



Biological Technical Report
Newhall Ranch



O C T O B E R 2 0 0 6

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BIOLOGICAL RESOURCES TECHNICAL REPORT

for the

NEWHALL RANCH SPECIFIC PLAN AREA

Los Angeles County, California

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SUMMARY OF FINDINGS

Dudek conducted biological surveys of the 12,000-acre Newhall Ranch Specific Plan (NRSP) Area and 2,028-acre Salt Creek Watershed area in July, August and September 2006 to assess existing conditions, map vegetation communities and land covers and determine the potential for special-status plants and wildlife to exist onsite. Vegetation community classifications used in this report primarily follow the *Vegetation Classification and Mapping Program, List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database* (CDFG 2003) with a few exceptions. In certain instances, the vegetation communities observed in the field did not match the vegetation communities described by CDFG (2003). In these instances, Dudek developed additional vegetation community classifications.

Dudek conducted botanical surveys for special-status plant species annually from 2002 through 2005. Botanical surveys of the site were conducted between April and August of each year. Additional botanical surveys of the High Country and Salt Creek areas were conducted in Spring 2006. More than 5,640 field-hours (564 field-days) were spent conducting botanical surveys within the study area over the four years that Dudek conducted surveys. Surveys were conducted in teams of two or more biologists, with at least one senior-level botanist included with each team. Biologists were able to observe reference populations of the state-listed endangered San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*; SFVS) and other special-status plant species in order to ensure flowering status and develop a search-image prior to conducting surveys of the Entrada site. Surveys focused on the identification and location of SFVS. Additional special-status plant species observed during SFVS surveys, including California Native Plant Society (CNPS) List 1B and 4 species, were also recorded.

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1.0 INTRODUCTION

The purpose of this Biological Resources Technical Report is to document the results of general and focused botanical surveys conducted within the 12,000-acre Newhall Ranch Specific Plan (NRSP) Area and 2,028-acre Salt Creek Watershed area. Dudek conducted vegetation mapping, general botanical surveys, and focused surveys for special-status plant species. The surveys were conducted at various times between 2002 and 2006. This report describes the biological character of the NRSP study area based on these surveys.

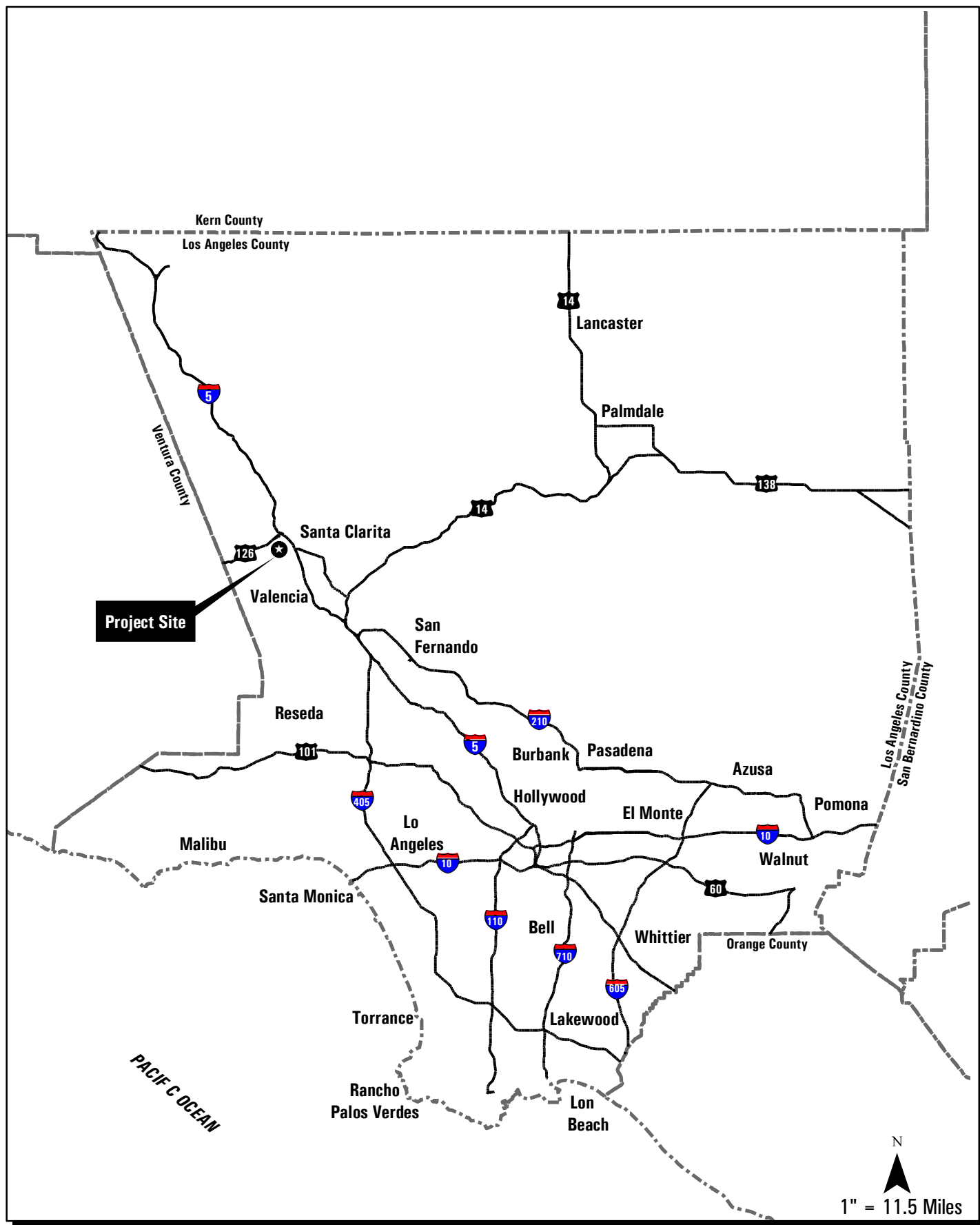
2.0 SITE DESCRIPTION

The NRSP 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 (I-5) and largely southwest of the junction of I-5 and State Route 126 (SR-126), with portions of the study area 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 the Ventura County/Los Angeles County line lies along the western boundary.

Newhall Land (Newhall) leases out portions of the NRSP study area for oil and natural gas production, cattle grazing and agricultural operations (*e.g.*, food crop production, dryland farming, honey farming). All such operations are currently ongoing. Southern California Edison and Southern California Gas Company have distribution lines within easements onsite as well. The easements/transmission lines are actively maintained.

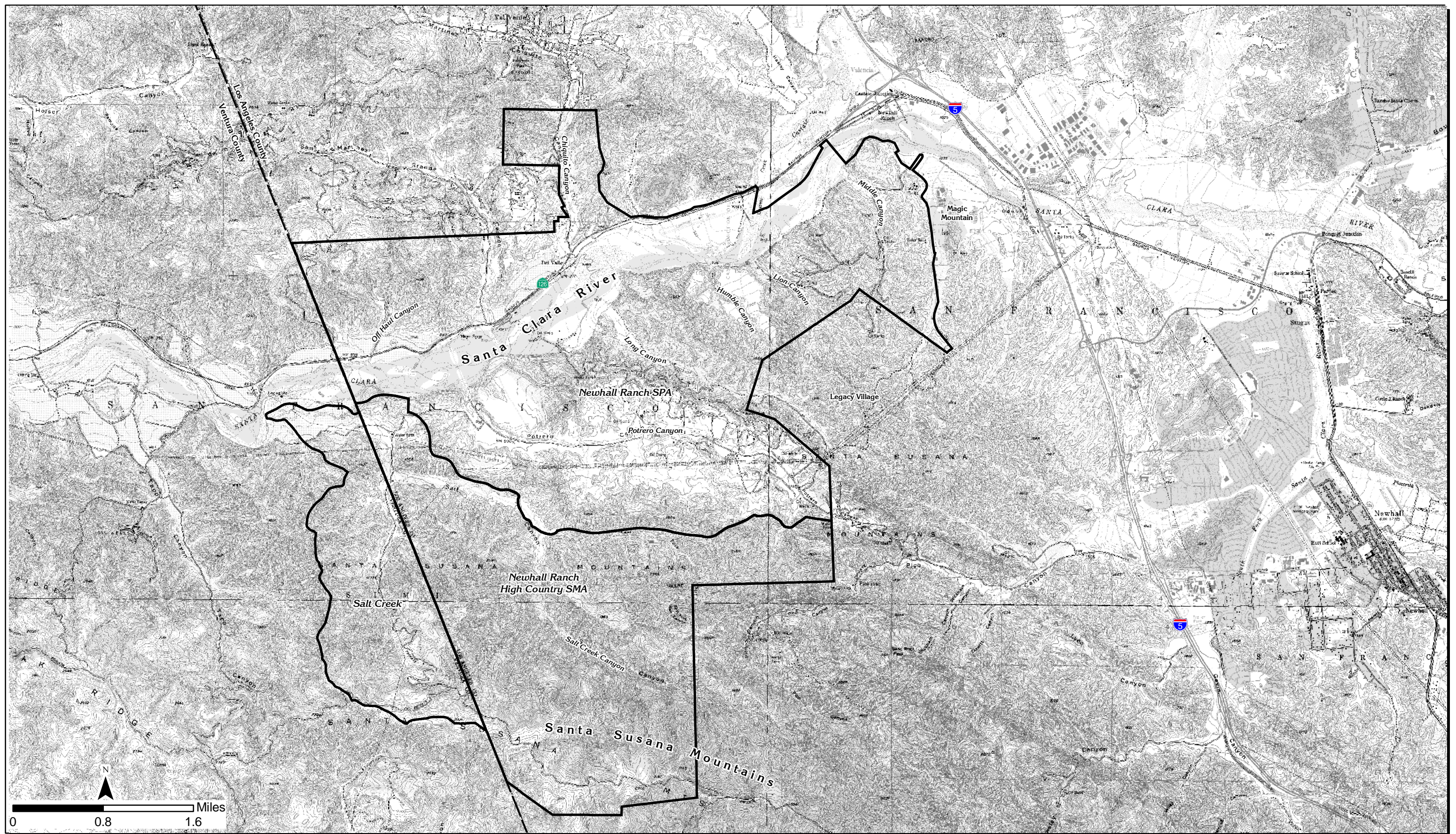
2.1 Topography

The NRSP study area includes areas north of SR-126 between Chiquito Canyon and the Ventura County line. South of SR-126, the study area includes areas between the Airport Mesa and Potrero Canyon, including Middle, Dead-End, Lion, Humble, and Long canyons, extending south into 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 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*).



Newhall Ranch Biological Resources Report
Regional Map

FIGURE
1



Biological Resources Technical Report

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Slope gradients 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.

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 (Allan E. Seward 2002, 2004).” 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, 2004).

Soils onsite include: Castaic and Saugus soils (30 to 65 percent slopes, severely eroded); Castaic-Balcom silty clay loams (9 to 15 percent slopes); Castaic-Balcom silty clay loams (15 to 30 percent slopes); Castaic-Balcom silty clay loams (30 to 50 percent slopes); Castaic-Balcom silty clay loams (30 to 50 percent slopes, eroded); Castaic-Balcom silty clay loams (50 to 65 percent slopes, eroded); Chino loam, Cortina sandy loam (0 to 2 percent slopes); Gaviota rocky sandy loam (15 to 30 percent slopes, eroded); Gaviota rocky sandy loam (30 to 50 percent slopes, eroded); Gazos clay loam (30 to 50 percent slopes); Hanford sandy loam (0 to 2 percent slopes); Hanford sandy loam (2 to 9 percent slopes); Metz loamy sand (0 to 2 percent slopes); Metz loamy sand (2 to 9 percent slopes); Mocho loam (0 to 2 percent slopes); riverwash; sandy alluvial land; Saugus loam (30 to 50 percent slopes); Saugus loam (30 to 50 percent slopes, eroded); Sorrento loam (0 to 2 percent slopes); Sorrento loam (2 to 5 percent slopes); terrace escarpments; Yolo loam (0 to 2 percent slopes); Yolo loam (2 to 9 percent slopes); Zamora loam (2 to 9 percent slopes); and Zamora loam (9 to 15 percent slopes) (USDA 1969).

3.0 SURVEY METHODS

Data regarding biological resources present on the project site were obtained through a review of pertinent literature and through field reconnaissance; both are described in detail below.

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3.1 Literature Review

Dudek conducted special-status plant surveys within various areas of the NRSP study area between 2002 and 2006. The literature search used for general floristic and special-status botanical resources present or potentially present on the NRSP study area is described in the *Sensitive Plant Survey Results for the Newhall Ranch Specific Plan Area, Los Angeles County, California* (Dudek 2002, 2004a, 2004b and 2006a); *Sensitive Plant Survey Results for Salt Creek, Los Angeles County, California* (Dudek 2004c); and *Biological Resources Technical Report for the Newhall Ranch High Country Specific Management Area and the Salt Creek Area* (Dudek 2006).

General information regarding wildlife species present in the region was obtained from Stebbins (2003) for reptiles and amphibians, American Ornithologists' Union (2005) for birds, Jones et al. (1997) for mammals, and Emmel and Emmel (1973) for butterflies. General information regarding vegetation communities were obtained from the California Department of Fish and Game (CDFG) (2003), Holland (1986) and Sawyer and Keeler-Wolf (1995). Plant species nomenclature follows Hickman (1993).

3.2 Field Reconnaissance Methods

3.2.1 Resource Mapping

Vegetation communities were mapped in the field directly onto a 200-scale (1" = 200') false-color digital orthographic map (AirPhotoUSA 2005) of the property. These boundaries and locations were digitized by Dudek Geographic Information Systems (GIS) technician Mark McGinnis using ArcGIS software. Vegetation community classifications used in this report follow CDFG (2003).

