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2013

# CROSSOSOMA

*Journal of the Southern California Botanists, Inc.*



*Flora of the Verdugo Mountains and San Rafael Hills*

Volume 39, Numbers 1 & 2

2013

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## Southern California Botanists, Inc.

- Founded 1927 -

<http://www.socalbot.org>

CROSSOSOMA (ISSN 0891-9100) is published twice a year by Southern California Botanists, Inc., a California nonprofit organization of individuals devoted to the study, conservation, and preservation of the native plants and plant communities of southern California.

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**Cover:**

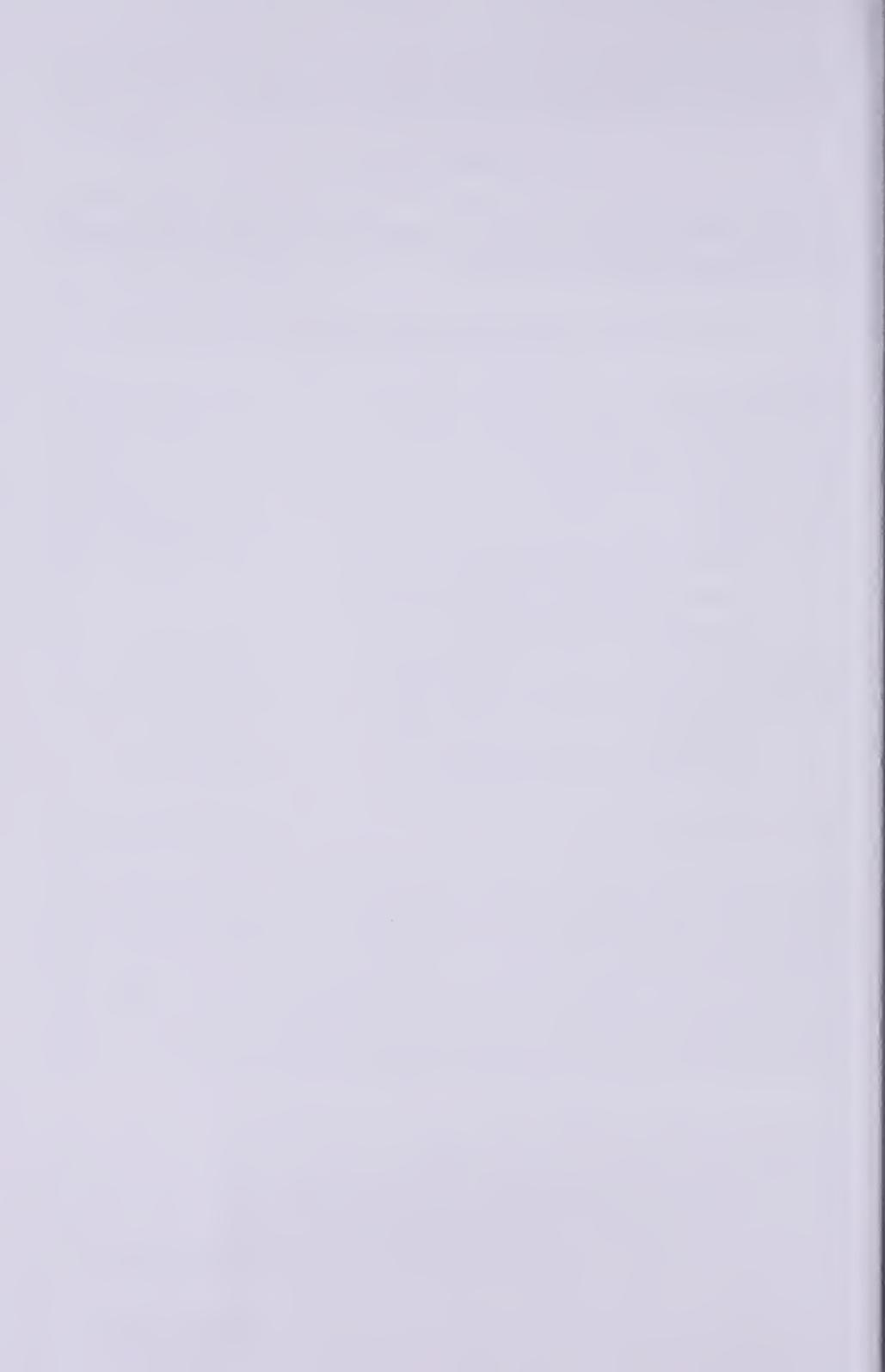
*Penstemon spectabilis* var. *subviscosus* (showy penstemon)  
from the southern end of the San Rafael Hills.

Photo : Valerie Soza

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**VASCULAR FLORA OF THE  
VERDUGO MOUNTAINS AND SAN RAFAEL HILLS,  
LOS ANGELES COUNTY, CALIFORNIA**

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**ABSTRACT:** The Verdugo Mountains and San Rafael Hills in Los Angeles County, California, are a 21 km (13 mi) long mountainous region that encompasses approximately 14,646 ha (36,192 acres) surrounded by the greater Los Angeles area. Urbanization from the greater Los Angeles area has encroached upon these mountains over the years. Despite the mountains' proximity to high population densities, recent botanical collections from the range are sparse. The goal of our study was to compile historic and recent botanical collections from the range to document the flora of the Verdugo Mountains and San Rafael Hills. We first compiled information on the natural and cultural history of the study area from literature reviews, internet searches, and local herbaria. We then performed botanical surveys in the Verdugo Mountains and San Rafael Hills to document vascular plant taxa with herbarium vouchers, develop an annotated checklist, describe plant communities, and document fire-following species for the region. The vegetation within the study area was predominantly chaparral (chamise or mixed chaparral) and southern coastal scrub with occasional woodlands (coast live oak or California walnut), riparian communities (California sycamore or mixed riparian woodlands), and grasslands (native bunchgrass or valley and southern coastal grassland). We identified fire-following species from three burn areas in the study area one to five years later. A total of 422 native and 163 non-native taxa were confirmed from the area, including 12 rare taxa.

**KEYWORDS:** California vegetation, chaparral, coastal scrub, fire followers, riparian communities, woodlands

## **INTRODUCTION**

California contains over 6500 described native, vascular plant taxa and is one of the most botanically diverse states (Jepson Herbarium 2013). It is also one of the most rapidly growing states in the United States. Its population increased from 19 million to 37.7 million from 1970 to 2011 and is expected to reach over 50 million

by 2050 (Schwartz et al. 2006; US Census Bureau 2012). Continued urbanization of habitats and its effects on California's flora remain a critical conservation issue for biological diversity. Human density, plant extirpation, and noxious weeds are increasing, while the amount of public resources available to set aside land for conservation is decreasing (Schwartz et al. 2006).

California has a long, rich history of botanical exploration, yet many areas of the state remain poorly documented botanically (Sanders and Boyd 1996). For example, over 200 new vascular plants were discovered in California between 1968 and 1986, and this rate of discovery remains constant (Erter 2000; Jepson Online Interchange 2012). Over 130 newly described native taxa have been documented in the state since the publication of the 1993 edition of The Jepson Manual (Jepson Online Interchange 2012). In addition, non-native taxa continue to be introduced and discovered in the state with over 100 non-native species becoming naturalized since the publication of the 1993 edition of The Jepson Manual (Jepson Online Interchange 2012). Even species documented by herbarium specimens are represented with vague historic collections that lack specific locality and habitat information and are difficult to relocate. These new discoveries and vague historic records highlight the need to document the California flora thoroughly and accurately.

Despite the high population density in southern California, knowledge of the local flora remains incomplete. Los Angeles County is the most populous county in the country and is one of the nine highest density counties in the state with greater than 935 people/km<sup>2</sup> (Schwartz et al. 2006; US Census Bureau 2012). Nevertheless, a new species of mule fat (*Baccharis malibuensis*) was discovered 25 miles west of downtown Los Angeles in 1988 (Beauchamp and Henrickson 1996; Erter 2000).

Areas lacking botanical collections and warranting floristic attention have been identified for southern California by utilizing herbarium specimens and geographic information systems (Soza et al. 2000). These areas include the central and western Mojave Desert, coastal basins, and southern San Joaquin Valley. Within Los Angeles County, portions of the Transverse Ranges bordering the coastal basins are relatively well-documented, but adjacent coastal lowlands are not (Soza et al. 2000). One coastal lowland area that is both lacking floristic documentation and being encroached upon by urbanization is the Verdugo Mountains and adjacent San Rafael Hills.

The goal of our study was to compile historic and recent botanical collections from the Verdugo Mountains and San Rafael Hills in order to document the flora

of this coastal lowland. We first compiled information on the natural and cultural history of the study area from literature reviews, internet searches, and local herbaria. We then performed botanical surveys in the Verdugo Mountains and San Rafael Hills to (1) document vascular plant taxa with herbarium vouchers, (2) develop an annotated checklist, (3) describe plant communities, and (4) document fire-following species and their duration in the region.

### Physical Location

The Verdugo Mountains and San Rafael Hills are a 21 km (13 mi) long mountainous island that encompasses approximately 14,646 ha (36,192 acres) surrounded by the greater Los Angeles area in Los Angeles County, California (Figs. 1-2). The study area is part of the larger Transverse Ranges, a group of mountain ranges that run predominantly east to west. The Verdugo Mountains and San Rafael Hills are situated between two larger mountain ranges, providing a link between the San Gabriel Mountains to the north and the Santa Monica Mountains to the southwest. The study area is bordered by San Fernando Valley to the west, La Crescenta Valley to the north, and San Gabriel Valley to the east and falls within the corporate boundaries of the cities of Burbank, Glendale, and Los Angeles. Surrounding roads were mostly used to define the boundaries for the study area, in addition to the Arroyo Seco to the east, and include Foothill Boulevard to the north, State Route 134 (SR-134) and Interstate 5 (I-5) to the south, and Wentworth Street to the west.

### Physiography

**Verdugo Mountains.** The Verdugo Mountains are located at the northwest end of the study area and are bounded by Verdugo Canyon (and Canada Boulevard) to the east and Big Tujunga Wash to the west (Fig. 2). The mountains are oriented northwest to southeast and encompass approximately 6,475 ha (16,000 acres). The Verdugo Mountains comprise steep terrain; approximately 60% of the land has a slope  $\geq 50\%$  (Koploy et al. 1979). The highest point is Verdugo Peak (Mt. Verdugo) at 953 m (3126 ft) elevation, extending down to 183 m (600 ft) at the southern base (Koploy et al. 1979; McKinney 1991). Other peaks include Tongva Peak (810 m [2656 ft]) south of Verdugo Peak near Brand Park, Mt. La Tuna (524 m [1720 ft]) near the northwest end of Verdugo Mountain Park, and Mt. Thom (756 m [2480 ft]) at the southeast end of the Verdugo Mountains (Wikipedia 2009). Another peak, which is culturally important and locally referred to as Mt. McGroarty, is Mt. San Ysidro (610 m [2000 ft]). The peak is informally named after the Californian poet laureate of 1933, John Steven McGroarty, whose former home was located on its north slope (Dart 1992). Additionally, 12 steep primary



**Figure 1:** Southern flank of the Verdugo Mountains, city of Glendale in the foreground (photo: Mike Dillon 2006).

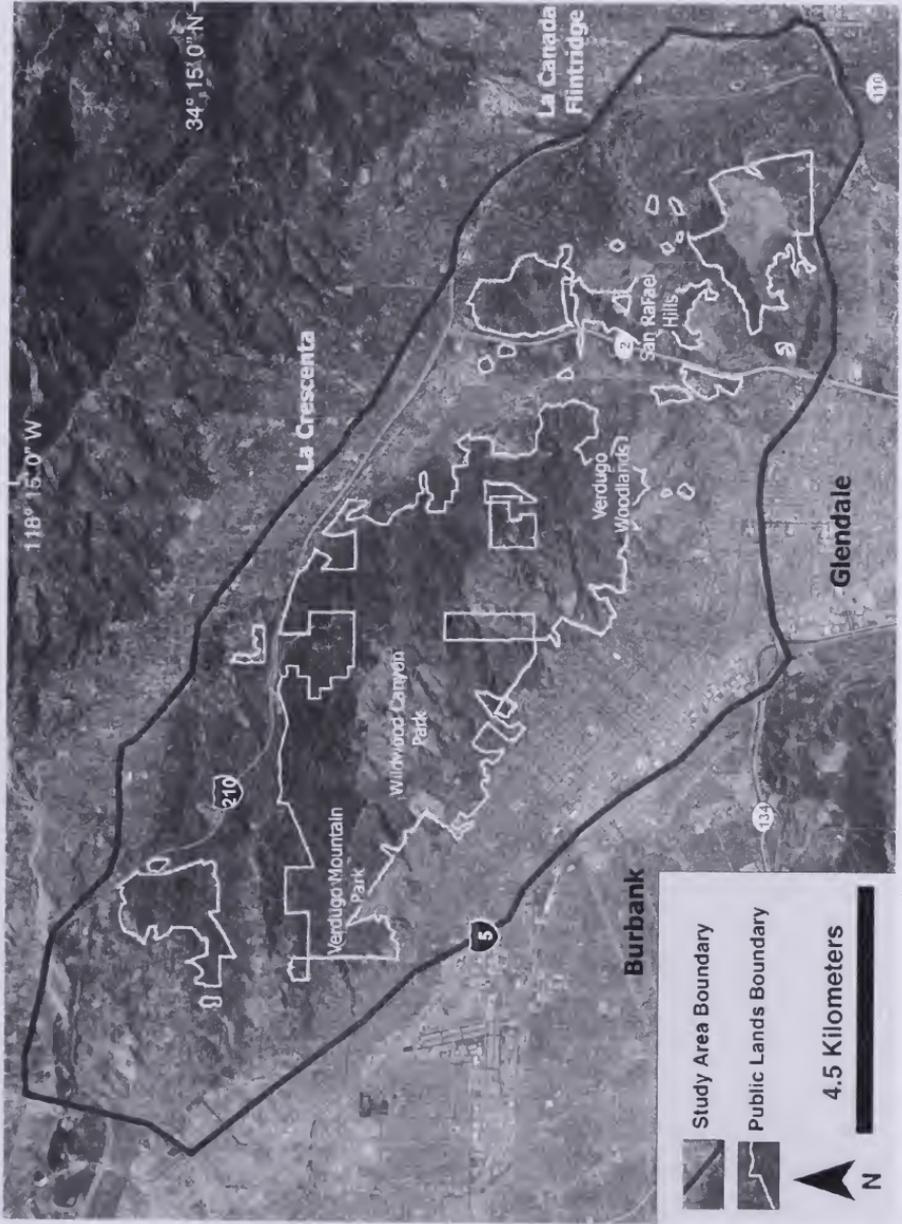


Figure 2: Map of the study area of the Verdugo Mountains and San Rafael Hills, Los Angeles County, California.

canyons occur within the range (Koploy et al. 1979): Brand, Dead Horse, Deer, Engleheard, Henderson, La Tuna, McDonald, Pomeroy, Sheep Corral, Stough, Sunset, and Wildwood Canyons.

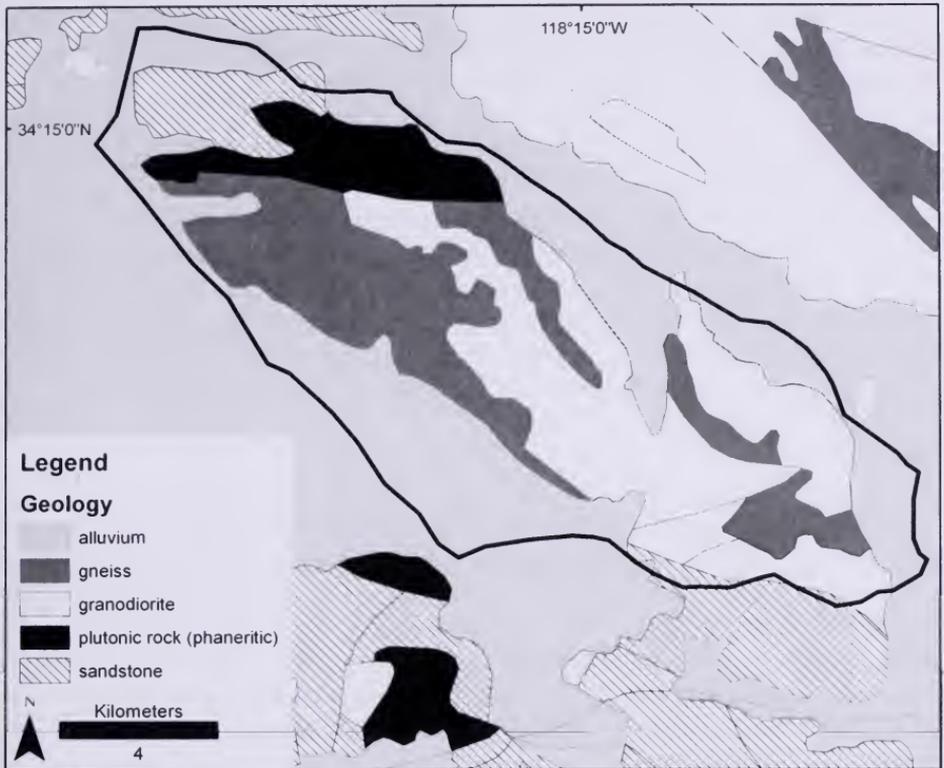
**San Rafael Hills.** The San Rafael Hills are located at the southeast end of the study area and are bounded by Arroyo Seco (and N Arroyo Boulevard) to the east and Verdugo Canyon (and Canada Boulevard) to the west (Fig. 2). The hills are oriented north to south and encompass approximately 2,849 ha (7,040 acres). These hills also comprise steep terrain; approximately 50% of the land has a slope  $\geq 50\%$  (Koploy et al. 1979). The highest point is Flint Peak at 576 m (1889 ft) elevation, extending down to 219 m (720 ft) at the southern base. Two major canyons, Scholl and Sycamore, run east to west.

## Geology

The study area is bounded to the south by the Verdugo-Eagle Rock and Raymond faults, and to the north by the San Fernando and Sierra Madre faults (Yeats 2004). These two fault zones have formed a ridge in the earth's crust that has been forced upward and is, therefore, higher than the surrounding land (Judson 1934). Earthquakes periodically impact the area; the most recent significant events are the 1971 Sylmar and 1994 Northridge earthquakes (Stavro 1998).

The range is relatively young, with core rocks ranging from 90 to 120 million years old (Stavro 1998). The Verdugo-Eagle Rock fault separates Paleozoic metasedimentary rocks, gneiss, migmatite, and granitic rocks to the north from more uniform granitic rocks to the south in the Santa Monica Mountains (Yeats 2004). The Verdugo Mountains and San Rafael Hills are geologically similar to the San Gabriel Mountains, comprising mostly Precambrian gneiss and Mesozoic granitic rock (granodiorite, Fig. 3; Miles and Goudey 1997). Soils in both the Verdugo Mountains and San Rafael Hills are classified as shallow Lithic Haploxerolls (xeric, calcareous loam soils), Typic Haploxeralfs (xeric, fine clay soils), Typic and Calcixerollic Xerochrepts (calcareous alluvial soils), and Typic Xerorthents (other xeric soils) (Miles and Goudey 1997).

**Verdugo Mountains.** The Verdugo Mountains are predominantly composed of late Mesozoic quartz diorite interspersed with areas of late Mesozoic leucocratic granitic rock (granodiorite) or metamorphic rock, including Cretaceous or older gneiss (Fig. 3). Small patches of Miocene volcanic rock (plutonic rock) and middle to late Miocene marine sedimentary rock (sandstone) occur at the northernmost edge of the range. Pleistocene nonmarine, alluvial sedimentary deposits (alluvium) occur at lower elevations along the periphery (Jennings and Strand 1969; Dibblee 1991).



**Figure 3:** Geologic map of the study area (black outline) and surrounding central Transverse Ranges, modified from Jennings and Strand (1969), Dibblee (1989, 1991), and Yeats (2004).

Soils within the Verdugo Mountains include the Altamont, Dublin, Hanford, Holland, Placentia, Ramona, Tujunga and Yolo series (Eckmann and Zinn 1915; Holmes et al. 1917). The Altamont, Dublin, and Yolo series are represented by clay loam at the northwest end of the range. The Hanford series is represented by gravelly sandy, sandy, and stony sandy loam around the base of the range. The Holland series is represented by loam as well as coarse sandy, sandy, and stony loam throughout the range. The Placentia series is represented by loam at the eastern base of the range. The Ramona series is represented by sandy loam along the southern side of the range. The Tujunga series is represented by gravelly sand and sandy loam around the southern base of the range (Eckmann and Zinn 1915; Holmes et al. 1917).

**San Rafael Hills.** The San Rafael Hills are predominantly composed of early Cretaceous quartz diorite (granodiorite, Fig. 3). Massive non-gneissoid quartz diorite occurs in the northern half, and massive gneissoid quartz diorite occurs in

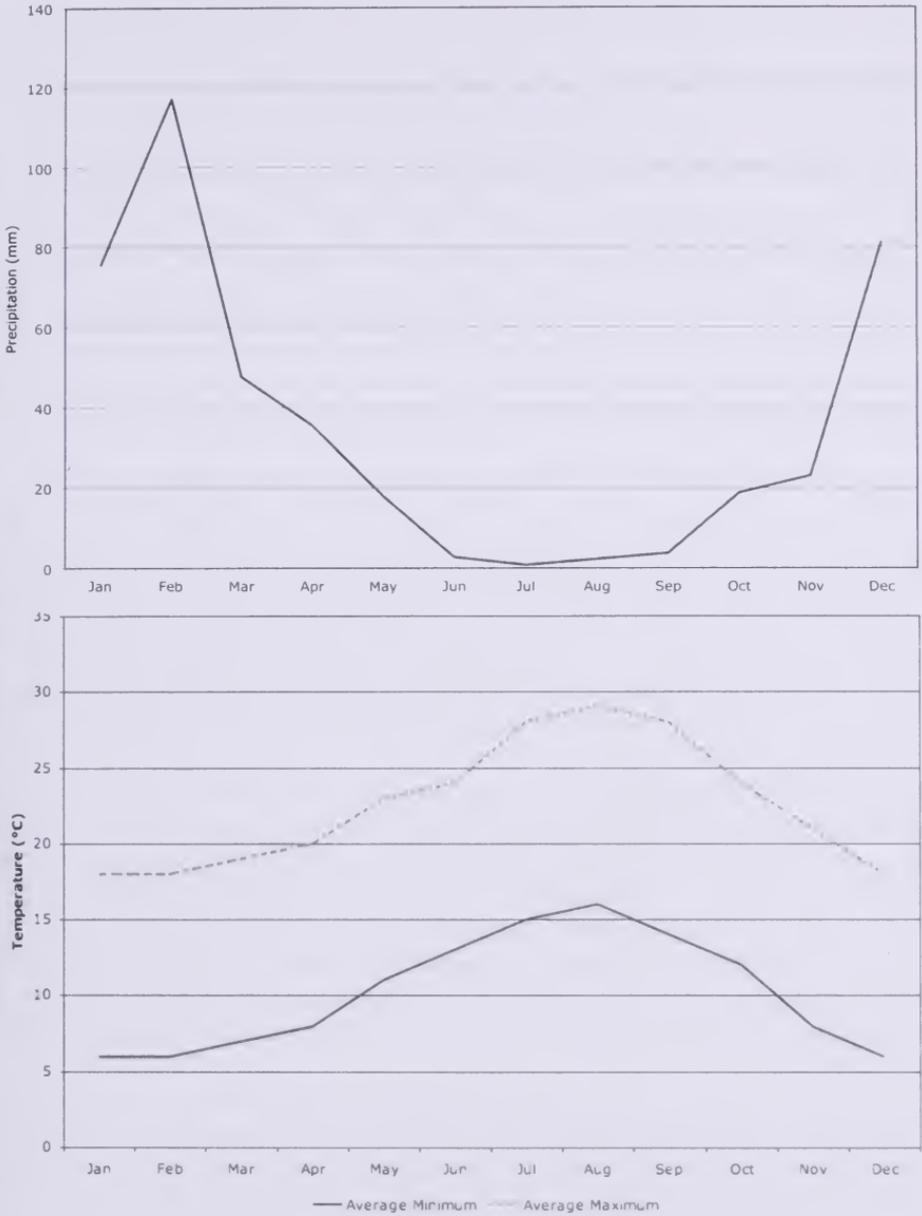
the southern half. Small areas of late Mesozoic leucocratic granitic rock, Precambrian siliceous metamorphic rock, and Precambrian gneissic rock are interspersed throughout (Jennings and Strand 1969; Dibblee 1989).

Soils within the San Rafael Hills also include the Altamont, Hanford, Holland, Placentia, Ramona, and Yolo series (Eckmann and Zinn 1915). The Altamont series is represented by clay, clay loam, and loam throughout the hills. The Hanford series is represented by fine sandy, gravelly sandy, sandy, and stony sandy loam around the base of the hills. The Holland series is represented by loam throughout the hills, whereas the Placentia and Ramona series are represented by loam around the base of the hills. The Yolo series is represented by clay loam and loam around the base of the hills (Eckmann and Zinn 1915).

## **Climate**

The study area is located in a Mediterranean climate characterized by warm, dry summers and mild, wet winters (Holland and Keil 1995). The Verdugo Mountains and San Rafael Hills lie in the Los Angeles Plain of the southern California coast, which has a hot and subhumid climate with some marine influence, including summer fog (Miles and Goudey 1997). These coastal plains have a mean annual precipitation of 305-508 mm (12-20 in.), mean annual temperature of 14-18°C (58-64°F), and mean freeze-free period of 300-350 days (Miles and Goudey 1997).

Weather data has been collected since 1996 from a local weather station in Glendale, located at the northern end of Verdugo Canyon (California Irrigation Management Information System [CIMIS] 2013), and is representative of the climate during our study period. From 1996 to 2012, the mean annual precipitation and temperature in the study area were 430 mm (16.91 in.) and 15.8°C (60.5°F), respectively. Mean monthly precipitation and minimum and maximum air temperatures for this period are summarized in Figure 4. These annual means are consistent with weather data that has been collected over a longer period by the National Oceanic and Atmospheric Administration (NOAA 2014) from a nearby station in Burbank. Since 1940, mean annual precipitation and temperature has fluctuated between 89 to 1010 mm (3.52 to 39.77 in.) and 15 to 19°C (59.7 to 66.7°F), respectively, at this station (NOAA 2014).



**Figure 4:** Mean monthly precipitation from the study area, reported from Glendale, CA, from 1996 to 2012 (top, CIMIS 2013). Average monthly minimum and maximum air temperatures from the study area, reported from Glendale, CA, from 1996 to 2012 (bottom, CIMIS 2013).

## Cultural and Land Use History

**Pre-European Inhabitants.** Prior to the arrival of the Spanish in southern California, the Shoshonean tribe Tongva, later referred to as the Gabrielinos, was the main inhabitant of the study area (Crocker 1969). One of the Tongva's permanent villages, Hahamogna, was located on the east bank of Arroyo Seco near Garfias Springs. Additionally, Tongva artifacts were recovered along the western side of Arroyo Seco, from Linda Vista and the vicinity of the Rose Bowl south to south Pasadena, and from Verdugo Canyon along Chevy Chase Drive in Glendale (Crocker 1969; Kielbasa 1997). Linda Vista was referred to as Indian Flat through the late 1800s because of Tongva occupation there. However, Tongva occupation declined by the 1850s due to the rapid division and sale of California mission lands in the 1830s (Crocker 1969).

**European Settlement.** The Verdugo Mountains are named after a corporal of the Spanish army, Jose Maria Verdugo, who laid claim to the range in the late 1700s (Crocker 1969; Perry and Parcher 1974; Koploy et al. 1979; Scheid 1986; Kielbasa 1997; Stavro 1998). Corporal Verdugo (originally Berdugo) was a native of Loreto, Baja California, who accompanied Father Junipero Serra during the establishment of missions in California. Afterwards, Verdugo served as Captain of the Guard at Mission San Gabriel and was awarded a land grant in 1784 to ranch on the area known as Haleameupet to the Tongva. This area comprised 14,730 ha (36,400 acres) and was located between the Arroyo Seco and the Los Angeles River and midway between Mission San Gabriel and Mission San Fernando. Verdugo's land was initially called Paraja de Zanja de Zacamutin (Place of the Zacamutin Ditch) or La Zanja, then Rancho de los Verdugos, and finally Rancho San Rafael. Rancho San Rafael included what is now Pasadena west of Arroyo Seco (San Rafael and Linda Vista areas), Highland Park (formerly Garvanza), Glendale, Burbank, La Cañada-Flintridge, Eagle Rock, and all the area formed by the confluence of the Arroyo Seco and the Los Angeles River (Fig. 2; Crocker 1969; Perry and Parcher 1974; Koploy et al. 1979; Scheid 1986; Kielbasa 1997; Stavro 1998).

Verdugo initially used the land to grow melons, beans, corn, wheat, wine grapes, red peppers, pomegranates, figs, apples, peaches, pears, oranges, limes, and other citrus fruits and to raise cattle, horses, sheep, and mules. During the early 1800s, the ranch primarily exchanged these goods (Crocker 1969; Perry and Parcher 1974). However, after California became a state in 1850, the Verdugo family began to sell off portions of land to pay taxes and fees imposed by the influx of people demanding monetary compensation for goods and services. The new landowners developed vineyards and orchards of peaches, apricots, prunes, lemons, and oranges (Crocker 1969; Perry and Parcher 1974; Stavro 1998).

The establishment of towns surrounding the study area followed shortly thereafter. The town of Glendale was established in 1887, followed by Linda Vista (later annexed to Pasadena) and Burbank (Fig. 2; Crocker 1969; Kielbasa 1997; Glendale Historical Society [GHS] 2009). Erskine M. Ross was one of the first Americans to buy real estate in Glendale and acquired 445 ha (1,100 acres) that he developed into an orange and olive plantation during the 1880s. In addition, he built the first of many upscale homes in the area, developed during the 1920s and 1930s for wealthier families. Today, this area is called the Rossmoyne neighborhood and consists of 1,100 homes at the southern base of the Verdugo Mountains (Perry and Parcher 1974; Satzman 2004).

In addition to agriculture and real estate development on former Rancho San Rafael land, coal exploration began along the west bank of the Arroyo Seco. Oil, coal, and mineral deposits have been sought in the study area, but nothing of commercial value has been found (Crocker 1969).

Another influx of people into southern California occurred between 1885 and 1888 because of its excellent climate for agriculture. Strawberries became the primary agricultural product in Glendale and Burbank between 1904 and 1908 (Perry and Parcher 1974). In addition, the southwestern part of Rancho San Rafael produced barley, nuts, fruits, poultry, and dairy, while the southeastern part produced roses, tomatoes, and oranges (Perry and Parcher 1974).

During the 1890s, golf became a popular sport and golf courses, as well as real estate, were developed in the San Rafael Hills area (Crocker 1969; Scheid 1986). In 1900, the San Rafael Heights were developed with estate-sized lots overlooking the Arroyo Seco. The area remained largely rural until the 1920s and 1930s when more real estate development occurred, including several large homes and a subdivision in the Annandale Hills area at the southeast end of San Rafael Hills. Real estate development in the area stopped during the depression of the early 1930s but resumed in the 1940s after World War II (Crocker 1969; Scheid 1986).

**Modern Day Development.** The study area has a long history of land use and real estate development. Currently, the Verdugo Mountains are surrounded by the cities of Los Angeles to the north and west, La Crescenta-Montrose to the north, Glendale to the east, and Burbank to the south (Fig. 2), with the present-day communities of Sun Valley, Sunland, and Tujunga along the northern side. The San Rafael Hills are surrounded by the cities of Glendale to the west, La Cañada-Flintridge to the northeast, Pasadena to the east, and Los Angeles to the south, with the communities of Eagle Rock and Linda Vista to the south and east, respectively. The range remains relatively intact despite the history of development on its lower slopes and surrounding the base of the range. Many portions of the

study area are publicly owned by cities or state (Fig. 2 - white outlines). However, several private in-holdings have been considered for development over the years.

A recently proposed development, Oakmont V, would have converted 97 ha (240 acres) of the Verdugo Mountains into 572 luxury homes (Stavro 1998). In 2002, after a ten-year battle, the city of Glendale, the Mountains Recreation and Conservation Authority, and the Santa Monica Mountains Conservancy (SMMC) bought the land from the developers and created the Verdugo Mountains Open Space Preserve (Dong 2003; Kennedy 2005).

Another recently proposed development, Canyon Hills, had been in battle for approximately ten years as well. In 2005, the city of Los Angeles approved the Canyon Hills project to develop 221 homes on 57 ha (140 acres) on the north side of Interstate 210 (I-210) in Sunland. The city approved the project on the condition that 608 acres be given to the SMMC as public open space (Christopher A. Joseph & Associates 2004; Kennedy 2005; Laidman 2005).

