % flowering* 5 % fruiting

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):

Venturan coastal sage scrub with *Artemisia californica*, *Eriogonum fasciculatum*, *E. elongatum*, *E. gracile*, *Salvia leucophylla*, *Ericameria palmeri* var. *pachypus*, *Mirabilis californica*

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

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

Comments: Plants were sparsely distributed with the polygons.

Should/Could this site be protected? How?

Other comments:

DETERMINATION (Check one or more, fill in blanks)

X Keyed in a site reference: Hickman 1993

X Compared with specimen housed at: RSA

_____ Compared with photo/drawing in:

_____ By another person (name):

_____ Other:

OTHER KNOWLEDGEABLE INDIVIDUALS (Name/Address/Phone) Kim Marsden

PHOTOGRAPHS (Check one or more)

Subject

Type

X Plant/Animal

X Slide

X Habitat

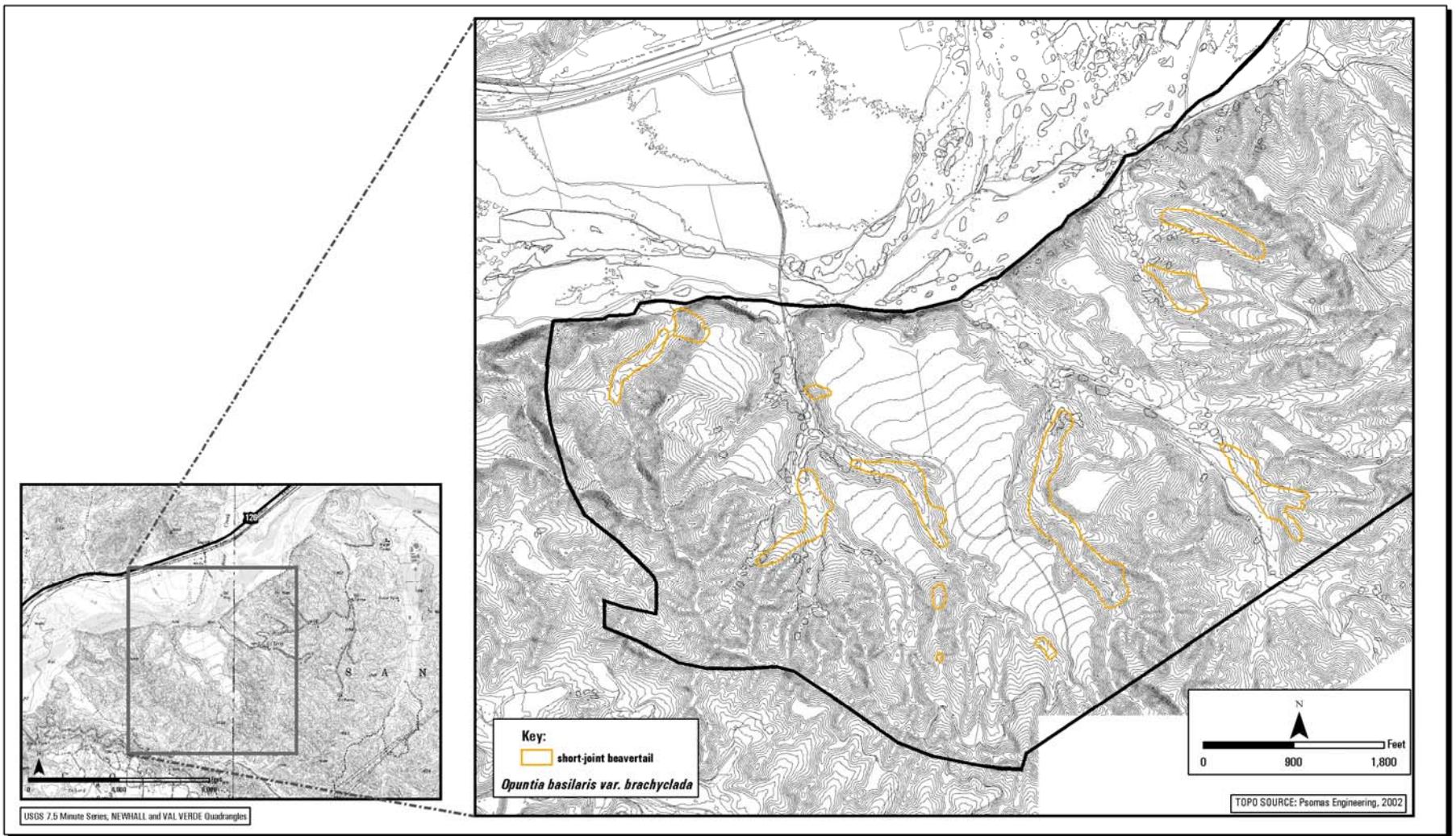
_____ Print

X Diagnostic Feature

_____ Other

May we obtain duplicates at our cost?