Vegetation community classifications used in this report primarily follow the *Vegetation Classification and Mapping Program, List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database* (CDFG 2003), with a few exceptions where the vegetation communities observed in the field did not match the vegetation communities described by CDFG 2003. In these instances, Dudek developed additional site-specific vegetation community classifications, which are described as “modified” in the vegetation descriptions in *Section 4.2* below.

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3.2.2 Flora

All plant species encountered during the special-status plant field surveys (see below) were identified and recorded. Species that could not be identified immediately were brought into the laboratory for further investigation. Latin and common names of plants follow *The Jepson Manual* (Hickman 1993) or other recent published taxonomic treatments. Where not listed in Hickman (1993), common names were taken from Abrams (1923). Where not found in this reference, a variety of sources were used (*e.g.*, Dale 1986; Roberts 1998).

3.2.3 Fauna

Surveys were conducted by walking meandering transects throughout the project site, surveying all suitable habitat types including along canyons and ridgelines, to ensure that 100 percent visual coverage was obtained. Wildlife species detected during the field survey by sight, calls, tracks, scat, or other signs were recorded. Binoculars (7 x 50 power) were used to aid in the identification of observed wildlife. At regular intervals the biologists stopped, remained quiet, and listened for wildlife vocalizations. All wildlife species detected in the NRSP study area were recorded. All habitats in the study area were surveyed for potential to support sensitive wildlife species.

Latin and common names of animals follow Stebbins (2003) for reptiles and amphibians, American Ornithologists' Union (2005) for birds, Jones et al. (1997) for mammals, and Emmel and Emmel (1973) for butterflies. CDFG (2006) was used for special-status species where Latin names have been changed.

3.2.4 Special-Status/Regulated Biological Resources

Special-status biological resources are those defined as follows: **(1)** species that have been given special recognition by federal, state, or local resource agencies and environmental organizations due to limited, declining, or threatened population sizes; **(2)** species and habitat types recognized by local and regional resource agencies as special-status; **(3)** habitat areas or vegetation communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; and **(4)** wildlife corridors and habitat linkages. Regulated biological resources may or may not be considered special-status, but are regulated under local, state, and/or federal laws.

Dudek conducted botanical surveys for special-status plant species annually from 2002 through 2005. Botanical surveys of the study area were conducted between April and August of each year. Additional botanical surveys were conducted in the High Country and Salt Creek areas in

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Spring 2006. More than 5,640 field-hours (564 field-days) were spent conducting botanical surveys within the study area over the four years that Dudek conducted surveys. Surveys were conducted in teams of two or more biologists, with at least one senior-level botanist included with each team. Biologists were able to observe reference populations of the state-listed endangered San Fernando Valley spineflower (*Chorizanthe parryi* var. *Fernandina*; SFVS) and other special-status plant species in order to develop a search-image prior to conducting surveys of the project site. Surveys focused on the identification and location of SFVS. Additional special-status plant species observed during SFVS surveys, including California Native Plant Society (CNPS) List 1B and 4 species, were also recorded.

A complete description of field surveys procedures for special-status plants are described in *Sensitive Plant Survey Results for the Newhall Ranch Specific Plan Area, Los Angeles County, California* (Dudek 2002, 2004a, 2004b and 2006a); *Sensitive Plant Survey Results for Salt Creek, Los Angeles County, California* (Dudek 2004c); and *Biological Resources Technical Report for the Newhall Ranch High Country Specific Management Area and the Salt Creek Area* (Dudek 2006). *Table 1* lists the dates, conditions, and survey focus for each of the surveys.

Dudek biologists Phil Behrends, Marc Doalson, Megan Enright, Clint Emerson, David Flietner, Callie Ford, Stuart Fraser, Colin Khoury, Makela Mangrich, Sherri Miller, Mike Sweesy, Sara Townsend, and Jennifer Turnbull conducted vegetation communities mapping in July and August 2006 per the schedule provided in *Table 1*.

TABLE 1
2006 Survey Schedule & Personnel for Newhall Ranch Specific Plan Area

DATE	BIOLOGISTS	PURPOSE
7/11/06	Stuart Fraser, Sherri Miller, Colin Khoury, Callie Ford, Jennifer Turnbull	Vegetation community mapping
7/13/06	Makela Mangrich, Colin Khoury	Vegetation community mapping
7/17/06	Colin Khoury, Clint Emerson, Dave Flietner, Marc Doalson	Vegetation community mapping
7/18/06	Megan Enright, Sherri Miller, Colin Khoury, Clint Emerson, Dave Flietner, Marc Doalson	Vegetation community mapping
7/19/06	Colin Khoury, Clint Emerson, Dave Flietner, Marc Doalson	Vegetation community mapping
7/20/06	Mike Sweesy, Sherri Miller	Vegetation community mapping
7/25/06	Sara Townsend, Sherri Miller	Vegetation community mapping
7/27/06	Sherri Miller	Vegetation community mapping
8/1/06	Phil Behrends, Sherri Miller	Vegetation community mapping
8/8/06	Sherri Miller	Vegetation community mapping

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This report includes the results of previous studies, identified in *Table 2*. For a description of methods utilized in these previous studies, please refer directly to the relevant reports, which are incorporated by reference.

TABLE 2
Previous Botanical Studies Conducted for Newhall Ranch
Specific Plan Area and Incorporated by Reference

DATE OF REPORT	REPORT TITLE	PURPOSE
November, 2002	2002 Sensitive Plant Survey Results for Newhall Ranch Specific Plan Area	Sensitive plant surveys 2002
June, 2004	2003 Sensitive Plant Survey Results for Newhall Ranch Specific Plan Area	Sensitive plant surveys 2003
October, 2004	2004 Sensitive Plant Survey Results for Newhall Ranch Specific Plan Area	Sensitive plant surveys 2004
June, 2006	2005 Sensitive Plant Survey Results for Newhall Ranch Specific Plan Area	Sensitive plant surveys 2005
June, 2004	2003 Sensitive Plant Survey Results for Salt Creek	Sensitive plant surveys 2003
October 2006	2006 High Country Biological Resources Technical Report	Vegetation mapping, sensitive plant surveys 2006

3.2.5 Survey Limitations

Vegetation communities were mapped in fall and winter of 2005 and summer of 2006. Focused surveys for special-status plant species were conducted in spring and summer 2002 through 2006. The surveys were timed to be coincident with the annual blooming period for early blooming annual species, including the state-listed threatened San Fernando Valley spineflower (*Chorizanthe parryi* ssp. *fernandina*; SFVS). Surveys continued past the peak bloom period for the SFVS into the summer when SFVS became a highly visible brick red while all of the other plants dried and faded to pale straw colors. Surveying during these two time periods maximized the potential for detection of SFVS during the survey effort.

The surveys were conducted during daylight hours under weather conditions that did not preclude observation of special-status plant species (*e.g.*, surveys were not conducted during heavy fog or rain).

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4.0 RESULTS OF SURVEYS

4.1 Botany – Vegetation Communities and Floral Diversity

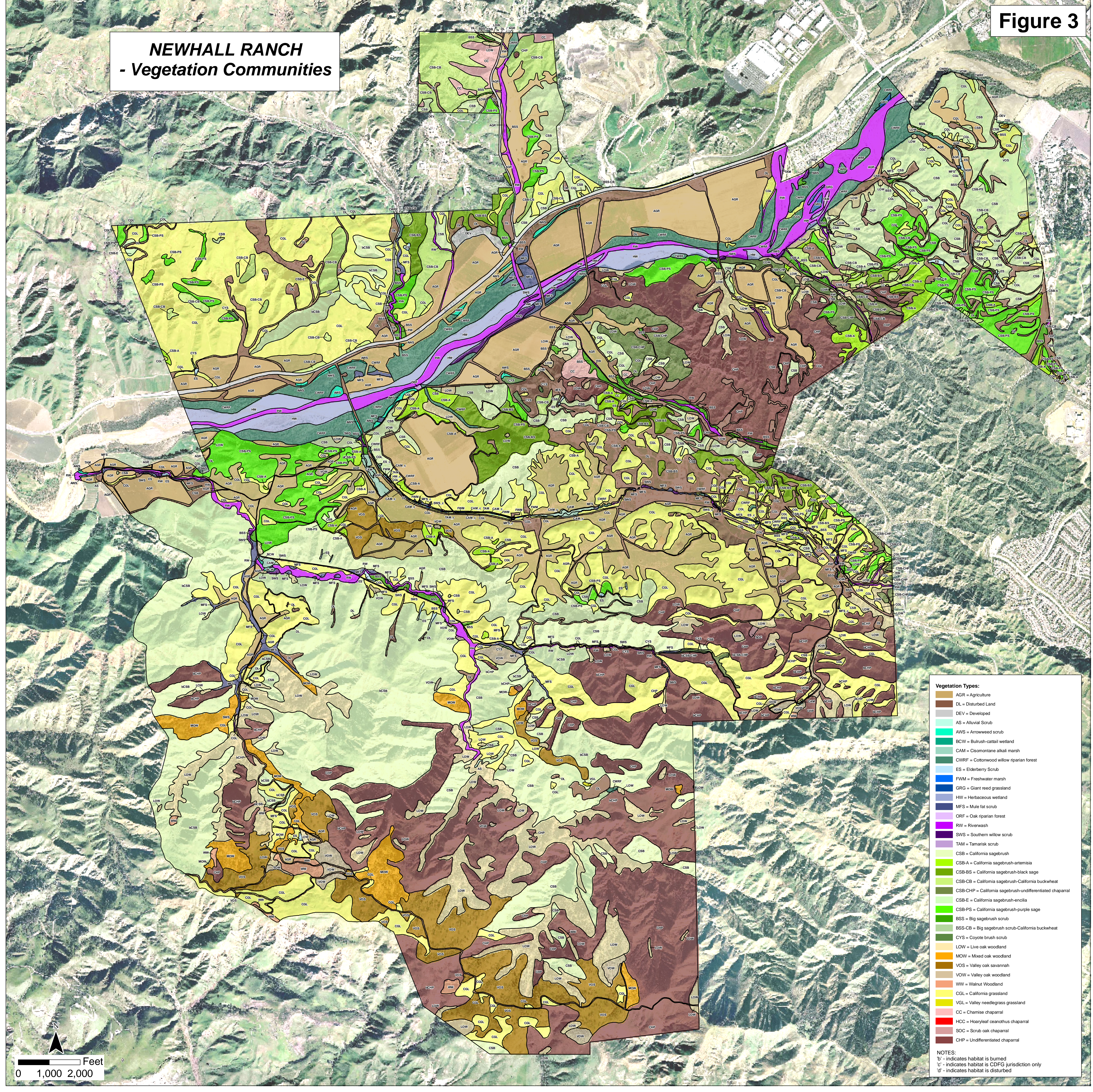
Native and naturalized vegetation communities within the NRSP study area are representative of those found in this region and of those plant communities found in the Santa Susana Mountains and the Santa Clara River ecosystems. Upland vegetation communities dominate the landscape within the NRSP study area both north and south of the Santa Clara River. The majority of the site consists of the following upland plant communities: California sagebrush and sub-associations, chaparral and sub-associations, coast live oak woodlands, mixed oak woodlands, valley oak woodlands and savannahs, California walnut woodland, and California annual grasslands. The Santa Clara River and its tributaries support a variety of riparian and scrub vegetation communities. These include southern cottonwood willow riparian forest, southern willow scrub, oak riparian forest, mulefat scrub, arrow weed scrub, big sagebrush scrub, alluvial scrub, herbaceous wetlands, coastal and valley freshwater marsh and cismontane alkali marsh. Intermittent and ephemeral drainages onsite also provide habitat for scalebroom and Great Basin series and alluvial scrubs.

Newhall leases out portions of the study area for oil and natural gas production, as well as for cattle grazing and agricultural operations (*e.g.*, food crop production, dryland farming, honey farming). All such operations are currently ongoing. Southern California Edison and Southern California Gas Company have distribution lines within easements onsite as well. Areas associated with these land uses are mapped as agriculture, disturbed land and developed land.

These vegetation communities and land covers are described below. Included (where applicable) are the codes corresponding to the List of California Terrestrial Natural Communities (CDFG 2003). Vegetation community acreages are presented in *Table 3* and their locations are depicted on *Figures 3 and 4* in the map pocket. Vegetation communities that appeared to be recovering from a recent burn are denoted by a lower-case “b” prefix. Vegetation communities that contained between 20 and 50 percent native species by percent cover are denoted by a lower-case “d” prefix.