In 2003, the city of Los Angeles passed an ordinance to preserve ridgelines in the Verdugo Mountains by prohibiting development within 60 vertical feet of ridgelines visible from six scenic corridors (Kennedy 2005). The only developments at higher elevations in the study area are radio towers. Eight antenna complexes are located along the crest of the Verdugo Mountains on Tongva Peak to transmit radio and telephone signals (Stavro 1998; Radiomap.us 2011). From 1964 to 1984, six radio towers on the crest transmitted KBLA (1500 AM Burbank). The radio towers were then moved to the FM signal and now transmit KROQ (106.7 Pasadena) and KXOL (96.3 Los Angeles; Fybush 2006). Flint Peak in the San Rafael Hills hosts radio towers for KLAX (97.9 Los Angeles) and KTLW (91.1 Arcadia; Radiomap.us 2011)

### **Conservation Areas**

The Verdugo Mountains and San Rafael Hills are recognized as a significant ecological area by the county and state. In 1976, Los Angeles County designated the study area a Significant Ecological Area (SEA 40) due to the relatively undisturbed vegetation and its potential facilitation of genetic interchange among plants and animals from the Santa Monica, San Gabriel, and Santa Susana Mountains (Bramlet 1988; Los Angeles County Department of Regional Planning [LAC-DRP] 2009). The study area is also part of the Rim of the Valley Corridor, a collection of state-designated ecologically significant areas that include parts of the Santa Monica, Santa Susanna, San Gabriel, and Verdugo Mountains, San Rafael Hills, and other green spaces that connect to the Los Padres National Forest. The

primary, long-term goal of the Rim of the Valley Corridor is to develop a state and national system that connects parks, trails, and other green spaces throughout the San Fernando and La Crescenta Valleys for public recreational use, protection of wildlife resources, and facilitation of wildlife movement (Dangermond & Associates 1990; Sodders 2006).

Various agencies, including the state of California and surrounding cities, own a number of protected areas within the study area (Fig. 2). For example, the city of Glendale purchased approximately 1,012 ha (2,500 acres) for preservation in both the Verdugo Mountains and San Rafael Hills (Willman 1987). A total of 1,821 ha (4,500 acres) is public across the Verdugo Mountains and San Rafael Hills (Kennedy 2005; Fond Land Preservation Foundation [FLPF] 2009), and an extensive trail system is frequently used by hikers and mountain bikers.

In the Verdugo Mountains, 1,255 ha (3,100 acres) have been set aside as wilderness reserve (McCorney 2003; FLPF 2009), including a number of protected parks owned by the cities of Burbank, Glendale, and Los Angeles, the California Department of Parks and Recreation, the SMMC, and the FLPF. The larger city-owned parks are Wildwood Canyon Park (202 ha [500 acres]) and Stough Canyon Nature Center (42 ha [103 acres]) in Burbank (Koploy et al. 1979; McCorney 2003), Verdugo Mountain Park (229 ha [565 acres]) in Los Angeles (Lin 2007), and Brand Park (270 ha [666 acres]) and Henderson Canyon (194 ha [479 acres]) in Glendale (Koploy et al. 1979; SMMC 2007).

In addition to city-owned acquisitions, various agencies and nonprofits manage a number of large protected areas within the study area. The California Department of Parks and Recreation manages Verdugo Mountains State Park at the northwest end. The SMMC oversees La Tuna Canyon Park (445 ha [1,100 acres]) in Sun Valley and the Verdugo Mountains Open Space Preserve (99 ha [244 acres]) in conjunction with the city of Glendale (Stavro 1998). The FLPF maintains approximately 202 ha (500 acres) at the northwest end of the Verdugo Mountains in the city of Los Angeles as the Fond Family Open Space (FLPF 2009).

Several city-owned parks are also established within the San Rafael Hills. The city of Glendale maintains 178 ha (440 acres) of undeveloped land in Scholl Canyon (Koploy et al. 1979). In addition, Descanso Gardens (67 ha [165 acres]) and Cherry Canyon Park (53 ha [131 acres]) are located at the northern end of the hills in the city of La Cañada-Flintridge (SMMC 2007).

## Botanical Collections History

A history of botanical collectors from the Verdugo Mountains and San Rafael Hills is summarized in Table 1. Prior to our study, few herbarium collections were made in the study area during recent times. Most collections within the study area were from the first half of the 20th century. More recent collections from the study area were made between 1960 and 1980 due to the efforts of local college students (e.g., Occidental College, Glendale Community College, etc.).

**Table 1.** Botanical collecting history in the Verdugo Mountains and San Rafael Hills prior to our study, based on herbarium specimens through the Consortium of California Herbaria (CCH 2012). V = Verdugo Mtns. SR = San Rafael Hills.

<i>Collector</i>	<i>Collection Period</i>	<i>Verdugo Mtns</i>	<i>San Rafael Hills</i>
Anstruther Davidson	1890-1892		SR
Louis Greata	1900		SR
L. R. Abrams	1901	V	SR
George B. Grant	1901		SR
H. P. Chandler	1902-1907	V	
Theodore Payne	1904	V	
F. W. Peirson	1904-1923	V	SR
Fordyce Grinnell Jr.	1910		SR
Geo. L. Moxley	1913-1917		SR
Albert J. Perkins	1914		SR
M. Caruthers	1916		SR
M. Bisbee	1917	V	SR
Alice M. Ottley	1920		SR
Dorothy Davis	1920s		SR
E. S. Spalding	1923		SR
May N. Ackley	1924-1930	V	SR
H. de Forest	1926-1933	V	
C. B. Wolf	1927		SR
Freda Detmers	1928-1930	V	
Joseph A. Ewan	1928-1933	V	
Charlotte Brown	1929	V	
Mrs. Alton Clare	1929	V	
T. S. Clare	1929	V	
Mark Morris	1929	V	
John P. Hill	1929-1933	V	
Fay A. MacFadden	1929-1933	V	SR
James Clizbe	1930	V	

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R. F. Folger	1930	V	
F. H. Raymond	1930		SR
Adele Axtman	1931	V	
Chung-Hsin Chung	1931		SR
Howard Mullins	1931		SR
R. Johnson	1931	V	
L. E. Hoffman	1932	V	
H. A. Jensen	1933	V	
Arthur B. Shepard	1933	V	
Douglas Bothwell	1934	V	
James B. McNair	1934	V	
Ervin H. Miller	1934	V	
Harry H. Stone	1934	V	
W. G. Webb	1934-1935	V	SR
E. S. Steele	1935	V	SR
L. C. Wheeler	1930s-1960s		SR
Lyman Benson	1946		SR
Peter Kamb	1948	V	SR
K. Crawford	1949		SR
Jack Hudson	1950		SR
Rimo Bacigalupi	1953	V	
Sherwin Carlquist	1955		SR
James W. Raymond	1960	V	
Don Jillson	1961		SR
B. C. Templeton	1962	V	
Wesley O. Griesel	1962-1963		SR
Sue Boergadine	1966		SR
Fran Dourisboure	1966		SR
Serena Light	1966		SR
M. A. Sanatay	1966		SR
Jane Snyder	1966		SR
Margaret Tucker	1966		SR
Mary MacArthur	1966-1968		SR
W. Bolander	1967	V	SR
Mary H. Ward	1970-1971		SR
Thomas A. Zink	1971	V	
Roy Halling	1972	V	
Rick Larson	1975	V	
Jan Roach	1975	V	
Joseph M. Keefe	1975-1996	V	SR

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Bill McKinley	1976	V	
Steve Archer	1977	V	
Melanie Baer	1977	V	
Sara Kabat	1977	V	
W. W. Wright	1977	V	
K. Bridwell	1978	V	
Daryl Koutnik	1978	V	
C. Shapiro	1979	V	
J. Totino	1979		SR
L. Yamanaka	1979		SR
S. Campbell	1980	V	
I. M. Johnston	1980	V	
J. Keeling	1980	V	
J. Liston	1980	V	
William Martin	1980	V	
Gerald Pitto	1980	V	
J. Stephens	1980	V	
Tami Stevenson	1980	V	
Wesley O. Griesel	1986	V	
John Dittes	1990	V	
Ron Martinolich	1991		SR
Kathy Molina	1992	V	
Harry Spilman	1996		SR
Jack Easton	1997		SR
LeRoy Gross	1999	V	

One of the most important historic collectors from the study area was Fay A. MacDonald MacFadden. MacFadden documented close to 250 specimens from the area prior to our study (Consortium of California Herbaria [CCH] 2012). She was an avid, self-taught botanist who collected over 27,000 specimens of mosses, ferns, and angiosperms from British Columbia and the western United States. MacFadden was born in 1888 in Colorado, moved with her family to Los Angeles in the 1930s, and lived in La Tuna Canyon from 1931 to 1933. During this time, MacFadden documented many of the plant species occurring in the Verdugo Mountains and San Rafael Hills. The private collections of MacFadden were used to establish the California State University, Fullerton Herbarium (MACF) in 1963 (Shropshire 1998). MacFadden died shortly thereafter in 1964 (McCleary and Waner 1969).

A more recent collector who documented a comparable number of plant specimens from the study area was Joseph M. Keefe. Keefe was born in 1942 in Santa

Paula, California, and served as Professor of Botany at Glendale Community College (GCC). As Professor at GCC, Keefe collected plants from the vicinity from 1975 until his untimely death in 2001 (Ventura County News Obituaries [VCNO] 2001). Keefe kindly donated his collections from the study area to Rancho Santa Ana Botanic Garden (RSA) to augment our study.

## METHODS

To develop a comprehensive list of vascular plants from the study area, we conducted searches of local herbaria and field surveys. We searched the following herbaria for historic and recent collections from the Verdugo Mountains and San Rafael Hills: GCC, University of California, Los Angeles (LA), Occidental College (LOC), MACF, RSA-Pomona College (POM), and California State University, Northridge (SFV). We examined all specimens for verification of taxonomic identification and annotated specimens accordingly. We collected herbarium vouchers from plants we surveyed in the study area from March 2000 to June 2007. We made an effort to collect from all accessible locations, major physiographic features, geologic and edaphic substrates, and plant communities. Several fires occurred within the study area prior to and during our project, which enabled us to survey burned areas during successive years to document recovery of these areas and fire-following species and their duration.

To categorize vegetation and delimit species distributions for an annotated checklist, we noted a variety of features at each collection site including locality, global positioning system (GPS) coordinates, elevation, substrate, aspect, habitat, associated species, and plant attributes such as flower color, life form, etc. We entered this information into the RSA-POM database, from which herbarium labels were generated, and which can be accessed through the CCH (2012). We deposited vouchers at RSA and sent duplicates to California State University, Chico (CHSC), Santa Barbara Botanic Garden (SBBG), San Diego Natural History Museum (SD), University of California, Berkeley (UC), and University of California, Riverside (UCR).

We made plant determinations using several references, including *The Jepson Manual* (Hickman 1993), *A Flora of Southern California* (Munz 1974), and the RSA-POM herbarium. All scientific nomenclature conforms to the *The Jepson Manual* (Baldwin et al. 2012). When absent from *The Jepson Manual*, we used nomenclature from the Jepson Online Interchange (2012) for species, excluding *Mimulus* (Barker et al. 2012). For families, we used nomenclature from the Angiosperm Phylogeny Group (APG) III (2009) and Smith et al. (2006). We used common names from *The Jepson Manual* (Hickman 1993) and, when absent from

*The Jepson Manual*, from the PLANTS database (US Department of Agriculture [USDA] 2013).

In addition to rare taxa documented from our herbaria searches and field surveys of the study area, we also identified rare taxa with the potential to occur in the study area based on geographic distribution and habitat suitability. We used collections just outside the study area, the CNPS Inventory (2014) for Burbank and Pasadena USGS quads and the Verdugo Mountains SEA (LACDRP 2009) to identify potential additional rare taxa.

We also compared the study area to the flora of the San Gabriel and Santa Monica Mountains to identify shared taxa among ranges and unique species to the Verdugo Mountains and San Rafael Hills. We used published floras for the San Gabriel and Santa Monica Mountains for comparisons (Raven et al. 1986; Mistretta in prep).

## RESULTS AND DISCUSSION

### Vegetation

The main vegetation types within the Verdugo Mountains and San Rafael Hills are often a mixed assemblage of dominant species. Therefore, in some cases we chose to describe vegetation types in more general terms, following the classification of Holland and Keil (1995), and in other cases in more specific terms, following the classification of the California Natural Diversity Database (CNDDB 2012). The vegetation within the study area is predominantly chaparral (chamise or mixed chaparral; Fig. 5A) and southern coastal scrub (Fig. 5B) with occasional woodlands (coast live oak or California walnut; Fig. 6A), riparian communities (California sycamore or mixed riparian woodlands), and grasslands (native bunchgrass or valley and southern coastal grassland; Fig. 6B). Below we describe the dominant species and associated shrubs, perennials, and annual herbs for each community in the study area.

***Southern Coastal Scrub.*** Southern coastal scrub is dominated by woody, often deciduous species that reach heights of 2 m (6.6 ft) or less and are dormant in the summer (Fig. 5B; Holland and Keil 1995). This scrub occurs primarily on lower south- and west-facing slopes, especially at the southern and western ends of the range. In the study area, southern coastal scrub is co-dominated by *Artemisia californica* (California sagebrush), *Eriogonum fasciculatum* (California buckwheat), *Malosma laurina* (laurel sumac), and *Salvia mellifera* (black sage).

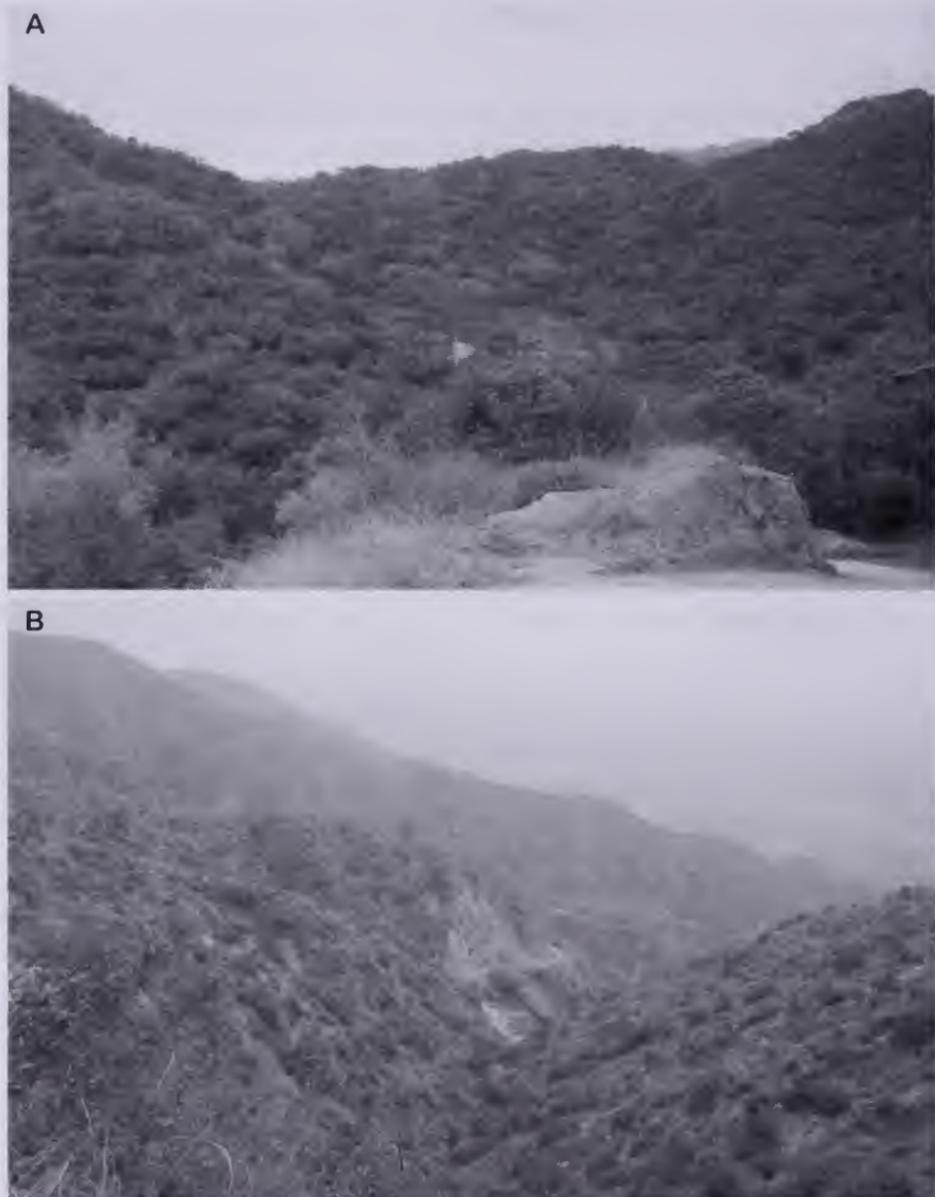
Other associated shrubs in this community include *Acmispon glaber* (California broom), *Adenostoma fasciculatum* (chamise), *Brickellia californica* (California brickellbush), *B. nevini* (Nevin's brickellbush), *Ceanothus crassifolius* (hoaryleaf ceanothus), *Cercocarpus betuloides* (birchleaf mountain mahogany), *Hazardia squarrosa* (saw-toothed goldenbush), *Hesperoyucca whipplei* (our lord's candle), *Heteromeles arbutifolia* (toyon), *Rhamnus ilicifolia* (holly-leaf redberry), *Rhus integrifolia* (lemonadeberry), *Salvia apiana* (white sage), *Sambucus nigra* subsp. *caerulea* (blue elderberry), *Senecio flaccidus* (Douglas' ragwort), *Toxicodendron diversilobum* (western poison oak), and *Trichostema lanatum* (woolly bluecurls).

Commonly occurring perennial herbs include *Calochortus plummerae* (Plummer's mariposa lily; Fig. 7A), *Chamaesyce melanadenia* (red-gland spurge), *Cortroglyne filaginifolia* (California-aster), *Delphinium cardinale* (scarlet larkspur), *Eriogonum elongatum* (longstem buckwheat), *Eriophyllum confertiflorum* (golden-yarrow), *Galium angustifolium* (narrow-leaved bedstraw), *Malacothrix saxatilis* (cliff desertydandelion), *Marah macrocarpa* (Cucamonga manroot), *Melica imperfecta* (smallflower melicgrass), *Mirabilis laevis* var. *crassifolia* (wishbone bush; Fig. 7B), *Pentagramma triangularis* (goldback fern), *Pseudognaphalium californicum* (ladies' tobacco), *Stipa coronata* (giant ricegrass), and *Stipa lepida* (foothill needlegrass).

Commonly occurring annuals include *Chaenactis artemisiifolia* (white pincushion), *C. glabriuscula* (yellow pincushion), *Clarkia unguiculata* (elegant clarkia), *Cryptantha intermedia* (Clearwater cryptantha), *Eriastrum sapphirinum* (sapphire woollystar), *Eucrypta chrysanthemifolia* (spotted hideseed), *Eulobus californicus* (California suncup), *Logfia filaginoides* (California cottonrose), *Lupinus hirsutissimus* (stinging lupine), *L. truncatus* (collared annual lupine), *Mentzelia micrantha* (San Luis blazingstar), *Muhlenbergia microsperma* (littleseed muhly), *Phacelia cicutaria* var. *hispida* (caterpillar phacelia), *P. minor* (wild canterbury bells; Fig. 7C), and *Thysanocarpus laciniatus* (mountain fringe pod).

Other shrubs associated with southern coastal scrub on west-facing midslopes include *Encelia californica* (California brittlebush), *Keckiella cordifolia* (heartleaf keckiella), *Quercus berberidifolia* (scrub oak), *Rhus ovata* (sugar bush), and *Xylococcus bicolor* (mission manzanita). Herbs occurring in these habitats include *Caulanthus lasiophyllus* (California mustard), *Pseudognaphalium biolettii* (two-color rabbit-tobacco), and *P. microcephalum* (Wright's cudweed).

**Chaparral.** Chaparral generally occurs on more mesic, north- and east-facing slopes, along ridges and upper slopes. This vegetation comprises evergreen, sclerophyllous shrubs that are taller (up to 3 m [9.8 ft]) and denser than southern



**Figure 5:** Vegetation of the Verdugo Mountains and San Rafael Hills. A) Chaparral on the northern side of the Verdugo Mountains along Whiting Woods fire road. B) southern coastal scrub along the southern side of the Verdugo Mountains.



**Figure 6:** Vegetation of the Verdugo Mountains and San Rafael Hills. A) Coast live oak woodland at northeastern end of the Verdugo Mountains (photo: Bob McFall Photography), B) grassland at northern end of the Verdugo Mountains.

coastal scrub, with fewer associated herbs (Fig. 5A; Holland and Keil 1995).

In the study area, chaparral occurs along the southern side of La Tuna Canyon, along the crest of the Verdugo Mountains, and towards the eastern end of the Verdugo Mountains.

**Chamise Chaparral.** Towards the eastern end of the Verdugo Mountains, chamise chaparral occurs along the crest and on north- and east-facing slopes. *Adenostoma fasciculatum* (chamise) dominates the community but *Ceanothus crassifolius* (hoaryleaf ceanothus), *Cercocarpus betuloides* (birchleaf mountain mahogany), *Heteromeles arbutifolia* (toyon), and *Xylococcus bicolor* (mission manzanita) are subdominants.

Other associated shrubs and trees in this community are *Acmispon glaber* (California broom), *Arctostaphylos glandulosa* (Eastwood's manzanita; Fig. 7D), *A. glauca* (bigberry manzanita), *Artemisia californica* (California sagebrush), *Brickellia californica* (California brickellbush), *B. nevinii* (Nevin's brickellbush), *Ceanothus oliganthus* (hairy ceanothus), *Diplacus longiflorus* (southern bush monkeyflower; Fig. 7E), *Eriogonum fasciculatum* (California buckwheat), *Hazardia squarrosa* (saw-toothed goldenbush), *Hesperoyucca whipplei* (our lord's candle), *Keckiella cordifolia* (heartleaf keckiella), *Linanthus californicus* (prickly phlox), *Malosma laurina* (laurel sumac), *Prunus ilicifolia* (holly-leaved cherry), *Quercus* spp. (oaks), *Rhamnus ilicifolia* (holly-leaf redberry), *Rhus ovata* (sugar bush), *Salvia mellifera* (black sage), *Sambucus nigra* subsp. *caerulea* (blue elderberry), *Senecio flaccidus* (Douglas' ragwort), *Toxicodendron diversilobum* (western poison oak), and *Trichostema lanatum* (woolly bluecurls) and *Clematis lasiantha* (pipestem clematis).

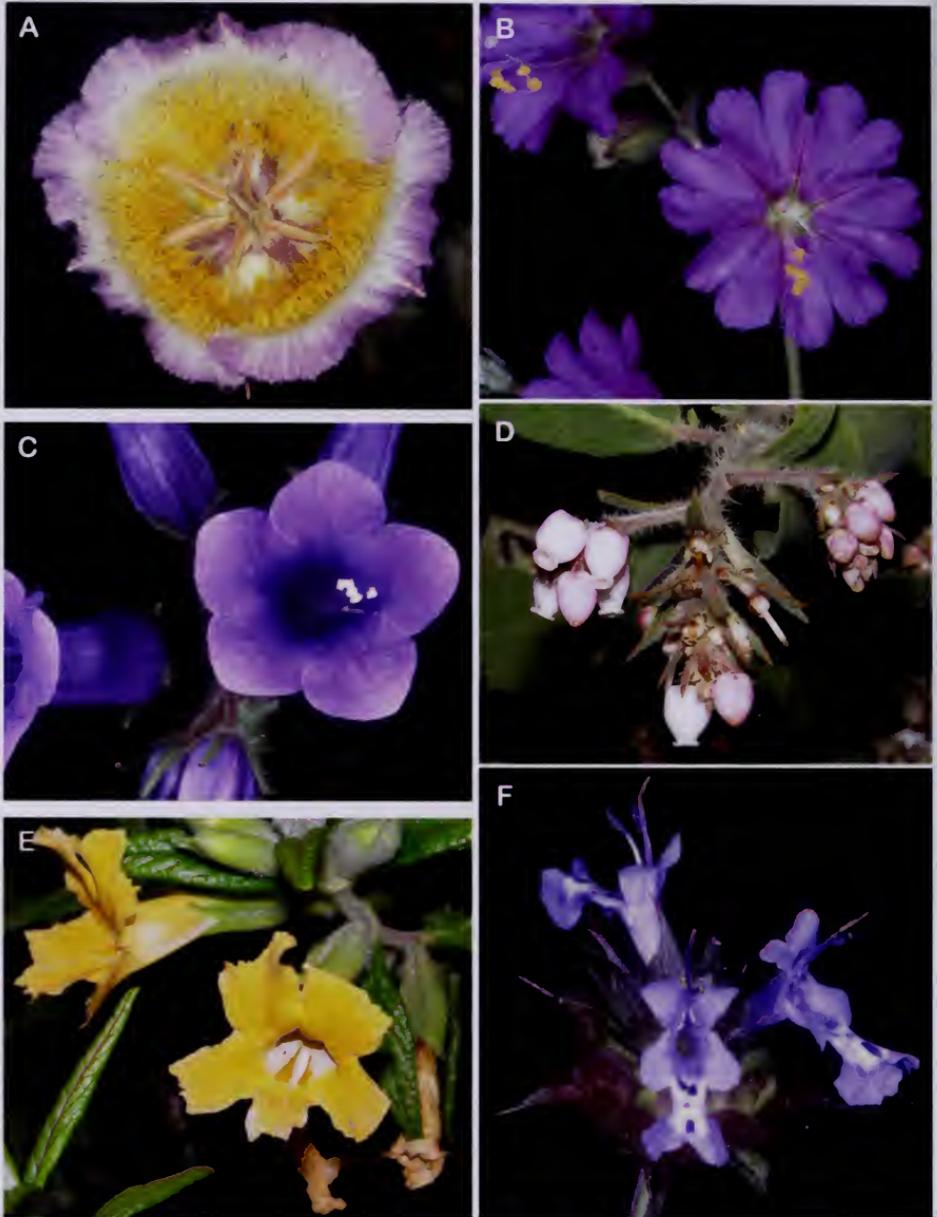
Associated perennial herbs include *Agrostis pallens* (seashore bentgrass), *Cirsium occidentale* var. *occidentale* (cobwebby thistle), *Corethrogyne filaginifolia* (California-aster), *Delphinium cardinale* (scarlet larkspur), *D. parryi* (Parry's larkspur), *Dichelostemma capitatum* (blue dicks), *Dudleya lanceolata* (lanceleaf liveforever), *Epilobium canum* subsp. *canum* (California fuschia), *Eriogonum elongatum* (longstem buckwheat), *Eriophyllum confertiflorum* (golden-yarrow), *Galium angustifolium* (narrow-leaved bedstraw), *Helianthemum scoparium* (peak rush-rose), *Helianthus gracilentus* (slender sunflower), *Heterotheca grandiflora* (telegraph weed), *H. sessiliflora* subsp. *fastigiata* (sessileflower false goldenaster), *Lathyrus vestitus* (Pacific pea), *Lonicera subspicata* var. *denudata* (Santa Barbara honeysuckle), *Malacothrix saxatilis* (cliff desertydandelion), *Marah macrocarpa* (Cucamonga manroot), *Melica imperfecta* (smallflower melicgrass), *Pellaea mu-*

*cronata* (bird's-foot fern), *Pentagramma triangularis* (goldback fern), *Poa secunda* (one-sided bluegrass), *Polypodium californicum* (California polypody), *Pseudognaphalium californicum* (ladies' tobacco), *P. microcephalum* (Wright's cudweed), *Silene laciniata* subsp. *laciniata* (cardinal catchfly), *Stipa coronata* (giant ricegrass), and *S. lepida* (foothill needlegrass). In seepy areas, other associated perennial herbs are *Bromus carinatus* (California brome), *Calochortus albus* (fairy lantern), *Castilleja applegatei* subsp. *martinii* (wavyleaf Indian paintbrush), and *Epilobium ciliatum* subsp. *ciliatum* (fringed willowherb).

Annuals in chamise chaparral of the study area are most common along fire roads and trails. Common annuals include *Caulanthus lasiophyllus* (California mustard), *Chenopodium berlandieri* (pitseed goosefoot), *Clarkia unguiculata* (elegant clarkia), *Claytonia perfoliata* (miner's lettuce), *Crassula connata* (pygmy-weed), *Cryptantha micromeres* (pygmyflower cryptantha), *C. microstachys* (Tejon cryptantha), *Eucrypta chrysanthemifolia* (spotted hideseed), *Eulobus californicus* (California suncup), *Helianthus annuus* (common sunflower), *Logfia filaginoides* (California cottonrose), *Nemophila menziesii* (baby blue-eyes), *Parietaria hespera* (rillita pellitory), *Phacelia cicutaria* var. *hispida* (caterpillar phacelia), *Pterostegia drymarioides* (woodland pterostegia), *Rafinesquia californica* (California chicory), *Salvia columbariae* (chia; Fig. 7F), *Thysanocarpus laciniatus* (mountain fringe-pod), and *Uropappus lindleyi* (Lindley's silverpuffs).

**Mixed Chaparral.** Towards the western end of the Verdugo Mountains, north-facing slopes are covered by mixed chaparral, comprising co-dominants of *Adenostoma fasciculatum* (chamise), *Ceanothus crassifolius* (hoaryleaf ceanothus), *Cercocarpus betuloides* (birchleaf mountain mahogany), *Eriogonum fasciculatum* (California buckwheat), *Heteromeles arbutifolia* (toyon), *Malosma laurina* (laurel sumac), *Prunus ilicifolia* (holly-leafed cherry), *Quercus berberidifolia* x *Q. durata* var. *gabrielensis* (scrub oak-leather oak hybrid), *Rhamnus crocea* (spiny redberry), *Salvia mellifera* (black sage), *Sambucus nigra* subsp. *caerulea* (blue elderberry), and *Toxicodendron diversilobum* (western poison oak).

Other associated shrubs and trees in this community are *Acmispon glaber* (California broom), *Artemisia californica* (California sagebrush), *Diplacus longiflorus* (southern bush monkeyflower; Fig. 7E), *Fraxinus dipetala* (California ash), *Keckiella cordifolia* (heartleaf keckiella), *Linanthus californicus* (prickly phlox), *Quercus agrifolia* (coast live oak), *Rhamnus ilicifolia* (holly-leaf redberry), *Rhus integrifolia* (lemonadeberry), *Ribes aureum* var. *gracillimum* (golden currant), *R. malvaceum* var. *viridifolium* (chaparral currant), and *Senecio flaccidus* (Douglas' ragwort).



**Figure 7:** Common plants occurring in southern coastal scrub and chaparral. A) *Calochortus plummerae*, B) *Mirabilis laevis* var. *crassifolia*, C) *Phacelia minor*, D) *Arctostaphylos glandulosa*, E) *Diplacus longiflorus*, F) *Salvia columbariae*.



**Figure 8:** Common plants occurring in grasslands. A) *Sanicula arguta*, B) *Scutellaria tuberosa*, C) *Calochortus clavatus* var. *gracilis*, D) *C. venustus*.

Associated perennial herbs include *Acourtia microcephala* (sacapellote), *Allium haematochiton* (redskin onion), *Cirsium occidentale* var. *californicum* (cobwebby thistle), *Corethrogyne filaginifolia* (California-aster), *Dichelostemma capitatum* (blue dicks), *Eriogonum elongatum* (longstem buckwheat), *Eriophyllum confertiflorum* (golden-yarrow), *Galium angustifolium* (narrow-leaved bedstraw), *Helianthus gracilentus* (slender sunflower), *Lonicera subspicata* var. *denudata* (Santa Barbara honeysuckle), *Malacothrix saxatilis* (cliff desertdandelion), *Marah macrocarpa* (Cucamonga manroot), *Melica imperfecta* (smallflower melicgrass), *Pseudognaphalium californicum* (ladies' tobacco), and *P. microcephalum* (Wright's cudweed).

Annuals present in this vegetation are *Amsinckia menziesii* (rancher's fireweed), *Clarkia unguiculata* (elegant clarkia), *Lupinus bicolor* (miniature lupine), *Phacelia cicutaria* var. *hispida* (caterpillar phacelia), and *P. minor* (wild canterbury bells; Fig. 7C).

**Mixed Chaparral/Southern Coastal Scrub.** At the northern end of the Verdugo Mountains, along the northern side of La Tuna Canyon, south-facing midslopes comprise a mixed chaparral/southern coastal scrub dominated by *Adenostoma fasciculatum* (chamise), *Eriogonum fasciculatum* (California buckwheat), *Malosma laurina* (laurel sumac), and *Salvia mellifera* (black sage).

Other associated shrubs in this mixed vegetation are *Acmispon glaber* (California broom), *Artemisia californica* (California sagebrush), *Brickellia californica* (California brickellbush), *Ceanothus crassifolius* (hoaryleaf ceanothus), *Hesperoyucca whipplei* (our lord's candle), and *Sambucus nigra* subsp. *caerulea* (blue elderberry).