X Yes _____ No



Newhall Ranch
2002 short-joint beavertail - Grapevine Mesa Area

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): *Opuntia basilaris* var. *brachyclada*

Reporter: Mark Elvin & Julie Vanderwier

Phone: (760) 942-5147

Address: DUDEK & Associates, 605 Third Street, Encinitas, CA 92024

Date of Field Work: June-July 2002

County: Los Angeles

Collection: yes

If yes, #

Mus./Herb:

Location: Northern Santa Susana Mountains, Newhall Ranch, southwest of confluence of the Santa Clara River and Castaic Creek, scattered in Long Canyon.

Quad Name: Val Verde

☒ 7 1/2' ☐ 15'

Elevation: 1000-1300'

T 4N

R 17W

1/4 of 1/4 Sec 3

Landowner/Manager: The Newhall Land and Farming Company, 23823 Valencia Boulevard, Valencia, CA 91355

Species Found? ☒ Yes ☐ No If not, reason:

Is this a new location record? ☒ Yes ☐ No ☐ Unknown

Total # of Individuals = 250-1250 Is this a subsequent visit? ☐ Yes ☒ No Compared to your last visit: ☐ more ☐ same ☐ fewer

Phenology (plants): ☒ 90 % vegetative ☒ 5 % flowering* ☒ 5 % fruiting

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):

Venturan coastal sage scrub with *Artemisia californica*, *Eriogonum fasciculatum*, *E. elongatum*, *E. gracile*, *Salvia leucophylla*, *Ericameria palmeri* var. *pachypus*, *Mirabilis californica*

Current Land Use/Visible Disturbances/Possible Threats: Current Land Use: Cattle grazing, farming; Visible Disturbances: cattle grazing, oil well operations; Possible Threats: proposed residential/commercial development.

Overall Site Quality: ☐ Excellent ☒ Good ☐ Fair ☐ Poor

Comments: Plants were sparsely distributed with the polygons.

Should/Could this site be protected? How?

Other comments:

DETERMINATION (Check one or more, fill in blanks)

☒ Keyed in a site reference: Hickman 1993

☒ Compared with specimen housed at: RSA

☐ Compared with photo/drawing in:

☐ By another person (name):

☐ Other:

OTHER KNOWLEDGEABLE INDIVIDUALS (Name/Address/Phone)

PHOTOGRAPHS (Check one or more)