Figure 3

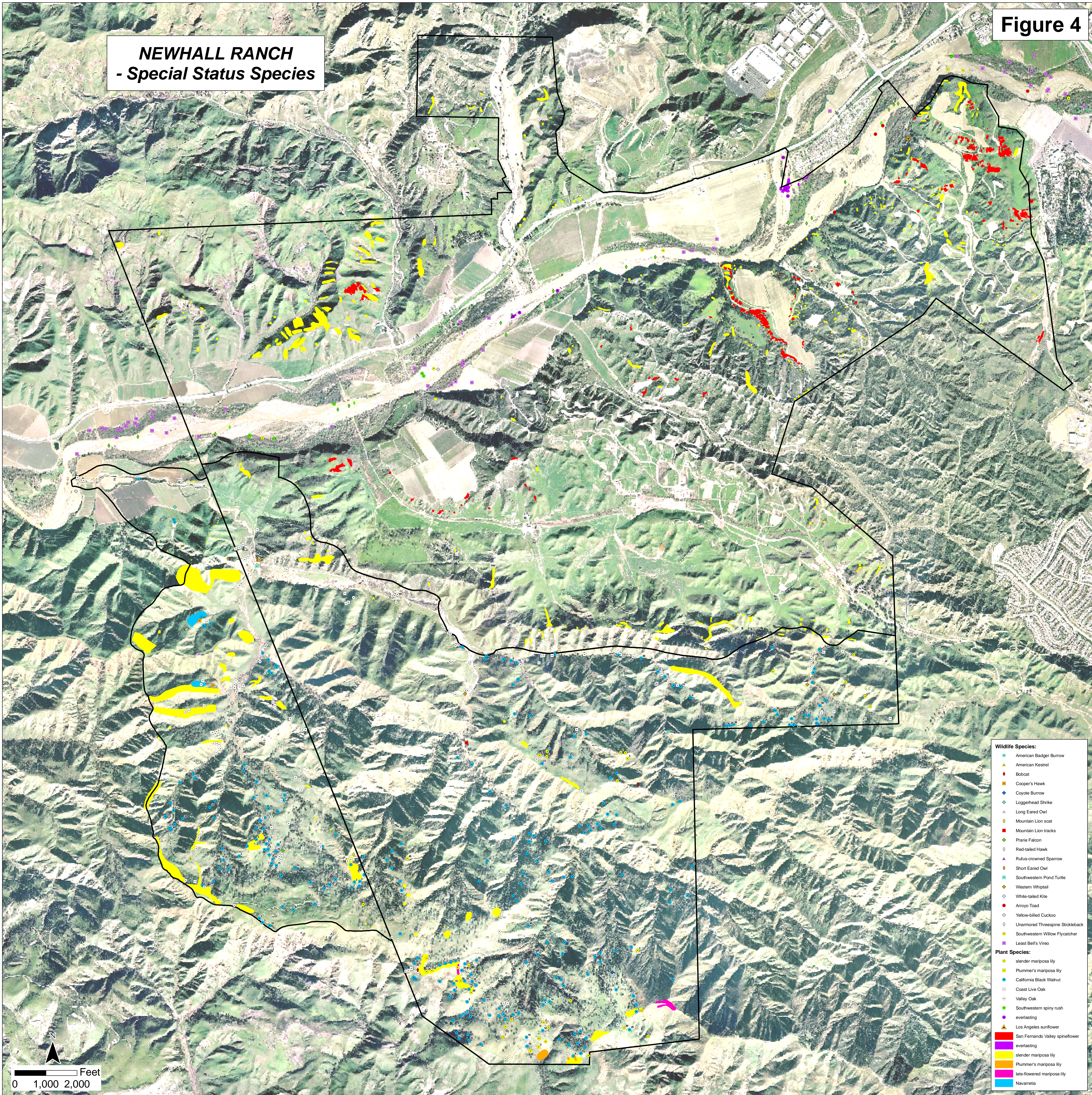
NEWHALL RANCH
- Vegetation Communities



- Vegetation Types:**
- AGR = Agriculture
 - DL = Disturbed Land
 - DEV = Developed
 - AS = Alluvial Scrub
 - AWS = Arrowweed scrub
 - BCW = Bulrush-cattail wetland
 - CAM = Cismontane alkali marsh
 - CWRF = Cottonwood willow riparian forest
 - ES = Elderberry Scrub
 - FWM = Freshwater marsh
 - GRG = Giant reed grassland
 - HW = Herbaceous wetland
 - MFS = Mule fat scrub
 - ORF = Oak riparian forest
 - RW = Riverwash
 - SWS = Southern willow scrub
 - TAM = Tamarisk scrub
 - CSB = California sagebrush
 - CSB-A = California sagebrush-artsenia
 - CSB-BS = California sagebrush-black sage
 - CSB-CB = California sagebrush-California buckwheat
 - CSB-CHP = California sagebrush-undifferentiated chaparral
 - CSB-E = California sagebrush-encelia
 - CSB-PS = California sagebrush-purple sage
 - BSS = Big sagebrush scrub
 - BSS-CB = Big sagebrush scrub-California buckwheat
 - CYS = Coyote brush scrub
 - LOW = Live oak woodland
 - MOW = Mixed oak woodland
 - VOS = Valley oak savannah
 - VOW = Valley oak woodland
 - WW = Walnut Woodland
 - CGL = California grassland
 - VGL = Valley needlegrass grassland
 - CC = Chamise chaparral
 - HCC = Hoaryleaf ceanothos chaparral
 - SOC = Scrub oak chaparral
 - CHP = Undifferentiated chaparral
- NOTES:**
- 'b' - indicates habitat is burned
 - 'c' - indicates habitat is CDFG jurisdiction only
 - 'd' - indicates habitat is disturbed

Figure 4

NEWHALL RANCH
- Special Status Species



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TABLE 3
Vegetation Communities and Land Cover Types for Newhall Ranch Specific Plan Area

Vegetation Community/ Land Cover Type	Subcommunity	Newhall Ranch SP Acreage	Salt Creek Acreage
Upland Grassland			
California Annual Grassland		1942.4	187.9
Purple needlegrass		51.6	0
Upland Scrub			
California sagebrush scrub		1452.1	11.8
	Burned California sagebrush scrub	789.7	615.6
	California sagebrush scrub – artemisia	119.0	0
	California sagebrush scrub – black sage scrub	196.5	0
	California sagebrush scrub – California buckwheat	294.0	0
	California sagebrush scrub – encelia farinosa	2.8	0
	California sagebrush scrub – purple sage scrub	392.9	2.1
	Disturbed California sagebrush scrub – purple sage scrub	4.5	0
	California sagebrush scrub-chaparral	136.1	0
	Disturbed California sagebrush scrub-chaparral	5.2	0
Coyote brush scrub		9.2	0
Undifferentiated chaparral		1093.2	9.1
	Burned Undifferentiated chaparral	905.7	115.6
	Chamise chaparral	51.4	0
	Hoary-leaf ceanothus chaparral	0.1	0
	Scrub oak chaparral	1.5	0
Big sagebrush scrub		17.2	0
	Big sagebrush – California buckwheat	0.5	0
Upland Woodland and Savannah			
Coast live oak woodland		607.7	148.0
Mixed oak woodland		74.2	94.6
	Mixed oak savannah	0	3.4
Valley oak woodland		47.2	23.9
	Valley oak savannah	369.2	110.0
California walnut woodland		6.8	20.4
Riparian Waters and Herbs			
River wash		276.4	7.4
Bulrush cattail wetland		1.4	0
Cismontane alkali marsh		18.6	0
Coastal and valley freshwater marsh		2.0	0
Herbaceous wetland		183.1	0
Riparian Scrub			
Alluvial scrub		0.5	0.4
Arrowweed scrub		17.3	0.7
Elderberry scrub		12.5	1.4
	Disturbed Elderberry scrub	0.3	0
Giant reed		7.1	0
Mulefat scrub		51.4	20.1

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TABLE 3
Vegetation Communities and Land Cover Types for Newhall Ranch Specific Plan Area

Vegetation Community/ Land Cover Type	Subcommunity	Newhall Ranch SP Acreage	Salt Creek Acreage
Southern willow scrub		21.5	2.5
Tamarisk scrub		2.6	0.2
Riparian Woodland			
Southern cottonwood willow riparian forest		352.9	0
Oak riparian forest		0.7	0
Land Covers			
Agriculture		1,425.2	99.1
Developed lands		84.6	0
Disturbed lands		913.2	43.9
Total		12,000.1	1,518.1

4.1.1 California Annual Grassland (42.040.00)

California annual grassland is characterized by a mixture of weedy, introduced annuals, primarily grasses. It may occur where disturbance by maintenance (mowing, scraping, discing, spraying, etc.), grazing, repetitive fire, agriculture, or other mechanical disruption have altered soils and removed native seed sources from areas formerly supporting native vegetation. On-site California annual grassland consists of various annual non-native grasses including wild oat (*Avena fatua*), slender oat (*Avena barbata*), and bromes (*Bromus diandrus*, *B. madritensis* ssp. *rubens*, *B. hordeaceus*). Other herbaceous species include black mustard (*Brassica nigra*), tocalote (*Centaurea melitensis*), Russian thistle (*Salsola tragus*), and doveweed (*Eremocarpus setigerus*). Some of these grasslands include occasional California sagebrush scrub species as described below. California annual grasslands may support special-status plant and animal species and provide foraging habitat for raptors (birds of prey).

4.1.2 Purple Needlegrass (41.150.00)

Native grassland contains at least ten percent or more of vegetative cover composed of perennial, native grasses. Species associated with this vegetation type include needlegrass (*Nasella pulchra*, *Nasella lepida*), leafy bentgrass (*Agrostis pallens*), junegrass (*Koeleria macrantha*), rattail fescue (*Vulpia myuros*), bromes (*Bromus* spp.), blue-eyed grass (*Sisyrinchium bellum*), blue dicks (*Dichelostemma capitatum*), mariposa lily (*Calochortus* spp.), common goldenstar (*Bloomeria crocea*), smooth cat's-ear (*Hypochoeris glabra*), and shooting star (*Dodecatheon clevelandii*). This plant community typically intermixes with coastal sage scrub on some clay

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soils, often on more mesic exposures and at the bases of slopes, but also may occur in large patches.

Native grassland is rare in southern California even though it typically includes non-native annual species intermixed with native perennial grasses and forbs. It has a substantial component of native species and generally occurs on intact clay substrates. Native grasslands, especially those on clay soils, provide potential habitat for a number of sensitive plant species (Roberts, pers. comm. 2000). Native grasslands provide nesting and foraging habitat for a diversity of passerine bird species and raptors (primarily foraging), many of which are considered to be sensitive.

4.1.3 California Sagebrush Scrub (32.010.00)

California sagebrush scrub is considered a coastal scrub vegetation community in CDFG (2003). Coastal scrub is a native plant community generally characterized by a variety of soft, low, aromatic, drought-deciduous shrubs, such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), California bush sunflower (*Encelia californica*), and sages (*Salvia* spp.), with scattered evergreen shrubs, including lemonadeberry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), and toyon (*Heteromeles arbutifolia*). It typically develops on south-facing slopes and other xeric situations. Coastal sage scrub is considered a sensitive vegetation community because of its depleted nature and the large number of special-status plant and wildlife species that it supports (Holland 1986).

Onsite California sagebrush scrub is dominated by a mixture of California sagebrush, black sage (*Salvia mellifera*), purple sage (*Salvia leucophylla*), and California buckwheat. Other species present within this community include our lord's candle (*Yucca whipplei*), slender tarweed (*Hemizonia fasciculata*), deerweed (*Lotus scoparius*), black mustard, and tocalote, with scattered chaparral species including chamise (*Adenostoma fasciculatum*), sugar bush (*Rhus ovata*), toyon, and chaparral bushmallow (*Malacothamnus fasciculatus*). California sagebrush scrub occurs onsite on dryer slopes, generally south or west facing.

California sagebrush scrub associations were also mapped onsite. Each one is dominated by a particular species that characterizes the association. In some cases, the dominant plant species could be the only species present. These associations are listed below.

- California Sagebrush- *Artemisia californica* (dominated only by California sagebrush) (32.010.01)
- California Sagebrush Scrub-Purple Sage Scrub (32.010.04), including disturbed

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- California Sagebrush Scrub-Black Sage (modified)
- California Sagebrush Scrub-California Buckwheat (modified)
- California Sagebrush Scrub-Encelia farinosa (modified)
- California Sagebrush Scrub-Chaparral (equal dominance of California sage scrub and chaparral scrub species) (modified from 32.300.00), including disturbed

4.1.4 Coyote Brush Scrub (32.060.00)

Coyote brush scrub is considered a coastal scrub vegetation alliance in CDFG (2003) and is dominated by coyote brush (*Baccharis pilularis*). It contains many of the same species as California sagebrush scrub (*i.e.* California sagebrush, California buckwheat, and sages, with scattered evergreen shrubs). Coyote brush scrub occurs mostly in uplands, but can occur along xeric drainages as well. It generally is regarded as a post-disturbance plant community in a successional state, with the climax community most often being California sagebrush scrub.

Because coyote brush scrub is an effective colonizer of disturbed sites it can be found in xeric to seasonally mesic areas, in heavily disturbed upland areas and flat areas or canyons and drainages that receive low seasonal flow or urban runoff.

4.1.5 Undifferentiated Chaparral Scrub (37.000.00)

Undifferentiated chaparral scrub is a drought- and fire-adapted community of broad-leaved shrubs, 1.5-3.0 m tall, typically forming dense impenetrable stands. It develops primarily on mesic north-facing slopes and in canyons. This vegetation community is often a mixture of chamise, hoary leaf ceanothus (*Ceanothus crassifolius*), scrub oak (*Quercus berberidifolia*), laurel sumac, and black sage.

Dominant chaparral species onsite include a mixture of chamise, hoaryleaf ceanothus (*Ceanothus crassifolius*), spiny redberry (*Rhamnus crocea*), sugar bush, and toyon. Other species that occur in this community onsite include chaparral bushmallow, holly-leaf redberry (*Rhamnus ilicifolia*), holly-leaf cherry (*Prunus ilicifolia*), and California sagebrush scrub species as described above.

A number of chaparral alliances exist onsite. Each one is dominated by a particular species that characterizes the alliance. In some cases, the dominant plant species could be the only species present. These alliances are listed below.