Associated perennial herbs include *Helianthus gracilentus* (slender sunflower) and *Mirabilis laevis* var. *crassifolia* (wishbone bush; Fig. 7B).

Common annual herbs are *Chaenactis artemisiifolia* (white pincushion), *C. glabriuscula* (yellow pincushion), *Chorizanthe staticoides* (turkish rugging), *Cryptantha muricata* (pointed cryptantha), *Eulobus californicus* (California sun-cup), *Logfia filaginoides* (California cottonrose), *Lupinus hirsutissimus* (stinging lupine), *L. sparsiflorus* (Coulter's lupine), *L. truncatus* (collared annual lupine), *Muhlenbergia microsperma* (littleseed muhly), *Phacelia minor* (wild canterbury bells; Fig. 7C), and *Pterostegia drymarioides* (woodland pterostegia).

**Coast Live Oak Woodland.** Oak woodland in the study area is coast live oak woodland (Fig. 6A; CNDDDB 2012), dominated by *Quercus agrifolia* (coast live oak), and located in upper drainages and on north-facing slopes at the northern and eastern ends of the Verdugo Mountains. Remnants of this vegetation are also present in the San Rafael Hills on upper, west-facing slopes of Scholl and Sycamore Canyons (Koploy et al. 1979; Swift 1992; Tierney 1997).

In the Verdugo Mountains, coast live oak woodland is associated with *Adenostoma fasciculatum* (chamise), *Artemisia californica* (California sagebrush), *Ceanothus oliganthus* (hairy ceanothus), *Heteromeles arbutifolia* (toyon), *Malosma laurina* (laurel sumac), *Pteridium aquilinum* var. *pubescens* (hairy brackenfern), *Quercus* spp. (oaks), *Rubus ursinus* (California blackberry), *Salvia mellifera* (black sage), *Symphoricarpos mollis* (creeping snowberry), *Toxicodendron diversilobum*

(western poison oak), and *Umbellularia californica* (California bay).

On San Rafael Hills' upper, west-facing slopes and ridgetops, common shrubs associated with *Quercus agrifolia* (coast live oak) are *Acmispon glaber* (California broom), *Adenostoma fasciculatum* (chamise), *Artemisia californica* (California sagebrush), *Cercocarpus betuloides* (birchleaf mountain mahogany), *Diplacus longiflorus* (southern bush monkeyflower; Fig. 7E), *Eriogonum fasciculatum* (California buckwheat), *Hesperoyucca whipplei* (our lord's candle), *Rhus integrifolia* (lemonadeberry), *Ribes speciosum* (fuschia-flowered gooseberry), *Salvia mellifera* (black sage), and *Sambucus nigra* subsp. *caerulea* (blue elderberry), and *Clematis lasiantha* (pipestem clematis). Common perennial herbs include *Malacothrix saxatilis* (cliff desertdandelion).

At the southern end of the San Rafael Hills, along the southern side of Scholl Canyon, common shrubs associated with *Quercus agrifolia* (coast live oak) are *Artemisia californica* (California sagebrush), *Diplacus longiflorus* (southern bush monkeyflower; Fig. 7E), *Encelia californica* (California brittlebush), *E. farinosa* (brittlebush), *Hazardia squarrosa* (saw-toothed goldenbush), *Heteromeles arbutifolia* (toyon), *Rhus ovata* (sugar bush), *Ribes speciosum* (fuschia-flowered gooseberry), *Salvia mellifera* (black sage), and *Symphoricarpos mollis* (creeping snowberry) and *Lonicera subspicata* var. *denudata* (Santa Barbara honeysuckle). Common perennial herbs include *Bloomeria crocea* (common goldenstar), *Malacothrix saxatilis* (cliff desertdandelion), *Melica imperfecta* (smallflower melicgrass), *Penstemon spectabilis* (showy penstemon), and *Stipa lepida* (foothill needlegrass).

**Mixed Chaparral/Oak Woodland.** North and east-facing slopes at the north-east end of the San Rafael Hills exhibit a mixed chaparral/oak woodland community, comprising *Adenostoma fasciculatum* (chamise), *Artemisia californica* (California sagebrush), *Cercocarpus betuloides* (birchleaf mountain mahogany), *Eriogonum fasciculatum* (California buckwheat), *Hesperoyucca whipplei* (our lord's candle), *Heteromeles arbutifolia* (toyon), *Malosma laurina* (laurel sumac), *Quercus durata* var. *gabrielensis* (leather oak), *Rhamnus ilicifolia* (holly-leaf red-berry), *Rhus integrifolia* (lemonadeberry), and *Salvia mellifera* (black sage).

Other associated shrubs in this community are *Acmispon glaber* (California broom), *Brickellia californica* (California brickellbush), *Diplacus longiflorus* (southern bush monkeyflower; Fig. 7E), *Ribes malvaceum* var. *viridifolium* (chaparral currant), *R. speciosum* (fuschia-flowered gooseberry), and *Senecio flaccidus* var. *douglasii* (Douglas' ragwort), and *Lonicera subspicata* var. *denudata* (Santa Barbara honeysuckle).

Common perennials include *Calystegia macrostegia* subsp. *intermedia* (island false bindweed), *Cirsium occidentale* var. *occidentale* (cobwebby thistle), *Dichelostemma capitatum* (blue dicks), *Marah macrocarpa* (Cucamonga manroot), *Melica imperfecta* (smallflower melicgrass), *Paeonia californica* (California peony), *Pseudognaphalium californicum* (ladies' tobacco), *P. microcephalum* (Wright's cudweed), *Silene laciniata* subsp. *laciniata* (cardinal catchfly), *Solanum douglasii* (greenspot nightshade), and *Stipa* spp. (needlegrass).

Common annuals include *Claytonia* spp. (springbeauty), *Cryptantha* spp. (cryptantha), *Eulobus californicus* (California suncup), and *Lupinus bicolor* (miniature lupine).

**California Walnut Woodland.** Within the mixed chaparral/southern coastal scrub are small patches of California walnut woodland (CNDDDB 2012) composed of *Juglans californica* (southern California black walnut) and located along upper slopes along the main east to west ridgeline in the Verdugo Mountains or along canyon bottoms (Swift 1992).

California walnut woodland is associated with *Fraxinus dipetala* (California ash), *Quercus agrifolia* (coast live oak), *Sambucus nigra* subsp. *caerulea* (blue elderberry), and *Umbellularia californica* (California bay). This community is located at the northwest end of the Verdugo Mountains in southwest-facing drainages of McDonald Creek and La Tuna Canyon.

Hybridization between walnuts occurs regularly, especially between black walnuts and English walnut (*J. regia*; Smith et al. 1912), and potential hybridization with cultivated walnuts is a threat to *J. californica* (CNPS 2014). Nuts were produced in the southwestern part of Rancho San Rafael in the early 1900s and northern California black walnut (*J. hindsii*) is the preferred rootstock for the cultivated *J. regia* (Smith et al. 1912; Batchelor and Braucher 1929; Perry and Parcher 1974). Isolated occurrences of northern California black walnut (*J. hindsii*) are found in Pasadena (Smith et al. 1912) and La Tuna Canyon (L. Gross & V. Soza 916 RSA), but these appear to be introduced. Despite proximity to cultivated and introduced walnuts, no specimens of *J. regia* or hybrids between *J. californica* and *J. regia* or *J. hindsii* have been documented from the study area (CCH 2014). Furthermore, upon examination of *J. californica* herbarium specimens from the study area, we did not find any evidence of hybridization between this and other walnuts, making these California walnut woodlands high priority for conservation.

**Riparian Communities.** Riparian communities are generally associated with watercourses and dominated by deciduous trees. Riparian communities within the

study area are more generally classified as valley and foothill riparian communities (Holland and Keil 1995), and more specifically as California sycamore or mixed riparian woodlands (CNDDDB 2012). Within the study area, riparian woodlands occur in canyon bottoms with increased water availability and permanent or seasonal surface water. Riparian woodlands have the highest value to wildlife as an available surface water source but have been rapidly lost as habitat due to development (Koploy et al. 1979; Swift 1992; Tierney 1997). In southern California, only 3–5% of the pre-settlement riparian woodlands remain (DePuydt 1996).

**California Sycamore Woodland.** Most of the riparian woodlands in the study area are California sycamore woodlands. Remnants of California sycamore woodlands are located in Dead Horse, Engleheard, Henderson, Pomeroy, Wildwood, Sheep Corral, Stough, and Sunset Canyons, Deer Creek, La Crescenta Park, and side canyons off La Tuna Canyon in the Verdugo Mountains, as well as Sycamore Canyon in San Rafael Hills (Koploy et al. 1979; Swift 1992). The Verdugo Mountains contain five drainages with permanent water sources: Brand, Engleheard, Henderson, and Pomeroy Canyons, and Deer Creek. In the San Rafael Hills, only Sycamore Canyon and a series of drainages off Cascadia Drive hold permanent water sources (Swift 1992).

California sycamore woodlands in the study area are composed of a dominant overstory of *Platanus racemosa* (California sycamore), *Quercus agrifolia* (coast live oak), and *Umbellularia californica* (California bay). Other associated trees that occur at the western end of the Verdugo Mountains in La Tuna Canyon are *Alnus rhombifolia* (white alder), *Fraxinus dipetala* (California ash), and *Populus fremontii* (Fremont cottonwood).

Shrubs commonly occurring in these communities are *Baccharis salicifolia* (mule fat), *Ribes aureum* var. *gracillimum* (golden currant), *Rubus ursinus* (California blackberry), *Salix lasiolepis* (arroyo willow) and other *Salix* spp. (willows), *Sambucus nigra* subsp. *caerulea* (blue elderberry), and *Toxicodendron diversilobum* (western poison oak). Additionally, *Symphoricarpos mollis* (creeping snowberry) occurs in north-facing canyons of La Tuna Canyon, and *Venegasia carpesioides* (canyon sunflower) in south-facing canyons at the eastern end of the Verdugo Mountains.

Common perennial herbs include *Artemisia douglasiana* (mugwort), *A. dracunculus* (tarragon), *Aspidotis californica* (California lacefern), *Dryopteris arguta* (coastal woodfern), *Dudleya lanceolata* (lanceleaf liveforever), *Elymus condensatus* (giant wildrye), *Juncus* spp. (rushes), *Pellaea andromedifolia* (coffee fern), *Pentagramma triangularis* (goldback fern), *Polypodium californicum* (California

polypody), and *Solanum douglasii* (greenspot nightshade). Additionally, *Scrophularia californica* (California figwort) occurs at the eastern end of the Verdugo Mountains, *Lilium humboldtii* subsp. *ocellatum* (ocellated lily) is common in north-facing canyons. *Carex spissa* (San Diego sedge), *Equisetum hyemale* subsp. *affine* (common scouring rush), and *Pteridium aquilinum* var. *pubescens* (hairy brackenfern) occur in south-facing canyons at the eastern end of the Verdugo Mountains.

**Mixed Riparian Woodland.** West-facing upper canyons in the San Rafael Hills are associated with a mixed riparian woodland of *Populus* spp. (cottonwoods), *Salix* spp. (willows), and *Umbellularia californica* (California bay). Common shrubs in this community are *Baccharis salicifolia* (mule fat) and *Rubus ursinus* (California blackberry). Associated common perennials include *Artemisia douglasiana* (mugwort), *Erythranthe cardinalis* (scarlet monkeyflower), and *Typha latifolia* (broad-leaved cattail). Remnant stands of *Rosa californica* (California rose) and *Typha* spp. (cattails) also persist in Sycamore Canyon (Swift 1992).

**Grassland.** Grassland communities are rare in the study area. We located several small, relatively undisturbed grasslands at the very northern end of the Verdugo Mountains (Fig. 6B). These grasslands should have high priority for conservation efforts.

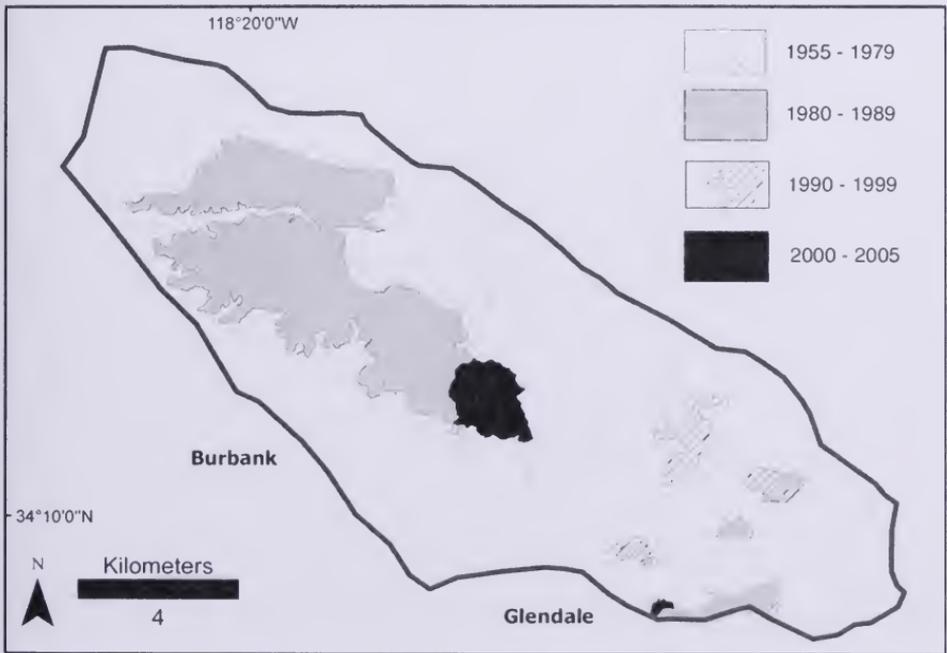
The largest of these grasslands is southeast of Green Verdugo Reservoir at approximately 457 m (1500 ft) elevation and is surrounded by southern coastal scrub (Fig. 6B). This grassland is valley and southern coastal grassland (Holland and Keil 1995) and is characterized by non-native grasses, such as annual *Bromus* species. Perennial herbs associated with this community include *Dichelostemma capitatum* (blue dicks), *Sanicula arguta* (sharptooth blacksnakeroot; Fig. 8A), *S. crassicaulis* (Pacific blacksnakeroot), *Scutellaria tuberosa* (Danny's skullcap; Fig. 8B), *Sisyrinchium bellum* (blue-eyed-grass), and *Toxicoscordion fremontii* (Fremont's deathcamas). Associated annual herbs include *Acmispon strigosus* (strigose bird's-foot trefoil), *Apiastrum angustifolium* (mock parsley), *Calandrinia ciliata* (red maids), *Claytonia parviflora* subsp. *parviflora* (streambank spring-beauty), *Cryptantha micromeres* (pygmyflower cryptantha), *C. microstachys* (Tejon cryptantha), *Deinandra fasciculata* (clustered tarweed), and *Pectocarya linearis* subsp. *ferocula* (sagebrush combseed).

Another, smaller grassland at the northern end of the Verdugo Mountains is located on north-facing, shallow, rocky slopes of volcanic origin, with small patches of open meadows on clay soil, below 549 m (1800 ft). This grassland is a small patch of what might be considered native bunchgrass grassland (Holland and Keil

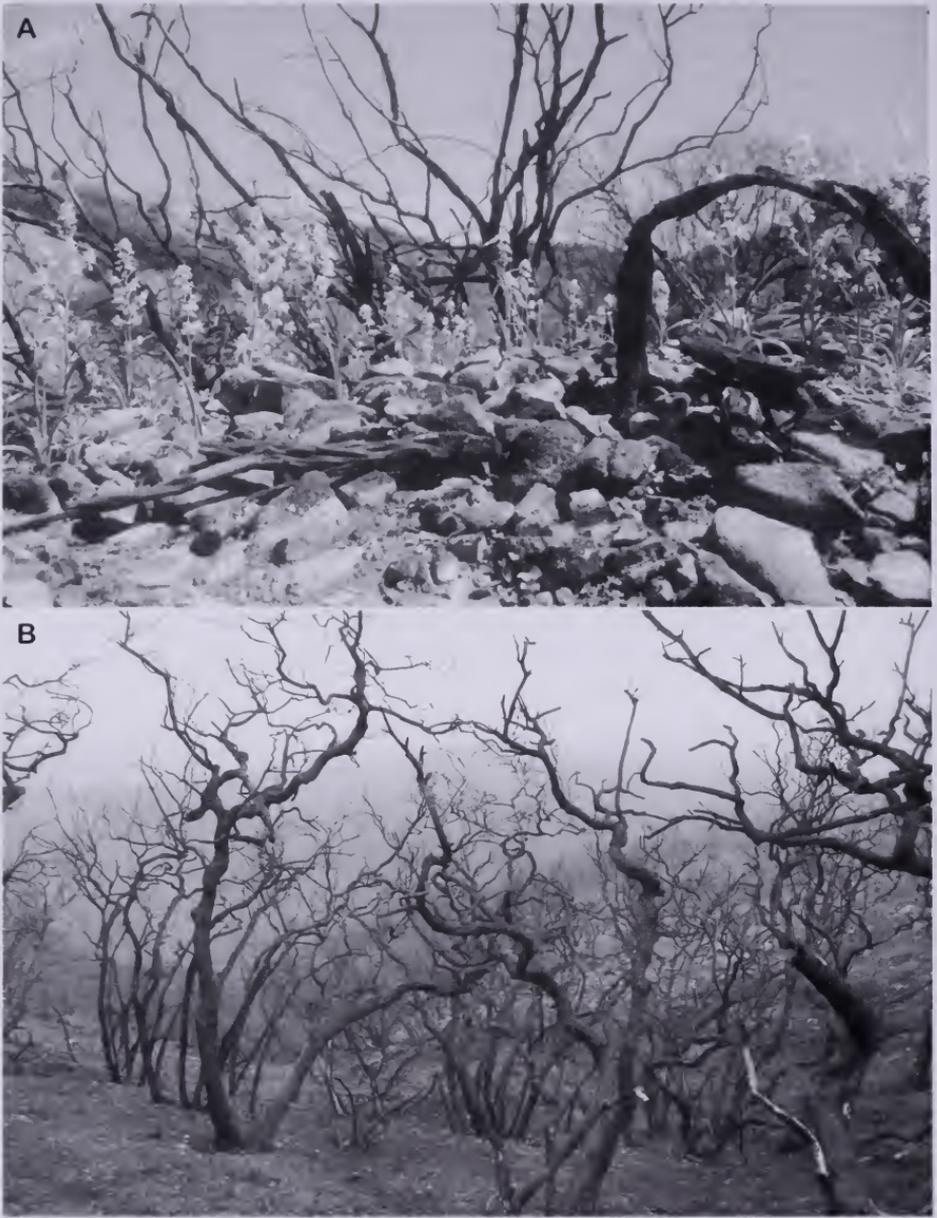
1995). Perennial herbs associated with this community are *Allium haematochiton* (redskin onion), *Bloomeria crocea* (common goldenstar), *Calochortus clavatus* var. *gracilis* (slender mariposa lily; Fig. 8C), *C. venustus* (butterfly mariposa lily; Fig. 8D), *Chlorogalum pomeridianum* var. *pomeridianum* (wavyleaf soap plant), *Cirsium occidentale* var. *californicum* (cobwebby thistle), *Delphinium parryi* (Parry's larkspur), *Dudleya lanceolata* (lanceleaf liveforever), *Epilobium canum* subsp. *canum* (California fuschia), *Fritillaria biflora* (chocolate lily), *Sisyrinchium bellum* (blue-eyed-grass), *Stipa lepida* (foothill needlegrass), and *S. pulchra* (purple needlegrass). Associated annuals include *Apiastrum angustifolium* (mock parsley), *Deinandra fasciculata* (clustered tarweed), and *Rafinesquia californica* (California chicory).

### Fire History and Fire Followers

Recent fires have occurred in the study area prior to and during our study. In the San Rafael Hills a fire occurred in December 1999, prior to our study, due to a faulty power pole transformer near the mouth of Cherry Canyon (Fig. 9; McKin-



**Figure 9:** Map of fire history in the Verdugo Mountains and San Rafael Hills. Fires greater than 5 acres between 2000 and 2005 are represented by black polygons, 1980 and 1989 are grey, fires between 1990 and 1999 are represented by transparent polygons with a black cross hatch, and historic fires that burned before 1980 are represented by white polygons. GIS layers provided by Bill A'Hearn and Doug Nickles (City of Glendale).



**Figure 10:** Recent fires within the Verdugo Mountains. A) Verdugo Mountains 1999 fire with *Toxicoscordion fremontii* in the foreground, B) Verdugo Mountains 2005 Harvard Fire.

ney 2000). In the Verdugo Mountains, several fires occurred prior to and during our study in 1999, 2002, 2003, and 2005 (Figs. 9-10; Table 2). The Los Angeles County Fire Department's Information Management Division Services Bureau has recorded fire history within the Verdugo Mountains and San Rafael Hills for fires greater than five acres since 1955 (Fig. 9, Table 2; pers. comm., T. Smith, Los Angeles County Fire Department). Based on records from the last approximately 50 years, the Verdugo Mountains average 1.1 fires every 3.6 years, each fire aver-

**Table 2:** Fire history within the Verdugo Mountains and San Rafael Hills for fires greater than five acres between 1955 and 2005, provided by Los Angeles County Fire Department's Information Management Division Services Bureau, unless otherwise noted below.

<i>Year</i>	<i>Name</i>	<i>Acreage</i>	<i>Region</i>
1955	La Tuna Fire	4306	Verdugo Mountains
1956	-	54	Verdugo Mountains
1957	-	100	Verdugo Mountains
1959	-	66	San Rafael Hills
1960	Verdugo Fire	660	Verdugo Mountains
1962	Allen Fire	250	Verdugo Mountains
1964	-	900	Verdugo Mountains
1964	Whiting Woods Fire	6950	Verdugo Mountains
1964	Chevy Chase Fire	2315	San Rafael Hills
1969	Sugarloaf Fire	121	Verdugo Mountains
1970	Brand Park Fire	45	Verdugo Mountains
1970	Scholl Fire	6	San Rafael Hills
1970	Chevy Chase Fire	27	San Rafael Hills
1971	-	16	San Rafael Hills
1972	-	19	Verdugo Mountains
1974	-	14	San Rafael Hills
1975	-	23	Verdugo Mountains
1977	-	423	Verdugo Mountains
1980	Sunland Fire	6400	Verdugo Mountains
1986	Flintridge Fire	90	San Rafael Hills
1986	Flint Peak Fire	75	San Rafael Hills
1988	Glen Oaks Canyon Fire	350	San Rafael Hills
1990	Glendale Fire	109	San Rafael Hills
1999	San Rafael Fire	486	San Rafael Hills <sup>a</sup>
1999	-	<5	Verdugo Mountains
2002	Mountain Fire	750	Verdugo Mountains
2003	Country Club Fire	100	Verdugo Mountains <sup>b</sup>
2005	Harvard (Castaway) Fire	840	Verdugo Mountains <sup>a</sup>

<sup>a</sup> pers. comm., D. Nickles, City of Glendale, California. <sup>b</sup> Sahagun et al. 2003



**Figure 11.** First year fire followers in the Verdugo Mountains and San Rafael Hills. A) resprouting *Adenostoma fasciculatum* and *Calystegia macrostegia* subsp. *intermedia*, B) resprouting *Heteromeles arbutifolia*, C) *Phacelia brachyloba*, D) *P. grandiflora*, E) *Tauschia arguta*, F) *Navarretia hamata*.

aging 555 ha (1,371 acres; Table 2, Fig. 9). The San Rafael Hills average 1.2 fires every 5 years, each fire averaging 131 ha (323 acres; Table 2, Fig. 9).

Several recent fires in the Verdugo Mountains and San Rafael Hills, prior to and during our study, enabled us to perform post-fire surveys to document fire followers and their duration in the range. In the Verdugo Mountains, a fire burned

in chaparral along the northeast side of the Verdugo Mountains in 1999 on the north side of La Tuna Canyon (Figs. 9-10A). We conducted surveys eight to nine months later in April and May 2000 (Fig. 11). The Mountain Fire also occurred in 2002 in coastal scrub along the southern side of the Verdugo Mountains in the vicinity of Brand Canyon (Fig. 9). We conducted surveys five to six months later in February and March 2003 (Fig. 11). In the San Rafael Hills, the San Rafael Fire of 1999 burned the northwestern portion of the hills (Fig. 9). We conducted surveys four months later in April 2000 and again in May 2001 on west-facing slopes and canyons (Fig. 11). In the fourth year following fires, we revisited burn areas to document duration of fire followers. Our observations on common, native fire followers during these surveys are summarized in Appendix 1.

**Flora**

We have confirmed 585 established taxa, 422 natives and 163 non-natives, from the study area (Appendix 3, Table 3). 28% of the flora is non-native, which is comparable to the Santa Monica Mountains with 27% of its flora represented by introduced species (Raven et al. 1986). The dominant vascular plant groups in the study area are angiosperms (570 taxa), followed by ferns (13 taxa), then gymnosperms (1 taxon) and lycophytes (1 taxon). The Verdugo Mountains and San Rafael Hills also support a diverse array of plant life forms, but the most species-rich are annual and perennial herbs with 240 (41%) and 221 (38%) taxa, respectively. The study area also supports a variety of shrubs (92 taxa, 16%), trees (27 taxa, 5%), and lianas (5 taxa, 1%).

**Table 3.** Floristic diversity in the Verdugo Mountains and San Rafael Hills.

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<b>Total Number of Taxa</b> .....	<b>585</b>
Native .....	422
Non-native .....	163
<b>Vascular Plant Group</b>	
Lycophyte .....	1
Fern .....	13
Gymnosperm .....	1
Angiosperm .....	570
<b>Life Form</b>	
Annual .....	240
Perennial herb .....	221
Liana .....	5
Shrub .....	92
Tree .....	27

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Of the 422 native taxa documented from the study area, 393 (93%) are shared with the San Gabriel Mountains, 352 (83%) are shared with the Santa Monica Mountains, and 335 (79%) are shared among all three ranges. Therefore, the study area appears to share closest affinity with the San Gabriel Mountains but is an important phylogeographic link between the San Gabriel and Santa Monica Mountains.

Twelve taxa in the study area do not occur in the San Gabriel or Santa Monica Mountains: *Aristida purpurea* var. *parishii* (Parish three-awn), *Ceanothus crassifolius* x *C. megacarpus* var. *megacarpus* (hoaryleaf ceanothus-bigpod ceanothus hybrid), *Chaenactis glabriuscula* var. *lanosa* (yellow pincushion), *Malacothrix californica* (California desertdandelion), *Piperia michaelii* (Michael's piperia), *Poa fendleriana* subsp. *longiligula* (longtongue mutton grass), *Sagina decumbens* subsp. *occidentalis* (western pearlwort), *Sagittaria latifolia* (broadleaf arrowhead), *Solidago velutina* subsp. *californica* x *S. confinis* (California goldenrod-southern goldenrod hybrid), *Sparganium eurycarpum* var. *greenii* (simplestem bur-reed), *Xylococcus bicolor* (mission manzanita), and *Verbena scabra* (sandpaper vervain). Ten are documented only by historic collections, but two are documented by recent collections (*Aristida purpurea* var. *parishii*, *Xylococcus bicolor*). *Aristida purpurea* var. *parishii* and *Xylococcus bicolor* do not occur in the western Transverse Ranges, but do occur in the South Coast subregion of the California Floristic Province (Baldwin et al. 2012).

During our herbaria searches and surveys in and around the study area, we also documented questionable taxa that might occur within the study area. These taxa, listed in Appendix 2, included non-natives that were not naturalized, historic taxa that were documented by single or vague records, and taxa occurring just outside the study area with potential habitat located within the study area. These questionable taxa could potentially add another 248 taxa to the study area, comprising 129 natives and 119 non-natives.

### Rare Taxa

Four CNPS Rare Plant Rank (RPR) 1B taxa have been reported from the study area (Table 4). RPR 1B taxa are designated as rare, threatened, or endangered in California and elsewhere (CNPS 2014). Three of these taxa were previously reported in the study area: *Malacothammus davidsonii* (Davidson's bush mallow) along the southern side of the range from Jeffries Canyon to Brace Canyon (Envicom 1987; Bramlet 1988; Tierney 1997; Stavro 1998), *Symphylotrichum greatae* (Greata's aster) from the Verdugo Mountains, likely from oak woodland (Swift 1992), and *Horkelia cuneata* var. *puberula* (wedgeloaf horkelia) from several historic collections. However, we were only able to relocate one of these taxa, *M. davidsonii*, over the course of the study (Table 4). We documented for the first time

**Table 4.** Rare taxa occurring or with the potential to occur in the Verdugo Mountains and San Rafael Hills, as determined by herbarium specimens (Appendix 2 - 3; CCH 2014), the California Native Plant Society (CNPS 2014), or the Los Angeles County Department of Regional Planning (LACDRP 2009). CNPS Rare Plant Ranks: 1A = plants presumed extirpated in California and either rare or extinct elsewhere; 1B = plants rare, threatened, or endangered in California and elsewhere; 2B = plants rare, threatened, or endangered in California, but more common elsewhere; 3 = plants about which more information is needed – a review list; 4 = plants of limited distribution - a watchlist. Threat Ranks: 0.1 = seriously threatened in California; 0.2 = moderately threatened in California; 0.3 = not very threatened in California (CNPS 2014).

Taxa	Rare Plant Rank	Historic collections in study area	Recent collections in study area	Collections just outside study area
		(before 1935)	(present study)	
<i>Asplenium vespertinum</i> Maxon	4.2			X
<i>Berberis nevinii</i>	1B.1			X
<i>Calandrinia breweri</i>	4.2	X	X	
<i>Calochortus clavatus</i> var. <i>gracilis</i>	1B.2		X	
<i>Calochortus plummerae</i>	4.2	X	X	
<i>Camissoniopsis lewisii</i> (P.H. Raven) W.L. Wagner & Hoch	3			X
<i>Centromadia parryi</i> subsp. <i>australis</i>	1B.1			X
<i>Chorizanthe parryi</i> var. <i>fernandina</i>	1B.1			X
<i>Chorizanthe parryi</i> var. <i>parryi</i>	1B.1			X
<i>Cladium californicum</i> (S. Watson) O'Neil	2B.2			X
<i>Clinopodium mimuloides</i> (Benth.) Kuntze	4.2			X
<i>Dodecahema leptoceras</i>	1B.1			X
<i>Harpagonella palmeri</i>	4.2			X
<i>Horkelia cuneata</i> var. <i>puberula</i>	1B.1	X		
<i>Imperata brevifolia</i> Vasey	2B.1			X
<i>Juncus acutus</i> var. <i>sphaerocarpus</i>	4.2			X
<i>Juglans californica</i>	4.2	X	X	
<i>Lepechinia fragrans</i> (Greene) Epling	4.2			X

Taxa	Rare Plant Rank	Historic collections in study area	Recent collections in study area	Collections just outside study area
		(before 1935)	(present study)	
<i>Lilium humboldtii</i> subsp. <i>ocellatum</i>	4.2	X	X	
<i>Malacothamnus davidsonii</i>	1B.2	X	X	
<i>Mucronea californica</i>	4.2			X
<i>Phacelia hubbyi</i> (J.F. Macbr.) Garrison	4.2			X
<i>Piperia cooperi</i>	4.2	X		
<i>Piperia michaelii</i>	4.2	X		
<i>Pseudognaphalium leucocephalum</i>	2B.2	X		
<i>Quercus durata</i> var. <i>gabrielensis</i>	4.2	X	X	
<i>Quercus engelmannii</i>	4.2			X
<i>Ribes divaricatum</i> var. <i>parishii</i>	1A			X
<i>Symphyotrichum greatae</i>	1B.3	X		
<i>Thelypteris puberula</i> (Baker) C.V. Morton var. <i>sonorensis</i> A.R. Sm.	2B.2			X

the fourth RPR 1B taxon, *Calochortus clavatus* var. *gracilis* (slender mariposa lily), from the northern side of the Verdugo Mountains (Table 4).

One CNPS RPR 2 taxon, *Pseudognaphalium leucocephalum* (white cudweed), has been reported from the study area. RPR 2 taxa are designated as rare, threatened, or endangered in California, but more common elsewhere (CNPS 2014). This taxon was historically collected from the study area but was not confirmed during our study (Table 4).

Seven CNPS RPR 4 taxa have been reported from the study area. RPR 4 taxa are designated with limited distribution and are on the Watch List (CNPS 2014). We were able to confirm the occurrence of five CNPS RPR 4 taxa in the study area.

We also used historic collections (CCH 2014) and reports (LACDRP 2009; CNPS 2014) from just outside the study area to identify 18 additional rare taxa that have the potential to occur in the study area.