Subject

Type

☒ Plant/Animal

☒ Slide

☒ Habitat

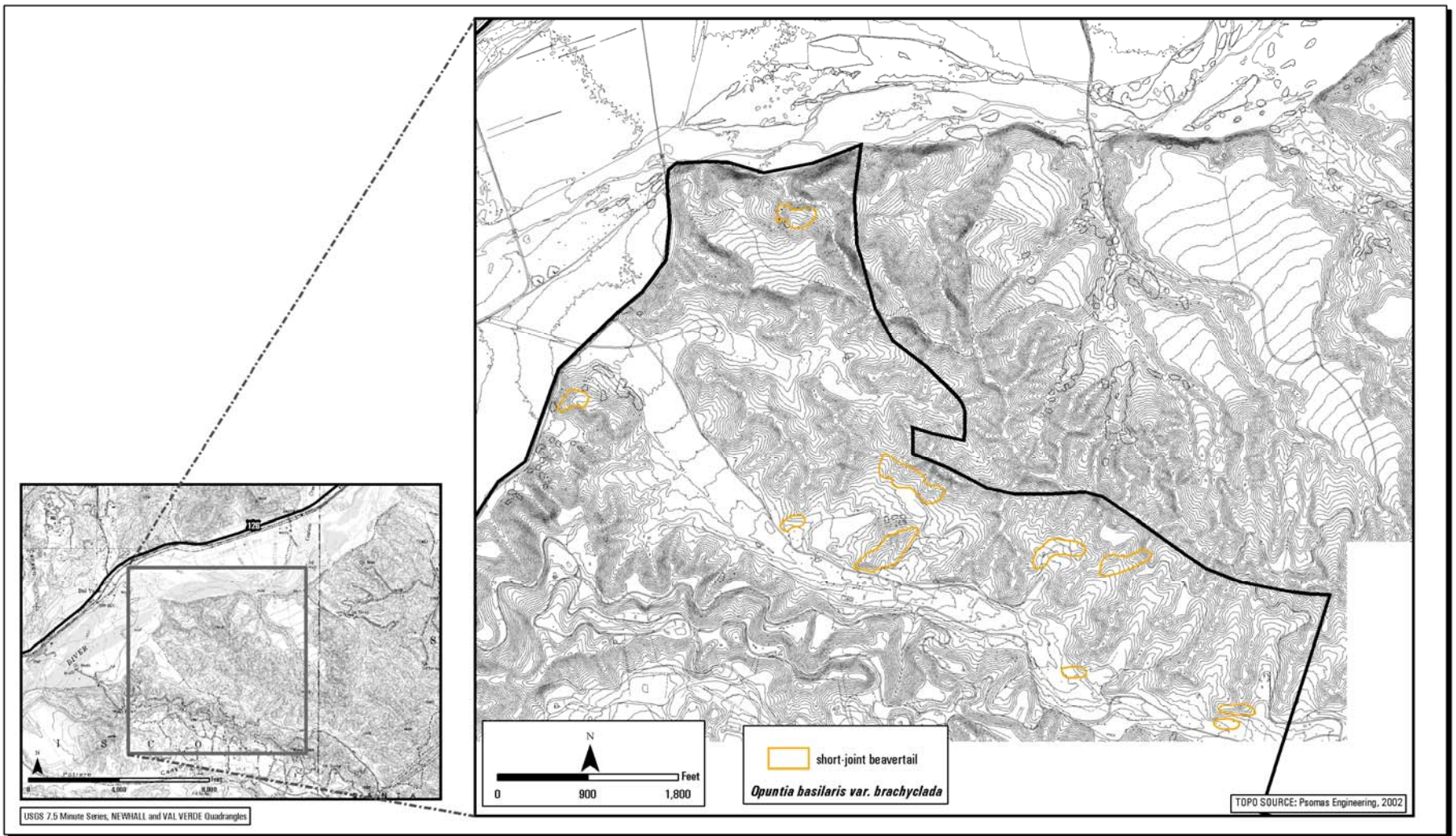
☐ Print

☒ Diagnostic Feature

☐ Other

May we obtain duplicates at our cost?

☒ Yes ☐ No



Newhall Ranch
2002 short-joint beavertail - Long Canyon Area

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): *Opuntia basilaris* var. *brachyclada*

Reporter: Mark Elvin & Julie Vanderwier

Phone: (760) 942-5147

Address: DUDEK & Associates, 605 Third Street, Encinitas, CA 92024

Date of Field Work: June-July 2002

County: Los Angeles

Collection: yes If yes, #

Mus./Herb:

Location: Northern Santa Susana Mountains, Newhall Ranch, northwest of confluence of the Santa Clara River and Castaic Creek, scattered in Chiquito Canyon.

Quad Name: Val Verde

X 7½' 15'

Elevation: 1000-1300'

T 4N

R 17W

¼ of ¼ Sec 15 and 16

Landowner/Manager: The Newhall Land and Farming Company, 23823 Valencia Boulevard, Valencia, CA 91355

Species Found? X Yes No If not, reason:

Is this a new location record? X Yes No Unknown

Total # of Individuals = 100-750 Is this a subsequent visit? Yes X No Compared to your last visit: more same fewer

Phenology (plants): 90 % vegetative 5 % flowering* 5 % fruiting

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):

Venturan coastal sage scrub with *Artemisia californica*, *Eriogonum fasciculatum*, *E. elongatum*, *E. gracile*, *Salvia leucophylla*, *Ericameria palmeri* var. *pachypus*, *Mirabilis californica*

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

Overall Site Quality: Excellent X Good Fair Poor

Comments: Plants were sparsely distributed with the polygons.

Should/Could this site be protected? How?