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- Chamise Chaparral (37.101.00) (dominated only by chamise)
- Hoary-Leaf Ceanothus Chaparral (37.208.00)
- Scrub Oak Chaparral (37.407.00)

4.1.6 Coast Live Oak Woodland (71.060.19)

According to Holland (1986), coast live oak woodland is dominated by a single evergreen species: coast live oak (*Quercus agrifolia*). Canopy height ranges from 10 to 25 m. The shrub layer is poorly developed, but may include toyon, gooseberry (*Ribes* spp.), laurel sumac or Mexican elderberry (*Sambucus mexicana*). The herb component is continuous, dominated by a variety of introduced species.

4.1.7 Mixed Oak Woodland (71.100.00)

Mixed oak woodland includes a predominance of coast live oaks, with valley oak (*Quercus lobata*) in sufficient numbers to constitute between 20 and 50 percent cover. An association of mixed oak woodland exists onsite, mixed oak savannah (71.100.08), which includes valley oaks or coast live oaks sparsely populated in either native or non-native grasslands.

4.1.8 Valley Oak Woodland (71.040.00)

Valley oak woodland includes a predominance of valley oaks in sufficient numbers to constitute between 20 and 50 percent cover. An association of valley oak woodland exists onsite, valley oak savannah (71.040.05), which includes valley oaks sparsely populated (up to 40 percent canopy cover) in either native or non-native grasslands.

4.1.9 California Walnut Woodland (72.100.01)

California black walnut woodland is comprised of an overstory of southern California black walnut (*Juglans californica*) and a very limited understory dominated by a variety of introduced species.

4.1.10 River Wash

River wash occurs within washes of the Santa Clara River or its tributaries that are unvegetated or sparsely vegetated with seedlings, sparse grasses, and forbs, and is subject to scouring by seasonal storm flows.

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4.1.11 Bulrush-Cattail Wetland (52.102.00)

Bulrush-cattail wetland consists of approximately equal dominance of bulrush (*Scirpus* sp.) and cattail (*Typha* sp.) species. It occurs along the Salt Creek within the High Country portion of the NRSP.

4.1.12 Cismontane Alkali Wetland (52.203.00)

According to Holland (1986), cismontane alkali marsh typically occurs in areas that are wet or inundated through most to all of the year. Dominant species include rushes (*Juncus* spp.), salt grass (*Distichlis spicata*), sedges (*Carex* spp.), yerba mansa (*Anemopsis californica*), and alkali heath (*Frankenia grandifolia*). This community occurs at lake beds and flood plains below 1,000 feet, characterized by higher levels of salts than are found in the coastal and valley freshwater marsh habitat. It differs from coastal saltmarsh primarily in that it is not subject to tidal inundation.

4.1.13 Coastal and Valley Freshwater Marsh (52.100.01)

Coastal and valley freshwater marsh is an emergent wetland vegetation type that occurs where the water table is at or just above the ground surface, such as around the margins of lakes, ponds, slow-moving streams, ditches, and seepages. Due to being permanently flooded by fresh water there is an accumulation of deep, peaty soils. It typically is dominated by species such as cattail, wooly sedge (*Carex lanuginosa*), yellow nutsedge (*Cyperus esculentus*), and bulrush.

4.1.14 Herbaceous Wetland

Herbaceous wetlands occur within the banks of the Santa Clara River or its tributaries. Common species within herbaceous wetlands include Hooker's evening primrose (*Oenothera elata*), cocklebur (*Xanthium strumarium*), and immature mulefat (*Baccharis salicifolia*), willows (*Salix* spp.), and Fremont cottonwood (*Populus fremontii* ssp. *Fremontii*) seedlings and saplings. This community does not fit into a CDFG (2003) defined plant community classification and was defined onsite by the dominant plant species.

4.1.15 Alluvial Scrub

Alluvial scrub is a community that occurs in creeks and washes on alluvial material. Species that can usually be found in this community include wetland species that can tolerate more xeric

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conditions and transitional sage scrub species. This community does not fit into a CDFG (2003) defined plant community classification and was defined onsite by the dominant plant species.

Onsite this community occurs solely within Santa Clara River and its tributaries. Species found onsite within this community include big sagebrush (*Artemisia tridentata*), mule, tree tobacco, scalebroom (*Lepidospartum squamatum*), big saltbush (*Atriplex lentiformis*), and California sagebrush.

4.1.16 Arrowweed Scrub (63.710.00)

Arrowweed scrub occurs in moderate to dense streamside thickets strongly dominated by arrowweed (*Pluchea sericea*). It occurs in streambanks, ditches, and washes with gravelly or sandy channels in most major drainages in the drier southern parts of California. Onsite, arrowweed scrub occurs along the banks of the Santa Clara River or its tributaries and is dense, with a few tamarisk (*Tamarix* spp.) individuals interspersed throughout.

4.1.17 Big Sagebrush Scrub (35.110.00)

Big sagebrush scrub is comprised mostly of soft-woody shrubs, 0.5-2 m tall, usually with bare ground underneath and between shrubs (Holland 1986). This community is typically dominated by big sagebrush and non-native grasses. California sage scrub and chaparral species also occur within this vegetation type. This community generally occurs in alluvial areas along washes and, as such, is under the jurisdiction of the CDFG pursuant to Section 1600 et seq. of the California Fish and Game Code.

4.1.18 Elderberry Scrub (63.410.00)

Elderberry scrub is an open scrub vegetation community dominated by Mexican elderberry (*Sambucus mexicana*), with scattered laurel sumac, toyon, and lemonadeberry, as well as an understory of grasses. Elderberry scrub is found in foothill areas on the upper benches of streams, and is often associated with sycamore riparian woodland.

4.1.19 Giant Reed (42.080.00)

Giant reed is a non-native plant community comprised of monotypic or nearly monotypic stands of the large grass giant reed (*Arundo donax*) that is fairly widespread in southern California. Typically it occurs on moist soils and in streambeds and may be related directly to soil disturbance or introduction of propagules by grading or flooding. Mapped occurrences of giant

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reed grassland may include native trees such as willows and cottonwoods within patches of this community.

4.1.20 Mulefat Scrub (63.510.00)

Mulefat scrub is a relatively low (2-3 m), dense, shrubby plant community that occurs in riparian vegetation, edges of catchment basins, and in canyons. It is dominated by mulefat and may contain a small number of arroyo willow (*Salix lasiolepis*), upland shrubs, and facultative herbs. Mulefat scrub is a seral community that occurs mainly along major drainages and floodplains where the riparian vegetation is open or disturbed. Frequent flooding and/or scouring apparently maintain this community in an early successional state (Holland 1986). Characteristic plant species in this community include mulefat, coyote brush, western ragweed (*Ambrosia psilostachya*), and a few other obligate or facultative wetland species (Reed 1988).

4.1.21 Southern Willow Scrub (63.130.00)

According to Holland (1986), southern willow scrub has been described as a dense, broad-leafed, winter-deciduous riparian thicket dominated by several species of willow, with scattered emergent Fremont cottonwood and western sycamore (*Platanus racemosa*). Most stands are too dense to allow much understory development. This plant community is considered seral due to repeated disturbance/flooding and is therefore unable to develop into the taller southern cottonwood-willow riparian forest.

4.1.22 Tamarisk Scrub (63.810.02)

Areas dominated by tamarisk were mapped as tamarisk scrub. This invasive, non-native vegetation type is considered a riparian community. Tamarisk typically occurs on moist soils and in streambeds and its occurrence may be related directly to soil disturbance or introduction of propagules by grading or flooding.

4.1.23 Southern Cottonwood-Willow Riparian Forest (61.130.02)

Southern cottonwood willow riparian forest is a tall, open, broad-leafed winter deciduous riparian forest dominated by Fremont cottonwood and several different species of willow. It occurs in frequently overflowed lands along rivers and streams.

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4.1.24 Southern Coast Live Oak Riparian Forest (71.060.20)

Southern live oak riparian forest is characterized by open to dense woodlands dominated by oak species (*Quercus* sp.), with western sycamore, scalebroom scrub, mulefat scrub, or southern willow scrub as an understory, as well as sclerophyllous shrubs such as hollyleaf redberry (*Rhamnus illicifolia*), California coffeeberry (*Rhamnus californica*), laurel sumac, Mexican elderberry, Fuchsia-flowered gooseberry (*Ribes speciosum*), toyon, poison oak (*Toxicodendron diversilobum*), giant rye grass (*Leymus condensatus*) and lemonadeberry. Large grassland areas dominated by bromes (*Bromus* spp.) may also be present.

4.1.25 Agriculture

Agriculture refers to areas where irrigated row and field crops are being grown [*i.e.*, intensive agriculture]. This area may support grass species such as barley (*Hordeum* spp.) and wild oat (*Avena* spp.). This land has relatively little biological resource value because it provides very limited habitat value for most native species. However, this area may supply grain and water for native and migratory birds. Also, raptors may prey on gophers and rabbits that occur in agricultural areas.

4.1.26 Disturbed Land

Disturbed land typically occurs in areas where soils have been recently or repeatedly disturbed by grading or compaction, resulting in the growth of very few native perennials. Disturbed land usually is dominated by bare ground or non-native dicotyledonous species including filaree (*Erodium* spp.), black mustard, thistles (*e.g.*, *Cynara cardunculus*, *Carduus pynoccephalus*, and *Centaurea melitensis*), doveweed, and others. Within the NRSP study area, disturbed land occurs on permeable surfaces without vegetation, as well as with weedy annual non-native vegetation including Russian thistle, totalote, doveweed, black mustard, and bull thistle (*Cirsium vulgare*).

4.1.27 Developed Land

Developed land refers to areas supporting manmade structures including homes, yards, roadways, and other highly modified lands supporting structures associated with dwellings or other permanent structures. Within the NRSP study area, developed land refers to existing roads.

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4.1.28 Floral Diversity

The NRSP 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 often have higher biological diversity than similar-sized areas within the core of a physiographic region (Boyd 1999).

At least 650 plant species or subspecies were identified within the NRSP study area, including the Newhall High Country. Of these, 482 species (74 percent) are native to the region and 168 species (26 percent) are non-native. The cumulative list of plant species identified on the site from 2002 to 2006 is provided as *Appendix A*.

4.2 Special-Status Plant Species

Seven special-status plant species were identified in the NRSP study area in surveys conducted between 2002 and 2005. These species include: slender mariposa lily (*Calochortus clavatus* var. *gracilis*), Pierson's morning-glory (*Calystegia peirsonii*), island mountain-mahogany (*Cercocarpus betuloides* var. *blancheae*), San Fernando Valley spineflower (*Chorizanthe parryi* var. *Fernandina*), everlasting (*Gnaphalium* sp. *nova*), southwestern spiny rush (*Juncus acutus* var. *leopoldii*), Parish's big sagebrush scrub (*Artemisia tridentata* ssp. *parishii*), and oak trees (*Quercus* spp.). These and other special-status 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 4* and depicted on *Figures 3 and 4* in the map pocket. This list is confined primarily species listed by the state and federal government as threatened or endangered, species proposed for state and/or federal listing or candidates, species found on Lists 1A, 1B, or 2 of the CNPS *Inventory of Rare and Endangered Plants of California* (CNPS 2001). A number of species found on CNPS Lists 3 or 4 also have the potential to occur on site (e.g., *Calystegia peirsonii*); however, due to their relatively low sensitivity level, CNPS Lists 3 or 4 plants are only discussed in the following sections if they were observed in the NRSP study area.

Everlasting (*Gnaphalium* sp. *nova*) is an undescribed species and is considered special-status for the purpose of this study.

Special-status species that were observed during the four years of field surveys are discussed in greater detail below. Any additional information regarding the mapping for each observed or detected special-status species is included in *Sections 4.2.1* through *4.2.9* below.

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TABLE 4
Special-status Plant Species Observed or Potentially Occurring at the NRSP Study Area

Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/Life Form/ Blooming Period	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 the 2002 through 2005 field seasons. 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>Artemisia tridentata</i> ssp. <i>parishii</i>	Parish's Big sagebrush scrub	None/None	None	Big sagebrush scrub on the margins of drainage channels/perennial shrub/November-August	Co-occurs with <i>Artemisia tridentata</i> ssp. <i>tridentata</i> . Observed within big sagebrush scrub within Newhall Ranch Specific Plan (NRSP) area and in Salt Creek. Considered special-status by the County of Los Angeles.
<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 the 2002 through 2005 field seasons. 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 the 2002 through 2005 field seasons. No CNDDDB records exist for the Newhall or Val Verde quads; however, suitable habitat present onsite. Moderate likelihood of occurrence within study area.
<i>Atriplex serenana</i> var. <i>davidsonii</i>	Davidson's saltscale	None/None	1B	coastal bluff scrub and coastal sage scrub on alkaline substrate/annual herb/May-October	Not observed during the 2002 through 2005 field seasons. No CNDDDB records exist for the Newhall or Val Verde quads. <i>Atriplex serenana</i> var. <i>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 the 2002 through 2005 field seasons. 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 nevinii</i>	Nevin's barberry	FE/SE	1B	chaparral, coastal sage scrub, riparian scrub, cismontane woodland on sandy or gravelly substrate/evergreen shrub/March-April	Not observed during the 2002 through 2005 field seasons. CNDDDB records exist for San Francisquito Canyon at confluence with Santa Clara River; suitable habitat present onsite. Moderate likelihood of occurrence within study area.
<i>Brodiaea filifolia</i>	thread-leaved Brodiaea	FT/SE	1B	clay substrate openings in chaparral, sage scrub, and grasslands/perennial herb (geophyte)/March-June	Not observed during the 2002 through 2005 field seasons. 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> var. <i>clavatus</i>	club-haired mariposa lily	None/None	4	chaparral and coastal sage scrub/ perennial herb (geophyte)/March-May	Not observed during the 2002 through 2005 field seasons. No CNDDDB records exist for Newhall and Val Verde quads. Very low likelihood of occurrence in study area.