## Non-native Taxa

Because the Verdugo Mountains and San Rafael Hills are surrounded by the greater Los Angeles area, a variety of non-native taxa have been introduced to the study area. We found evidence for 163 non-native taxa naturalizing in the study area (Table 4, Appendix 3), as well as taxa that have been introduced at the urban-wildland interface, but which are not apparently naturalizing (Appendix 2). We have documented naturalizing, non-native taxa commonly observed in different vegetation types below. Despite the presence of non-native taxa, different vegetation types within the study area remain relatively intact.

**Southern Coastal Scrub.** Non-native taxa commonly occurring in southern coastal scrub of the study area include *Avena barbata* (slender wild oat), *Bromus diandrus* (ripgut grass), *B. madritensis* (foxtail chess), *Centaurea melitensis* (to-calote), *Erodium cicutarium* (redstem stork's bill), *Hirschfeldia incana* (shortpod mustard), *Logfia gallica* (narrowleaf cottonrose), *Pennisetum setaceum* (crimson fountaingrass), and *Schismus barbatus* (common Mediterranean grass).

**Chaparral.** Non-natives commonly occurring in chaparral of the study area, usually along fire roads and trails, include *Anthriscus caucalis* (bur-chervil), *Avena barbata* (slender wild oat), *A. fatua* (wild oat), *Bromus diandrus* (ripgut grass), *B. hordeaceus* (soft brome), *B. madritensis* (foxtail chess), *Carduus pycnocephalus* (Italian thistle), *Centaurea melitensis* (to-calote), *Cotula australis* (Australian waterbuttons), *Erodium botrys* (longbeak stork's bill), *E. cicutarium* (redstem stork's bill), *Festuca myuros* (rat-tail fescue), *F. perennis* (Italian ryegrass), *Galium aparine* (goose grass), *Hirschfeldia incana* (shortpod mustard), *Hordeum murinum* subsp. *glaucum* (smooth barley), *Hypochaeris glabra* (smooth cat's-ear), *Logfia gallica* (narrowleaf cottonrose), *Melilotus indicus* (sourclover), *Pseudognaphalium luteoalbum* (Jersey cudweed), *Schismus barbatus* (common Mediterranean grass), *Sisymbrium orientale* (Indian hedgemustard), and *Sonchus oleraceus* (common sow thistle).

**Riparian Communities.** Non-natives commonly occurring in riparian woodlands of the study area include *Ageratina adenophora* (sticky snakeroot), *Ailanthus altissima* (tree of heaven), *Anthriscus caucalis* (bur-chervil), *Bromus diandrus* (ripgut grass), *Galium aparine* (goose grass), *Marrubium vulgare* (horehound), *Nicotiana glauca* (tree tobacco), *Ricinus communis* (castor bean), *Sisymbrium orientale* (Indian hedgemustard), *Spartium juncinum* (Spanish broom), *Stellaria media* (common chickweed), *Stipa miliacea* (smilo grass), and *Vinca major* (greater periwinkle).

**Fire Followers.** Many of the non-native taxa mentioned above in various plant communities also appear to germinate and establish readily after fire. Common non-natives following fires within the first year in the study area are *Ageratina adenophora* (sticky snakeroot), *Anthriscus caucalis* (bur-chervil), *Arabidopsis thaliana* (mouse-ear cress), *Avena barbata* (slender wild oat), *A. sativa* (cultivated oat), *Bromus diandrus* (ripgut grass), *B. madritensis* (foxtail chess), *Centaurea melitensis* (tocalote), *Cerastium glomeratum* (mouse-ear chickweed), *Conyza* spp. (horseweed), *Erodium cicutarium* (redstem stork's bill), *Festuca myuros* (rat-tail fescue), *Galium aparine* (goose grass), *Hirschfeldia incana* (shortpod mustard), *Lactuca serriola* (prickly lettuce), *Logfia gallica* (narrowleaf cottonrose), *Malva* spp. (mallow), *Nicotiana glauca* (tree tobacco), *Ricinus communis* (castor bean), *Schismus barbatus* (common Mediterranean grass), *Sisymbrium orientale* (Indian hedgemustard), *Sonchus oleraceus* (common sow thistle), *Spartium junceum* (Spanish broom), *Spergularia bocconii* (Boccone's sandspurry), and *Stellaria media* (common chickweed).

**Horticultural Introductions.** In addition to voluntary non-native taxa, a number of horticultural introductions have become naturalized in the study area due to its cultural history and/or proximity to urbanization. The Campbell-Johnston family, who farmed near the study area in 1883, introduced many imported trees and plants into the San Rafael area, especially Australian species like *Eucalyptus* spp. (gum tree, Appendix 2). Theodore Payne also introduced many horticultural selections and hybrids of native plants into the area (Crocker 1969), such as *Berberis nevadensis* (Nevin's barberry, Appendix 2).

## CONCLUSIONS

The Verdugo Mountains and San Rafael Hills are an important link between the San Gabriel and Santa Monica Mountains. Despite increasing urbanization from the greater Los Angeles area surrounding the base of the range, the study area has maintained relatively undisturbed communities of coastal scrub, chaparral, woodlands, riparian areas, and grasslands due to the conservation efforts by local communities and organizations. We hope that our efforts at documenting native, non-native, and fire-following vascular plant taxa from the study area and describing its plant communities will aid in understanding the natural history of the area and in future conservation efforts. The communities of California walnut woodland, California sycamore woodland, mixed riparian woodland, and grassland support a unique assemblage of vascular plants for the study area, a variety of sensitive species, and important habitats for wildlife that should have high priority for conservation in the study area.

**ACKNOWLEDGEMENTS:** We would like to thank all the volunteers and RSA staff and interns that assisted with field surveys and herbarium searches: Ileene Anderson, Susan Caplow, Michael Denslow, Shalini Deo, Stephen Dreher, Eileen Edwards, Neil Gilbert, Bill Hogshead, Michael Honer, Ruby Kopelov, Steve Larson, Wayne Law, Leland Lubinsky, Laura Moore, Adelina Munoz, Bart O'Brien, Miriam Sidibeh, Marisa Sripracha, Sarah Swartzentruber, Samantha Tessel, Christopher Vellema, Aydee Virgen, Molly Ward, and Deborah Ziegylbaum. Steve Larson, Timothy Smith (Los Angeles County Fire Department), Bill A'Hearn and Doug Nickles (City of Glendale), and the Pasadena Fire Department provided information on fire history within the study area. Jan Bartolo and Nello Iacono (Burbank Park and Recreation Department), Captain Eric Indermill (Glendale Fire Department), Gabriel León (Camp Max Straus), and Rorie Skei (Santa Monica Mountains Conservancy) assisted us with access into the study area. Ron Harlan and Joseph Keefe (Glendale Community College), C. Eugene Jones and Frances Shropshire (California State University, Fullerton), Michael Long (Eaton Canyon Nature Center), Gretchen North (Occidental College), and James Hogue (California State University, Northridge) allowed access to herbarium collections from the range. David Bobart (City of Glendale, Planning Department), Fred Dong (Volunteers Organized in Conserving the Environment), and Gary Wallace provided useful information on contacts and previous botanical reports from the range. Delphine Trowbridge and The Sierra Club, Verdugo Hills Group, provided funding for the project.

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## APPENDIX 1 - FIRE FOLLOWERS

Scientific Name	Habitat	Verdugo Mountains		San Rafael Hills	
		Year 1	Year 4	Years 1-2	Year 4
<b>SHRUBS / TREES (Resprouting)</b>					
<i>Acmispon glaber</i>	W-facing slopes	X	X	X	X
<i>Adenostoma fasciculatum</i>	S- and W-facing slopes and ridgetops	X	X	X	X
<i>Arctostaphylos glandulosa</i>	crest of range	X			
<i>Artemisia californica</i>	S- and W-facing slopes, ridgetops, and drainages	X	X	X	X
<i>Baccharis salicifolia</i>	SW-facing canyons	X			
<i>Brickellia californica</i>	W-facing slopes and ridgetops	X	X	X	
<i>B. nevinii</i>	slopes	X			
<i>Ceanothus crassifolius</i>	W-facing slopes	X seedlings	X		X
<i>Cercocarpus betuloides</i>	SW-facing canyons	X	X	X	X
<i>Diplacus longiflorus</i>	S- and W-facing slopes, ridgetops, and drainages	X	X	X	X
<i>Encelia farinosa</i>	SW-facing ridges	X seedlings			
<i>Eriodictyon crassifolium</i> var. <i>nigrescens</i>	slopes and ridgetops	X	X		
<i>Eriogonum fasciculatum</i>	S- and W-facing slopes and ridgetops	X seedlings	X	X	X
<i>Garrya veatchii</i>	crest of range	X			
<i>Hazardia squarrosa</i>	S- and W-facing slopes and ridgetops	X	X	X	X
<i>Hesperoyucca whipplei</i>	S- and W-facing slopes and ridgetops	X	X	X	X
<i>Heteromeles arbutifolia</i>	S- and W-facing slopes and ridgetops	X	X	X	X
<i>Juglans californica</i>		X seedlings			
<i>Keckiella cordifolia</i>	SW-facing canyons	X	X	X	
<i>Lepidospartum latisquamum</i>	slopes	X			
<i>Malosma laurina</i>	S- and W-facing slopes and ridgetops	X	X	X	X
<i>Pinus</i> sp.		X			
<i>Platanus racemosa</i>	SW-facing canyons	X			X

APPENDIX 1 - FIRE FOLLOWERS					
Scientific Name	Habitat	Verdugo Mountains		San Rafael Hills	
		Year 1	Year 4	Years 1-2	Year 4
<i>Prunus ilicifolia</i>	S- and W-facing slopes and ridgetops	X	X		X
<i>Quercus</i> spp.	S- and W-facing slopes and ridgetops	X		X	X
<i>Q. agrifolia</i>	SW-facing canyons	X	X		
<i>Q. berberidifolia</i>	W-facing slopes		X		
<i>Q. durata</i> var. <i>gabrielensis</i>	W-facing slopes		X		
<i>Rhamnus ilicifolia</i>	SW-facing canyons	X			
<i>Rhus integrifolia</i>	W-facing slopes		X		X
<i>R. ovata</i>	S- and W-facing slopes and ridgetops	X			
<i>Ribes aureum</i> var. <i>gracillimum</i>	SW-facing canyons	X	X		
<i>R. malvaceum</i> var. <i>viridifolium</i>	W-facing slopes				X
<i>Rubus ursinus</i>	SW-facing canyons	X			
<i>Salix</i> spp.	SW-facing canyons	X			
<i>Salvia apiana</i>	S- and W-facing slopes and ridgetops	X			
<i>S. mellifera</i>	S- and W-facing slopes and ridgetops	X seedlings	X	X	X
<i>Sambucus nigra</i> subsp. <i>caerulea</i>	SW-facing canyons	X	X	X	X
<i>Senecio flaccidus</i>	W-facing slopes	X	X		
<i>Toxicodendron diversilobum</i>	SW-facing canyons and W-facing slopes	X	X	X	X
<i>Umbellularia californica</i>	SW-facing canyons	X			
<i>Venegasia carpesioides</i>	SW-facing canyons	X			
<i>Xylococcus bicolor</i>	slopes	X	X		
<b>PERENNIALS</b>					
<i>Acourtia microcephala</i>	W-facing slopes			X	
<i>Artemisia douglasiana</i>	SW-facing drainages	X			
<i>Aspidotis californica</i>	SW-facing canyons	X			
<i>Calochortus plummerae</i>	slopes	X			

## APPENDIX 1 - FIRE FOLLOWERS

Scientific Name	Habitat	Verdugo Mountains		San Rafael Hills	
		Year 1	Year 4	Years 1-2	Year 4
<i>Calystegia macrostegia</i> subsp. <i>intermedia</i>	S- and W-facing slopes and ridgetops	X	X	X	
<i>Carex spissa</i>	SW-facing canyons	X			
<i>Chamaesyce melanadenia</i>	W-facing slopes	X	X		
<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	W-facing slopes			X	
<i>Cirsium occidentale</i>	S- and W-facing slopes and ridgetops	X		X	X
<i>Corethrogyne filaginifolia</i>	SW-facing drainages, ridgetops, and W-facing slopes	X	X	X	
<i>Delphinium cardinale</i>	W-facing slopes	X	X	X	
<i>Dichelostemma capitatum</i>	S- and W-facing slopes and ridgetops	X		X	X
<i>Dryopteris arguta</i>	SW-facing canyons	X			
<i>Elymus condensatus</i>	SW-facing canyons	X			
<i>Equisetum hyemale</i> subsp. <i>affine</i>	SW-facing canyons	X			
<i>Erigeron foliosus</i> var. <i>foliosus</i>	slopes	X			
<i>Eriogonum elongatum</i>	W-facing slopes	X	X		
<i>Eriophyllum confertiflorum</i>	W-facing slopes		X	X	X
<i>Galium angustifolium</i>	slopes and canyons	X	X		
<i>Helianthemum scoparium</i>	W-facing slopes		X	X	X
<i>Helianthus gracilentus</i>	slopes and ridgetops	X	X		
<i>Heterotheca sessiliflora</i> subsp. <i>fastigiata</i>	W-facing slopes and canyons			X	
<i>Juncus textilis</i>	SW-facing drainages	X		X	
<i>Lathyrus vestitus</i>	S- and W-facing slopes and ridgetops	X	X		
<i>Lonicera subspicata</i> var. <i>denudata</i>	S- and W-facing slopes and ridgetops	X	X	X	
<i>Malacothrix saxatilis</i>	W-facing slopes	X	X	X	X

APPENDIX 1 - FIRE FOLLOWERS					
Scientific Name	Habitat	Verdugo Mountains		San Rafael Hills	
		Year 1	Year 4	Years 1-2	Year 4
<i>Marah macrocarpa</i>	S- and W-facing slopes and ridgetops	X	X	X	X
<i>Melica imperfecta</i>	S- and W-facing slopes and ridgetops	X	X		X
<i>Mirabilis laevis</i> var. <i>crassifolia</i>	S- and W-facing slopes	X	X		
<i>Muilla maritima</i>	SW-facing, gentle slopes and ridgetops	X			
<i>Paeonia californica</i>	W-facing slopes			X	
<i>Pellaea andromedifolia</i>	SW-facing canyons	X			
<i>P. mucronata</i>	S- and W-facing slopes and ridgetops	X			
<i>Pentagramma triangularis</i>	slopes	X	X		
<i>Polypodium californicum</i>	SW-facing canyons	X			
<i>Pseudognaphalium biolettii</i>	W-facing slopes		X	X	
<i>P. californicum</i>	W-facing slopes		X	X	
<i>P. microcephalum</i>	W-facing slopes		X		
<i>Pteridium aquilinum</i> var. <i>pubescens</i>	SW-facing canyons	X			
<i>Scrophularia californica</i>	SW-facing canyons			X	
<i>Scutellaria tuberosa</i>	W-facing slopes			X	
<i>Silene laciniata</i> subsp. <i>laciniata</i>	SW-facing drainages	X			
<i>Solanum douglasii</i>	SW-facing canyons and W-facing slopes	X	X		X
<i>Stephanomeria cichoriacea</i>	SW-facing canyons	X			
<i>Stipa lepida</i>	slopes	X			
<i>Tauschia arguta</i>	W-facing slopes			X	
<i>Toxicoscordion fremontii</i>	S- and W-facing slopes	X		X	
<i>Woodwardia fimbriata</i>	W-facing canyons			X	
<b>ANNUALS</b>					
<i>Acmispon maritimus</i> var. <i>maritimus</i>	S- and W-facing slopes and ridgetops	X		X	

APPENDIX 1 - FIRE FOLLOWERS					
Scientific Name	Habitat	Verdugo Mountains		San Rafael Hills	
		Year 1	Year 4	Years 1-2	Year 4
<i>A. strigosus</i>	S- and W-facing slopes and ridgetops	X		X	
<i>Ambrosia acanthicarpa</i>	slopes	X			
<i>Antirrhinum kelloggii</i>	S- and W-facing slopes and ridgetops	X			
<i>Calandrinia breweri</i>	S- and W-facing slopes and ridgetops	X			
<i>C. ciliata</i>	W-facing slopes			X	
<i>Calyptridium monandrum</i>	S- and W-facing slopes and ridgetops	X			
<i>Camissoniopsis bistorta</i>	W-facing slopes			X	
<i>C. hirtella</i>	S- and W-facing slopes and ridgetops	X	X	X	X
<i>C. micrantha</i>	S- and W-facing slopes			X	
<i>Cardamine oligosperma</i>	W-facing slopes			X	
<i>Caulanthus lasiophyllus</i>	S- and W-facing slopes	X			
<i>Chaenactis artemisiifolia</i>	S- and W-facing slopes and ridgetops	X	X		
<i>Chenopodium</i> spp.	S- and W-facing slopes and ridgetops	X	X		
<i>Chorizanthe staticoides</i>	S- and W-facing slopes	X			
<i>Clarkia epilobioides</i>	SW-facing canyons	X			
<i>Claytonia parviflora</i> subsp. <i>parviflora</i>	SW-facing drainages and W facing slopes	X		X	
<i>C. perfoliata</i>	S- and W-facing slopes	X			
<i>Crassula connata</i>	S- and W-facing slopes and ridgetops	X			
<i>Cryptantha intermedia</i>	W-facing slopes	X	X		X
<i>C. micromeres</i>	S- and W-facing slopes	X		X	
<i>C. microstachys</i>	W-facing slopes		X		
<i>C. muricata</i>	S- and W-facing slopes and ridgetops	X		X	
<i>Diplacus brevipes</i>	S- and W-facing slopes	X			
<i>Emmenanthe penduliflora</i> var. <i>penduliflora</i>	S- and W-facing slopes and ridgetops	X		X	

APPENDIX 1 - FIRE FOLLOWERS					
Scientific Name	Habitat	Verdugo Mountains		San Rafael Hills	
		Year 1	Year 4	Years 1-2	Year 4
<i>Eriastrum saphirinum</i>	slopes	X			
<i>Erythranthe floribunda</i>	SW-facing drainages	X			
<i>E. guttata</i>	SW-facing canyons	X			
<i>Eschscholzia californica</i>	S- and W-facing slopes and ridgetops	X			
<i>Eucrypta chrysanthemifolia</i>	S- and W-facing slopes and ridgetops	X	X	X	X
<i>Eulobus californicus</i>	S- and W-facing slopes and ridgetops	X	X		X
<i>Festuca octoflora</i>	S- and W-facing slopes and ridgetops	X		X	
<i>Gilia capitata</i> subsp. <i>abrotanifolia</i>	S- and W-facing slopes and ridgetops	X			
<i>Logfia filaginoides</i>	S- and W-facing slopes and ridgetops	X		X	X
<i>Lupinus bicolor</i>	W-facing slopes	X	X	X	X
<i>L. concinnus</i>	W-facing slopes			X	
<i>L. formosus</i> var. <i>formosus</i>	S-facing slopes	X			
<i>L. hirsutissimus</i>	S- and W-facing slopes and ridgetops	X		X	X
<i>L. sparsiflorus</i>	S- and W-facing slopes and ridgetops	X			
<i>L. succulentus</i>	S-facing slopes	X			
<i>L. truncatus</i>	S- and W-facing slopes	X		X	X
<i>Mentzelia micrantha</i>	slopes	X			
<i>Muhlenbergia microsperma</i>	S- and W-facing slopes and ridgetops	X			
<i>Navarretia hamata</i>	W-facing slopes			X	
<i>Nemacladus ramosissimus</i>	S- and W-facing slopes	X			
<i>Nemophila menziesii</i>	N-facing slopes along ridgetops	X			
<i>Papaver californicum</i>	ridgetops	X		X	
<i>Pectocarya penicillata</i>	slopes		X		
<i>Phacelia brachyloba</i>	S- and W-facing slopes and ridgetops	X			
<i>P. cicutaria</i> var. <i>hispidula</i>	S- and W-facing slopes and ridgetops	X	X	X	X

APPENDIX 1 - FIRE FOLLOWERS					
Scientific Name	Habitat	Verdugo Mountains		San Rafael Hills	
		Year 1	Year 4	Years 1-2	Year 4
<i>P. grandiflora</i>	S- and W-facing slopes and ridgetops	X	X	X	
<i>P. minor</i>	S- and W-facing slopes and ridgetops	X	X	X	X
<i>Pterostegia drymarioides</i>	S- and W-facing slopes and ridgetops	X	X		
<i>Rafinesquia californica</i>	S- and W-facing slopes and ridgetops	X		X	
<i>Salvia columbariae</i>	slopes	X	X		
<i>Silene antirrhina</i>	slopes	X			
<i>S. coniflora</i>	N-facing slopes	X			
<i>Stylocline gnaphaloides</i>	S- and W-facing slopes and ridgetops	X			
<i>Thysanocarpus laciniatus</i>	SW-facing ridge	X			
<i>Triodanis biflora</i>	SW-facing drainages	X			
<i>Uropappus lindleyi</i>	S- and W-facing slopes	X			
<i>Urtica urens</i>	W-facing canyons			X	

**APPENDIX 2 - EXCLUDED TAXA  
FROM THE VASCULAR FLORA OF THE VERDUGO MOUNTAINS  
AND SAN RAFAEL HILLS, LOS ANGELES COUNTY, CALIFORNIA**

In the following list, we enumerate taxa we have, for three reasons, excluded from the flora of the Verdugo Mountains and San Rafael Hills. The arrangement of the list parallels that of the main annotated catalogue. (1) We excluded native and non-native taxa that were documented from the study area only from cultivated plantings or had been introduced but had not naturalized. These taxa are not known to spread beyond their original introductions, either via seed or aggressive vegetative propagation. Scientific nomenclature for introduced plants not in Baldwin et al. (2012) or Jepson Online Interchange (2012) follows the PLANTS database (USDA 2013) or The Plant List (2013). (2) We excluded taxa documented by vouchers that suggested they could have been collected within the boundaries of the study area, but where the locality information was sufficiently vague that the veracity of the records was questionable. Often these taxa were known from a single, very old record. (3) We excluded taxa that occurred just outside the study area and were documented by relatively recent, credible collections. In most cases, these plants occurred in habitats also present within the study area, and therefore should be sought in appropriate sites within the study area.

Scientific nomenclature used in this list largely follows APG (2009) and Baldwin et al. (2012) or Jepson Online Interchange (2012). Where we have opted to follow alternative nomenclature, the name used in Baldwin et al. (2012) is included in brackets. Common names follow Hickman (1993) or USDA (2013). Non-native or introduced taxa are indicated by an asterisk (\*) before the name. Plants considered sensitive by the California Native Plant Society, California Department of Fish and Game, and/or United States Fish and Wildlife Service are indicated by a dagger (†).

FILICAE

EQUISETACEAE

*Equisetum laevigatum* A. Braun, SMOOTH SCOURING RUSH. Perennial herb. Documented by a historic collection from just outside the study area in Arroyo Seco; to be expected in similar situations as *E. hyemale* subsp. *affine*. Peirson s.n., 25 Apr 1920 (POM).

CONIFERAE

CUPRESSACEAE

*Calocedrus decurrens* (Torr.) Florin, INCENSE CEDAR. Tree. Persisting from cultivation at Forester's Grove and in a canyon near the base of the northern flank of range, above La Tuna Canyon Road. Soza et al. 1348, 20 Jul 2001 (RSA).

\*†*Hesperocyparis forbesii* (Jeps.) Bartel, TEECATE CYPRESS. Tree. Infrequent, persisting from cultivation along fire roads, etc. Gross 480, 23 Feb 2002 (RSA).

## APPENDIX 2 - EXCLUDED TAXA

- \*†*Hesperocyparis macrocarpa* (Hartw.) Bartel, MONTEREY CYPRESS. Tree. Documented by historic collections of cultivated material from Tujunga and Brand canyons. *Thurber; s. n. 15 Feb 1949 (RSA)*.
- \*†*Hesperocyparis stephensonii* (C. B. Wolf) Bartel, CUYAMACA CYPRESS. Tree. Infrequent, persisting from cultivation along fire roads, etc. *Gross 471, 2 Feb 2002 (RSA)*.
- Juniperus californica* Carrière, CALIFORNIA JUNIPER. Large shrub. Documented on alluvial benches in Big Tujunga Wash near Oreas Park. *Gross 260, 25 Aug 2000 (RSA)*.
- \**Platycladus orientalis* (L.) Franco, ORIENTAL ARBORVITAE. Tree. Documented by a historic collection of cultivated material from the Vinedale School in La Tuna Canyon. *MacFadden 10778, 17 Mar 1933 (MACF)*.
- PINACEAE
- \**Pinus attenuata* Lemmon, KNOBCONE PINE. Tree. Persisting from cultivation at Forester's Grove. *Gross 684, 18 Jan 2003 (RSA)*.
- \**Pinus coulteri* D. Don, COULTER PINE. Tree. Persisting from cultivation at Forester's Grove, and at scattered sites along fire roads on the northern flank of the range. *Gross 341, 16 Mar 2001 (RSA)*.
- \**Pinus halepensis* Mill., ALEPPO PINE. Tree. Persisting from cultivation at Forester's Grove, and in Henderson Canyon at north base of the range. *Soza et al. 1352, 20 Jul 2001 (RSA)*.
- Pseudotsuga macrocarpa* (Vasey) Mayr, BIG-CONE DOUGLAS-FIR. Tree. Documented by a historic collection from Pasadena, either from cultivated material or from the San Gabriel Mountains. *Jones s.n., 25 Nov 1883 (POM)*.

## ANGIOSPERMAE – DICOTYLEDONES

## AIZOACEAE

- \**Aptenia cordifolia* (L. f.) Schwantes, BABY SUN ROSE. Perennial herb. Documented along the southeastern side of the range at the urban-wildland interface, apparently a waif. *Gross & Riefner 2826, 25 Jun 2007 (RSA)*.

## AMARANTHACEAE

- \**Amaranthus retroflexus* L., REDROOT AMARANTH. Annual. Documented by a historic collection from Altadena, presumably as an urban weed. *Peirson 1842, 1951 (RSA)*.
- Atriplex serenana* Abrams var. *serenana*, BRACTSCALE. Annual. Documented by a historic collection from Arroyo Seco in Pasadena. *Dunn s.n., 8 Aug 1930 (RSA)*.
- Chenopodium pratericola* Rydb., DESERT GOOSEFOOT. Annual. Documented by a historic collection from just outside the study area in Crescenta, on disturbed road margin. *Davidson s.n., Jul 1916 (RSA)*.
- \**Dysphania multifida* (L.) Mosyakin & Clemants, CUTLEAF GOOSEFOOT. Annual. Documented by historic collections from just outside the study area in Pasadena and adjacent areas. *Roos 1159, 19 Jul 1937 (POM)*.

## ANACARDIACEAE

- \**Searsia lancea* (L. f.) F.A. Barkley, AFRICAN SUMAC. Large shrub. Documented by cultivated material from the southern flank of the San Rafael Hills, above the junction of the 134 and 2 freeways. *Soza & Gross 1201, 9 May 2001 (RSA)*.
- \**Searsia pendulina* (Jacq.) Moffett, WHITE KAREE. Large shrub. Persisting from cultivation at the northwestern end of the range (near Topley Lane and Verdugo Crestline Drive), north of the 210 Freeway in Sunland. *Gross 379, 25 Mar 2001 (RSA)*.

## APIACEAE

- \**Apium graveolens* L. var. *dulce* (Mill.) DC., CELERY. Perennial herb. Documented by a historic collection from near the campus of Occidental College; to be expected in understory of perennially wet riparian areas. *Wiggins s.n., 11 May 1922 (LOC)*.

<b>APPENDIX 2 - EXCLUDED TAXA</b>
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- Berula erecta* (Huds.) Coville, CUTLEAF WATERPARSNIP. Perennial herb. Documented just outside the study area in boggy soil around ponds in Big Tujunga Wash, between the 210 Freeway and Hansen Dam; to be expected in wet soil elsewhere along Big Tujunga Wash, Arroyo Seco, La Tuna Canyon, or other perennially wet drainages within the range. *Gross 72, 20 Sep 1998 (RSA)*.
- \**Cyclosperrnum leptophyllum* (Pers.) Britton & P. Wilson, MARSH PARSLEY. Annual. Documented as an urban weed at the corner of Campus and Bird roads at Occidental College. *Shive s.n., 6 Apr 1983 (LOC)*.
- Perideridia parishii* (J.M. Coult. & Rose) A. Nelson & J.F. Macbr. subsp. *latifolia* (A. Gray) T.I. Chuang & Constance, PARISH'S YAMPAH. Geophyte. Documented by a historic collection from Kewen Lake in Pasadena. *Peirson 817, s.d. (RSA)*.
- \**Spermolepis echinata* (DC.) A. Heller, BRISTLY SCALESEED. Annual. Documented by a historic collection at the northwestern base of the range in lower La Tuna Canyon, apparently on a shady, moist bank. This species is a Sonoran Desert plant otherwise known from southern California, from Borrego Valley, Colorado Desert region (where native). We presume it was present in the Verdugo Mountains as an introduced waif from automobile tires or livestock. *MacFadden 2441, Apr 1930 (MACF)*.
- ARALIACEAE
- \**Hedera canariensis* Willd., ALGERIAN IVY. Liana. Documented by cultivated material spreading into chaparral at the urban-wildland interface, at the northern base of the range, off of Whiting Woods Road at the mouth of Henderson Canyon. *Soza et al. 1355, 20 Jul 2001 (RSA)*.
- ASTERACEAE
- Agoseris heterophylla* (Nutt.) Greene, ANNUAL AGOSERIS. Annual. Documented by a historic collection from Pasadena. *Jones s.n., 3 May 1882 (POM)*.
- Ambrosia psilostachya* DC., WESTERN RAGWEED. Perennial herb. Documented by a historic collection from Pasadena; to be expected in riparian woodland and alluvial benches throughout the range. *Blake 474, 29 Jul 1910 (RSA)*.
- Bidens frondosa* L., sticktight. Annual. Documented from Hansen Dam flood control basin along Big Tujunga Wash. *Gross et al. 6212, 17 Oct 2013 (RSA)*.
- Bidens laevis* (L.) Britton et al., BUR-MARIGOLD. Suffruticose perennial. Documented just outside the study area, in shallow water at the edge of ponds in Big Tujunga Wash, between the 210 Freeway and Hansen Dam; to be expected in wet soil elsewhere along Big Tujunga Wash. *Gross 84, 16 Oct 1998 (RSA)*.
- \**Centaurea benedicta* (L.) L., BLESSED THISTLE. Annual. Documented by historic collections just outside the study area near Burbank and Tujunga. *Booth 806, s.d. (POM)*.
- \**Centaurea cyamis* L., BACHELOR'S BUTTON. Annual. Documented by a collection from Mt. Fiji on the campus of Occidental College, in dry, sandy soil; presumably an escape from cultivation or intentionally introduced through a packet of flower seeds. *Wilder 81, 11 May 1991 (LOC)*.
- †*Centromadia parryi* (Greene) Greene subsp. *australis* (D. D. Keck) B. G. Baldwin, SOUTHERN TARPLANT. Annual. Documented by a historic collection from Altadena, perhaps cultivated at Peirson's house. *Peirson 1350, 1951 (RSA)*.
- Cirsium brevistylum* Cronquist, INDIAN THISTLE. Annual. Documented by a historic collection from Kewen Lake in Pasadena. *Peirson s.n., s.d. (RSA)*.
- \**Cotula coronopifolia* L., BRASS-BUTTONS. Perennial herb. Documented by a historic collection citing the locality as Tujunga Canyon, Verdugo Mountains, elevation 1300 feet (396 m). However, there is no drainage called Tujunga Canyon in the Verdugo Mountains. In the San Gabriel Mountains, there are both Big Tujunga and Little Tujunga canyons. The elevation cited would place the collection clearly within the San Gabriel Mountains in either of these drainages. *MacFadden 2578, 10 Apr 1931 (RSA)*.
- Deinandra pallida* (D. D. Keck) B. G. Baldwin, KERN TARPLANT. Annual. Documented by a historic