Other comments:

DETERMINATION (Check one or more, fill in blanks)

X Keyed in a site reference: Hickman 1993

X Compared with specimen housed at: RSA

 Compared with photo/drawing in:

 By another person (name):

 Other:

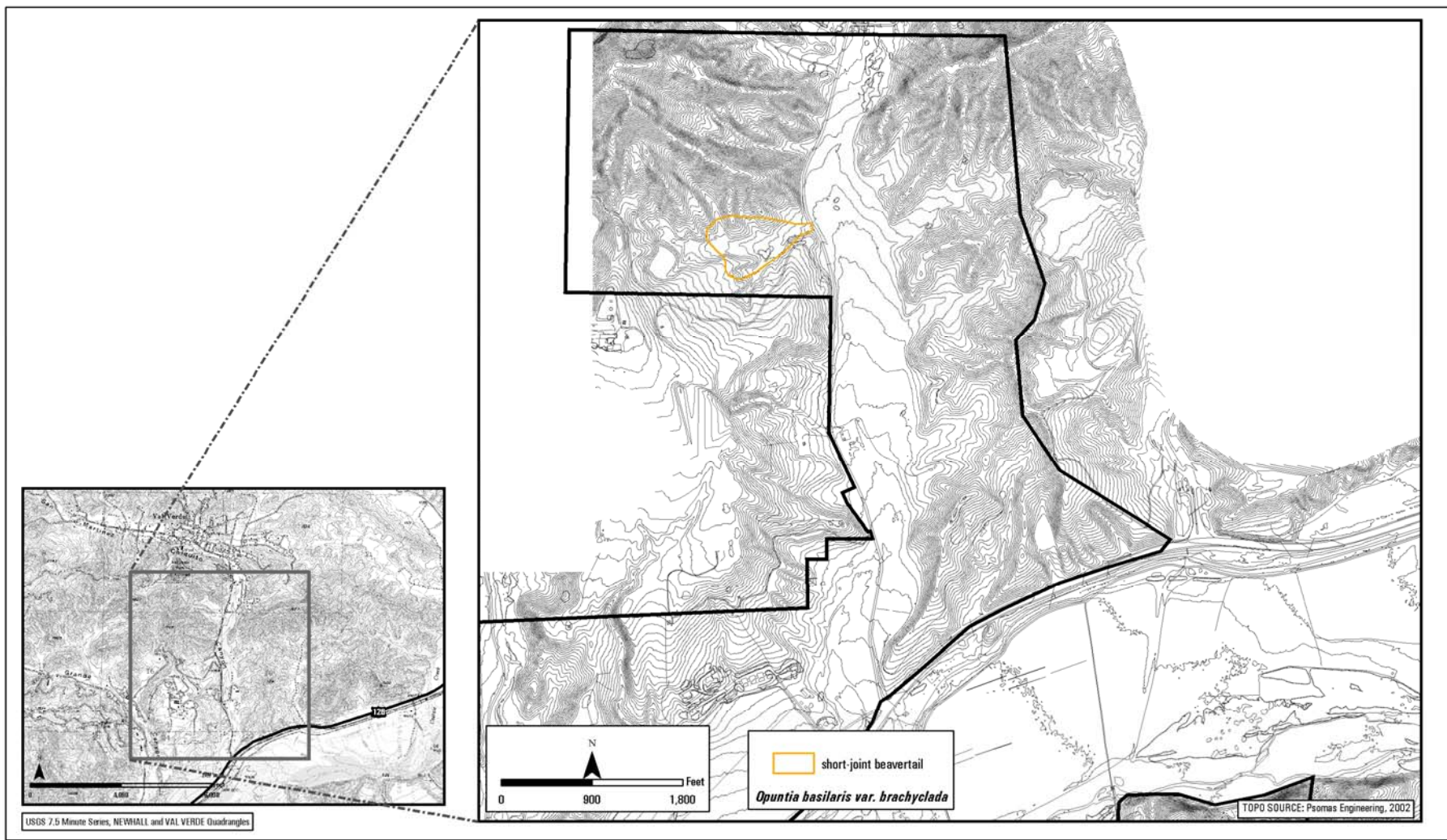
OTHER KNOWLEDGEABLE INDIVIDUALS (Name/Address/Phone)

PHOTOGRAPHS (Check one or more)

Subject	Type
<u>X</u> Plant/Animal	<u>X</u> Slide
<u>X</u> Habitat	<u> </u> Print
<u>X</u> Diagnostic Feature	
<u> </u> Other	

May we obtain duplicates at our cost?

X Yes No



Newhall Ranch
2002 short-joint beavertail - Chiquito Canyon Area