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TABLE 4
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Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/Life Form/ Blooming Period	Presence or Likelihood of Occurrence Onsite
<i>Calochortus clavatus</i> var. <i>gracilis</i>	slender mariposa lily	None/None	1B	chaparral and coastal sage scrub/perennial herb (geophyte)/March-May	Observed each year of field surveys on north trending slopes throughout the study area. This species is locally abundant. The estimated number of individuals in the study area ranged from 3,071 in 2005 to 68,888 in 2004. CNDDDB records also exist for mouth of Pico Canyon.
<i>Calochortus plummerae</i>	Plummer's mariposa lily	None/None	1B	chaparral, coastal sage scrub, cismontane woodland, grasslands on rocky granitic substrate/perennial herb (geophyte)/May-July	Not observed during the 2002 through 2005 field seasons. 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. Moderate likelihood of occurrence within study area.
<i>Calochortus weedii</i> var. <i>vestus</i>	late-flowered mariposa lily	None/None	1B	chaparral, cismontane & riparian woodland/perennial herb (geophyte)/ June-August	Not observed during the 2002 through 2005 field seasons. 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. This species was observed at the head of the Salt Creek drainage in the Santa Susana Mountains to the southwest during the 2003 field season. 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 California sagebrush throughout the study area.
<i>Calystegia sepium</i> ssp. <i>binghamiae</i>	Santa Barbara morning-glory	None/None	1A	marshes and swamps/perennial herb/ April-May	Not observed during the 2002 through 2005 field seasons. 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> ssp. <i>australis</i>	southern tarplant	None/None	1B	mesic edges of marshes in grasslands/ annual herb/May-November	Not observed during four years of field surveys. No CNDDDB records exist for the Newhall or Val Verde quads; however, suitable habitat present onsite. Low likelihood of occurrence within study area.
<i>Cercocarpus betuloides</i> var. <i>blancheae</i>	island mountain-mahogany	None/None	4	chaparral, closed-cone coniferous forest/evergreen shrub/February-May	Observed in mixed chaparral in the study area during the 2005 field season.
<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 onsite in five general areas within the survey area: Airport Mesa, Grapevine Mesa, Long Canyon, Potrero Canyon, and San Martinez Grande Canyon. An estimated 8,332 to 6,249,926 individuals were observed between the 2002-2005 growing seasons.
<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-	Not observed during the 2002 through 2005 field seasons. No CNDDDB records exist for the Newhall or Val Verde quads; however,

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TABLE 4
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Scientific Name	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/Life Form/ Blooming Period	Presence or Likelihood of Occurrence Onsite
				November	records exist for the Simi Hills and Oat Mountain. Suitable habitat exists onsite. Moderate likelihood of occurrence within study area.
<i>Delphinium parryi</i> ssp. <i>blochmaniae</i>	dune larkspur	None/None	1B	maritime chaparral, coastal dunes/ perennial herb/ April-May	Not observed during the 2002 through 2005 field seasons. No likelihood of occurrence.
<i>Dodecahema leptoceras</i>	slender-horned spineflower	FE/SE	1B	Alluvial scrub on sandy substrate/annual herb/April-June	Not observed during the 2002 through 2005 field seasons. Historic CNDDDB records exist for the Newhall or Val Verde quads in alluvial habitat similar to those present onsite. Moderate likelihood of occurrence within Santa Clara River in study area.
<i>Dudleya blochmaniae</i> ssp. <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 the 2002 through 2005 field seasons. No CNDDDB records exist for the Newhall or Val Verde quads. Suitable habitat present onsite. Low likelihood of occurrence within study area.
<i>Dudleya cymosa</i> ssp. <i>marcescens</i>	marcescent dudleya	FT/CR	1B	chaparral, often on volcanic substrate/perennial herb (geophyte)/ April-June	Not observed during the 2002 through 2005 field seasons. No CNDDDB records exist for Newhall and Val Verde quads. Unidentified <i>Dudleya cymosa</i> observed on vertical sandstone cliffs and slopewash in 2002 are actually <i>D. lanceolata</i> , a common species. Low likelihood of occurrence within study area.
<i>Dudleya cymosa</i> ssp. <i>ovatifolia</i>	Santa Monica Mountains dudleya	FT/None	1B	chaparral and coastal sage scrub, often on volcanic substrate/perennial herb (geophyte)/March-June	Not observed during the 2002 through 2005 field seasons. No CNDDDB records exist for Newhall and Val Verde quads. Unidentified <i>Dudleya cymosa</i> observed on vertical sandstone cliffs and slopewash in 2002 are actually <i>D. lanceolata</i> , a common species. Low likelihood of occurrence within study area.
<i>Dudleya multicaulis</i>	many-stemmed dudleya	None/None	1B	coastal bluff scrub, coastal sage scrub, valley and foothill grassland, rocky, often clay substrate/perennial herb/ April-June	Not observed during the 2002 through 2005 field seasons. No CNDDDB records exist for the Newhall or Val Verde quads; closest known occurrences are in Calabasas and San Dimas. Suitable habitat exists onsite. Low to moderate likelihood of occurrence within study area.
<i>Dudleya parva</i>	Conejo dudleya	FT/None	1B	coastal sage scrub and grassland on rocky, gravelly clays/perennial herb/May-June	Not observed during the 2002 through 2005 field seasons. No CNDDDB records exist for the Newhall or Val Verde quads. Suitable habitat exists onsite. Low likelihood of occurrence within study area.
<i>Erodium macrophyllum</i>	round-leaved filaree	None/None	2	cismontane woodland and grasslands on clay substrate/annual herb/March-May	Not observed during the 2002 through 2005 field seasons. No CNDDDB records exist for the Newhall or Val Verde quads; however records exist for Simi Valley, and this plant was observed in the hills east of Castaic Lake in

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TABLE 4
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					2003. Suitable habitat present onsite; moderate likelihood of occurrence in study area.
<i>Helianthus nuttallii</i> ssp. <i>parishii</i>	Los Angeles sunflower	None/None	1A	marshes and swamps/perennial herb/ August-October	A <i>Helianthus</i> population, discovered in 2002 at Castaic Spring, on the south side of the Santa Clara River between Middle Canyon and San Jose Flats, was determined by some experts to be this species, but determined by other experts not to be this species. Based on pollen electron microscopy and chromosome counts, it is likely that the Newhall <i>Helianthus</i> species is a hybrid between <i>H. nuttallii</i> and <i>H. californicus</i> or an intermediate evolutionary step between the two species (Porter and Fraga 2004). No suitable habitat observed in study area. Not recorded within study area during 2003-2005 field seasons.
<i>Horkelia cuneata</i> var. <i>puberula</i>	mesa horkelia	None/None	1B	chaparral, cismontane woodland, coastal sage scrub on sandy or gravelly substrate/ perennial herb/February-December	Not observed during the 2002 through 2005 field seasons. 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 past years surveys in California sagebrush and chaparral onsite.
<i>Juncus acutus</i> ssp. <i>leopoldii</i>	southwestern spiny rush	None/None	4	coastal dunes, meadows, seeps, marshes, and swamps/ perennial herb/May-June	Observed in mesic riparian areas 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 the 2002 through 2005 field seasons. Nearest 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 the 2002 through 2005 field seasons. 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>Nemophila parviflora</i> var. <i>quercifolia</i>	oak-leaved nemophila	None/None	4	cismontane woodland, lower montane coniferous forest/annual herb/may-June	Not observed onsite during 2005 field season. Observed in past years surveys in oak woodland east of Grapevine Mesa. High likelihood of occurrence in study area.

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TABLE 4
Special-status Plant Species Observed or Potentially Occurring at the NRSP Study Area

<i>Scientific Name</i>	Common Name	Status Federal/State	CNPS List	Primary Habitat Associations/Life Form/ Blooming Period	Presence or Likelihood of Occurrence Onsite
<i>Nolina cismontane</i>	chaparral nolina	None/None	1B	chaparral, coastal sage scrub on sandstone or gabbro substrate/ perennial shrub April-July	Not observed during the 2002 through 2005 field seasons. 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	Not observed during the 2002 through 2005 field seasons. This plant was identified as onsite by Dudek in 2002; however, recent investigations indicate that the <i>Opuntia basilaris</i> plants on Newhall Ranch are not <i>O. basilaris</i> var. <i>brachyclada</i> , but are <i>O. basilaris</i> var. <i>ramosa</i> .
<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 the 2002 through 2005 field seasons. 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 gambelii</i>	Gambel's watercress	FE/ST	1B	Marsh and swamps (freshwater and brackish)/ perennial herb/April-September	Not observed during the 2002 through 2005 field seasons. No CNDDDB records exist for the Newhall or Val Verde quads. Limited suitable habitat present onsite. Very low likelihood of occurrence within study area.
<i>Senecio aphanactis</i>	rayless ragwort	None/None	2	chaparral, coastal sage scrub, cismontane woodland on alkaline substrate/annual herb/January-April	Not observed during the 2002 through 2005 field seasons. Historic CNDDDB record for Saugus, south of Santa Clara River. Suitable habitat onsite. Moderate likelihood of occurrence within study area.
<i>Sidalcea neomexicana</i>	Salt Spring checkerbloom	None/None	2	chaparral, coastal sage scrub, and playas on alkaline substrate/perennial herb/March-June	Not observed during the 2002 through 2005 field seasons. 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> var. <i>sonorensis</i>	Sonoran maiden fern	None/None	2	meadows and seeps/perennial herb/ fertile January-September	Not observed during the 2002 through 2005 field seasons. 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	CNPS List 1A:	Plants presumed extinct in California
FT:	Federally-listed as threatened	CNPS List 1B:	Plants rare, threatened, or endangered in California and elsewhere
FC:	Federal candidate for listing	CNPS List 2:	Plants rare, threatened, or endangered in CA but more common elsewhere
SC:	State candidate for listing	CNPS List 3:	Plants about which we need more information – a review list
SE:	State-listed as endangered	CNPS List 4:	Plants of limited distribution – a watch list
ST:	State-listed as threatened		
SR:	State-listed as rare		

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4.2.1 Slender Mariposa Lily (*Calochortus clavatus* var. *gracilis*)

Slender mariposa lily has no state or federal status but is a CNPS List 1B.2 plant. It is typically found in chaparral, coastal sage scrub, and grasslands, often on clay, and/or rocky soils. It has been documented to occur at the mouth of Pico Canyon and other canyons in the vicinity of the NRSP study area (Newhall Quad; CNDDDB 2002). Other varieties of this species documented from southern California include club-haired mariposa lily (*Calochortus clavatus* var. *clavatus*) and pale mariposa lily (*C. clavatus* var. *pallidus*). The club-haired mariposa lily differs in that it is virtually a serpentine endemic (restricted to serpentine soils) and a very robust species, generally attaining a height of one meter. Pale mariposa lily differs in that the petals are a paler yellow, the anthers are paler (yellow to pale purple), and the hairs on the petals are not as knobby or club shaped. Neither the club-haired mariposa lily nor pale mariposa have a prominent red line above the nectary on the petal, as is the case with the slender mariposa lily.

Multiple polygons of mariposa lily were mapped within the NRSP study area by drawing boundaries on aerial photograph field maps around the areas that contained the mariposa lily. Surveys within the study area were conducted during and after the blooming season for the slender mariposa lily; therefore, some estimates were made based on the number of fruiting individuals observed. The fruiting individuals are much more cryptic than the flowering plants; therefore it is expected that only a subset of the plants that were in flower earlier were observed and it is not possible to estimate what portion was observed. Moreover, geophytes like *Calochortus* generally only have a fraction of the plants flower in any given year, and the non-flowering individuals are generally not as visible.

Within the NRSP study area, the slender mariposa lily was found primarily on east-, northeast-, and southwest-facing ridges and slopes in California sagebrush scrub, California buckwheat and California annual grassland vegetation communities. The plants were generally mapped in areas of high vegetative cover and a variety of soil types (e.g., gravelly loam, sandy loam, rocky clay). This species is locally abundant within the NRSP study area, with the estimated number of individuals varying from 3,071 to 68,888 between 2003 and 2005. Within the Salt Creek area, the estimated number of individuals was 25,967 in 2003 (*Table 5*).

TABLE 5
Slender Mariposa Lily Summary of Occurrence Data

Project Area	Estimated Number of Individuals by Year			
	2002	2003	2004	2005
NRSP (including HC)	Not observed	7,592	68,888	3,071
Salt Creek area	Not surveyed	25,967	Not surveyed	Not surveyed

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

Peirson's morning-glory has no state or federal status, but is a CNPS List 4.2 species. This morning-glory is rhizomatous perennial that typically is found in more desert-like areas (*e.g.*, creosote bush, Joshua tree series) at elevations which exceed 3,000 feet AMSL, although there are records in the CNDDDB for lower elevations in the local area. RECON (1996) concluded that chaparral morning-glory (*Calystegia macrostegia* ssp. *cyclostegia*) was the more common species in the NRSP study area. However, after reviewing the floral bracts, leaf shape, and its glabrous nature, Dudek determined 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 special-status plant species conducted in 1992 (Dames and Moore 1993).

Although not abundant, Peirson's morning-glory is widespread onsite and was observed on virtually all ridges and slopes, climbing over mixed chaparral, California sagebrush scrub, California buckwheat, and in California annual grassland series throughout the study area.