## APPENDIX 2 - EXCLUDED TAXA

- collection from La Tuna Canyon. However, this taxon is primarily known from Kern County and adjacent areas in Santa Barbara and San Luis Obispo counties, in the inner Coast Ranges, southern San Joaquin Valley, Tehachapi Mountains, and southern Sierra Nevada. This collection may represent a labeling error. *MacFadden 2220, May 1930 (RSA)*.
- \**Eclipta prostrata* (L.) L., FALSE DAISY. Annual. Documented from just outside the study area in moist soil near Hansen Dam in Big Tujunga Wash; to be expected elsewhere near perennial water sources in Big Tujunga Wash, Arroyo Seco, and La Tuna Canyon. *Gross 57, 18 Sep 1998 (RSA)*.
- Ericameria palmeri* (A. Gray) H.M. Hall var. *pachylepis* (H.M. Hall) G.L. Nesom, PALMER'S GOLD-ENBUSH. Small shrub. Documented by a historic collection of a single individual from a hillside opposite the library on-campus at Occidental College. *Krueckeberg 72, 4 Nov 1939 (LOC)*.
- \**Erigeron simatrensis* Retz., ASTHMAWEED. Annual. Documented just outside the study area, near the ponds in Big Tujunga Wash, between the 210 Freeway and Hansen Dam; to be expected in disturbed areas elsewhere in the range, especially near the urban-wildland interface. *Gross 85, 16 Oct 1998 (RSA)*.
- Eriophyllum wallacei* (A. Gray) A. Gray, WOOLLY FASTERBONNETS. Annual. Documented by a historic collection from Big Tujunga Wash. *Grimmell s.n., 3 Apr 1921 (POM)*.
- \**Galinsoga parviflora* Cav. var. *parviflora*, GALLANT SOLDIER. Annual. Documented by a historic collection from an irrigated field in Pasadena, presumably an agricultural waif. *Roos 919, 21 Jun 1939 (POM)*.
- Gutierrezia sarothrae* (Pursh) Britton & Rusby, BROOM SNAKEWEED. Suffruticose perennial. Documented by a historic collection from Big Tujunga Wash. *MacFadden s.n., Jun 1933 (RSA)*.
- \**Helianthus mollis* Lam., ASHY SUNFLOWER. Perennial herb. Documented by a historic collection from Pasadena, presumably as a waif or cultivated material. *Anonymous s.n., 1880 (POM)*.
- \**Hypochaeris radicata* L., ROUGH CAT'S-EAR. Perennial herb. Documented just outside the study area by a historic collection from Pasadena. *Peirson 2136, 13 Jun 1920 (RSA)*.
- Laenecia coulteri* (A. Gray) G.L. Nesom, COULTER'S HORSEWEED. Annual. Documented by a historic collection from Pasadena; to be expected about seeps and in moist soils of riparian woodland throughout the range. *Jones s.n., 25 Feb 1882 (POM)*.
- Lagophylla ramosissima* Nutt., BRANCHED LAGOPHYLLA. Annual. Documented just outside the study area by a historic collection from Pasadena. *Peirson 1358, s.d. (RSA)*.
- Layia glandulosa* (Hook.) Hook. & Arn., WHITE LAYIA. Annual. Documented by a historic collection from Big Tujunga Wash. *Grimmell s.n., 3 Apr 1921 (RSA)*.
- Leptosyne californica* Nutt., CALIFORNIA TICKSEED. Annual. Documented by historic collections from just outside the study area, in Big Tujunga Wash, near Pasadena, and at Occidental College. *Krueckeberg 107, 17 Feb 1940 (LOC)*.
- Lessingia glandulifera* A. Gray var. *glandulifera*, VALLEY LESSINGIA. Annual. Documented just outside the study area by a historic collection from Pasadena, and, more recently, in Big Tujunga Wash. *Gross 63, 18 Sep 1998 (RSA)*.
- \**Matricaria recutita* L., GERMAN CHAMOMILE. Annual. Documented by a historic collection as an orchard weed in La Tuna Canyon. *MacFadden 1630, 15 Apr 1930 (RSA)*.
- \**Melampodium perfoliatum* (Cav.) Kunth, PERFOLIATE BLACKFOOT. Annual. Documented just outside the study area by a historic collection from Pasadena. *Grant 763, 1904 (POM)*.
- Monolopia lanceolata* Nutt., COMMON MONOLOPIA. Annual. Documented by a historic collection from Pasadena. *Jones s.n., 3 May 1882 (POM)*.
- Pentachaeta amea* Nutt., GOLDEN-RAYED PENTACHAETA. Annual. Documented by a historic collection from Pasadena. *Peirson 1222, s.d. (RSA)*.
- Pluchea odorata* (L.) Cass., SALT MARSH FLEABANE. Perennial herb. Documented from just outside the study area in Big Tujunga Wash, between the 210 Freeway and Hansen Dam, in boggy soil near ponds; to be expected in wet soil elsewhere along Big Tujunga Wash, in Arroyo Seco and La

## APPENDIX 2 - EXCLUDED TAXA

- Tuna Canyon. *Gross* 80, 20 Sep 1998 (RSA).
- Senecio californicus* DC., CALIFORNIA RAGWORT. Annual. Documented by a historic collection from Big Tujunga Wash. *Peirson* 347, 30 Mar 1919 (RSA).
- \**Soliva sessilis* Ruiz & Pav., FIELD BURRWEED. Annual. Documented by a historic collection from Pasadena. *Wheeler* 7269, 17 May 1957 (RSA).
- Stephanomeria pauciflora* (Torr.) A. Nelson, WIRE-LETTUCE. Suffruticose perennial. Documented from just outside the study area, on alluvial benches in Big Tujunga Wash. *White* 6025, 20-21 Nov 1997 (RSA).
- \**Tragopogon porrifolius* L., SAISIFY. Perennial herb. Documented as an urban weed from a vacant lot in Eagle Rock. *Fotheringham* 131, 23 Apr 1996 (RSA).
- \**Xanthium spinosum* L., SPINY COCKLEBUR. Annual. Documented by a historic collection from Eagle Rock, as an urban weed along a disturbed road margin. *Spalding s.n.*, 25 Jun 1923 (RSA).
- BERBERIDACEAE
- \*†*Berberis nevini* A. Gray, NEVIN'S BARBERRY. Large shrub. Currently persisting from cultivation in the low hills at the western end of the range; also documented from historic collections of cultivated material from the campus of Occidental College. Plants from the eastern edge of Arroyo Seco in Pasadena, near intersection of Washington Blvd. and Arroyo Blvd., also represent cultivated material; however, natural stands of this species existed north of the study area in Arroyo Seco between Devil's Gate Dam and the base of the San Gabriel Mountains. *Smiley s.n.*, 30 Apr 1936 (LOC).
- Berberis pinnata* Lag. subsp. *pinnata*, CALIFORNIA BARBERRY. Large shrub. Reported for the Verdugo Mountains (as *Odoestemon fascicularis* (DC.) Abrams) by Grinnell (1917). Unfortunately, Grinnell did not cite a voucher for the Verdugo Mountains, and we have not observed any individuals from the study area. A historic collection was documented nearby from the Arroyo Seco. *Hammer s.n.*, Apr 1929 (RSA).
- BORAGINACEAE
- Cryptantha micrantha* (Torr.) I.M. Johnston, REDROOT CRYPTANTHA. Annual. Documented by historic collections from Big Tujunga Wash. *Abrons s.n.*, 6 Apr 1901 (POM).
- Eriodictyon parryi* (A. Gray) Greene, POODLE-DOG BUSH. Small shrub. Documented by a historic collection just outside the study area, in Tujunga Wash near Stonehurst. *MacFadden* 10554, Jun 1932 (RSA).
- Eriodictyon trichocalyx* A. Heller var. *trichocalyx*, HAIRY YERBA SANTA. Small shrub. Documented from alluvial benches in Big Tujunga Wash. *White* 5147, 15 May 1997 (RSA).
- †*Horopogonella palmeri* A. Gray, PALMER'S GRAPPLING HOOK. Annual. Documented by historic collections from Pasadena, presumably in areas of open, clay soil. *Jones s.n.*, 28 Feb 1882 (POM).
- Heliotropium curassavicum* L. var. *oculatum* (A. Heller) Tidestr., SEASIDE HELIOTROPE. Perennial herb. Documented from moist soil along stream in Big Tujunga Wash; to be expected in moist, alkaline areas throughout the range. *Gross* 263, 25 Aug 2000 (RSA).
- Phacelia ciliata* Benth., GREAT VALLEY PHACELIA. Annual. Documented by a historic collection near Pasadena, presumably in area of heavy soil. *Peirson* 967, 14 Feb 1903 (RSA).
- Phacelia longipes* A. Gray, LONGSTALK PHACELIA. Annual. Observed in the sandy wash behind Devil's Gate Dam; documented by a historic collection from "Arroyo Seco Canyon", which could be in the San Gabriel Mountains or the area now occupied by Brookside Park in Pasadena. *Moxley* 364, 4 Jul 1915 (RSA).
- Plagiobothrys arizonicus* (A. Gray) A. Gray, ARIZONA POPCORNFLOWER. Annual. Documented from the northern side of the range, along Whiting Woods fire road; one plant observed, presumably introduced from heavy equipment used to clear road. *Gross* 5549, 14 Apr 2012 (RSA).
- Plagiobothrys nothofolius* (A. Gray) A. Gray, POPCORN FLOWER. Annual. Documented by historic records from the campus of Occidental College, presumably in relatively heavy soils. *Kruckeberg* 81, 24 Nov 1939 (LOC).

<b>APPENDIX 2 - EXCLUDED TAXA</b>
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**BRASSICACEAE**

- Boechera californica* (Rollins) Windham & Al-Shehbaz, CALIFORNIA ROCKCRESS. Perennial herb. Documented by a historic collection from Pasadena. *Jones s.n., 28 Jun 1902 (POM)*.
- \**Camelina microcarpa* DC., LITTLEPOD FALSE FLAX. Annual. Documented by a historic collection from Glendale, presumably a pasture or orchard weed; unclear whether this collection is from inside or outside our study area boundary. *Rochmell, s.n., May 1920 (RSA)*.
- Coulanthus heterophyllus* (Nutt.) Payson, SAN DIEGO WILD CABBAGE. Annual. Documented by a historic collection from the hills west of Arroyo Seco in Pasadena. This collection could be within the Verdugo Mountains region, but most likely refers to the San Gabriel Mountains. *Peirson 4186, 17 Mar 1919 (RSA)* [collected as *Coulanthus heterophyllus* var. *heterophyllus*].
- Descurainia pinnata* (Walter) Britton, WESTERN TANSYMUSTARD. Annual. Documented by a historic collection from La Tuna Canyon. *MacFadden 2201, 8 Apr 1930 (RSA)* [as *Descurainia pinnata* subsp. *menziesii* (DC.) Detling].
- \**Diplotaxis tenuifolia* (L.) DC., PERENNIAL WALLROCKET. Suffruticose perennial. Documented by a historic collection from Pasadena. *Wheeler s.n., 24 Dec 1969 (RSA)*.
- \**Lepidium latifolium* L., BROADLEAVED PEPPERWEED. Perennial herb. Documented by a collection just outside the study area, in the inundation area behind Devil's Gate Dam. Colony proliferating in a disturbed sandy area behind the dam's spillway. *Gross 668, 5 Oct 2002 (RSA)*.
- Lepidium nitidum* Nutt., SHINING PEPPERWEED. Annual. Documented by historic collections from the campus of Occidental College and near Pasadena, presumably on heavy soil. *Kruckeberg 40, 8 Mar 1939 (LOC)*.
- \**Lepidium strictum* (S. Watson) Rattan, UPRIGHT PEPPERWEED. Annual. Documented by a historic collection as an urban weed in Pasadena. *Wheeler 7268, 17 May 1957 (RSA)*.
- \**Raphanus sativus* L., RADISH. Annual. Documented as an urban or agricultural weed by historic collections from Eagle Rock and Pasadena. *Hogne s.n., 13 Jun 1997 (SFV)*.
- Rorippa curvisiliqua* (Hook.) Britton, CURVEPOD YELLOWCRESS. Annual or biennial herb. Documented just outside the study area by a historic collection from the inundation area behind Devil's Gate Dam; growing in open, wet, clay mud. *Wheeler 6707, 22 Jun 1949 (RSA)*.
- Rorippa palustris* (L.) Besser subsp. *palustris*, BOG YELLOWCRESS. Biennial to perennial herb. Documented by a historic collection from Kewen Lake in Pasadena. *Peirson 1907, s.d. (RSA)*.
- \**Sinapis alba* L., WHITE MUSTARD. Annual. Documented by a historic collection from Pasadena, presumably an agricultural waif. *Grant s.n., 6 Jun 1901 (POM)*.
- \**Sisymbrium altissimum* L., TUMBLE MUSTARD. Annual. Documented by a historic collection from La Crescenta; however, it is unclear whether this collection was within the study area boundary. *Moxley s.n., May 1927 (LOC)*.

**CACTACEAE**

- \**Opuntia microdasys* (Lehm.) Pfeiff., ANGEL'S-WINGS. Succulent shrub. Documented from a dump site just outside the study area, on bench between Haines Canyon and Big Tujunga Wash. *Gross 449, 6 Oct 2001 (RSA)*.
- Opuntia X vaseyi* (J.M. Coul.) Britton & Rose, VASEY'S COASTAL PRICKLYPEAR. Succulent shrub. Documented from alluvial benches in Big Tujunga Wash. *White 5153, 15 May 1997 (RSA)*.

**CANNABACEAE**

- \**Cannabis sativa* L., MARIJUANA. Annual. Documented by historic collections from La Tuna Canyon and Oak Grove Park near Devil's Gate Dam, presumably waifs and not persisting long at any given location. *MacFadden s.n., Sep 1929 (RSA)*.

**CAPRIFOLIACEAE**

- \**Centranthus ruber* (L.) DC., RED VALERIAN. Perennial herb. Documented by cultivated material near Norris Dorm on the campus of Occidental College in Eagle Rock. *de Jesus 3, 20 May 1986 (LOC)*.

<b>APPENDIX 2 - EXCLUDED TAXA</b>
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\**Lonicera japonica* Murray, JAPANESE HONEYSUCKLE. Liana. Documented by a collection of cultivated material from the eastern slope of the range. *Campbell 43, 4 Jun 1980 (RSA)*.

*Plectritis ciliosa* (Greene) Jeps., LONGSPUR SEABLUSH. Annual. Documented by a historic collection from Arroyo Seco in Pasadena. *Peirson 1204, 13 May 1951 (RSA)*.

## CARYOPHYLLACEAE

*Mimortia douglasii* (Torr. & A. Gray) Mattf., DOUGLAS' STITCHWORT. Annual. Documented by a historic collection from Pasadena. *Jones s.n., 2 May 1882 (POM)*.

*Spergularia marina* (L.) Besser, SALT SANDSPURRY. Annual. Documented by historic collections from just outside the study area in Pasadena. *Grant 197, Apr 1902 (RSA)*.

## CONVOLVULACEAE

\**Convolvulus arvensis* L., BINDWEED. Perennial herb. Documented by a historic collection from outside the study area in Arroyo Seco; potentially present at lower elevations near the urban-wildland interface, and as an urban or agricultural weed. *Spalding s.n., 26 Apr 1925 (RSA)*.

## EUPHORBIACEAE

\**Chamaesyce prostrata* (Aiton) Small, PROSTRATE SANDMAT. Annual. Documented by a historic collection from Pasadena, apparently an urban weed. *Wheeler 6833, 19 Aug 1951 (RSA)*.

\**Chamaesyce serpens* (Kunth) Small, MATTED SANDMAT. Annual. Documented by a historic collection from Pasadena, apparently an urban weed. *Wheeler s.n., 8 Nov 1970 (UCR)*.

*Chamaesyce serpyllifolia* (Pers.) Small subsp. *serpyllifolia*, THYME-LEAFED SPURGE. Annual. Documented by historic collections as an urban weed near southern and eastern base of the range, e.g., near Glendale; possibly present in disturbed sites at the urban-wildland interface. *Wheeler 4173, 20 Jun 1936 (RSA)*

\**Euphorbia helioscopia* L., WARTWEED. Annual. Documented by a historic collection from Pasadena, presumably as an urban weed. *Wheeler 6799, 10 Mar 1951 (RSA)*.

*Euphorbia spathulata* Lam., WARTY SPURGE. Annual. Documented by a historic collection from the campus of Occidental College in Eagle Rock; on shaded slope, presumably in heavy soil. *Kruckeberg 142, 29 Mar 1940 (LOC)*.

## FABACEAE

\**Acacia cyclops* G. Don, COASTAL WATTLE. Large shrub. Documented from the south by southeast face of the Eagle Rock in oak woodland, presumably cultivated. *Keefe 30946, 19 Jan 2001 (RSA)*.

\**Acacia dealbata* Link, SILVER WATTLE. Tree. Persisting from cultivation in Brand Canyon; may have potential to naturalize in areas at the urban-wildland interface. *Gross et al. 17 Jun 2003 (RSA)*.

\**Acacia longifolia* (Andrews) Willd., SYDNEY GOLDEN. Large shrub. Cultivated as a landscape tree, e.g., along 134 Freeway on-ramp near Eagle Rock Park. *Keefe 31045, 7 Feb 2001 (RSA)*.

*Acmispon dendroideus* (Greene) Brouillet var. *dendroideus*, ISLAND BROOM. Suffruticose perennial. Documented by a historic collection from Pasadena. *Grant s.n., 17 Jun 1904 (RSA)*.

*Acmispon glaber* (Vogel) Brouillet var. *brevialatus* (Ottley) Brouillet, CALIFORNIA BROOM. Suffruticose perennial. Documented by a historic collection from Pasadena. *Woglum s.n., 17 May 1930 (RSA)*.

*Acmispon micranthus* (Torr. & A. Gray) Brouillet, DESERT DEERVETCH. Annual. Documented by a historic collection from Little Tujunga Wash, at its confluence with Big Tujunga Wash. *Peirson 2117, 3 May 1920 (RSA)*.

*Astragalus gambeliannus* E. Sheld., Gambel's DWARF MILKVETCH. Annual. Documented by a historic collection from Pasadena, presumably from an area of open clay or grassland. *Jones s.n., 3 May 1882 (POM)*.

*Astragalus trichopodus* (Nutt.) A. Gray var. *phoxus* (M.E. Jones) Barneby, SANTA BARBARA MILKVETCH. Perennial herb. Documented by collections from just outside the study area in Big Tujunga Wash. *Gross 18, 15 May 1998 (RSA)*.

\**Caesalpinia gilliesii* (Hook.) D. Dietr., BIRD-OF-PARADISE. Large shrub. Documented by a historic collection of cultivated material from Maeder Ranch in La Tuna Canyon. This species is widely

## APPENDIX 2 - EXCLUDED TAXA

planted and often escapes along road margins elsewhere in southern California; therefore, to be expected at the urban-wildland interface in the study area. *MacFadden 1810, Apr 1929 (MACF)*.

- \**Indigofera heterantha* Brandis, HIMALAYAN INDIGO. Large shrub. Documented from cultivated material at the intersection of Linda Vista Rd. and Figueroa St., in upper Scholl Canyon. *Schapiro 7, 10 Apr 1979 (RSA)*.
- \**Lotus corniculatus* L., BIRDFOOT TRIFOLIE. Perennial herb. Documented by a collection from the campus of Occidental College in Eagle Rock; apparently a lawn weed. *Tse 158, 1 Jun 1988 (LOC)*.
- Lupinus excubitus* M.E. Jones var. *excubitus*, GRAPE SODA EUPINE. Suffruticose perennial. Documented by a collection from the mouth of Big Tujunga Canyon, at the base of the San Gabriel Mountains. *Thorne 40619, 26 Jun 1971 (RSA)*.
- Lupinus longifolius* (S. Watson) Abrams, LONGLEAF BUSH LUPINE. Small shrub. Documented by historic collections from alluvial plains and low hills just outside the study area, e.g., Montrose, Highland Park, and South Pasadena; presumably in larger washes, such as Arroyo Seco and Verdugo Wash, but extirpated due to development and channelization. *Payne s.n., 3 Jun 1939 (RSA)*.
- \**Robinia pseudoacacia* L., BLACK LOCUST. Tree. Planted at scattered sites across the range and spreading by root suckers, however, unclear whether it is naturalizing into adjacent chaparral. *Soza & Lubinsky 1232, 16 May 2001 (RSA)*.
- Rupertia physodes* (Douglas) J.W. Grimes, FOREST SCURFPEA. Perennial herb. Documented by historic collections from Pasadena. *Jones 2691, 2 May 1882 (POM)*.
- \**Senna artemisioides* (DC.) Randell, SILVER SENNA. Small shrub. Several individuals growing in chaparral and coastal scrub at the northwestern end of the range, apparently planted; however, at least one individual observed, but not collected, growing along the 210 Freeway and appearing naturalized. *Gross 469, 2 Feb 2002 (RSA)*.
- Trifolium albopurpureum* Torr. & A. Gray, RANCHERIA CLOVER. Annual. Documented by a historic collection from Elysian Park in Pasadena; to be expected throughout the range in grassy openings on heavy soil. *Brown s.n., s.d. (POM)*.
- Trifolium gracilentum* Torr. & A. Gray, PINPOINT CLOVER. Annual. Documented by a historic collection from Pasadena. *Jones s.n., 3 May 1882 (POM)*.
- Trifolium microcephalum* Pursh, SMALLHEAD CLOVER. Annual. Documented by a historic collection from Pasadena. *Jones s.n., 2 May 1882 (POM)*.
- \**Trifolium repens* L., WHITE CLOVER. Perennial herb. Documented as a lawn weed in Eagle Rock. *Hogue s.n., 19 Apr 1999 (SFI)*.
- Trifolium wilddenovii* Spreng., TOMCAT CLOVER. Annual. Documented by a historic collection from the campus of Occidental College; apparently growing on a shaded slope. *Kruckeberg 40, 29 Mar 1940 (LOC)*.

## FAGACEAE

*Quercus agrifolia* Née var. *oxyadenia* (Torr.) J.T. Howell, COAST LIVE OAK. Tree. Some plants from the northern base of the range, in tributaries of upper La Tuna Canyon, have sparse, but persistent pubescence on lower leaf surfaces, and have been referred to as this variety. However, the plants from the study area do not approach the degree of pubescence seen in typical material of *Q. agrifolia* var. *oxyadenia* from the San Jacinto, Palomar, and Cuyamaca Mountains, or elsewhere in the Peninsular Ranges as described in Roberts (1995) but are included in Appendix 3 with the tentative assignment to the var. *agrifolia*. *Riefner 00-750, 29 Aug 2000 (RSA)*.

†*Quercus engelmannii* Greene, ENGLMANN OAK. Tree. Documented by historic collections from just outside the study area near Pasadena. All material from the study area that approach this taxon are of intermediate morphology (smaller in stature and mixed trichomes) suggesting introgressive hybrids with either *Q. berberidifolia* or *Q. durata* var. *gabrielensis*. There were probably typical individuals of *Q. engelmannii* historically present in oak woodlands about the base of the range, especially the San Rafael Hills; however, these were lost early to wood cutting and later

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to urbanization. *Grant 6167, 5 May 1904 (RSA)*.

*Quercus lobata* Née, VALLEY OAK. Tree. Documented by historic collections from just outside the study area in Pasadena, presumably in deep valley soils. *Grant s.n., 12 May 1901 (POM)*.

## GROSSULARIACEAE

*Ribes amarum* McClatchie, BITTER GOOSEBERRY. Small shrub. Documented from a historic collection in Pasadena. *Jones s.n., 25 Feb 1882 (POM)*.

†*Ribes divaricatum* Douglas var. *parishii* (A. Heller) Jeps., PARISH'S GOOSEBERRY. Small shrub. Documented by a historic collection from Pasadena. This variety is currently thought to be extinct. *Jones s.n., 7 Mar 1882 (POM)*.

## HALORAGACEAE

\**Myriophyllum aquaticum* (Vell.) Verdc., PARROT'S FEATHER. Aquatic perennial herb. Documented from just outside the study area, within ponds in Big Tujunga Wash, in standing water and sprawling on muddy shoreline. *Gross 78, 20 Sep 1998 (RSA)*.

## JUGLANDACEAE

\**Juglans hindsii* R.E. Sm., CALIFORNIA BLACK WALNUT. Tree or large shrub. Documented by a collection in La Tuna Canyon from cultivated material by the foundation of an old residence. *Gross & Soza 916, 15 May 2003 (RSA)*.

## LAMIACEAE

\**Mentha X piperita* L., PEPPERMINT. Perennial herb. Documented by a historic collection from Pasadena. *Grant s.n., 8 Sep 1901 (RSA)*.

\**Mentha X villosa* Huds., SPEARMINT-APPLE MINT HYBRID. Perennial herb. Local in wet soil in Big Tujunga Wash. *White 9718, 31 Jul 2003 (RSA)*.

\**Rosmarinus officinalis* L., ROSEMARY. Small shrub. Documented by a historic collection of cultivated material. *Clare s.n., 10 Apr 1929 (RSA)*.

*Salvia carniacea* Benth., THISTLE SAGE. Annual. Documented by a historic collection from just outside the study area near Burbank, presumably in sandy soils of alluvial fan or wash. *Davidson s.n., 1 May 1890 (RSA)*.

*Salvia leucophylla* Greene, PURPLE SAGE. Small shrub. Documented by a historic collection from the hills behind the campus of Occidental College, and observed at Stough Canyon Nature Center. These populations appear to represent cultivated material, however, the species does occur naturally in the San Gabriel, Liebre, and Santa Monica mountains, as well as further south in the Puente Hills. *Miller s.n., 2 May 1948 (RSA)*.

*Stachys rigida* Benth. var. *rigida*, ROUGH HFDGENFETLE. Perennial herb. Documented by a collection from Arroyo Seco in Pasadena, just outside the study area; presumably in a riparian area, and to be expected in similar habitats throughout the range. *Hood 300, 16 Apr 1970 (RSA)*.

## LOASACEAE

*Mentzelia laevicanlis* (Hook.) Torr. & A. Gray, SMOOTHSTEM BLAZINGSTAR. Biennial herb. Documented from just outside the study area near Hansen Dam in Big Tujunga Wash, on sandy alluvium. *White 5134, 14 May 1997 (RSA)*.

## LYTHRACEAE

*Annuammia coccinea* Rottb., VALLEY REDSTEM. Annual. Documented from just outside the study area, along a stream channel in the Hansen Dam area of Big Tujunga Wash; to be expected in wet soil elsewhere along Big Tujunga Wash and Arroyo Seco. *Gross 1206, 16 Nov 2003 (RSA)*.

*Annuammia robusta* Heer & Regel, GRAND REDSTEM. Annual. Documented by historic collections from just outside the study area, in bed of Devils Gate Reservoir. *Benson 12206, 16 Oct 1946 (POM)*.

## MALVACEAE

\**Malva sylvestris* L., HIGH MALLOW. Biennial herb. Documented by a collection from a north-facing slope of Mt. Fiji on the campus of Occidental College in Eagle Rock, in disturbed grassy area with sandy soil. *Garrahan 25, 30 Apr 1986 (LOC)*.

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\**Modiola caroliniana* (L.) G. Don, CAROLINA BRISTLEMALLOW. Perennial herb. Documented as an urban weed by a historic collection from Pasadena. *Wheeler s.n., 8 Apr 1968 (RSA)*.

## MELIACEAE

\**Melia azedarach* L., CHINA BERRY. Tree. Persisting from cultivation at an abandoned home site in La Tuna Canyon. *Gross & Soza 920, 15 May 2003 (RSA)*.

## MOLLUGINACEAE

\**Glinus lotoides* L., LOTUS SWEETJUICE. Annual. Documented by a historic collection just outside the study area, along the lake shore at Hansen Dam in Big Tujunga Wash, in silty soil. *Wheeler 7528, 29 Nov 1958 (RSA)*.

## MYRTACEAE

\**Eucalyptus camaldulensis* Dehnh., RED GUM. Tree. Persisting from cultivation, but unclear whether it has naturalized within the study area. This species does naturalize elsewhere in southern California. *Gross 445, 1 Sep 2001 (RSA)*.

\**Eucalyptus globulus* Labill., BLUE GUM. Tree. Persisting from cultivation, but unclear whether it has naturalized within the study area. This species does naturalize elsewhere in southern California. *Gross 747, 22 Feb 2003 (RSA)*.

\**Eucalyptus robusta* Sm., SWAMPMAHOGANY. Tree. Persisting from cultivation in Brand Canyon. *Gross 740, 22 Feb 2003 (RSA)*.

\**Eucalyptus rudis* Endl., WESTERN AUSTRALIAN FLOODEDGUM. Tree. Documented from Big Tujunga Wash; unclear whether this collection represents cultivated material or naturalizing populations. *White 5059, 5 May 1997 (RSA)*.

\**Eucalyptus sideroxylon* Woolls, RED IRON BARK. Tree. Persisting from cultivation at scattered sites, especially near Forester's Grove. One small tree in Dead Horse Canyon may be naturalized, but this is not certain. *Gross 683, 18 Jan 2003 (RSA)*.

\**Leptospermum laevigatum* (Gaertn.) F. Muell., AUSTRALIAN TEATREEL. Large shrub. Documented by a historic collection of cultivated material at Vinedale School in La Tuna Canyon. *MacFadden 10770, 15 Mar 1933 (MACF)*.

## NYCTAGINACEAE

\**Bougainvillea glabra* Choisy, PAPERFLOWER. Large shrub. Documented by cultivated material from Glendale, and persisting from cultivation near an old foundation in Brand Canyon. *Gross et al. 1033, 17 Jun 2003 (RSA)*.

\**Mirabilis jalapa* L. var. *jalapa*, FOUR-O'CLOCK. Perennial herb. Documented at margins of riparian area in Big Tujunga Wash, at outlet of Haines Channel. *White 9717, 31 Jul 2003 (RSA)*.

## OLEACEAE

\**Olea europaea* L., EUROPEAN OLIVE. Tree. Persisting from cultivation at scattered sites throughout the range, including remnants of a few small orchards. This species does naturalize elsewhere in southern California, and to be expected throughout the study area in drainages near the urban-wildland interface. *Gross 755, 7 Mar 2003 (RSA)*.

## ONAGRACEAE

*Cnissontopsis intermedia* (P.H. Raven) W.L. Wagner & Hoch, INTERMEDIATE SUNCLP. Annual. Documented by historic collections from the campus of Occidental College in Eagle Rock. *Krueckeberg 122, 8 Mar 1940 (LOC)*.

*Epilobium brachycarpum* C. Presl, TALL ANNUAL WILLOWHERB. Annual. Documented by historic collections from Occidental College and La Tuna Canyon; observed more recently at the northern end of the range, but not vouchered. *Krueckeberg 177, 1 Jun 1940 (LOC)*.

*Ludwigia peploides* (Kunth) P.H. Raven subsp. *peploides*, FLOATING PRIMROSE-WILLOW. Perennial herb. Documented by a historic collection from Kewen Lake, just outside the study area; also observed, but not vouchered, from flowing water of Big Tujunga Wash near Hansen Dam. *Peirson 2080, Sep 1916 (RSA)*.

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*Oenothera californica* (S. Watson) S. Watson subsp. *californica*, CALIFORNIA EVENING PRIMROSE. Perennial herb. Documented by a historic collection from Big Tujunga Wash near Roscoe. *MacFadden 10996, May 1933 (RSA)*.

*Oenothera elata* Kunth subsp. *hirsutissima* (S. Watson) W. Dietr., HOOKER'S EVENING PRIMROSE. Perennial herb. Documented by a historic collection of cultivated material grown from seed originally collected at Devil's Gate Dam. Also documented from other scattered sites just outside the study area, around the base of the range. Collected more recently in moist soil along stream channels of Big Tujunga Wash near Hansen Dam; to be expected elsewhere in the range in wet canyons and near seeps and springs. *Munz 13413, 15 Aug 1935 (POM)*.

\**Oenothera rosea* L'Hér. ex Aiton, ROSE EVENING PRIMROSE. Suffruticose perennial. Documented by a historic collection from just outside the study area, along the muddy shore of the lake behind Devil's Gate Dam. *Wheeler 6801, 14 May 1951 (RSA)*.

\**Oenothera simosa* W.L. Wagner & Hoeh, WAVY-LEAVED GAURA. Annual. Documented by a historic collection from Altadena, presumably an urban weed or waif. *Peirson 2160, 13 Jun 1920 (POM)*.

#### OROBANCHACEAE

*Orobanche californica* Cham. & Schldl. subsp. *fendgei* (Munz) Heckard, CALIFORNIA BROOMRAPE. Parasitic perennial herb. Documented from a historic collection in a wash in the vicinity of La Crescenta. This locality may be at the northern base of the range, but is more likely outside of the study area, in a wash from the San Gabriel Mountains. *Moxley 2037, May 1927 (LOC)*.

#### OXALIDACEAE

\**Oxalis articulata* Savigny subsp. *rubra* (A. St.-Hil.) Lourteig, WINDOWBOX WOODSORREL. Geophyte. Documented from the campus of Occidental College, presumably as a border plant in gardens or a lawn weed. *Dos Passos 22, 23 May 1969 (LOC)*.

*Oxalis californica* (Abrams) R. Knuth, CALIFORNIA WOODSORREL. Suffruticose perennial. Documented by a historic collection near Pasadena. *Johnson s.n., Apr 1903 (POM)*.

\**Oxalis latifolia* Kunth, BROADLEAF WOODSORREL. Geophyte. Documented from an area of planted pine trees on the campus of Occidental College, presumably cultivated at this site. *Dos Passos 29, 25 May 1969 (LOC)*.

#### PAPAVERACEAE

*Ehrendorferia chrysantha* (Hook. & Arn.) Rylander, GOLDEN EARDROPS. Suffruticose perennial. Documented by a historic collection from near Pasadena. *Jones s.n., 28 Jun 1903 (POM)*.