4.2.3 Island Mountain-mahogany (*Cercocarpus betuloides* var. *blancheae*)

Island mountain-mahogany has no state or federal status, but is a CNPS List 4.3 species. It is an evergreen shrub that occurs as part of the chaparral communities 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 special-status plant species conducted in 1992 (Dames and Moore 1993) or general botanical surveys conducted in 1995 (RECON and Impact Sciences 1996). Onsite, island mountain-mahogany occurs as an occasional component of chaparral series at the base of north-facing slopes.

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

San Fernando Valley spineflower (SFVS) is state-listed as endangered, a candidate for federal listing, and is a CNPS List 1B species. Until its rediscovery in 1999 at Laskey Mesa on Ahmanson Ranch in Ventura County, it was thought to be extinct. A review of the CNDDDB of historic occurrence of SFVS 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 special-status plant species conducted in 1992 (Dames and Moore 1993) or general botanical surveys conducted in 1995 (RECON and Impact Sciences 1996).

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Most of the SFVS was found on slopes with a south-facing component in habitat that was open California sagebrush scrub, California buckwheat scrub, ecotonal California sagebrush/California buckwheat and California annual grassland series, or at the edge of agricultural fields on mesas. Most of the observed SFVS was 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 vicinity 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.

Vegetative cover in the area of SFVS occurrences ranged from five to 100 percent, but was more commonly between 60 and 80 percent. The soil type for all mapped SFVS occurrences in the NRSP study area consisted of sandy loams.

In 2002, 2003, 2004, and 2005 surveys for SFVS were conducted throughout the NRSP and the Entrada and VCC study areas. Results from the 2002 surveys included population estimates for the senescent remains of SFVS plants that were observed during the 2002 surveys (but which germinated prior to 2002). Pre-2002 plants were estimated to include approximately 3,153,190 individuals, while plants that germinated in 2002 were estimated to include approximately 7,810 individuals. In 2003, surveys estimated populations of SFVS totaling approximately 5,775,460 individuals. In 2004, the total population of SFVS at Newhall Land was estimated to be approximately 525,390 individuals. In 2005, the total population of SFVS at Newhall Land was estimated to be approximately 7,223,570 individuals.

2003 surveys conducted for SFVS throughout the Salt Creek area were negative. *Table 6* presents the SFVS occurrence data for the NRSP study area.

TABLE 6
San Fernando Valley Spineflower Summary of Occurrence Data
for the Newhall Ranch SPA, 2005

NRSP Subarea	Estimated Number of Individuals by Year			
	2002	2003	2004	2005
Airport Mesa	463	1,114,559	38,236	1,706,335
Grapevine Mesa	7,794	2,121,160	425,235	4,092,910
Potrero Canyon	Not surveyed	233,328	13,326	327,154
San Martinez Grande Canyon	75	1,124,388	1,387	123,527
Total for the Newhall Ranch SPA	8,332	4,593,435	478,184	6,249,926

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4.2.5 Everlasting (*Gnaphalium* sp. *nova*)

An undescribed species of *Gnaphalium* was documented within the NRSP study area during the 2003, 2004, and 2005 field seasons. Two main populations of this undescribed species, totaling about 600 individuals, were documented in 2003 in the Santa Clara River and in Castaic Creek south of SR-126. During the 2004 surveys conducted by FLx, these two occurrences were noted again with about 700 plants. In 2005, the two NRSP occurrences consisted of approximately 800 individuals and five individuals. These occurrences are primarily on secondary alluvial benches. The vegetation around these plants consists of sparsely vegetated open alluvial scrub.

Plants of this unnamed everlasting were previously assigned to the species *Gnaphalium leucocephalum*, which is not thought to occur west of the Peninsular and Transverse Ranges in California. Based on further examination, these specimens are considered by UC Riverside (UCR) and Rancho Santa Ana Botanic Garden (RSA) botanists to be an undescribed taxon (*Gnaphalium* species *nova*). The *Gnaphalium* plants on the NRSP study area differ from *Gnaphalium leucocephalum* in stature, pubescence, and phyllary characters.

A search of three herbaria (UCR, RSA, and the San Diego Natural History Museum) by Dudek biologist Marc Doalson revealed that 14 collections of this plant have been made in Ventura, Orange, Riverside, Los Angeles, and San Diego counties. Eight collections date from 1901 to 1987 (1901, 1918, 1922, 1928, 1931, 1959, 1985 and 1987). There are six more recent collections dating from 1994 to 2003 (1994, two from 1995, 1997 and two from 2003). Many are from somewhat vague localities, such as "San Fernando Valley" and "Pasadena." Modern collections have come mostly from the Santa Ana Mountains region and especially Temescal Wash in western Riverside County, with several collections from adjacent San Diego County. In addition to the herbaria specimens, the *G. sp. nova* has been observed in 2003 and 2004 along Castaic Creek and the Santa Clara River in Los Angeles County (Dudek 2004). Plants are almost always associated with alluvial soils, often being found on the benches along major washes.

4.2.6 Southwestern Spiny Rush (*Juncus acutus* var. *leopoldii*)

Southwestern spiny rush has no state or federal status, but is a CNPS List 4.2 species. It is a perennial herb that grows in mesic areas such as meadows, marshes, and seeps. It is widespread occurring from San Louis Obispo to Baja California, Mexico (CNPS 2001). Southwestern spiny rush was occasional in mesic riparian areas along the Santa Clara River.

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4.2.7 Parish's Big Sagebrush Scrub (*Artemisia tridentata* ssp. *Parishii*)

Artemisia tridentata ssp. *parishii* is not a CNPS special-status species, but is considered sensitive by the County of Los Angeles. This subspecies co-occurs with the more common *Artemisia tridentata* ssp. *tridentata*. According to *The Jepson Manual* (Hickman, et. al., 1993), the differentiating characteristics between the two subspecies in question are as follows: inflorescence branches drooping and fruit hairy in subspecies *parishii*, and inflorescence branches erect to spreading and fruit glandular in subspecies *tridentata*. *Artemisia tridentata* plants were evaluated within the Landmark Village portion of NRSP in November 2005.

There are big sagebrush plants with drooping inflorescence branches (*A.t. parishii*) and erect inflorescence branches (*A.T. tridentata*) that co-occur there, so collections of both were made. After analyzing the characteristics of numerous samples, including examining the fruits under a microscope, it was determined that both subspecies probably occur there. However, it appears as though these two subspecies also may hybridize, as the full range of characteristics (drooping and erect inflorescence branches and hairy and glandular fruit) were found among the collected specimens.

The characteristics were generally consistent among individual plants that seemed to fit into either subspecies *parishii* or subspecies *tridentata* (i.e., a plant with drooping inflorescence branches and hairy fruit had drooping inflorescence branches and hairy fruit throughout the plant). However, plants that appeared to be hybrids sometimes had mixed characters throughout.

4.2.8 Oak trees (*Quercus* spp.)

Oak trees have no state or federal sensitivity status, but are protected under the County of Los Angeles Oak Tree Ordinance (CLAOTO) and CEQA. Oak tree surveys have been conducted within the portions of the Project site (including a 200 foot buffer) where development would occur while the number of oak trees to be preserved within protected areas (e.g., High Country and River Corridor SMAs, proposed Spineflower Preserves, and Open Areas) has been estimated. The surveys and density estimates identified 20,100 oak trees potentially regulated by CLAOTO and PRC 21083. The vast majority of the oaks on the site are coast live oak (*Quercus agrifolia*; 15,948), but valley oaks (*Q. lobata*; 4,100), scrub oaks (*Q. berberidifolia*; 49), and MacDonald oak (*Q. x macdonaldii*; 3) (a hybrid or evolutionary intermediate between a valley oak and a scrub oak) also occur.

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4.2.9 Bryophytes and Lichens

Bryophytes (non-vascular plants including mosses, liverworts, and hornworts) are plants which lack true vascular tissues (specialized water and nutrient conducting vessicles) found in angiosperms (*i.e.* flowering plants) and gymnosperms (*i.e.* cone producing plants). Since these non-vascular plants lack water transporting tissues, their life histories require that they inhabit areas of high humidity or places where water is immediately available. These areas can be found adjacent to permanent or temporary water sources or in microhabitats which provide sufficient moisture. Overall, Newhall Ranch is typical of the Mediterranean climate in Southern California and does not exhibit conditions favorable for a diverse flora of bryophytes. However, bryophytes were detected during surveys along north facing slopes, shady areas in canyons, and along cut banks in ephemeral drainages.

Lichens are not classified as true plants but rather are a symbiotic relationship between fungi and green algae and/or cyanobacteria. The relationship between the organisms of these phyla have allowed for their colonization of diverse niches throughout the world. Lichens were detected in the surveys of the NRSP study area however, appropriate habitat for lichens was limited to scattered non-granitic rocks and soils and fallen wood of trees and shrubs. No special-status bryophytes or lichens are recorded as occurring in the proximity of the NRSP study area(CDFG 2004).

5.0 ACKNOWLEDGMENTS

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APPENDIX A
*Vascular Plant Species Observed
At Newhall Ranch
(2002, 2003, 2004, 2005, and 2006)*

APPENDIX A

Vascular Plant Species Observed at Newhall Ranch (2002 thru 2006)

LYCOPODIAE

SELAGINELLACEAE – SPIKE-MOSS FAMILY

Selaginella bigelovii – Bigelow's spike-moss

EQUISETAE

EQUISETACEAE – HORSETAIL FAMILY

Equisetum hyemale – common scouring-rush

Equisetum laevigatum – smooth scouring-rush

Equisetum telmateia – giant horsetail

FILACEAE

AZOLLACEAE – MOSQUITO FERN FAMILY

Azolla c.f. filiculoides – duckweed fern

DENNSTAEDTIACEAE – BRAKEN FAMILY

Adiantum jordanii – California maiden-hair

Pellaea andromedifolia – coffee fern

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

Pentagramma triangularis – goldenback fern

DRYOPTERIDACEAE – WOOD FERN FAMILY

Dryopteris arguta – coastal wood fern

POLYPODIACEAE – POLYPODY FAMILY

Polypodium californicum – California polypody

CONIFERAE

CUPRESSACEAE – CYPRESS FAMILY

* *Cedrus deodara* – Deodar cedar

Juniperus californica – California juniper

PINACEAE – PINE FAMILY

* *Pinus halepensis* – Aleppo pine

* *Pinus pinea* – stone pine

APPENDIX A

Vascular Plant Species Observed at Newhall Ranch (2002 thru 2006)

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
- Bowlesia incana* – American Bowlesia
- * *Conium maculatum* – poison hemlock
- * *Coriandrum sativum* – cilantro
- * *Daucus carota* – Queen Anne’s lace
- Daucus pusillus* – rattlesnake weed
- Lomatium utriculatum* – common lomatium
- Lomatium caruifolium* - Alkali parsnip
- Sanicula bipinnata* – poison sanicle
- Osmorhiza brachypoda* – California sweet-cicely
- * *Petroselinum crispum* - parsley
- Sanicula crassicaulis* – Pacific sanicle
- * *Torilis arvensis* – Japanese hedge-parseley

APPENDIX A

Vascular Plant Species Observed at Newhall Ranch (2002 thru 2006)

- * *Torilis nodosa* – knot hedge-parseley
- Yabea microcarpa* - California hedge parsley

APOCYNACEAE – DOGBANE FAMILY

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

ASCLEPIADACEAE – MILKWEED FAMILY

- Asclepias californica* – California milkweed
- Asclepias fascicularis* – narrow-leaf milkweed

ASTERACEAE – SUNFLOWER FAMILY

- Achillea millefolium* – yarrow
- Achyrrachaena mollis* – blow-wives
- Acourtia microcephala* – sacapellote
- Agoseris grandiflora* – large-flowered agoseris
- Agoseris retrorsa* – spear-leaf agoseris
- 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 emoryi* – Emory's 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 artemisiifolia* – artemisia pincushion
- Chaenactis glabriuscula* – yellow pincushion
- * *Chrysothamnus nauseosus* – rubber rabbitbrush
- Cirsium occidentale* var. *californicum* – California thistle
- Cirsium occidentale* var. *occidentale* – cobwebby thistle

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Vascular Plant Species Observed at Newhall Ranch (2002 thru 2006)

- * *Cirsium vulgare* – bull thistle
- * *Cnicus benedictus* – blessed thistle
- Conyza canadensis* – horseweed
- Conyza coulteri* – Coulter’s conyza
- Coreopsis bigelovii* – Bigelow’s coreopsis
- * *Coreopsis tinctoria* – calliopsis
- Corethrogyne filaginifolia* – virgate cudweed aster
- * *Cotula coronopifolia* – African brass-buttons
- * *Cotula australis* - Australian brass-buttons
- Deinandra increscens* ssp. *increscens* – no common name
- Encelia actoni* – Acton’s encelia
- Encelia californica* – California bush sunflower
- Encelia farinosa* – brittlebush, incensio
- Ericameria palmeri* var. *pachylepis* – goldenbush
- Ericameria pinifolia* – pine-bush
- Erigeron foliosus* – leafy daisy
- Eriophyllum confertiflorum* – long-stem golden yarrow
- Euthamia occidentalis* – western goldenrod
- Filago californica* – California fluffweed
- * *Filago gallica* – narrow-leaf filago
- * *Gazania linearis* – gazania
- Gnaphalium bicolor* – bicolor cudweed
- Gnaphalium californicum* – California everlasting
- Gnaphalium canescens* ssp. *microcephalum* – white everlasting
- Gnaphalium leucocephalum* – Sonora everlasting
- Gnaphalium luteo-album* – white cudweed
- Gnaphalium* sp. *nova* – everlasting
- Gnaphalium palustre* – lowland cudweed
- Gnaphalium stramineum* – cotton-batting plant
- Grindelia* sp. – gumplant
- Hazardia squarrosa* ssp. *grindelioides* – saw-toothed goldenbush
- Helianthus annuus* – common sunflower
- Helianthus nuttallii* c.f. ssp. *parishii* – Los Angeles sunflower
- Hemizonia fasciculata* – fascicled tarweed
- Hemizonia kelloggii* – Kellogg’s tarweed
- Heterotheca grandiflora* – telegraph weed
- Heterotheca sessiliflora* – golden aster

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Vascular Plant Species Observed at Newhall Ranch (2002 thru 2006)

- Hypochaeris glabrata* – smooth cat’s ear
- * *Hypochaeris radicata* – hairy cat’s ear
- Isocoma menziesii* – goldenbush
- Isocoma menziesii* var. *menziesii* [*Haplopappus venetus*] - Menzies' goldenbush
- Iva axillaris* – poverty weed
- * *Lactuca saligna* – willowleaf lettuce
- * *Lactuca serriola* – prickly lettuce
- Lagophylla ramosissima* – common hareleaf
- Lasthenia californica* – coast goldfields
- Layia glandulosa* – white layia
- Layia platyglossa* – tidy tips
- Lepidospartum squamatum* – scale-broom
- Lessingia filaginifolia* – California aster
- Lessingia glandulifera* – lessingia
- Madia exigua* – small tarweed
- Madia gracilis* – slender madia
- Malacothrix clevelandii* – Cleveland’s malacothrix
- Malacothrix saxatilis* – cliff malacothrix
- * *Matricaria matricarioides* – pineapple weed
- Micropus californicus* – slender cottonweed
- * *Picris echioides* – bristly ox-tongue
- Pluchea odorata* – marsh-fleabane
- Pluchea sericea* – arrow weed
- Psilocarphus tenellus* – slender woolly-heads
- * *Pulicaria paludosa* – Spanish sunflower
- Rafinesquia californica* – California chicory
- Senecio californicus* – California butterweed
- Senecio flaccidus* var. *douglasii* – butterweed
- * *Senecio vulgaris* – common groundsel
- Silybum marianum* – milk thistle
- Solidago californica* – California goldenrod
- * *Sonchus asper* – prickly sow-thistle
- * *Sonchus oleraceus* – common sow-thistle
- * *Spartium junceum* – Spanish broom
- Stebbinoseris heterocarpa* [*Microseris heterocarpa*] – brown puffs
- Stephanomeria cichoriacea* - chicory-leaved *Stephanomeria*
- Stephanomeria exigua* – small wreathplant

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Vascular Plant Species Observed at Newhall Ranch (2002 thru 2006)

Stephanomeria pauciflora – wire-lettuce
Stephanomeria virgata – twiggy wreathplant
Stylocline gnaphaloides – everlasting nest-straw
Uropappus lindleyi [*Microseris lindleyi*] – silver puffs
Wyethia ovata – mule ears
Xanthium spinosum – spiny cocklebur
Xanthium strumarium – cocklebur

BETULACEAE – BIRCH FAMILY

Alnus rhombifolia – white alder

BORAGINACEAE – BORAGE FAMILY

Amsinckia menziesii var. *intermedia* – yellow fiddleneck
Amsinckia menziesii var. *menziesii* – yellow fiddleneck
Amsinckia tessellata – devil's lettuce
Cryptantha sp. – forget-me-not
Cryptantha decipiens – gravel cryptantha
Cryptantha intermedia – common forget-me-not
Cryptantha micrantha – redroot cryptantha
Cryptantha microstachys – tejon cryptantha
Cryptantha muricata – prickly cryptantha
Heliotropium curassavicum – wild heliotrope
Pectocarya linearis – slender pectocarya
Pectocarya penincillata – pectocarya
Pectocarya setosav – pectocarya
Plagiobothrys arizonicus – popcorn flower
Plagiobothrys canescens – rusty popcorn flower
Plagiobothrys collinus – California popcorn flower
Plagiobothrys fulvus – common popcorn flower

BRASSICACEAE – MUSTARD FAMILY

Arabis sparsiflora – no common name
Athysanus pusillus – dwarf athysanus
* *Brassica nigra* – black mustard
* *Capsella bursa-pastoris* – shepard's purse
Caulanthus lasiophyllus – California mustard
Descurainia pinnata ssp. *halictorum* – tansy mustard

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- Erysimum capitatum* – wall flower
- * *Hirschfeldia incana* – short-podded mustard
- Lepidium lasiocarpum* – peppergrass
- * *Lepidium latifolium* – peppergrass
- Lepidium oblongum* – peppergrass
- Lepidium virginicum* – wild peppergrass
- * *Lobularia maritime* – sweet-alyssum
- * *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
- Stanleya pinnata* var. *pinnata* – Prince's plume
- Thysanocarpus curvipes* – fringe-pod
- Thysanocarpus laciniatus* – lace-pod
- Tropidocarpum gracile* – slender dobie-pod

CACTACEAE – CACTUS FAMILY

- * *Cereus peruvianus* – Peruvian apple cactus
- Opuntia basilaris* var. *ramosa* – beaver-tail cactus
- Opuntia californica* var. *parkeri* – cane cholla
- Opuntia littoralis* – coastal prickly-pear
- Opuntia X vaseyi* – prickly-pear cactus
- * *Trichocereus spachianus* – golden torch cactus

CAMPANULACEAE - BELLFLOWER FAMILY

Nemacladus ramosissimus – Nuttall's threadplant

CAPPARACEAE – CAPER FAMILY

Isomeris arborea – bladderpod

CAPRIFOLIACEAE – HONEYSUCKLE FAMILY

Lonicera interrupta – chaparral honeysuckle
Lonicera subspicata – southern honeysuckle
Sambucus mexicana – Mexican elderberry
Symphoricarpos sp. – snowberry
Symphoricarpos c.f. *mollis* – spreading snowberry

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CARYOPHYLLACEAE – PINK FAMILY

- * *Cerastium glomeratum* – sticky mouse-ear
- * *Herniaria hirsute* ssp. *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
- Stellaria nitens* – shining 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 oracle
- * *Atriplex semibaccata* – Australian saltbush
- Atriplex serenana* var. *serenana* – bractscale
- Atriplex suberecta* – Australian saltbush
- Atriplex triangularis* – spearscale
- * *Bassia hyssopifolia* – five-hooked bassia
- * *Beta vulgaris* – garden beet
- * *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
- * *Spinacia oleracea* – spinach

CONVOLVULACEAE – MORNING-GLORY FAMILY

- Calystegia macrostegia* ssp. *cyclostegia* – morning-glory

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- 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 fabaceus - California manroot
Marah macrocarpus – wild cucumber

CUSCUTACEAE – DODDER FAMILY

- Cuscuta californica* – California dodder
Cuscuta pentagona – five-angled dodder
Cuscuta subinclusa – canyon dodder

DATISCEAE – DASTICA FAMILY

- Dastica glomerata* – Durango root

ERICACEAE – HEATH FAMILY

- Arctostaphylos glandulosa* ssp. *mollis* - manzanita
Arctostaphylos glauca – bigberry manzanita

EUPHORBIACEAE – SPURGE FAMILY

- Chamaesyce albomarginata* – rattlesnake spurge
* *Chamaesyce maculata* – spotted spurge
Chamaesyce polycarpa – small-seed sand mat
Chamaesyce serpyllifolia – thyme-leafed spurge
Croton californicus – California croton
Eremocarpus setigerus – doveweed
Euphorbia spathulata – reticulate-seed spurge
* *Ricinus communis* – castor-bean
Stillingia linearifolia – linear-leaved stillingia

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FABACEAE – PEA FAMILY

- Amorpha californica* var. *californica* – false indigo
- * *Acacia baileyana* – golden wattle
- Astragalus didymocarpus* – white dwarf locoweed
- Astragalus gambelianus* – Gambel's locoweed
- 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 hamatus* – grab lotus
- Lotus humistratus* – lotus
- Lotus purshianus* – Spanish-clover
- Lotus salsuginosus* – coastal lotus
- Lotus scoparius* var. *scoparius* – deerweed
- Lotus strigosus* – strigose deerweed
- Lupinus bicolor* – Lindley's annual lupine
- Lupinus excubitus* – Mountain Springs bush lupine
- Lupinus excubitus* var. *excubitus* – grape soda lupine
- Lupinus excubitus* var. *hallii* – grape soda lupine
- Lupinus hirsutissimus* – stinging lupine
- Lupinus microcarpus* var. *densiflorus* – chick lupine
- Lupinus microcarpus* var. *microcarpus* – chick lupine
- Lupinus sparsiflorus* – Coulter's lupine
- Lupinus succulentis* – arroyo lupine
- Lupinus truncatus* – collar lupine
- * *Medicago 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 albopurpureum* – rancheria clover
- Trifolium ciliolatum* – tree clover
- * *Trifolium fragiferum* – strawberry clover
- Trifolium fucatum* – bull clover

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- Trifolium gracilentum* – pin-point clover
- * *Trifolium hirtum* – rose clover
- Trifolium microcephalum* – maiden clover
- * *Trifolium repens* – white clover
- Trifolium willdenovii* – valley clover
- Vicia americana* – American vetch
- Vicia exigua* – slender vetch
- Vicia hassei* – Hesse’s vetch
- * *Vicia villosa* ssp. *villosa* – winter vetch

FAGACEAE – BEECH FAMILY

- Quercus agrifolia* – coast live oak
- Quercus berberidifolia* – scrub oak
- Quercus chrysolepis* – canyon live oak
- Quercus douglasii* x *lobata* - oak
- Quercus douglasii* – blue oak
- Quercus lobata* – valley oak

GERANIACEAE – GERANIUM FAMILY

- * *Erodium brachycarpum* – shortfruit stork’s bill
- * *Erodium botrys* – long-beaked filaree
- * *Erodium cicutarium* – red-stemmed filaree
- * *Erodium moschatum* – white-stemmed filaree

GROSSULARIACEAE – CURRANT FAMILY

- Ribes aureum* – golden currant
- Ribes californicum* - California gooseberry
- Ribes malvaceum* – chaparral currant

HYDROPHYLLACEAE – WATERLEAF FAMILY

- Emmenanthe penduliflora* – whispering bells
- Eriodictyon crassifolium* var. *nigrescens* – yerba santa
- Eucrypta chrysanthemifolia* – common eucrypta
- Nemophila menziesii* – baby blue-eyes
- Nemophila parviflora* var. *quercifolia* – oak-leaved nemophila
- Nemophila pedunculata* – littlefoot nemophila
- Phacelia cicutaria* – caterpillar phacelia
- Phacelia cicutaria* var. *hispida* – caterpillar phacelia

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Phacelia cicutaria var. *hubbyi* - caterpillar scorpionweed

Phacelia distans – blue fiddleneck

Phacelia imbricata ssp. *imbricata* – imbricate phacelia

Phacelia minor – wild canterbury-bell

Phacelia ramosissima – shrubby phacelia

Phacelia viscida - sticky phacelia

Pholistoma auritum – fiesta flower

JUGLANDACEAE – WALNUT FAMILY

Juglans californica – southern California black walnut

LAMIACEAE – MINT FAMILY

* *Lamium amplexicaule* - henbit

* *Marrubium vulgare* – horehound

Mentha citrata – orange mint

Monardella lanceolata - mustang mint

Salvia apiana – white sage

Salvia x bernardina – no common name

Salvia columbariae – chia

Salvia leucophylla – purple sage

Salvia mellifera – black sage

Scutellaria tuberosa – Danny’s skullcap

Stachys ajugoides – bugle hedge-nettle

Stachys ajugoides var. *rigida* – rigid hedge-nettle

Stachys albens – white hedge-nettle

Trichostema lanatum – woolly bluecurls

Trichostema lanceolatum – vinegar weed

LAURACEAE – LAUREL FAMILY

Umbellularia californica – California laurel

LOASACEAE – STICK-LEAF FAMILY

Mentzelia sp. – blazing star

Mentzelia laevicaulis – blazing star

Mentzelia micrantha – small-flowered stick-leaf

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LYTHRACEAE – LOOSESTRIFE FAMILY

Lythrum californicum – California loosestrife

MALVACEAE – MALLOW FAMILY

Malacothamnus fasciculatus ssp. *laxiflorus* – chaparral bush mallow

Malacothamnus fremontii – bush mallow

Malacothamnus marruboides – bush mallow

* *Malva neglecta* – common mallow

* *Malva parviflora* – cheeseweed

MELIACEAE – MAHOGANY FAMILY

* *Melia azedarach* – China berry

MORACEAE – FIG FAMILY

* *Ficus carica* – edible fig

MYRTACEAE – MYRTLE FAMILY

* *Eucalyptus* sp. – eucalyptus

* *Eucalyptus camaldulensis* – red gum

* *Eucalyptus globulus* – blue gum

* *Eucalyptus leucoxylon* – white ironbark

* *Eucalyptus polyanthemos* – silver dollar gum

* *Eucalyptus sideroxylon* – red ironbark

NYCTAGINACEAE – FOUR O'CLOCK FAMILY

Mirabilis laevis var. *crassifolia* [*M. californica*] – California wishbone-bush