\*†*Romneya coulteri* Harv., COULTER'S MATILJIA POPPY. Small shrub. Persisting from cultivation in small draw along the north side of the 134 Freeway, just east of the 2 Freeway, in the San Rafael Hills; also growing at the northwest end of the Verdugo Mountains and along road in Wildwood Canyon. *Gross 2671, 2 May 2007 (RSA)*.

#### PASSIFLORACEAE

\**Passiflora caerulea* L., BLUECROWN PASSIONFLOWER. Perennial herb. Documented by cultivated material growing on a fence at Oakmont Country Club Golf Course. *Liston 47, 28 May 1980 (RSA)*.

#### PITTOSPORACEAE

\**Pittosporum tobira* (Thunb.) W.T. Aiton, JAPANESE PITTOSPORUM. Large shrub. Documented as an escape from cultivation just outside the study area in Big Tujunga Wash, between the 210 Freeway and Hansen Dam. *Gross & Gutman 269, 8 Sep 2000 (RSA)*.

\**Pittosporum undulatum* Vent., VICTORIAN BOX. Tree. Documented as an escape from cultivation just outside the study area in Big Tujunga Wash, between the 210 Freeway and Hansen Dam; also persisting from cultivation in lower Brand Canyon. *Gross 748, 22 Feb 2003 (RSA)*.

#### PLANTAGINACEAE

\**Cymbalaria muralis* P. Gaertn. et al., KENILWORTH IVY. Annual. Documented as a sidewalk weed in Eagle Rock. *Shive 273, 21 May 1981 (LOC)*.

\**Plantago arenaria* Waldst. & Kit., SAND PLANTAIN. Annual. Documented from just outside the study

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area in Big Tujunga Wash, between the 210 Freeway and Hansen Dam; also observed, but not vouchered, behind Devil's Gate Dam in Arroyo Seco, growing in dry, sandy disturbed areas. *White & Davis 5438, 1 Aug 1997 (RSA)*.

*Plantago submda* Pilg., TALL COASTAL PLANTAIN. Perennial herb. Documented by historic collections from Pasadena, including Kewen Lake, presumably in moist soil. *Peirson 1179, s.d. (RSA)*.

\**Veronica persica* Poir., PERSIAN SPEEDWELL. Annual. Documented by a historic collection from Pasadena, presumably as a lawn or landscape weed. *Shunmway s.n., May 1903 (POM)*.

*Veronica serpyllifolia* L. subsp. *humifusa* (Dicks.) Syme, BRIGHTBLUE SPEEDWELL. Perennial herb. Documented by a historic collection from Pasadena, presumably as a lawn or landscape weed. *Bell s.n., 26 Feb 1946 (POM)*.

## POLEMONIACEAE

*Collomia grandiflora* Lindl., GRAND COLLOMIA. Annual. Documented by a historic collection from just outside the study area in Tujunga. *Thackery 521, 18 May 1928 (RSA)*.

*Eriastrum densifolium* (Benth.) H. Mason subsp. *elougatum* (Benth.) H. Mason, GIANT WOOLLYSTAR. Suffruticose perennial. Documented by collections from just outside the study area in Big Tujunga Wash, on sandy alluvial benches. *Keefe 30996.1, 19 Jan 2001 (RSA)*.

*Gilia achilleifolia* Benth. subsp. *achilleifolia*, CALIFORNIA GILIA. Annual. Documented by historic collections from the Verdugo Woodlands, presumably cultivated or a garden escape. *Hill s.n., 6 Apr 1933 (RSA)*.

*Leptosiphon aureus* (Nutt.) E. Vilm. subsp. *aureus*, GOLDEN LINANTHUS. Annual. Documented by a historic collection from Big Tujunga Wash, just outside the study area. *Abrams s.n., Apr 1901 (POM)*.

*Microsteris gracilis* (Hook.) Greene, SLENDER PHLOX. Annual. Documented by a historic collection from just outside the study area near Devil's Gate in Arroyo Seco. *Peirson 909, 14 Mar s.a. (RSA)*.

*Navarretia atractylloides* (Benth.) Hook. & Arn., HOLLYLEAF PINCUSHIONPLANT. Annual. Documented by a historic collection from the lower Arroyo Seco, which could be within the San Gabriel Mountains or South Pasadena; to be expected in open situations throughout the range, especially on alluvial benches and margins of dirt roads and trails. *Dobbs s.n., 3 Sep 1927 (LOC)*.

## POLYGONACEAE

†*Chorizanthe parryi* S. Watson var. *fernaudina* (S. Watson) Jeps., SAN FERNANDO VALLEY SPINEFLOWER. Annual. Documented by historic collections from just outside the study area, near the confluence of Little Tujunga and Big Tujunga washes, and near Burbank. *Peirson 2120, 3 May 1920 (RSA)*.

*Chorizanthe procumbens* Nutt., PROSTRATE SPINEFLOWER. Annual. Documented by historic collections from just outside the study area in Arroyo Seco and Pasadena; collected more recently in Big Tujunga Wash, north of the 210 Freeway. *Gross 14, 15 May 1998 (RSA)*.

†*Dodecahema leptoceras* (A. Gray) Reveal & Hardham, SLENDER-HORNED SPINEFLOWER. Annual. Documented from alluvial benches of Big Tujunga Wash just northwest of the study area; also known from a historic collection from Crescenta, presumably in a wash from the San Gabriel Mountains. *Krantz et al. s.n., 9 May 1988 (RSA)*.

\**Eriogonum fasciculatum* Benth. var. *fasciculatum*, CALIFORNIA BUCKWHEAT. Small shrub. Scarce, growing in openings within thick chaparral and presumably intentionally introduced via seed. A few shrubs found on ridgelines and old fuel breaks near the northern base of the range are smaller and shorter than typical *E. fasciculatum* var. *foliosum* (Nutt.) Abrams and, therefore, approach var. *fasciculatum*. *Gross et al. 1076, 19 Jun 2003 (RSA)*.

*Eriogonum thurberi* Torr., THURBER'S BUCKWHEAT. Annual. Documented from just outside the study area on alluvial benches of Big Tujunga Wash; also documented by a vague, anonymous historic collection from the "Verdugo Hills". *White 5135, 14 May 1997 (RSA)*.

\**Fagopyrum esculentum* Moench, BUCKWHEAT. Annual. Documented by a historic collection from La

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Tuna Canyon, apparently growing in a ruderal situation and introduced as a contaminant in pigeon feed. *MacFadden 2545, 10 Oct 1929 (RSA)*.

\**Fallopia japonica* (Houtt.) Ronse Decr., JAPANESE KNOTWEED. Perennial herb. Documented by a historic collection from Pasadena, presumably as an urban weed. *Wheeler s.n., 18 Sep 1975 (RSA)*.

*Lactariæa coriacea* (Goodman) Hoover, LEATHER SPINEFLOWER. Annual. Documented from just outside the study area by a historic collection from Pasadena; collected more recently in Big Tujunga Wash. *White 5145, 15 May 1997 (RSA)*.

†*Mucronæa californica* Benth., CALIFORNIA SPINEFLOWER. Annual. Documented by historic collections from low elevations just outside the study area around the base of the range, e.g., Devil's Gate, Pasadena, and Glendale; may still be extant on open alluvial benches in Big Tujunga Wash. *Davidson s.n., Jun 1891 (RSA)*.

*Persicaria hydropiperoides* (Michx.) Small, WATERPEPPER. Suffruticose perennial. Documented from just outside the study area in Big Tujunga Wash, between the 210 Freeway and Hansen Dam, in boggy soil near ponds; to be expected in wet soil elsewhere along Big Tujunga Wash and in Arroyo Seco and La Tuna Canyon. *Gross 88, 16 Oct 1998 (RSA)*.

*Persicaria lapathifolia* (L.) Gray, WILLOW WEED. Perennial herb. Documented just outside the study area by historic collections from Oak Grove Park, Pasadena; collected more recently in Big Tujunga Wash, in wet soil, in openings of riparian woodland. *Gross 261, 25 Aug 2000 (RSA)*.

\**Rumex acetosella* L., SHEEP SORREL. Perennial herb. Documented by a historic collection from near Pasadena. *Davidson s.n., May 1892 (RSA)*.

*Rumex salicifolius* Weinm., WILLOW DOCK. Perennial herb. Documented from just outside the study area near the ponds in Big Tujunga Wash, in shaded riparian woodland. *White 5143, 14 May 1997 (RSA)*.

*Rumex violascens* Rech. f., MEXICAN DOCK. Annual or biennial herb. Documented from Hansen Dam flood control basin along Big Tujunga Wash. *Gross et al. 6208, 17 Oct 2013 (RSA)*.

#### PROTEACEAE

\**Grevillea robusta* A. Cunn. ex R. Br., SILKOEAK. Tree. Persisting from cultivation in Pomeroy and Brand canyons. *Vellema 101, 19 Jan 2001 (RSA)*.

\**Grevillea wilsonii* A. Cunn., WILSON'S GREVILLEA. Tree. Documented by a historic collection of cultivated material from Maeder's Ranch in La Tuna Canyon. *MacFadden s.n., Apr 1933 (MACF)*.

#### RANUNCULACEAE

*Delphinium patens* Benth. subsp. *hepaticoideum* Ewan, SPREADING LARKSPUR. Geophyte. Documented by a historic collection from Pasadena. *Jones s.n., 2 May 1882 (POM)*.

#### RESEDACEAE

\**Reseda alba* L., WHITE MIGNONETTE. Perennial herb. Documented by a historic collection from South Pasadena, presumably as cultivated material. *Grant s.n., 8 Jan 1900 (POM)*.

#### RHAMNACEAE

\*†*Ceanothus cyaneus* Eastw., LAKESIDE CEANOTHUS. Large shrub. Documented by a historic collection near Devil's Gate Dam, at the northeastern edge of the study area, presumably from cultivated material. However, the voucher indicates that the plant was growing within an isolated stand of chaparral, along with *C. crassifolius* and *C. megacarpus*, leaving some possibility that it was native to this site. This species is otherwise restricted to the foothills of the Cuyamaca Range in central San Diego County. *Griesel 784, 17 May 1963 (RSA)*.

\**Ceanothus impressus* Trel., SANTA BARBARA CEANOTHUS. Large shrub. A single plant was collected at the edge of a fill slope, along the north side of the 210 Freeway, just west of La Tuna Canyon Road exit; presumably introduced via hydroseeding. *Riefner 06-238, 12 Jun 2006 (RSA)*.

*Ceanothus leucodermis* Greene, CHAPARRAL WHITETHORN. Large shrub. Documented by a historic collection from Pasadena. *Greata s.n., Apr 1901 (RSA)*.

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## ROSACEAE

*Aphanes occidentalis* (Nutt.) Rydb., FIELD PARSLEY PIERT. Annual. Documented by a historic collection from "Pasadena (San Raf Ranch)", presumably from San Rafael Ranch near Garvanza. *Grant s.n.*, 25 Mar 1900 (POM).

\**Cotoneaster pamosa* Franch., SILVERLEAF COTONEASTER. Large shrub. Documented by cultivated material from near the mouth of Brand Canyon. *Gross 750*, 22 Feb 2003 (RSA).

\**Pyracantha fortuneana* (Maxim.) H.L. Li, CHINESE FIRETHORN. Large shrub. Documented by cultivated material from near the mouth of Brand Canyon. *Gross 749*, 22 Feb 2003 (RSA).

## RUTACEAE

\**Casimiroa tetrameria* Millsp., MATASANO. Large shrub. Persisting from cultivation about an old foundation, near McDonald Canyon, north of La Tuna Canyon. *Gross & Soza 917*, 15 May 2003 (RSA).

## SALICACEAE

\**Salix babylonica* L., WEEPING WILLOW. Tree. Documented by a historic collection from Oak Knoll, Pasadena, presumably from cultivated material. *Grant s.n.*, 6 May 1901 (POM).

## SANTALACEAE

*Phoradendron serotinum* (Raf.) M.C. Johnst. subsp. *macrophyllum* (Engelm.) Kuijt, BIG LEAF MISTLETOE. Parasitic perennial herb. Documented by a historic collection from Pasadena, but unclear whether this locality is within the study area; to be expected on *Populus*, *Salix*, *Fraxinus*, and other trees (except *Quercus*) in riparian woodlands throughout the range. *Jones s.n.*, 27 Feb 1882 (POM).

## SAPINDACEAE

\**Aesculus californica* (Spach) Nutt., CALIFORNIA BUCKEY. Tree. Documented from cultivated material near Brand Canyon Cemetery; also observed in drainages of La Tuna Canyon near the 210 Freeway, presumably introduced from nearby nursery. *Gross et al. 1062*, 17 Jun 2003 (RSA).

## SAXIFRAGACEAE

*Lithophragma bolanderi* A. Gray, BOLANDER'S WOODLAND-STAR. Geophyte. Documented by a historic collection from Arroyo Seco near Pasadena, but this locality may actually be in the San Gabriel Mountains. *Peirson 69*, 21 May 1918 (RSA).

## SCROPHULARIACEAE

\**Buddleja asiatica* Lour., DOGTALE. Large shrub. Single individual, presumably planted, along Brand Canyon Road on the main crest of the range; resprouting vigorously after fire. *Gross 410*, 28 May 2001 (RSA).

## SIMMONDSIACEAE

*Simmondsia chinensis* (Link) C. K. Schneid., JOJOBA. Large shrub. Scarce. A single, very old pistillate plant was found on a ridgeline at the northwestern end of the range, north of the 210 Freeway, in mixed chaparral and coastal scrub. It is not clear if this is a natural occurrence or derived from cultivated material. The plant is growing near a large, presumably native colony of *Forestiera pubescens* Nutt. and also near several planted exotics, e.g., *Rhus pendulina* Jacq. and *Eucalyptus* sp. *Gross 132*, 15 Apr 1999 (RSA).

## SOLANACEAE

\**Cestrum elegans* (Brongn.) Schtdl., PURPLE CESTRUM. Large shrub. Documented by a historic collection of cultivated material from La Tuna Canyon. *MacFadden 10772*, 15 Mar 1933 (MACF).

*Nicotiana quadrivalvis* Pursh, INDIAN TOBACCO. Annual. Documented by historic collection from La Tuna Canyon. *MacFadden 1232*, 6 Jun 1929 (MACF).

\**Solanum nigrum* L., BLACK NIGHTSHADE. Perennial herb. Documented as an urban weed by historic collections from Pasadena. *Wheeler s.n.*, 12 Sep 1975 (RSA).

*Solanum physalifolium* Rusby var. *nitidibaccatum* (Bitter) Edmonds, HOF NIGHTSHADE. Annual. Documented by a historic collection from just outside the study area in Burbank; to be expected in

<b>APPENDIX 2 - EXCLUDED TAXA</b>
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disturbed sites throughout the range near the urban-wildland interface. *Wheeler 5689, 12 Jan 1943 (RSA)*.

*Solanum umbelliferum* Eschsch., BLUEWITCH NIGHTSHADE. Suffruticose perennial. A historic collection from La Cañada approaches this species in its branched hairs of the upper stems, but in other respects is consistent with other specimens of *S. xanti* from the Verdugo Mountains region. *Perkins s.n., 23 Mar 1913 (RSA)*.

## TAMARICACEAE

\**Tamarix aphylla* (L.) H. Karst., ATHIEL. Tree. Persisting from cultivation near Pasko Park at the north-western end of the range; also collected in Dead Horse Canyon. *Gross 470, 2 Feb 2002 (RSA)*.

## TROPAEOLACEAE

\**Tropaeolum majus* L., GARDEN NASTURTIUM. Perennial herb. Documented by cultivated material from the campus of Occidental College and near Highland Park. *Dos Passos 27, 24 May 1969 (LOC)*.

## ULMACEAE

\**Ulmus minor* Mill., SMOOTH-LEAVED ELM. Tree. Documented by cultivated material from the south-eastern side of the range at the urban-wildland interface, near a power substation. *Gross & Riefner 2830, 25 Jun 2007 (RSA)*.

\**Ulmus pumila* L., SIBERIAN ELM. Tree. Documented by cultivated material from the southeastern side of the range at the urban-wildland interface, near a power substation. *Gross & Riefner 2831, 25 Jun 2007 (RSA)*.

## VERBENACEAE

*Phyla lanceolata* (Michx.) Greene, LANCELEAF FOGFRUIT. Perennial herb. Documented by a historic collection from Kewen Lake in Pasadena. *Peirson 1040, 16 Sep 1951 (RSA)*.

*Phyla nodiflora* (L.) Greene, TURKEY TANGLE FOGFRUIT. Perennial herb. Documented as an urban weed from a vacant lot in Eagle Rock. *Fotheringham 118, 23 Apr 1996 (RSA)*.

## VITACEAE

*Vitis girdiana* Munson, DESERT WILD GRAPE. Liana. Documented by a historic collection from Oak Knoll, Pasadena; to be expected, at least historically, in larger riparian woodland areas, such as Arroyo Seco and Verdugo Wash. *Peirson 741, 1951 (RSA)*.

## ANGIOSPERMAE - MONOCOTYLEDONES

## ALISMATACEAE

*Echinodorus berteroi* (Spreng.) Fassett, UPRIGHT BURHEAD. Aquatic perennial herb. Documented by historic collections from Devil's Gate Dam area, presumably in areas of slow moving or standing water, probably now extirpated. *Wheeler 6708, 22 Jun 1949 (RSA)*.

## AMARYLLIDACEAE

\**Agapanthus praecox* Willd., AFRICAN-LILY. Geophyte. Persisting from cultivation at the urban-wildland interface in Glendale. *Vellema 108, 4 Feb 2001 (RSA)*.

*Allium amplexans* Torr., NARROWLEAF ONION. Geophyte. Documented from greenhouse area on the Glendale College Campus. *Stevenson 25, Apr 28 1980 (RSA)*.

\**Leucojum aestivum* L., SUMMER SNOWFLAKE. Geophyte. Documented from apparent cultivation in oak woodland and chaparral in the San Rafael Hills. *Gross & Fraga 2445, 20 Jan 2006 (RSA)*.

## ARACEAE

*Lemna minor* L., COMMON DUCKWEED. Aquatic annual. Documented by a historic collection from "Arroyo Seco, near Pasadena, elev. 650 ft.," which would put this just outside the study area on the southern end of Arroyo Seco, presumably in an area of open standing or slow moving water; to be expected throughout the range in similar situations. *Peirson 5269, 19 Sep 1924 (RSA)*.

*Lemna minuta* Kunth, LEAST DUCKWEED. Aquatic annual. Floating on surface of ponds in Big Tujunga Wash. *Gross 70, 20 Sep 1998 (RSA)*.

## APPENDIX 2 - EXCLUDED TAXA

## CYPERACEAE

*Cyperus niger* Ruiz & Pav., BLACK FLATSEDLG. Perennial herb. Documented by a historic collection from Oak Knoll in Pasadena. *Greata s.n.*, 28 Oct 1900 (RSA).

\**Cyperus rotundus* L., PURPLE NUTSEDLG. Perennial herb. Documented by a historic collection from Pasadena. *Peirson 3265*, 1 Aug 1922 (POM).

*Eleocharis parishii* Britton, PARISH'S SPIKERUSH. Perennial herb. Documented just outside the study area along stream channels and ponds in Big Tujunga Wash, between the 210 Freeway and Hansen Dam; to be expected in other wet drainages in the range, or about seeps and springs. *Gross & Law 4*, 8 Aug 2000 (RSA).

*Eleocharis radicans* (Poir.) Kunth, ROOTED SPIKERUSH. Perennial herb. Documented just outside the study area near ponds in Big Tujunga Wash, in wet soil at the base of a fill slope along the 210 Freeway; to be expected in other wet drainages in the range, or about seeps and springs. *Gross & Gutman 271*, 8 Sep 2000 (RSA).

*Scirpus microcarpus* J. Presl & C. Presl, PANICLED BULRUSH. Perennial herb. Documented from just outside the study area in Big Tujunga Wash, between the 210 Freeway and Hansen Dam, along stream channels; to be expected in wet soil elsewhere along Big Tujunga Wash and perhaps in Arroyo Seco and La Tuna Canyon. *Gross & Law 255*, 8 Aug 2000 (RSA).

## JUNCACEAE

†*Juncus acutus* L. ssp. *leopoldii* (Parl.) Snogerup, LEOPOLD'S RUSH. Perennial herb. Two populations recently documented along Big and Little Tujunga washes from Oreas Park to Hansen Dam. *Swinney 11787*, 10 Mar 2010 (RSA).

*Juncus phaeocephalus* Engelm., BROWNHEAD RUSH. Perennial herb. Documented by a historic collection from near Occidental College in Eagle Rock, presumably near sluggish flowing or pooled water. *Moxley, s.n.*, 9 May 1915 (RSA).

## POACEAE

*Andropogon glomeratus* (Walter) Britton et al. var. *scabrighumis* C.S. Campb., SOUTHWESTERN BUSHY BLUESTEM. Perennial herb. Documented from just outside the study area along a stream channel near Oreas Park in the Hansen Dam area of Big Tujunga Wash. *Gross & Law 248*, 8 Aug 2000 (RSA).

*Aristida divaricata* Willd., POVERTY THREE-AWN. Perennial herb. Documented by a historic collection from Altadena, presumably a waif. *Grant s.n.*, 2 Apr 1905 (RSA).

*Aristida ternipes* Cav. var. *gentilis* (Hornard) Allred, HOOK THREE-AWN. Perennial herb. Documented by historic collections from just outside the eastern end of the range, e.g., Occidental College and Pasadena. *Clemons s.n.*, 10 Jun 1922 (POM).

*Bromus heteroanms* Colla, CHILEAN CHESS. Annual. Documented by a historic collection from Pasadena. *Grant 779*, 15 Apr 1905 (POM).

\**Cenchrus longispinus* (Hack.) Fernald, MAT SANDBUR. Annual. Documented by a historic collection as an orchard weed in La Tuna Canyon. *MacFadden 3199*, 1 Aug 1931 (RSA).

\**Digitaria sanguinalis* (L.) Scop., HAIRY CRABGRASS. Annual. Documented by historic collections from La Tuna Canyon and Eagle Rock, presumably as urban or agricultural weeds. *MacFadden, s.n.*, 2 Jun 1931 (RSA).

\**Echinochloa crus-galli* (L.) P. Beauv., BARNYARDGRASS. Perennial herb. Documented from just outside the study area in Big Tujunga Wash, in moist sand of stream channels, in openings of riparian woodland. *Gross & Law 252*, 8 Aug 2000 (RSA).

*Elymus triticoides* Buckley, BEARDLESS WILDRYE. Perennial herb. Documented by a historic collection from south of the study area, near Highland Park. *Kruckeberg 245*, 31 May 1939 (RSA).

\**Eragrostis mexicana* (Hornem.) Link subsp. *virescens* (J. Presl) S.D. Koch & Sánchez Vega, MEXICAN LOVEGRASS. Perennial herb. Documented from just outside the study area in Big Tujunga Wash. *Gross 60*, 18 Sep 1998 (RSA).

<b>APPENDIX 2 - EXCLUDED TAXA</b>
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- \**Hordeum vulgare* L., COMMON BARLEY. Annual. Documented by a historic collection from near Highland Park, as a weed in a vacant lot. *Kruekeberg s.n.*, 8 Mar 1940 (RSA).
- Koeleria macrantha* (Ledeb.) Schult., PRAIRIE JUNEGRASS. Perennial herb. Documented by a historic collection from the campus of Occidental College. *Scott s.n.*, 20 Apr 1921 (RSA).
- \**Panicum miliaceum* L. subsp. *miliaceum*, BROOM CORN MILLET. Annual. Documented by a historic collection as an orchard weed in La Tuna Canyon. *MacFadden 2974*, 10 Jun 1931 (MACF).
- \**Phalaris canariensis* L., CANARY GRASS. Annual. Documented by a historic collection from Eagle Rock, as a weed in open, sunny fields. *Eatherton s.n.*, May 1930 (POM).
- \**Phalaris minor* Retz., LITTLESEED CANARYGRASS. Annual. Documented by historic collections as an urban weed from Pasadena and Highland Park, near the campus of Occidental College. *Wiggins s.n.*, 11 May 1922 (RSA).
- \**Sorghum halepense* (L.) Pers., JOHNSONGRASS. Perennial herb. Documented by a historic collection from Glendale, as an urban or agricultural weed along road margins. *Watry s.n.*, May 1930 (RSA).
- \**Stenotaphrum secundatum* (Walter) Kuntze, SAINT AUGUSTINE GRASS. Perennial herb. Documented as a lawn grass in Eagle Rock, and from outside the study area in Big Tujunga Wash, naturalizing in shady understory of riparian woodland. *Hogne s.n.*, 23 Sep 1997 (SFV).
- Stipa speciosa* Trin. & Rupr., DESERT NEFDLEGRASS. Perennial herb. Documented from alluvial benches in Big Tujunga Wash. *Thorne 40631*, 26 Jun 1971 (RSA).

## PONTEDERIACEAE

- \**Eichhornia crassipes* (Mart.) Solms, WATER HYACINTH. Aquatic perennial herb. Documented just outside the study area, floating in ponds in Big Tujunga Wash, between the 210 Freeway and Hansen Dam, covering the whole surface and rooting in mud at the water's edge. *Gross 86*, 16 Oct 1998 (RSA).

## POTAMOGETONACEAE

- Potamogeton foliosus* Raf. subsp. *foliosus*, LEAFY PONDWEED. Aquatic perennial herb. Documented from just outside the study area in Big Tujunga Wash, between the 210 Freeway and Hansen Dam, submerged in ponds. *Gross 90*, 16 Oct 1998 (RSA).

**APPENDIX 3**  
**ANNOTATED CATALOGUE OF THE VASCULAR FLORA OF THE**  
**VERDUGO MOUNTAINS AND SAN RAFAEL HILLS, LOS ANGELES**  
**COUNTY, CALIFORNIA**

The following list includes all vascular plant taxa documented during fieldwork in the Verdugo Mountains and San Rafael Hills, and through herbarium specimens deposited at GCC, LA, LOC, MACF, RSA-POM, and SFV. An alphabetical arrangement has been followed for families within subdivisions, classes, or subclasses, as well as for genera within families and species within genera. Scientific nomenclature used in this list largely follows APG (2009) and Baldwin et al. (2012) or Jepson Online Interchange (2012). Where we have opted to follow alternative nomenclature, the name used in Baldwin et al. (2012) is included in brackets. Common names follow Hickman (1993) or USDA (2013). Non-native or introduced taxa are indicated by an asterisk (\*) before the name. Plants considered sensitive by the California Native Plant Society, California Department of Fish and Game, and/or United States Fish and Wildlife Service are indicated by a dagger (†).

Annotations provided for each taxon include a generalized classification of life form (e.g., tree, perennial herb, annual, etc.), followed by a statement of relative frequency of occurrence, generalized distribution within the range, characteristic habitats where found, and a representative voucher specimen (including collector's name, collector's number, collection date, and in parentheses, the acronym of the herbarium where deposited [Thiers 2013]). Relative frequency of occurrence is classified as follows:

Scarce—apparently rare, documented at only one or two, relatively localized (and often historic) occurrences, and with relatively few plants at any given site;

Infrequent—documented at only a few (e.g., 3-6), often widely scattered occurrences, and with relatively few plants at any given site;

Occasional—documented at several (e.g., 7-20) clustered or scattered occurrences, though generally with numerous plants at any given site;

Frequent—documented at many (e.g., >20), generally widely scattered occurrences, and usually common at any site where present;

Common—documented at almost any location within the habitat(s) occupied by a given taxon, generally with numerous individuals present at most any location.

## LYCOPODIAE

## SELAGINELLACEAE

*Selaginella bigelovii* Underw., BUSHY SPIKEMOSS. Perennial herb. Infrequent throughout the range, mostly in La Tuna Canyon, about bases of rocks, boulders, or in crevices of bedrock cliffs and outcrops on xeric slopes. *Soza et al. 812, 27 Apr 2000 (RSA)*.

## FILICAE

## BLECHNACEAE

*Woodwardia fimbriata* Sm., GIANT CHAIN FERN. Perennial herb. Scarce, at western end of the San Rafael Hills (e.g., Scholl and Verdugo canyons) and in Deer Creek on the northern flank of the main body of the range, in shady, wet canyon bottoms. *Gross et al. 186, 27 Apr 2000 (RSA)*.

## DENNSTAEDTIACEAE

*Pteridium aquilinum* (L.) Kuhn var. *pubescens* Underw., HAIRY BRACKEN-FERN. Perennial herb. Infrequent, primarily southern side of the range, on alluvial benches and base of slopes in canyon bottoms, generally in understory of trees or tall shrubs. *Jillson s.n., 5 Feb 1961 (RSA)*.

## DRYOPTERIDACEAE

*Dryopteris arguta* (Kaulf.) Maxon, COASTAL WOODFERN. Perennial herb. Frequent and widespread throughout the range, generally in mesic situations in understory duff of chaparral and oak woodlands. *Peirson s.n., 24 Jul 1906 (RSA)*.

## EQUISETACEAE

*Equisetum hyemale* L. subsp. *affine* (Engelm.) Calder & Roy L. Taylor, COMMON SCOURING RUSH. Perennial herb. Infrequent, large patch on damp alluvial bench with riparian vegetation, Brand Canyon; historically known from larger drainages in and near the range (e.g., Arroyo Seco, Big Tujunga Wash). *Gross et al. 719, 10 Feb 2003 (RSA)*.

*Equisetum telmateia* Ehrh. subsp. *braunii* (Milde) Hauke, GIANT HORSETAIL.

Perennial herb. Scarce, historically documented in one of the larger side canyons draining into La Tuna Canyon, at the northwestern end of the range, and from a marshy area in Verdugo Woodlands. *Detmers s.n.*, 17 Oct 1928 (RSA).

## POLYPODIACEAE

*Polypodium californicum* Kaulf., CALIFORNIA POLYPODY. Perennial herb. Frequent and widespread, generally in mesic conditions on north-facing slopes, shaded cliff faces, and crevices of bedrock outcroppings in canyon bottoms, in understory of chaparral and oak woodland. *Gross & Fraga 514*, 4 Apr 2002 (RSA).

## PTERIDACEAE

*Adiantum capillus-veneris* L., SOUTHERN MAIDEN-HAIR. Perennial herb. Scarce, seeps on shaded cliff-faces and water falls, northern flank of the range off of La Tuna Canyon, just west of the 210 freeway on-ramp, and observed, but not collected in Deer Creek; to be expected elsewhere on seeps, shaded cliffs, and banks. *Gross & Moore 230*, 5 Jun 2000 (RSA).

*Adiantum jordanii* Müll.Hal., CALIFORNIA MAIDEN-HAIR. Perennial herb. Infrequent, documented historically at scattered sites, generally in chaparral or oak woodlands, on mesic slopes or canyon bottoms. *Kiefer 2041*, 15 May 1966 (LA).

*Aspidotis californica* (Hook.) Nutt. ex Copel., CALIFORNIA LACEFERN. Perennial herb. Infrequent, primarily southern side of the range (e.g., Brand and Pomeroy canyons), in shade of rocks or under shrubs, on dry hillsides and benches along drainages. *Vellema 102*, 19 Jan 2001 (RSA).

*Pellaea andromedifolia* (Kaulf.) Fée, COFFEE FERN. Perennial herb. Occasional on somewhat dry, sunny to partly shady slopes and canyon bottoms in chaparral. *Moore et al. 48*, 8 Jun 2000 (RSA).

*Pellaea mucronata* (D. C. Eaton) D. C. Eaton var. *mucronata*, BIRD'S-FOOT FERN. Perennial herb. Common and widespread throughout the range, about rocks and in crevices of bedrock outcrops on xeric slopes in chaparral. *Abrams s.n.*, 7 Apr 1901 (RSA).

*Pentagramma triangularis* (Kaulf.) Yatsk., Windham & E. Wollenw. subsp. *triangularis*, GOLDBACK FERN. Perennial herb. Common and widespread throughout the range, about rocks, in crevices of bedrock outcrops, and under shrubs, generally on mesic slopes in chaparral. *Soza et al. 658*, 30 Mar 2000 (RSA).

## SALVINIACEAE

*Azolla filiculoides* Lam., PACIFIC MOSQUITO FERN. Aquatic annual or perennial herb. Documented by an old record from gently flowing water in the Verdugo Woodlands; present just outside study area on the surface of slow moving streams and placid pools along Big Tujunga Wash at and upstream from Hansen Dam. *Detmers s.n., 17 Oct 1928 (RSA)*.

## CONIFERAE

## PINACEAE

\**Pinus pinea* L., ITALIAN STONE PINE. Tree. Scarce, north base of the range at head of La Tuna Canyon; single young plant growing in chaparral, and appearing adventive (or at least not obviously intentionally planted). *Gross et al. 1063, 17 Jun 2003 (RSA)*.