OLEACEAE – OLIVE FAMILY

Fraxinus dipetala – California ash

* *Fraxinus uhdei* – tropical ash

Fraxinus velutina – velvet ash

* *Ligustrum lucidum* – glossy privet

* *Olea europaea* – mission olive

ONAGRACEAE – EVENING-PRIMROSE FAMILY

Camissonia bistorta – southern sun cup

Camissonia bistorta x *hirtella* – sun cup

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Camissonia boothii – sun cup
Camissonia boothii ssp. *decorticans* – shredding evening primrose
Camissonia californica – mustard primrose
Camissonia hirtella – sun cup
Camissonia micrantha – miniature sun cup
Camissonia strigulosa – sun cup
Clarkia cylindrical – speckled clarkia
Clarkia purpurea – winecup clarkia
Clarkia speciosa – clarkia
Clarkia unguiculata – elegant clarkia
Epilobium brachycarpum – willow herb
Epilobium canum ssp. *canum* – California fuchsia
Epilobium ciliatum – California cottonweed
Ludwigia peploides – yellow waterweed
Ludwigia repens – water primrose
Oenothera elata – evening primrose
* *Oenothera laciniata* – evening primrose

OROBANCHACEAE – BROOM-RAPE FAMILY

Orobanche fasciculata – clustered broom-rape
Orobanche parishii ssp. *parishii* – broom-rape
Orobanche sp. – broom-rape

PAEONIACEAE – PEONY FAMILY

Paeonia californica – California peony

PAPAVERACEAE – POPPY FAMILY

Argemone corymbosa – prickly poppy
Dendromecon rigida - tree poppy
Dicentra chrysantha- golden ear-drops
Dicentra ochroleuca - yellow bleeding heart
Eschscholzia californica – California poppy
Meconella denticulata – small-flower meconella
Papaver californicum – fire poppy
Platystemon californicus – California creamcups

PLANTAGINACEAE – PLANTAIN FAMILY

Plantago erecta – dot-seed plantain

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- * *Plantago indica* – plantain
- * *Plantago lanceolata* – English plantain
- * *Plantago major* – common plantain
- Plantago c.f. ovata* – woolly plantain

PLATANACEAE – SYCAMORE FAMILY

Platanus racemosa – western sycamore

POLEMONIACEAE – PHLOX FAMILY

Allophyllum divaricatum – purple false gillyflower
Allophyllum glutinosum – sticky false gillyflower
Eriastrum densifolium – woollystar
Eriastrum densifolium ssp. *densifolium* - woollystar
Eriastrum densifolium ssp. *elongatum* – elongate eriastrum
Eriastrum densifolium ssp. *mohavense* – Mohave eriastrum
Eriastrum sapphirinum – sapphire eriastrum
Gilia angelensis – angel gilia
Gilia capitata – globe gilia
Gilia splendens – splendid gilia
Leptodactylon californicum – prickly phlox
Linanthus androsaceus – common linanthus
Linanthus pygmaeus - linanthus
Navarretia atractylodes – holly-leaf skunkweed
Phlox gracilis – slender phlox

POLYGONACEAE – BUCKWHEAT FAMILY

Chorizanthe fimbriata – fringed spineflower
Chorizanthe parryi var. *fernandina* – San Fernando Valley spineflower
Chorizanthe staticoides – turkish rugging
Eriogonum angulosum – angle-stem buckwheat
Eriogonum baileyi – Bailey’s buckwheat
Eriogonum brachyanthum – short-flowered buckwheat
Eriogonum elongatum – long-stemmed buckwheat
Eriogonum fasciculatum ssp. *foliolosum* – California buckwheat
Eriogonum fasciculatum ssp. *polifolium* – California buckwheat
Eriogonum gracile var. *gracile* – slender woolly buckwheat
Eriogonum gracillimum – rose and white buckwheat

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- Eriogonum maculatum* – spotted buckwheat
- Eriogonum nudum* - naked buckwheat
- Eriogonum c.f. viridescens* – buckwheat
- Lastarriaea coriacea* – lastarriaea
- * *Polygonum arenastrum* – common knotweed
- * *Polygonum argyrocoleon* – smartweed
- Polygonum lapathifolium* – willow weed
- Polygonum punctatum* – perennial smartweed
- Pterostegia drymarioides* – granny’s hairnet
- * *Rumex conglomeratus* – whorled dock
- * *Rumex crispus* – curly dock
- Rumex hymenosepalus* – wild rhubarb
- Rumex maritimus* – golden dock
- Rumex obtusifolius* – dock
- Rumex salicifolius* – willow dock

PORTULACACEAE – PURSLANE FAMILY

- Calandrinia ciliata* – redmaids
- Calyptridium sp.* – pussypaws
- Claytonia parviflora* – small-leaved montia
- Claytonia perfoliata* – miner’s lettuce
- * *Portulaca oleracea* – common purslane

PRIMULACEAE - PRIMROSE FAMILY

- * *Anagallis arvensis* – scarlet pimpernel

RANUNUCULACEAE – BUTTERCUP FAMILY

- Clematis ligusticifolia* – yerba de chiva
- Clematis pauciflora*- ropevine
- Delphinium cardinale* – scarlet larkspur
- Delphinium parryi* ssp. *parryi* – Parry’s larkspur

RHAMNACEAE – BUCKTHORN FAMILY

- Ceanothus crassifolius* – hoary-leaved ceanothus
- Ceanothus foliosus* – southern blue lilac
- Ceanothus leucodermis* – white-bark ceanothus
- Ceanothus tomentosus* – woolyleaf ceanothus

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Rhamnus crocea – redberry

Rhamnus ilicifolia – holly-leaf redberry

ROSACEAE – ROSE FAMILY

Adenostoma fasciculatum – chamise

Cercocarpus betuloides – mountain-mahogany

Cercocarpus betuloides var. *betuloides* – birch-leaf mountain-mahogany

Cercocarpus betuloides var. *blancheae* – island mountain-mahogany

Heteromeles arbutifolia – toyon

Prunus ilicifolia – holly-leaf cherry

Prunus virginiana var. *demissa* – western choke-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 nuttallii ssp. *nuttallii* – San Diego bedstraw

Galium porrigens – climbing bedstraw

SALICACEAE – WILLOW FAMILY

Populus fremontii – Fremont's cottonwood

Populus tremuloides – Quaking aspen

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

SAXIFRAGACEAE - SAXIFRAGE FAMILY

Lithophragma bolanderi - Bolander's woodland star

Saxifraga californica - California saxifrage

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Vascular Plant Species Observed at Newhall Ranch (2002 thru 2006)

SCROPHULARIACEAE – FIGWORT FAMILY

- Antirrhinum coulterianum* – white snapdragon
- Antirrhinum multiflorum* – withered snapdragon
- Castilleja affinis* – coast paintbrush
- Castilleja densiflora* – dense-flowered owl's-clover
- Castilleja exserta* – common owl's-clover
- Castilleja foliolosa* – woolly Indian paintbrush
- Collinsia heterophylla* – purple Chinese houses
- Collinsia parviflora* – maiden blue eyed Mary
- Cordylanthus rigidus* – bird's beak
- Keckiella cordifolia* – heart-leaf penstemon
- Linaria canadensis* – toadflax
- Mimulus aurantiacus* – bush monkeyflower
- Mimulus aurantiacus* var. *pubescens* – bush monkeyflower
- Mimulus brevipes* - yellow monkeyflower
- Mimulus guttatus* – seep monkeyflower
- Mimulus pilosus* – downy monkeyflower
- Penstemon centranthifolius* – scarlet bugler
- Scrophularia californica* - California figwort
- * *Verbascum thapsus* – woolly mullein
- * *Verbascum virgatum* – wand mullein
- * *Veronica anagallis-aquatica* – water speedwell
- * *Veronica persica* – Persian speedwell

SIMAROUBACEAE – QUASSIA FAMILY

- * *Ailanthus altissima* – tree of heaven

SOLANACEAE – NIGHTSHADE FAMILY

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

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Vascular Plant Species Observed at Newhall Ranch (2002 thru 2006)

TAMARICACEAE – TAMARISK FAMILY

- * *Tamarix* sp. – tamarisk
- * *Tamarix ramoissima* – tamarisk

ULMACEAE – ELM FAMILY

- * *Ulmus pumila* – Siberian elm

URTICACEAE – NETTLE FAMILY

- Hesperocnide tenella* – western nettle
- Parietaria hespera* – western pellitory
- Urtica dioica* – giant creek nettle
- * *Urtica urens* – dwarf nettle

VERBENACEAE – VERVAIN FAMILY

- Verbena lasiostachys* – western verbena

VIOLACEAE – VIOLET FAMILY

- Viola pedunculata* – Johnny jump-ups

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 alma* – sturdy sedge
- Carex praegracilis* – clustered field sedge

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Vascular Plant Species Observed at Newhall Ranch (2002 thru 2006)

- 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* – Parish's spikerush
- Eleocharis rostellata* – beaked spikerush
- Scirpus acutus* – hard-stemmed bulrush
- Scirpus americanus* – winged three-square
- Scirpus maritimus* – alkali bulrush
- Scirpus microcarpus* – bulrush
- Scirpus robustus* – Pacific coast bulrush

IRIDACEAE - IRIS FAMILY

- Sisyrinchium bellum* – blue-eyed grass

JUNCACEAE – RUSH FAMILY

- Juncus* sp. – rush
- Juncus acutus* ssp. *leopoldii* – southwestern spiny rush
- Juncus balticus* – wire rush
- Juncus bufonius* – toad rush
- Juncus longistylis* – rush
- Juncus mexicanus* – Mexican rush
- Juncus rugulosus* – wrinkled rush
- Juncus textilis* – Indian rush
- Juncus torreyi* – rush
- Juncus triformis* – Yosemite dwarf rush
- Juncus xiphioides* – iris-leaved rush

LEMNACEAE – DUCKWEED FAMILY

- Lemna miniscula* – duckweed
- Lemna valdiviana* – duckweed

LILIACEAE – LILY FAMILY

- * *Allium cepa* – onion
- Allium porrum* – onion

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Vascular Plant Species Observed at Newhall Ranch (2002 thru 2006)

- * *Amaryllis bella-donna* – naked lady
- * *Asparagus officinalis* – asparagus
- Bloomeria crocea* – common goldenstar
- Brodiaea terrestris* ssp. *kernensis* – dwarf brodiaea
- Calochortus clavatus* var. *gracilis* – slender mariposa lily
- Calochortus venustus* – mariposa lily
- Calochortus weedii* var. *vestus* – late-flowered mariposa lily
- Chlorogalum pomeridianum* - soap plant
- Dichelostemma capitatum* – blue dicks
- Muilla maritima* – common muilla
- Yucca whipplei* – Our Lord’s candle
- Yucca schidigera* – Mojave Yucca

POACEAE – GRASS FAMILY

- Achnatherum coronatum* – giant needlegrass
- * *Agrostis* sp. – bentgrass
- * *Agrostis viridis* – water bent
- Aristida adscensionis* - six-weeks three-awn
- * *Arundo donax* – giant reed
- * *Avena barbata* – slender oat
- * *Avena fatua* – wild oat
- Avena sativa* – cultivated oat
- * *Bromus arenarius* - Australian brome
- Bromus carinatus* - California brome
- Bromus catharticus* – California brome
- Bromus catharticus* var. *catharticus* – California brome
- * *Bromus diandrus* – ripgut grass
- Bromus grandis* - tall brome
- * *Bromus hordeaceus* – soft chess
- * *Bromus madritensis* ssp. *rubens* – foxtail chess
- * *Bromus sterilis* – sterile brome
- * *Bromus tectorum* – cheat grass
- * *Cortaderia jubata* – pampas grass
- * *Crypsis schoenoides* – prickly grass
- * *Cynodon dactylon* – Bermuda grass
- * *Digitaria sanguinalis* – hairy crabgrass
- Distichlis spicata* – salt grass

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Vascular Plant Species Observed at Newhall Ranch (2002 thru 2006)

- * *Echinochloa colonum* – jungle-rice
- Echinochloa crus-galli* – barnyard grass
- * *Eleusine indica* – goose grass
- Elymus elymoides* – bottlebrush squirreltail
- Elymus glaucus* – western wild-rye
- Elymus multisetus* – big squirreltail
- Eragrostis mexicana* – lovegrass
- * *Festuca arundinacea* – tall fescue
- * *Hordeum marinum* – Mediterranean barley
- * *Hordeum murinum* – glaucous foxtail barley
- Koeleria macrantha* - Junegrass
- * *Lamarckia aurea* – goldentop
- * *Leptochloa uninerva* – Mexican sprangletop
- Leymus condensatus* – giant ryegrass
- Leymus triticoides* – beardless wild rye
- * *Lolium multiflorum* – Italian ryegrass
- * *Lolium perenne* – perennial ryegrass
- * *Lolium temulentum* - darnel
- Melica imperfecta* – California melic
- Muhlenbergia asperifolia* – scratch-grass
- Muhlenbergia microsperma* – littleseed muhly
- Nassella cernua* – nodding needlegrass
- Nassella lepida* – foothill needlegrass
- Nassella pulchra* – purple needlegrass
- Panicum capillare* – western witchgrass
- * *Panicum miliaceum* – broom corn millet
- * *Parapholis incurve* – sickle grass
- Paspalum distichum* – knotgrass
- * *Phalaris aquatica* – Harding grass
- * *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 bicolor* – sorghum

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Vascular Plant Species Observed at Newhall Ranch (2002 thru 2006)

- Sorghum halepense* – Johnsongrass
- Sporobolus airoides* – alkali scation
- * *Triticum aestivum* – cultivated wheat
- Vulpia microstachys* – fescue
- * *Vulpia myuros* – rattail fescue
- Vulpia octoflora* – six-weeks fescue

POTAMOGETONACEAE – PONDWEED FAMILY

Potamogeton foliosus – leafy pondweed

TYPHACEAE – CATTAIL FAMILY

- Typha angustifolia*- narrow leaved cattail
- Typha domingensis* – slender cattail
- Typha latifolia* – broad-leaved cattail
- * signifies introduced (non-native) species

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