## ANGIOSPERMAE - DICOTYLEDONES

## ADOXACEAE

*Sambucus nigra* L. subsp. *caerulea* (Raf.) Bolli, BLUE ELDERBERRY. Large shrub. Frequent and widespread throughout the range, especially at lower elevations, generally in canyon bottoms and open, xeric slopes in chaparral and coastal scrub. *MacFadden s.n., 20 Mar 1931 (RSA)*.

## AMARANTHACEAE

\**Amaranthus albus* L., TUMBLEWEED. Annual. Infrequent at scattered sites, especially in disturbed areas at the urban-wildland interface. *Gross et al. 398, 4 Jun 2001 (RSA)*.

*Amaranthus blitoides* S. Watson, MAT AMARANTH. Annual. Scarce, documented by a historic collection from La Tuna Canyon, but to be expected elsewhere, especially in disturbed sites at the urban-wildland interface. *MacFadden s.n., 13 Jun 1929 (MACF)*.

\**Amaranthus hybridus* L., SLIM AMARANTH. Annual. Scarce, documented by a historic collection from Eagle Rock, but to be expected elsewhere, especially in disturbed sites at the urban-wildland interface. *Greata s.n., 23 Sep 1900 (RSA)*.

*Amaranthus powellii* S. Watson, POWELL'S AMARANTH. Annual. Scarce, documented by historic collections from near Glendale and in La Tuna

Canyon, but to be expected elsewhere, especially in disturbed sites at the urban-wildland interface. *Spalding s.n.*, 26 Nov 1922 (RSA).

\**Atriplex canescens* (Pursh) Nutt. subsp. *canescens*, FOURWING SALTBUSH. Small shrub. Scarce, northwestern base of the range, under the 210 Freeway bridge over Big Tujunga Wash; and observed, but not collected, nearby along the freeway, spreading from plantings along road margins and cut slopes. *Gross 99*, 1 Nov 1998 (RSA).

\**Atriplex semibaccata* R. Br., AUSTRALIAN SALTBUSH. Suffruticose perennial. Infrequent, scattered sites at the urban-wildland interface, e.g., near Eagle Rock; generally in open, disturbed situations, especially along road margins and graded areas; common as an urban weed. *Keefe 30889*, 19 Jan 2001 (RSA).

\**Chenopodium album* L., PIGWEED. Annual. Infrequent at scattered sites throughout the range, generally near the urban-wildland interface in open, disturbed situations; more common as an urban weed. *Keefe 30905*, 19 Jan 2001 (RSA).

*Chenopodium berlandieri* Moq., PITSEED GOOSEFOOT. Annual. Occasional, and in places, locally common; on slopes and alluvial benches at scattered sites throughout the range, generally in disturbed areas, e.g., along road margins and fuel breaks, post-fire areas, and openings in chaparral. *Gross et al. 275*, 18 Oct 2000 (RSA).

*Chenopodium californicum* (S. Watson) S. Watson, CALIFORNIA GOOSEFOOT. Perennial herb. Infrequent, documented by historic collections from La Tuna Canyon; collected more recently near the mouth of McDonald Creek, lower La Tuna Canyon, on deeper soils of alluvial benches. *Soza et al. 1143*, 18 Apr 2001 (RSA).

\**Chenopodium murale* L., NETTLELEAF GOOSEFOOT. Annual. Infrequent, documented from several sites around the base of the range, e.g., La Tuna Canyon, Verdugo Park, and Eagle Rock, presumably in disturbed situations at the urban-wildland interface; common as an urban weed. *Keefe 22636*, 11 Apr 1978 (RSA).

\**Chenopodium strictum* Roth var. *glaucophyllum* (Aellen) Wahl. LATEFLOWERING GOOSEFOOT. Annual. Scarce, northern base of the range in La Tuna Canyon, in hard-packed soil of road margin and in cracks of asphalt paving. *Gross 455*, 10 Nov 2001 (RSA).

\**Dysphania ambrosioides* (L.) Mosyakin & Clemants, MEXICAN TEA. Annual. Infrequent at scattered sites throughout the range, generally near the urban-wildland interface, in open, disturbed situations, especially where water is seasonally present. *Gross et al. 291*, 18 Oct 2000 (RSA).

\**Dysphania botrys* (L.) Mosyakin & Clemants, JERUSALEM OAK. Annual. Occasional, on slopes and alluvial benches throughout the range, in gen-

erally disturbed or sandy situations, e.g., along roads and open, graded areas; mostly in chaparral and riparian woodland. *Keefe 23370, 10 Jun 1978 (RSA)*.

\**Dysphania pumilio* (R. Br.) Mosyakin & Clemants, CLAMMY GOOSEFOOT. Annual. Scarce. documented by historic collections at the northern base of the range, e.g., Pasadena and La Tuna Canyon; presumably in disturbed situations, especially in compacted soil. *MacFadden 3172, 15 Jul 1931 (RSA)*.

\**Salsola australis* R. Br., RUSSIAN THISTLE. Annual. Infrequent, scattered sites throughout the range, especially along the main crest, generally in recently disturbed situations, e.g., along road margins and graded areas; surrounding areas mostly of chaparral. *Soza et al. 1358, 20 Jul 2001 (RSA)*.

## ANACARDIACEAE

*Malosma laurina* (Nutt.) Nutt. ex Abrams, LAUREL SUMAC. Large shrub. Common and widespread on most of the lower elevation slopes throughout the study area, primarily in coastal scrub, and extending to higher elevations on the southern flank of the range; less frequent on northern, steep, chaparral slopes. *MacFadden 153, 20 Apr 1931 (RSA)*.

*Rhus aromatica* Aiton. FRAGRANT SUMAC. Small shrub. Occasional at lower elevations throughout the range, typically on lower slopes and benches in canyons, in coastal scrub on the southern side of range, and in mixed chaparral on the northern side of the range. *Soza et al. 655, 30 Mar 2000 (RSA)*.

*Rhus integrifolia* (Nutt.) Brewer & S. Watson, LEMONADEBERRY. Large shrub. Frequent, on slopes throughout the range in coastal scrub at lower elevations and upwards into chaparral on higher slopes and ridges. *Wolf 1465, 31 Dec 1927 (RSA)*.

*Rhus ovata* S. Watson, SUGAR BUSH. Large shrub. Frequent and widespread on slopes over much of the range, and in sandy washes at lower elevations. *Hudson s.n., Mar 1950 (RSA)*.

\**Schinus molle* L., PERUVIAN PEPPER TREE. Tree. Occasional, widely planted ornamental and naturalizing in debris basins and scattered open, xeric areas of the range, generally near urban-wildland interfaces in coastal scrub, e.g., southern end of the San Rafael Hills; also observed infrequently on slopes within relatively thick chaparral. *Gross et al. 409, 4 Jun 2001 (RSA)*.

*Toxicodendron diversilobum* (Torr. & A. Gray) Greene, WESTERN POISON OAK. Small shrub. Common throughout the study area in understory of oak woodland and riparian woodland, and on mesic slopes in chaparral, especially across the northern flank of the range; often creating large, nearly impenetrable thickets. *Soza & Lubinsky 1233, 16 May 2001 (RSA)*.

## APIACEAE

- \**Anthriscus caucalis* M. Bieb., BUR-CHERVIL. Annual. Frequent, and at times locally common, generally near roads and trails, or other disturbance in relatively mesic, shady areas at lower elevations, especially on the northeastern flank of the range; mostly in chaparral, oak woodland, and riparian woodland. *Keefe 22835, 28 Apr 1978 (RSA)*.
- Apiastrum angustifolium* Nutt., MOCK PARSLEY. Annual. Occasional on lower elevation slopes, generally in open areas between shrubs in coastal scrub. *Soza et al. 897, 12 May 2000 (RSA)*.
- Bowlesia incana* Ruiz & Pav., HOARY BOWLESIA. Annual. Occasional, and in some areas locally common, on lower slopes across the northern and northwestern flanks of the range; on mesic exposures and under shrubs in chaparral and coastal scrub. *Soza et al. 778., 25 Apr 2000 (RSA)*.
- \**Conium maculatum* L., POISON HEMLOCK. Biennial herb. Occasional, though locally common where present (e.g., Dead Horse Canyon, Engleheard Canyon, debris basin in Sherer Canyon), in disturbed wet areas in canyons and mesic exposures on lower elevation slopes, especially at the urban-wildland interface, generally in riparian woodland. *Peirson 2846, 25 Apr 1920 (RSA)*.
- Daucus pusillus* Michx., AMERICAN WILD CARROT. Annual. Scarce, documented by historic collections in La Tuna Canyon, at the northern base of the range; presumably in coastal scrub or chaparral. *MacFadden s.n., 4 Apr 1931 (RSA)*.
- \**Foeniculum vulgare* Mill., FENNEL. Suffruticose perennial. Scarce on slopes, especially in La Tuna Canyon, generally near paved roads and in disturbed chaparral and coastal scrub; to be expected in similar situations throughout the range. *Soza et al. 1346, 20 Jul 2001 (RSA)*.
- Lomatium dasycarpum* (Torr. & A. Gray) J. M. Coult. & Rose subsp. *dasycarpum*, WOOLLYFRUIT DESERTPARSLEY. Perennial herb. Scarce, documented by historic collections in La Tuna Canyon and San Rafael Hills; still extant at the southwestern end of the range on low, xeric slopes in coastal scrub. *MacFadden 3159, Apr 1931 (RSA)*.
- Lomatium lucidum* (Torr. & A. Gray) Jeps., SHINY BISCUITROOT. Geophyte. Occasional on lower elevation slopes throughout the range, generally in openings between shrubs and understory of chaparral and coastal scrub. *Soza et al. 981, 6 Jun 2000 (RSA)*.
- Lomatium utriculatum* (Nutt. ex Torr. & A. Gray) J. M. Coult. & Rose, COMMON LOMATIUM. Geophyte. Scarce, documented by a historic collection near Flintridge, presumably in heavy soil. *MacFadden 2439, Apr 1930 (MACF)*.

- Oenanthe sarmentosa* J. Presl, WATER PARSLEY. Perennial herb. Scarce, documented by historic collections from the Verdugo Woodlands, presumably in a perennially wet area. *McNair s.n.*, 1 May 1934 (RSA).
- Osmorhiza brachypoda* Torr., CALIFORNIA SWEETCICELY. Perennial herb. Scarce, along northern base of the range in shady canyon bottoms, e.g., tributary drainage off La Tuna Canyon, and observed, but not collected in Deer Creek; growing in understory of oak woodland. *Gross 536*, 28 Apr 2002 (RSA).
- Sanicula arguta* J. M. Coult. & Rose, SHARPTOOTH BLACKSNAKEROOT. Geophyte. Scarce, at southern and northwestern base of the range, in heavy soil, in openings in chaparral and coastal scrub with other clay soil grasses, forbs, and geophytes. *Soza et al. 1185*, 26 Apr 2001 (RSA).
- Sanicula crassicaulis* Poepp. ex DC, PACIFIC BLACKSNAKEROOT. Perennial herb. Infrequent on shaded slopes and benches along drainages, especially across the northern flank of the range, e.g., east branch of Engleheard Canyon; in understory of chaparral, coastal scrub, and oak woodland. *MacFadden s.n.*, 10 Mar 1931 (RSA).
- Sanicula tuberosa* Torr., TURKEY PEA. Geophyte. Scarce, at northwestern end of the range, on gentle slopes with heavy soil of volcanic origin, in understory of chaparral and coastal scrub. *Gross 133*, 15 Apr 1999 (RSA).
- Tauschia arguta* (Torr. & A. Gray) J. F. Macbr., SOUTHERN UMBRELLA-WORT. Perennial herb. Occasional in the San Rafael Hills, on xeric slopes in chaparral; not collected or seen in the main body of the range, but to be expected in similar habitats. *Greata s.n.*, Mar 1907 (RSA).
- Yabea microcarpa* (Hook. & Arn.) Koso-Pol., FALSE CARROT. Annual. Scarce, documented by historic collections at Devil's Gate and La Tuna Canyon, northern base of the range, on mesic, north-facing slopes. *MacFadden, s.n.*, 4 Apr 1931 (RSA).

## APOCYNACEAE

- Apocynum cannabinum* L., INDIAN HEMP. Perennial herb. Infrequent, though locally common where present, especially in upper La Tuna Canyon, generally on benches and along stream beds in riparian woodland. *Riefner 00-754*, 29 Aug 2000 (RSA).
- Asclepias eriocarpa* Benth., KOTOLO. Perennial herb. Scarce, documented by a few historic collections about the base of the range; collected more recently in La Tuna Canyon area where a few plants were found along a dry ridgeline in coastal scrub. *Gross 420*, 27 May 2001 (RSA).
- Asclepias fascicularis* Decne., NARROW-LEAF MILKWEED. Perennial herb. Infrequent, documented by historic collections from lower elevation slopes

in the San Rafael Hills, e.g., near Eagle Rock, and in the main body of the range in La Tuna Canyon; to be expected in drainages throughout the study area. *Bisbee s.n.*, 30 Aug 1917 (RSA).

***Funastrum cynanchoides*** (Decne.) Schltr. var. ***hartwegii*** (Vail) Krings, CLIMBING MILKWEED. Suffruticose perennial. Infrequent on lower elevation slopes and ridges at the western end of the range, especially La Tuna canyon area, generally in coastal scrub. *Gross et al.* 497, 21 Mar 2002 (RSA).

\****Nerium oleander*** L., OLEANDER. Large shrub. Infrequent, growing outside of cultivation (though widely planted and persisting around abandoned home sites), generally near seeps or other perennial water sources near the urban-wildland interface, e.g., Eagle Rock, Big Tujunga Wash, and scattered spots on road cuts along the 210 Freeway. *Keefe* 30954, 19 Jan 2001 (RSA).

\****Vinca major*** L., GREATER PERIWINKLE. Perennial herb. Occasional, escaping from cultivation near abandoned home sites and at the urban-wildland interface; at scattered sites throughout the range, generally in shaded canyon bottoms and alluvial benches, in understory of oak woodland and riparian woodland. *Vellema* 101B, 19 Jan 2001 (RSA).

## ARALIACEAE

\****Hedera helix*** L., ENGLISH IVY. Liana. Infrequent, scattered sites in shaded canyons throughout the range, escaping from cultivation at the urban-wildland interface (especially at abandoned home sites), and growing up into trees or shrubs in oak woodland, riparian woodland, and chaparral. *Gross* 744, 22 Feb 2003 (RSA).

## ASTERACEAE

***Acourtia microcephala*** DC., SACAPELLOTE. Perennial herb. Occasional, scattered sites throughout the range, in relatively mesic sites with deeper, well drained soil; generally forming local patches within chaparral. *MacFadden s.n.*, 1 Jun 1931 (RSA).

\****Ageratina adenophora*** (Spreng.) R. M. King & H. Rob., STICKY SNAKE-ROOT. Suffruticose perennial. Common in canyons and drainages throughout the study area, aggressively invasive in understory of riparian woodland. *Soza et al.* 815, 27 Apr 2000 (RSA).

***Ambrosia acanthicarpa*** Hook., ANNUAL BUR-SAGE. Annual. Occasional throughout the range, in open sandy soil of washes and other disturbed areas, especially road margins and debris basins. *Gross et al.* 293, 18 Oct 2000 (RSA).

- \**Anthemis cotula* L., MAYWEED. Annual. Infrequent, documented by historic collections from scattered sites around the base of the range, especially the southeastern edge, and La Tuna Canyon, presumably in moist, disturbed areas. *MacFadden 1168, 6 Jun 1929 (RSA)*.
- Artemisia californica* Less., CALIFORNIA SAGEBRUSH. Small shrub. Common throughout the range, generally on open slopes and alluvial benches, most abundant in coastal scrub, but also on xeric exposures in chaparral. *Steele s.n., 11 Oct 1935 (POM)*.
- Artemisia douglasiana* Besser, MUGWORT. Perennial herb. Occasional and often locally common along drainages, and on adjacent alluvial benches of canyons throughout the range; generally in understory of riparian woodland, occasionally in mesic sites in oak woodland. *Gross 444, 1 Sep 2001 (RSA)*.
- Artemisia dracunculus* L., TARRAGON. Suffruticose perennial. Occasional, mostly in La Tuna and Engleheard canyons and adjacent areas; along fuel breaks, road margins, and open, often disturbed flats within chaparral and coastal scrub. *Keefe 22059A, 10 Jun 1977 (RSA)*.
- Baccharis douglasii* DC., MARSH BACCHARIS. Suffruticose perennial. Scarce, documented by a vague, historic collection, presumably in riparian woodland or other wetland habitat. *Davidson s.n., Aug 1892 (RSA)*.
- Baccharis pilularis* DC., CHAPARRAL BROOM. Large shrub. Infrequent, along margin of the 210 Freeway and along fire roads at northern side of range, along Wildwood Fire Road and at southern side in Stough Canyon, in disturbed areas within chaparral; perhaps naturalizing from plantings at some locations, e.g., in coastal scrub along concrete channel near Bel Aire Park. *Gross 329, 12 Nov 2000 (RSA)*.
- Baccharis salicifolia* (Ruiz & Pav.) Pers., MULE FAT. Large shrub. Common throughout the range, generally in riparian habitats, such as along streams and open alluvial benches, but can be found along roads and other open, disturbed sites where water collects. *Soza et al. 669, 30 Mar 2000 (RSA)*.
- \**Bidens pilosa* L., COMMON BEGGAR-TICKS. Annual. Scarce, south side of the range in Brand Canyon, in moist, more or less disturbed soil; to be expected in moist, disturbed situations at the urban-wildland interface throughout the study area. *Gross & Moore 213, 5 Jun 2000 (RSA)*.
- Brickellia californica* (Torr. & A. Gray) A. Gray, CALIFORNIA BRICKELL-BUSH. Small shrub. Frequent throughout the range, especially the southern flank, on xeric, rocky slopes and cliffs, in chaparral and coastal scrub. *Wheeler 6373, 11 Oct 1952 (RSA)*.
- Brickellia nevini* A. Gray, NEVIN'S BRICKELLBUSH. Small shrub. Occasional, scattered sites throughout the range, especially along the main crest and southern flank; mostly on xeric, rocky slopes and cliffs in chaparral, occasionally in disturbed road cuts. *Wheeler 6372, 11 Oct 1952 (RSA)*.

- \**Carduus pycnocephalus* L., ITALIAN THISTLE. Perennial herb. Occasional and in some areas locally common, generally in canyons along the northern flank of the range, e.g., Engleheard and Sheep Corral canyons, growing along road margins and other disturbed areas in moist, deep soil; also observed after fire on west-facing slopes in San Rafael Hills. *Soza et al.* 877, 12 May 2000 (RSA).
- \**Centaurea melitensis* L., TOCALOTE. Annual. Occasional and, in some areas, locally common throughout the range, on slopes, road margins, and other disturbed ground within chaparral and coastal scrub, and especially after fire in areas dominated by introduced annual grasses. *Keefe* 31011, 24 Jan 2001 (RSA).
- \**Centaurea solstitialis* L., YELLOW STAR-THISTLE. Annual. Infrequent, but locally common where present, along main crest and northeast flank of the range, in disturbed margins of fire roads. *Gross* 333, 13 Jan 2001 (RSA).
- Chaenactis artemisiifolia* (A. Gray) A. Gray, WHITE PINCUSHION. Annual. Frequent, especially along southern flank of the range and lower hills along the western edge; on open, xeric slopes in chaparral and coastal scrub, especially after fire or in years of above average precipitation. *Soza & Moore* 839, 10 May 2000 (RSA).
- Chaenactis glabriuscula* DC. var. *glabriuscula*, YELLOW PINCUSHION. Annual. Occasional and at times locally common, especially along southern flank of the range and lower hills along the western edge; on ridgetops and open, xeric slopes in chaparral and coastal scrub. *Gross & Moore* 223, 5 Jun 2000 (RSA).
- Chaenactis glabriuscula* DC. var. *lanosa* (DC.) H. M. Hall, YELLOW PINCUSHION. Annual. Scarce, documented by a historic collection from the hills west of Eagle Rock Valley, as well as other early collections from outwash plains just outside the study area. *Bisbee s.n.*, 20 May 1917 (RSA).
- Cirsium occidentale* (Nutt.) Jeps. var. *californicum* (A. Gray) D. J. Keil & C. E. Turner, COBWEBBY THISTLE. Biennial herb. Infrequent, on lower slopes at northwestern end of the range and in San Rafael Hills; generally in openings in chaparral or other somewhat disturbed areas, on or near clay soil. *Gross et al.* 403, 4 Jun 2001 (RSA).
- Cirsium occidentale* (Nutt.) Jeps. var. *occidentale*, COBWEBBY THISTLE. Biennial herb. Occasional on slopes and canyon bottoms throughout the range, generally in openings of chaparral and on sandy, alluvial benches. *Mullins s.n.*, 19 Apr 1931 (POM).
- \**Cirsium vulgare* (Savi) Ten., BULL THISTLE. Perennial herb. Scarce, documented at northern base of the range along edge of road in thick chaparral; to be expected in moist disturbed areas throughout the study area, especially near the urban-wildland interface. *Soza et al.* 1351, 20 Jul 2001 (RSA).

- \**Conyza bonariensis* (L.) Cronquist, ASTHMAWEED. Annual. Infrequent at scattered sites throughout the range, generally in disturbed situations at the urban-wildland interface. *Gross 454, 10 Nov 2001 (RSA)*.
- Conyza canadensis* (L.) Cronquist, CANADIAN HORSEWEED. Annual (sometimes treated as introduced). Infrequent throughout the range, along roads, debris basins, or in other disturbed areas (both natural and anthropogenic), especially at the urban-wildland interface. *Gross et al. 277, 18 Oct 2000 (RSA)*.
- Corethrogyne filaginifolia* (Hook. & Arn.) Nutt., CALIFORNIA-ASTER. Suffruticose perennial. Frequent on slopes, ridges, and alluvial benches throughout the range, generally in openings within chaparral and coastal scrub, and along road margins. *Wheeler 1426, 7 Oct 1932 (RSA)*.
- \**Cotula australis* (Sieber ex Spreng.) Hook. f., AUSTRALIAN WATERBUT-TONS. Annual. Infrequent throughout the range, generally at the urban-wildland interface in disturbed areas in moist or hard-packed soil, such as road margins, trails, etc., as in mouths of Brand, Engleheard, and Sheep Corral canyons. *Gross 732, 22 Feb 2003 (RSA)*.
- Deinandra fasciculata* (DC.) Greene, CLUSTERED TARWEED. Annual. Frequent and often locally common, especially in lower elevation foothills at the western edge of the range, and in the San Rafael Hills; generally on xeric slopes and ridges in openings within chaparral and coastal scrub, and also in dry, meadow-like areas of relatively flat, heavy soil. *MacFadden s.n., 11 Jun 1933 (RSA)*.
- \**Delairea odorata* Lem., CAPE-IVY. Liana. Infrequent, but widely scattered in drainages at the base of the range, e.g., Eagle Rock, Engleheard Canyon, and Scholl Canyon, in riparian woodland at the urban-wildland interface; an aggressive weed, and may be locally abundant where present, sprawling over shrubs and trees in canyon bottoms. *Keefe 30923, 19 Jan 2001 (RSA)*.
- \**Dimorphotheca sinuata* DC., GLANDULAR CAPE MARIGOLD. Annual. Scarce, escaped from cultivation at the urban-wildland interface, along southern side of the range, on somewhat disturbed, recently burned ridge; commonly cultivated, to be expected as an infrequent escape elsewhere throughout the study area. *Gross et al. 727, 10 Feb 2003 (RSA)*.
- Encelia californica* Nutt., CALIFORNIA BRITTLEBUSH. Small shrub. Occasional throughout the range, and locally common at the western edge of the study area, generally on somewhat xeric slopes in coastal scrub; presumably some populations are natural, however, this species is also widely planted on fill slopes and other disturbed sites, forming self-sustaining populations, as on hillsides near Theodore Payne Foundation. *Keefe 31152, 19 Mar 2001 (RSA)*.

- \**Encelia farinosa* A. Gray ex Torr., BRITTLEBUSH. Small shrub. Infrequent, scattered sites on both northern and southern flanks of the range; planted or seeded on cut/fill slopes along roads and on old fuel breaks, forming self-sustaining populations in adjacent xeric chaparral and coastal scrub. *Gross et al.* 723, 10 Feb 2003 (RSA).
- Ericameria linearifolia* (DC.) Urbatsch & Wussow, INTERIOR GOLDEN-BUSH. Small shrub. Scarce, documented by a historic collection from La Tuna Canyon; a single individual was collected more recently just outside of the study area on an earthen levee in Big Tujunga Wash, north of the 210 Freeway. *MacFadden* 1308, 1 Oct 1929 (RSA).
- Ericameria parishii* (Greene) H. M. Hall, PARISH'S RABBITBRUSH. Small shrub. Scarce, documented by a few widely scattered collections across the northern flank of the range, generally along roads, fuel breaks, or other somewhat disturbed openings in chaparral. *Gross* 446, 1 Sep 2001 (RSA).
- Ericameria pinifolia* (A. Gray) H. M. Hall, PINE-BUSH. Small shrub. Infrequent, primarily in the northern and eastern part of the range, in openings in chaparral and on old road cuts. *Davidson s.n.*, Aug 1892 (POM).
- Erigeron foliosus* Nutt. var. *foliosus*, LEAFY FLEABANE. Perennial herb. Occasional, scattered sites on both sides of the range, generally on xeric slopes in openings of chaparral and coastal scrub. *Gross et al.* 567, 17 Jul 2002 (RSA).
- Eriophyllum confertiflorum* (DC.) A. Gray var. *confertiflorum*, GOLDEN-YARROW. Suffruticose perennial. Common throughout the range on slopes, ridges, and alluvial benches, generally in chaparral and coastal scrub. *MacFadden s.n.*, 20 Apr 1931 (POM).
- \**Gamochaeta pensylvanica* (Willd.) Cabrera, PENNSYLVANIA EVERLASTING. Annual. Occasional on slopes and alluvial benches throughout the range, in open or semi-shaded areas of loose soil, generally somewhat disturbed sites in chaparral and xeric coastal scrub. *Moore et al.* 44, 8 Jun 2000 (RSA).
- \**Gazania linearis* (Thunb.) Druce, TREASUREFLOWER. Perennial herb. Infrequent, widely cultivated and escaping at scattered sites throughout the range at the urban-wildland interface, generally along road margins. *Gross* 752, 1 Mar 2003 (RSA).
- Gutierrezia californica* (DC.) Torr. & A. Gray, CALIFORNIA MATCHWEED. Suffruticose perennial. Infrequent, in foothills at western end of the range, including one population on a small pocket of red, oxidized soil on the face of a steep slope. *Gross et al.* 401, 4 Jun 2001 (RSA).
- Hazardia squarrosa* (Hook. & Arn.) Greene var. *grindelioides* (DC.) W. D. Clark, SAW-TOOTHED GOLDENBUSH. Small shrub. Frequent on slopes and ridges, especially along the main crest and northern flank of the range, generally in chaparral. *Moxley* 259, 3 Sep 1914 (POM).

- \**Hedynois cretica* (L.) Dum.-Cours., CRETE WEED. Annual. Infrequent, but in some places locally common, principally at the northeastern base of the range, in compacted soil along dirt roads in oak woodland and chaparral; relatively common as an urban weed, and to be expected throughout the study area at the urban-wildland interface. *Soza et al.* 879, 12 May 2000 (RSA).
- Helenium puberulum* DC., ROSILLA. Perennial herb. Scarce, documented by historic collections from canyons on the southern flank of the range, e.g., Sunset Canyon, presumably in riparian situations. *Peirson* 4228, 21 Oct 1923 (RSA).
- Helianthus annuus* L., COMMON SUNFLOWER. Annual. Frequent on slopes, ridges, and alluvial benches throughout the range, especially at the urban-wildland interface and along roads in somewhat disturbed situations; primarily in annual grassland, coastal scrub, and disturbed riparian woodland. *Gross* 377, 1 Apr 2001 (RSA).
- Helianthus gracilentus* A. Gray, SLENDER SUNFLOWER. Perennial herb. Occasional throughout the range, generally in openings on xeric slopes and ridges in chaparral, less frequently coastal scrub, and especially along roads, fuel breaks, and areas recovering from recent burns. *Soza et al.* 992, 6 Jun 2000 (RSA).
- \**Helminthotheca echioides* (L.) Holub, BRISTLY OX-TONGUE. Perennial herb. Scarce in disturbed situations at the urban-wildland interface; more frequent as an urban weed. *Spalding s.n.*, 25 Jun 1923 (RSA).
- Heterotheca grandiflora* Nutt.; TELEGRAPH WEED. Biennial herb. Occasional throughout the range, primarily along road margins and other disturbed areas in the urban-wildland interface, less frequent on xeric, open areas in chaparral and coastal scrub, and on sandy alluvium of open washes and canyon bottoms; common as an urban weed. *Ewan* 10799, Jun 1933 (LA).
- Heterotheca sessiliflora* (Nutt.) Shinnars subsp. *fastigiata* (Greene) Semple, SES-  
SILEFLOWER FALSE GOLDENASTER. Perennial herb. Occasional, on xeric slopes, ridges, and alluvial benches throughout the range, especially along dirt roads, on fuel breaks, and other somewhat disturbed situations in chaparral. *Ward s.n.*, 16 Apr 1970 (RSA).
- \**Hypochaeris glabra* L., SMOOTH CAT'S-EAR. Annual. Occasional throughout the range, especially at the urban-wildland interface, generally in open, somewhat disturbed situations, as along road margins, open, sandy washes, etc.; frequent as an urban weed. *Gross* 821, 4 May 2003 (RSA).
- Isocoma menziesii* (Hook. & Arn.) G. L. Nesom var. *vernonioides* (Nutt.) G. L. Nesom, MENZIES' GOLDENBUSH. Small shrub. Scarce, documented by a historic collection from a hillside in Eagle Rock, and present, but uncommon, at the extreme western edge of the study area, on flats adjacent to

Big Tujunga Wash; to be expected elsewhere in open, somewhat disturbed areas about the base of the range. *Spalding s.n.*, 7 Feb 1923 (POM).

\**Lactuca serriola* L., PRICKLY LETTUCE. Annual. Occasional throughout the range, especially along road margins, debris basins, and other disturbed sites at the urban-wildland interface (at times locally abundant). Occasionally, scattered individuals will be found in less disturbed situations in chaparral, coastal scrub, oak woodland, and riparian woodland; common as an urban weed. *Riefner 00-758*, 29 Aug 2000 (RSA).

*Lasthenia coronaria* (Nutt.) Ornduff, ROYAL GOLDFIELDS. Annual. Scarce, known primarily from historic collections at scattered, now urbanized, sites around the base of the range, especially the eastern end, e.g., Devil's Gate, Eagle Rock, etc.; collected more recently in foothills at the extreme northwestern end of the range near McDonald Creek, growing with other native annuals in openings between shrubs, in coastal scrub; perhaps still present as a post-fire species in less disturbed areas of chaparral and coastal scrub in the San Rafael Hills and adjacent areas. *Davidson s.n.*, 3 May 1892 (POM).

*Lasthenia gracilis* (DC.) Greene, NEEDLE GOLDFIELDS. Annual. Scarce, known from historic collections at scattered, now urbanized sites around the base of the range, especially the eastern end, e.g., Eagle Rock, Pasadena; perhaps still present as a post-fire species in chaparral of the San Rafael Hills. *M. Bisbee s.n.*, 24 Apr 1917 (POM).

*Layia platyglossa* (Fisch. & C. A. Mey.) A. Gray, TIDY-TIPS. Annual. Scarce, documented by historic collections at scattered, now urbanized sites around the base of the range. *Steele & Pratt s.n.*, 9 Apr 1934 (POM).

*Lepidospartum squamatum* (A. Gray) A. Gray, NEVADA BROOMSAGE. Small shrub. Infrequent, primarily along channels and alluvial benches of larger drainages, e.g., south-facing slopes of Brand, Dead Horse, Jeffries, and Stough canyons, less often in disturbed openings in chaparral, especially on fuel breaks, where presumably introduced by contaminated soils carried on bulldozers or other heavy equipment. *Gross & Soza 393*, 31 May 2001 (RSA).

*Logfia filaginoides* (Hook. & Arn.) Morefield, CALIFORNIA COTTONROSE. Annual. Occasional throughout the range on slopes, ridges, and alluvial benches; generally in xeric, open areas within chaparral and coastal scrub, and hard-packed soil along road margins, etc. *Steele s.n.*, 10 May 1935 (POM).

\**Logfia gallica* (L.) Coss. & Germ., NARROWLEAF COTTONROSE. Annual. Occasional throughout the range on slopes, ridges, and alluvial benches; on recent burns, somewhat disturbed, open areas within chaparral and coastal scrub, and hard-packed soil along road margins and fuel breaks. *Gross & Moore 204*, 5 Jun 2000 (RSA).

- Madia gracilis*** (Sm.) D. D. Keck, SLENDER TARWEED. Annual. Scarce, documented by a historic collection from slopes of La Tuna Canyon behind Belmont Country Club. *MacFadden 11050, Jun 1933 (RSA)*.
- Malacothrix californica*** DC., CALIFORNIA DESERTDANDELION. Annual. Scarce, documented by historic collections near Burbank and in La Tuna Canyon, in sandy sites. *MacFadden 3167, 10 Apr 1931 (RSA)*.
- Malacothrix clevelandii*** A. Gray, CLEVELAND'S DESERTDANDELION. Annual. Scarce, documented by historic collections in washes of Arroyo Seco and La Tuna Canyon; collected more recently on a ridge in the foothills at the northwestern end of the range, as a post-fire element in burned chaparral and coastal scrub and to be expected in similar situations elsewhere throughout the study area. *Soza & Moore 865, 10 May 2000 (RSA)*.
- Malacothrix saxatilis*** (Nutt.) Torr. & A. Gray var. ***tenuifolia*** (Nutt.) A. Gray, CLIFF DESERTDANDELION. Perennial herb. Frequent, on slopes and ridges throughout the range, especially on cliffs and steep road cuts within chaparral; occasionally present as a weed in somewhat moist, disturbed sites at the urban-wildland interface. *Ward s.n., 19 Jun 1970 (POM)*.
- \**Matricaria matricarioides*** (Less.) Porter, PINEAPPLE WEED. Annual. Occasional throughout the range, generally on road margins and in other disturbed sites at the urban-wildland interface, especially in moist or hard-packed soil, such as the mouth of Sheep Corral Canyon; common as an urban weed. *Gross 412, 28 May 2001 (RSA)*.
- Micropus californicus*** Fisch. & C. A. Mey. var. ***californicus***, SLENDER COTTONWEED. Annual. Scarce, documented by historic collections from La Tuna Canyon. *MacFadden 2176, 1 Jun 1930 (POM)*.
- Osmadenia tenella*** Nutt., OSMADENIA. Annual. Scarce, documented by historic collections from now urbanized areas about the southern and eastern base of the range, e.g., Eagle Rock and Glendale, presumably in relatively heavy soil. *Davidson s.n., 1892 (POM)*.
- Pseudognaphalium beneolens*** (Davidson) Anderb., WRIGHT'S CUDWEED. Perennial herb. Infrequent, documented mainly by historic collections across the southern flank of the range; collected more recently along the main crest in openings in chaparral. *Bisbee s.n., 5 Oct 1917 (POM)*.
- Pseudognaphalium biolettii*** Anderb., TWO-COLOR RABBIT-TOBACCO. Perennial herb. Frequent throughout the range, on xeric, open slopes, ridges, and alluvial benches, generally within chaparral and coastal scrub. *Soza et al. 805, 27 Apr 2000 (RSA)*.
- Pseudognaphalium californicum*** (DC.) Anderb., LADIES' TOBACCO. Perennial herb. Frequent throughout the range, on xeric, open slopes, ridges, and alluvial benches; generally within chaparral and coastal scrub, less frequently in understory of oak woodland. *MacFadden s.n., 17 Apr 1931 (POM)*.

- †*Pseudognaphalium leucocephalum* (A. Gray) Anderb., WHITE CUDWEED. Suffruticose perennial. Scarce, documented by historic collections from Verdugo Wash and La Tuna Canyon, presumably on alluvial benches. *MacFadden 2953, Apr 1931 (RSA)*.
- \**Pseudognaphalium luteoalbum* (L.) Hilliard & B. L. Burt, JERSEY CUDWEED. Annual. Occasional at scattered sites throughout the range, in generally damp soil in canyon bottoms and other moist disturbed areas at the urban-wildland interface; fairly common as an urban weed. *Gross & Soza 440, 6 Jun 2001 (RSA)*.
- Pseudognaphalium microcephalum* (Nutt.) Anderb., WRIGHT'S CUDWEED. Perennial herb. Infrequent, documented mainly by historic collections from slopes at the eastern end of the range; collected more recently near Flint Peak, in xeric, open areas in chaparral and coastal scrub. *Bisbee s.n., 2 Sep 1917 (POM)*.
- Pseudognaphalium ramosissimum* (Nutt.) Anderb., PINK CUDWEED. Perennial herb. Scarce, documented by a historic collection from Eagle Rock; primarily a more coastal species. *Greata s.n., 23 Sep 1900 (POM)*.
- Pseudognaphalium stramineum* (Kunth) Anderb., COTTONBATTING PLANT. Annual. Infrequent, in foothills at western edge of the range, in openings or under shrubs in coastal scrub. *Gross & Soza 898b, 15 May 2003 (RSA)*.
- Psilocarphus tenellus* Nutt., SLENDER WOOLLYHEADS. Annual. Documented by a historic collection from San Rafael Hills near campus of Glendale Community College, along path in disturbed chaparral; also recorded from just outside the study area in Hahamongna Watershed Park (formerly Oak Grove Park) behind Devil's Gate Dam, and observed, but not collected, in Big Tujunga Wash, in drying beds of rain pools and silt along flood channels. *Wheeler 6637, 26 Apr 1948 (RSA)*.
- Rafinesquia californica* Nutt., CALIFORNIA CHICORY. Annual. Occasional on slopes throughout the range, in understory of chaparral, coastal scrub, and oak woodland; also frequent as post-fire species. *Gross & Soza 899, 15 May 2003 (RSA)*.
- Senecio flaccidus* Less. var. *douglasii* (DC.) B. L. Turner & T. M. Barkley, DOUGLAS' RAGWORT. Small shrub. Occasional on slopes, ridges, and alluvial benches throughout the range, generally in openings in chaparral and coastal scrub; less frequent along road margins and fuel breaks. *Gross et al. 279, 18 Oct 2000 (RSA)*.
- \**Senecio vulgaris* L., OLD-MAN-IN-THE-SPRING. Annual. Occasional on slopes, ridges, and alluvial benches throughout the range, in open, somewhat disturbed areas in chaparral and coastal scrub; especially common as an urban weed. *Gross 366, 31 Mar 2001 (RSA)*.
- \**Silybum marianum* (L.) Gaertn., BLESSED MILKTHISTLE. Annual or biennial. Scarce, but locally common in Brand Canyon, forming dense colony

of robust plants on deep, moist soil of alluvial bench in an area that burned the previous year. *Gross 819, 4 May 2003 (RSA)*.

***Solidago velutina*** DC. subsp. ***californica*** (Nutt.) Semple, CALIFORNIA GOLDENROD. Perennial herb. Infrequent, at base of slopes, alluvial benches, and stream channels in canyons throughout the range, generally in oak woodland and riparian woodland. *Davidson s.n., Jul 1889 (RSA)*.

***Solidago velutina*** DC. subsp. ***californica*** (Nutt.) Semple X ***Solidago confinis*** Nutt., CALIFORNIA GOLDENROD-SOUTHERN GOLDENROD HYBRID. Perennial herb. Infrequent, on slopes and alluvial benches in canyons throughout the range, generally in oak woodland and riparian woodland. *Gross et al. 1055, 17 Jun 2003 (RSA)*.

\****Sonchus asper*** (L.) Hill, PRICKLY SOW THISTLE. Annual. Infrequent at scattered sites throughout the range, in moist disturbed areas, especially at the urban-wildland interface. *Gross 2600, 13 Mar 2007 (RSA)*.

\****Sonchus oleraceus*** L., COMMON SOW THISTLE. Annual. Frequent along roads, trails, and other disturbed sites throughout the range, especially at the urban-wildland interface, and common as an urban weed; occasional in less disturbed situations in chaparral, coastal scrub, oak woodland and riparian woodland. *Keefe 30917, 19 Jan 2001 (RSA)*.

***Stephanomeria cichoriacea*** A. Gray, CHICORYLEAF WIRELETTUCE. Perennial herb. Occasional across the main crest of the range on bedrock outcrops and cliffs at the head of canyons draining the northern flank, generally in chaparral; also seen, but not collected, on cliffs in lower Brand Canyon, and to be expected in similar situations across the southern flank of the range. *Gross 447, 1 Sep 2001 (RSA)*.

***Stephanomeria exigua*** Nutt. subsp. ***coronaria*** (Greene) Gottlieb, WHITEPLUME WIRELETTUCE. Annual. Infrequent along ridges of lower hills at the western edge of the range, in xeric, rocky areas in open, grassy coastal scrub. *Soza et al. 979, 6 Jun 2000 (RSA)*.

***Stephanomeria virgata*** Benth. subsp. ***virgata***, ROD WIRELETTUCE. Annual. Occasional throughout the range, generally in openings in chaparral, and along roads, road cuts, and fuel breaks. *Keefe 30907A, 19 Jan 2001 (RSA)*.

***Stylocline gnaphaloides*** Nutt., EVERLASTING NEST STRAW. Annual. Occasional, on xeric ridges of lower hills surrounding the range, generally in open coastal scrub. *Soza & Moore 831, 10 May 2000 (RSA)*.

‡***Symphotrichum greatae*** (Parish) G. L. Nesom, GREATA'S ASTER. Perennial herb. Scarce, documented by a vague, historic collection from the Verdugo Mountains, presumably in riparian woodland or other wetland habitat. *Peirson s.n., s.d. (RSA #93783)*.

\****Tanacetum parthenium*** (L.) Sch.Bip., FEVERFEW. Perennial herb. Infrequent along the upper reaches of La Tuna Canyon and its tributary drainages, in

moist soil of drainages, in riparian woodland and oak woodland. *Gross et al. 1096, 19 Jun 2003 (RSA)*.

\**Taraxacum erythrospermum* Besser, RED-SEEDED DANDELION. Perennial herb. Scarce, documented by a historic collection from Eagle Rock, and to be expected throughout the range in moist, disturbed sites at the urban-wildland interface; common as an urban weed. *Gross 2599, 12 Mar 2007 (RSA)*.

*Tetradymia comosa* A. Gray, HAIRY HORSEBRUSH. Small shrub. Infrequent, primarily on slopes of lower hills at the far western edge of the range, but with scattered occurrences across the main crest and in the San Rafael Hills; generally present as small colonies in openings of chaparral or in coastal scrub. *Keefe 23285, 23 May 1978 (RSA)*.

*Uropappus lindleyi* (DC.) Nutt., LINDLEY'S SILVERPUFFS. Annual. Occasional, on slopes and ridges throughout the range, though more frequent towards the far western edge and across the northern flank, mostly in openings in chaparral and coastal scrub, and as a post-fire species. *Soza & Moore 868, 10 May 2000 (RSA)*.

*Venegasia carpesioides* DC., CANYON SUNFLOWER. Small shrub. Infrequent in Brand Canyon, along southern flank of the range, but to be expected in other mesic canyons across the southern side of the range; mostly on shaded slopes and alluvial benches in oak woodland and riparian woodland. *Gross et al. 1049, 17 Jun 2003 (RSA)*.

*Xanthium strumarium* L., COCKLEBUR. Annual. Documented by historic collections from Arroyo Seco and La Tuna Canyon, observed in debris basins near Bel Aire Park and in Wildwood Canyon; to be expected along disturbed stream channels and other wet, disturbed areas throughout the range. *MacFadden 1723, 11 May 1930 (RSA)*.

## BETULACEAE

*Alnus rhombifolia* Nutt., WHITE ALDER. Tree. Scarce in La Tuna Canyon, in riparian woodland. *Gross et al. 551, 17 Jul 2002 (RSA)*.

## BORAGINACEAE

*Amsinckia intermedia* Fisch. & C.A. Mey, COMMON FIDDLENECK. Annual. Occasional, on xeric slopes and ridges at scattered sites throughout the range; in annual grassland, openings in coastal scrub, and as a post-fire annual in chaparral. *Abrams 1429, Apr 1901 (POM)*.

*Amsinckia menziesii* (Lehm.) A. Nelson & J. F. Macbr., RANCHER'S FIRE-WEED. Annual. Infrequent, on xeric slopes and ridges at scattered sites throughout the range; in annual grassland, openings in coastal scrub, and

as a post-fire annual in chaparral. *Soza & Moore 853, 10 May 2000 (RSA)*.

*Cryptantha clevelandii* Greene, CLEVELAND'S CRYPTANTHA. Annual. Scarce, on northern flank of the range in La Tuna Canyon, on ridgetop in small area of reddish clay substrate within chaparral opening. *Gross et al. 243, 8 Jun 2000 (RSA)*.

*Cryptantha intermedia* (A. Gray) Greene, CLEARWATER CRYPTANTHA. Annual. Common on slopes, ridges, and alluvial benches throughout the range, in openings in chaparral and coastal scrub, and as a post-fire element. *Soza et al. 978, 6 Jun 2000 (RSA)*.

*Cryptantha micromeres* (A. Gray) Greene, PYGMYFLOWER CRYPTANTHA. Annual. Occasional, in scattered sites throughout the range, but most frequent on slopes across northern base of the range, primarily in understory of chaparral and on recent burns; relatively few individuals present at any given occurrence. *Soza et al. 711, 20 Apr 2000 (RSA)*.

*Cryptantha microstachys* (A. Gray) Greene, TEJON CRYPTANTHA. Annual. Occasional on slopes, ridges, and alluvial benches throughout the range; at times locally common, primarily in understory of chaparral and coastal scrub. *Grinnell s.n., Apr 1910 (RSA)*.

*Cryptantha muricata* (Hook. & Arn.) A. Nelson & J. F. Macbr., POINTED CRYPTANTHA. Annual. Occasional on slopes, ridges, and alluvial benches throughout the range, in xeric openings in chaparral and coastal scrub, and especially following fire. *Gross & Moore 224, 5 Jun 2000 (RSA)*.

\**Echium candicans* L. f., PRIDE OF MADEIRA. Small shrub. Scarce, although locally common where present, in northern San Rafael Hills, planted along road and naturalizing on adjacent northwesterly slopes, in burned chaparral and coastal scrub; flowers varied from white to lavender, pale blue, and dark blue. *Gross 1211, 19 Mar 2004 (RSA)*.

*Emmenanthe penduliflora* Benth. var. *penduliflora*, WHISPERING BELLS. Annual. Occasional on slopes and ridges throughout the range, in openings in chaparral and coastal scrub, and more frequent as a post-fire species in these habitats. *Soza & Moore 848, 10 May 2000 (RSA)*.

*Eriodictyon crassifolium* Benth. var. *nigrescens* Brand, THICKLEAF YERBA SANTA. Large shrub. Occasional on slopes and alluvial benches at scattered sites across the range, generally in chaparral and coastal scrub, usually in deep or sandy soils, and sometimes forming extensive stands, especially following fire. *Soza & Moore 836, 10 May 2000 (RSA)*.

*Encrypta chrysanthemifolia* (Benth.) Greene var. *chrysanthemifolia*, SPOTTED HIDESEED. Annual. Common and widespread on slopes, ridges, and alluvial benches throughout the range, generally in openings in chaparral and coastal scrub, but tolerant of shade in oak woodlands; especially frequent as a post-fire species. *Moore et al. 43, 8 Jun 2000 (RSA)*.

- Nemophila menziesii* Hook. & Arn. var. *integrifolia* Parish, BABY BLUE-EYES. Annual. Frequent on slopes, ridges, and alluvial benches throughout the range, generally in openings in chaparral and coastal scrub, but tolerant of shade in oak woodlands, as in Sheep Corral Canyon. *Gross et al.* 948, 29 May 2003 (RSA).
- Nemophila menziesii* Hook. & Arn. var. *menziesii*, BABY BLUE-EYES. Annual. Occasional on slopes, ridges, and alluvial benches throughout the range, generally in openings in chaparral and coastal scrub, but tolerant of shade in oak woodlands. *Hill s.n.*, 29 Apr 1929 (RSA).
- Pectocarya linearis* (Ruiz & Pav.) DC. subsp. *ferocula* (I. M. Johnst.) Thorne, SAGEBRUSH COMBSEED. Annual. Occasional, on lower slopes and alluvial benches, at western and northern edges of the range, generally in openings in coastal scrub. *Soza & Moore* 842, 10 May 2000 (RSA).
- Pectocarya penicillata* (Hook. & Arn.) A. DC., SLEEPING COMBSEED. Annual. Occasional, on lower slopes and alluvial benches throughout the range, though more frequent at western and northern edges of the study area; generally in openings in coastal scrub, and especially in sandy soil. *Gross & Soza* 915, 15 May 2003 (RSA).
- Phacelia brachyloba* (Benth.) A. Gray, SHORTLOBE PHACELIA. Annual. Infrequent, documented from recently burned slopes and ridges at widely scattered sites throughout the range, generally in chaparral and coastal scrub, being locally common only the first or second year following fire. *Soza & Moore* 863, 10 May 2000 (RSA).
- Phacelia cicutaria* Greene var. *hispida* (A. Gray) J. T. Howell, CATERPILLAR PHACELIA. Annual. Frequent on open, xeric slopes of the San Rafael Hills and across the southern and northwestern flanks of the main body of the range, generally in chaparral and coastal scrub. *Keefe* 22906, 11 May 1978 (RSA).
- Phacelia distans* Benth., DISTANT PHACELIA. Annual. Frequent on slopes, ridges, and alluvial benches, generally in openings in chaparral and coastal scrub; common as a post-fire species. *McNair s.n.*, 1 May 1934 (RSA).
- Phacelia douglasii* (Benth.) Torr., DOUGLAS' PHACELIA. Annual. Scarce, documented by a historic collection near Glendale. *Clare s.n.*, 10 Apr 1929 (RSA).
- Phacelia grandiflora* (Benth.) A. Gray, LARGEFLOWER PHACELIA. Annual. Occasional, documented from recently burned slopes and ridges throughout the range; generally one of the most abundant post-fire species in chaparral and coastal scrub, being locally common the first or second year following fire. *Soza et al.* 726, 20 Apr 2000 (RSA).
- Phacelia imbricata* Greene subsp. *imbricata*, IMBRICATE PHACELIA. Perennial herb. Scarce, documented from a historic collection in La Tuna Canyon. *MacFadden* 2932, 10 Apr 1931 (RSA).

- Phacelia minor* (Harv.) Thell. ex F. Zimm., WILD CANTERBURY BELLS. Annual. Frequent on slopes and ridges throughout the range, generally in openings in chaparral and coastal scrub; especially common as a post-fire species. *Abrams s.n.*, 7 Apr 1901 (POM).
- Phacelia ramosissima* Douglas ex Lehm. var. *latifolia* (Torr.) Cronquist, BRANCHING PHACELIA. Perennial herb. Occasional on lower canyon slopes and adjacent alluvial benches, scattered sites throughout the range, generally in chaparral and understory of oak woodland and riparian woodland. *Gross et al.* 1061, 17 Jun 2003 (RSA).
- Pholistoma auritum* (Lindl.) Lilja var. *auritum*, FIESTA FLOWER. Annual. Infrequent, on lower slopes of canyons in the San Rafael Hills and across the northern flank of the range, also at the northwestern edge of the study area on volcanic soil; generally in understory of chaparral and oak woodland. *Soza et al.* 891, 12 May 2000 (RSA).
- Plagiobothrys collinus* (Phil.) I. M. Johnst. var. *fulvescens* (I. M. Johnst.) Higgins, COOPER'S POPCORNFLOWER. Annual. Scarce, near Camp Max Straus, in canyon at northern base of the range, in relatively deep soil of flat area, in chaparral and oak woodland. *Gross* 175, 22 Apr 2000 (RSA).
- \**Wigandia urens* (Ruiz & Pav.) Kunth var. *caracasana* (Kunth) D. Gibson, CARACUS WIGANDIA. Large shrub. Scarce, near Eagle Rock, spreading from cultivation onto adjacent hillsides. *Riefner* 06-2, 25 Mar 2006 (RSA).

## BRASSICACEAE

- \**Arabidopsis thaliana* (L.) Heynh., MOUSE-EAR CRESS. Perennial herb. Infrequent, although locally common where present, on slopes across the southern flank of the range, especially in and near Brand Canyon; disturbed soil along trails and roads, generally in openings in chaparral and coastal scrub, especially after fire, and also in moist soil along drainages in riparian woodland. *Gross* 363, Mar 31 2001 (RSA).
- Athysanus pusillus* (Hook.) Greene, COMMON SANDWEED. Annual. Infrequent, on slopes and ridges at the northwestern edge of range, generally on mesic exposures, in openings between shrubs in coastal scrub. *Soza et al.* 905, 12 May 2000 (RSA).
- \**Brassica nigra* (L.) W. D. J. Koch, BLACK MUSTARD. Annual. Scarce, documented by a historic collection from Eagle Rock. *Spalding s.n.*, 25 Jun 1923 (RSA).
- \**Brassica rapa* L., TURNIP. Annual. Scarce, documented by historic collections from Eagle Rock and Glendale; collected more recently in the foothills at the northwestern edge of the range, as weed along road margin, and to be expected elsewhere in disturbed situations at the urban-wildland interface. *Spaulding s.n.*, 7 Feb 1923 (RSA).

- \**Capsella bursa-pastoris* (L.) Medik., SHEPHERD'S PURSE. Annual. Occasional, in scattered sites at lower elevations throughout the range, generally in disturbed situations within natural areas at the urban-wildland interface, especially on compacted soil; primarily an urban weed. *Bisbee s.n.*, 15 Apr 1917 (RSA).
- Cardamine californica* (Nutt.) Greene var. *californica*, MILK MAIDS. Geophyte. Scarce, on slope in La Tuna Canyon Park, on mesic exposure in understory of oak woodland; to be expected in similar situations within larger canyons throughout the range. *Dilley s.n.*, 11 Jan 1997 (SFV).
- Cardamine oligosperma* Nutt., LITTLE WESTERN BITTERCRESS. Annual or biennial. Occasional, although locally common where present, on slopes and alluvial benches of the San Rafael Hills and adjacent areas on the northeastern side of the range, generally in disturbed openings and on recent burns in chaparral, oak woodland, and riparian woodland; also an urban weed. *Soza et al.* 882, 12 May 2000 (RSA).
- Caulanthus heterophyllus* (Nutt.) Payson, SAN DIEGO WILD CABBAGE. Annual. Scarce, on ridgeline in Wildwood Canyon, southern flank of the range, in xeric openings in chaparral and coastal scrub; this is a pale-flowered form found primarily in the northern Peninsular Ranges (e.g., San Jacinto Mountains, Santa Ana Mountains, Gavilan Hills, etc.). *Soza et al.* 771, 25 Apr 2000 (RSA) [as *Caulanthus heterophyllus* var. *pseudosimulans* ined.].
- Caulanthus lasiophyllus* (Hook. & Arn.) Payson, CALIFORNIA MUSTARD. Annual. Infrequent, on slopes and ridges, primarily in northern flank of the range, in chaparral and coastal scrub, especially as a post-fire species. *Soza et al.* 717, 20 Apr 2000 (RSA).
- Erysimum capitatum* (Douglas ex Hook.) Greene var. *capitatum*, WESTERN WALLFLOWER. Biennial herb. Occasional on slopes at scattered sites throughout the range, generally in openings in chaparral and coastal scrub, and in understory of oak woodland. *Gross & Fraga* 520, 4 Apr 2002 (RSA).
- \**Hirschfeldia incana* (L.) Lagr.-Fossat, SHORTPOD MUSTARD. Annual to short-lived perennial herb. Common and widespread on slopes, ridges, and alluvial benches throughout the range, primarily in disturbed situations, such as trails, road margins, and fuel breaks, in chaparral and coastal scrub, but can be found in virtually any vegetation; also common as an urban weed. *Soza & Moore* 826, 10 May 2000 (RSA).
- \**Lepidium didymum* L., LESSER SWINECRESS. Annual. Scarce weed along road margin at picnic area in Wildwood Canyon Park, above debris basin. *Gross* 2732, 16 May 2007 (RSA).
- Lepidium virginicum* L. var. *pubescens* (Greene) Thell., HAIRY PEPPERWEED. Annual. Occasional on slopes, ridges, and alluvial benches, at scattered sites throughout the range, generally in openings within chaparral and

coastal scrub, and also on recent burns and hard-packed, disturbed soil along roads, etc. *Soza et al. 743, 25 Apr 2000 (RSA)*.

\**Lobularia maritima* (L.) Desv., SWEET ALYSSUM. Suffruticose perennial. Occasional, escaping from cultivation at scattered sites throughout the range, generally in debris basins and other disturbed areas at the urban-wildland interface. *Detmers s.n., 18 Jan 1930 (RSA)*.

*Nasturtium officinale* R. Br., WATER CRESS. Perennial herb. Infrequent, throughout the range in canyons and other areas with slow flowing water, as in lower Sunset Canyon above debris basin; primarily in riparian woodland. *Bisbee, 5 May 1917 (RSA)*.

\**Sisymbrium irio* L., LONDON ROCKET. Annual. Infrequent, mostly along western end of the range, in generally disturbed situations with deeper, heavy soils, such as trails, road margins, and vacant lots, at the urban-wildland interface, mostly in annual grassland; more common and widespread as an urban weed. *Soza et al. 1141, 18 Apr 2001 (RSA)*.

\**Sisymbrium officinale* (L.) Scop., HEDGE MUSTARD. Annual. Occasional, mostly on slopes and alluvial benches on the northeastern flank of the range and in the San Rafael Hills, generally on mesic exposures in oak woodland and disturbed openings in chaparral. *Soza et al. 872, 12 May 2000 (RSA)*.

\**Sisymbrium orientale* L., INDIAN HEDGEMUSTARD. Annual. Frequent and widespread throughout the range, primarily in disturbed situations, e.g., road margins, trails, fuel breaks, and debris basins, as well as on recent burns in chaparral, coastal scrub, oak woodland, etc. *Gross et al. 703, 10 Feb 2003 (RSA)*.

*Thysanocarpus curvipes* Hook., SAND FRINGEPOD. Annual. Scarce, documented by a historic collection from La Tuna Canyon; collected recently at the southern base of the range between Sunset and Story canyons, in disturbed opening in coastal scrub. *Gross et al. 2592, 17 Mar 2006 (RSA)*.

*Thysanocarpus laciniatus* Nutt. var. *laciniatus*, MOUNTAIN FRINGEPOD. Annual. Frequent on slopes, cliffs, and old road cuts throughout the range, generally on mesic exposures in openings in chaparral and coastal scrub. *MacFadden s.n., 4 Apr 1931 (RSA)*.

*Tropidocarpum gracile* Hook., DOBIE POD. Annual. Scarce, documented by a historic collection from Eagle Rock Valley. *Peirson 1902, 24 Feb 1903 (RSA)*.

*Turritis glabra* L., TOWER ROCKCRESS. Biennial herb. Scarce, documented by historic collections from northern and eastern portions of the range; collected more recently near confluence of Verdugo Wash and Cunningham Canyon, in openings in chaparral and adjacent oak woodland. *Soza et al. 1344, Jul 20 2001 (RSA)*.

## CACTACEAE

*Cylindropuntia californica* (Torr. & A. Gray) F.M. Kunth var. *parkeri* (J.M. Coult.) Pinkava, CANE CHOLLA. Succulent shrub. Scarce, along the southwestern flank of the range in Chandler Canyon, and also observed in La Tuna Canyon; growing in a large patch mixed with *Opuntia littoralis* (Engelm.) Cockerell. *Gross 2730, 16 May 2007 (RSA)*.

\**Opuntia ficus-indica* (L.) Mill., INDIAN-FIG. Succulent shrub. Infrequent, widely cultivated and naturalizing in scattered areas at the urban-wildland interface, mostly in coastal scrub. *Gross et al. 396, 4 Jun 2001 (RSA)*.

*Opuntia littoralis* (Engelm.) Cockerell, COASTAL PRICKLYPEAR. Succulent shrub. Occasional on slopes and alluvial benches at scattered sites throughout the range, most frequent at lower elevations, especially towards the western edge of the study area; generally in openings in coastal scrub, less frequent in chaparral. *Soza et al. 824, 27 Apr 2000 (RSA)*.

## CAMPANULACEAE

*Githopsis diffusa* A. Gray subsp. *diffusa*, SAN GABRIEL BLUECUP. Annual. Scarce, along northwestern flank of the range in tributary drainages of La Tuna Canyon, on mesic exposures in understory and openings of chaparral; to be expected in similar habitats elsewhere in the study area. *Gross et al. 947, 29 May 2003 (RSA)*.

*Lobelia dunnii* Greene var. *serrata* (A. Gray) McVaugh, DUNN'S LOBELIA. Perennial herb. Scarce, documented by a collection from a tributary on the south side of La Tuna Canyon, growing along margin of intermittent stream; to be expected elsewhere in seeps on bedrock outcrops and cliffs. *Hogue & Dilley 148.1, 11 Aug 1999 (SFV)*.

*Nemacladus ramosissimus* Nutt., SMALLFLOWER THREADPLANT. Annual. Scarce, documented by a historic collection from Crescenta and, more recently, on a ridge in the low hills north of La Tuna Canyon; generally a post-fire species in chaparral. *Soza & Moore 860, 10 May 2000 (RSA)*.

*Triodanis biflora* (Ruiz & Pav.) Greene, SMALL VENUS' LOOKING-GLASS. Annual. Infrequent, on mesic slopes at widely scattered sites, especially the lower flanks of the range; generally in understory of chaparral and coastal scrub. *Grinnell s.n., 30 May 1914 (RSA)*.

## CAPRIFOLIACEAE

*Lonicera subspicata* Hook. & Arn. var. *denudata* Rehder, SANTA BARBARA HONEYSUCKLE. Liana, sometimes a scandent shrub. Frequent and

widespread, especially in the San Rafael Hills and across the northern and western flanks of the range; generally in chaparral and coastal scrub, but also in understory of oak woodland. *MacFadden s.n.*, 8 Jul 1931 (RSA).

*Symphoricarpos mollis* Nutt., CREEPING SNOWBERRY. Small shrub. Infrequent, documented on the southern flank of the San Rafael Hills by a historic collection from Eagle Rock (and recently observed here), otherwise, known primarily from the northern flank of the range in Engleheard and Sheep Corral canyons, La Crescenta Valley Park, and La Tuna Canyon and its tributary drainages; generally in shaded understory of oak woodland and adjacent benches in riparian woodland. *Gross et al.* 1071, 17 Jun 2003 (RSA).

### CARYOPHYLLACEAE

\**Cerastium glomeratum* Thuill., MOUSE-EAR CHICKWEED. Annual. Occasional and at times locally common where present on slopes, ridges, and alluvial benches at scattered sites throughout the range; generally on mesic exposures at lower elevations and in somewhat disturbed situations, e.g., along road margins, trails, fuel breaks and recent burns, but also in less disturbed openings in adjacent chaparral and coastal scrub; occasional as an urban weed, especially on moist soil. *Soza et al.* 723, 20 Apr 2000 (RSA).

*Loefflingia squarrosa* Nutt., SPREADING PYGMYLEAF. Annual. Scarce, documented by historic collections from Crescenta and Scholl Canyon, presumably on alluvial benches or in other open, sandy situations. *Perkins s.n.*, 30 May 1914 (RSA).

*Polycarpon depressum* Nutt., CALIFORNIA MANYSEED. Annual. Scarce, documented by a historic collection from La Tuna Canyon, on sandy alluvial benches. *MacFadden* 3185, 17 Apr 1931 (RSA).

\**Polycarpon tetraphyllum* (L.) L., FOUR-LEAVED ALLSEED. Annual. Occasional, at scattered sites throughout the range, especially at the urban-wildland interface, generally in disturbed areas with compacted soils where rain water collects, e.g., along road margins, trails, and fuel breaks, in understory of oak woodland and openings in chaparral and coastal scrub; common as an urban weed. *Soza et al.* 883, 12 May 2000 (RSA).

*Sagina apetala* Ard., DWARF PEARLWORT. Annual. Scarce, although locally common where present, along southern base of the range in Stough Park, in disturbed area of compacted clay soil. *Soza & Boyd* 796, 26 Apr 2000 (RSA).

*Sagina decumbens* (Elliott) Torr. & A. Gray subsp. *occidentalis* (S. Wats.) G. E. Crow, WESTERN PEARLWORT. Perennial herb. Scarce, documented by

a collection from Henderson Canyon at the northern base of the range, in oak woodland and adjacent riparian woodland. *Keefe 22826, 28 Apr 1978 (RSA)*.

***Silene antirrhina* L.**, SLEEPY SILENE. Annual. Scarce, on slope of Brand Canyon, at southern base of the range, in chaparral and coastal scrub burned in 2002 Brand Fire; to be expected elsewhere throughout the range as a post-fire species. *Soza & Hogshead 1635, 23 Apr 2003 (RSA)*.

\****Silene coniflora* Oth.**, MANYNERVE CATCHFLY. Annual. Scarce, on slopes and ridges at the northwestern end of the range; locally common on recent burn in chaparral and coastal scrub, and to be expected elsewhere throughout the range as a post-fire species. *Soza & Moore 858, 10 May 2000 (RSA)*.

\****Silene gallica* L.**, COMMON CATCHFLY. Annual. Frequent on slopes and ridges throughout the study area, although more common in the San Rafael Hills and across the northern flank of the range; generally in somewhat disturbed situations, e.g., along road margins, trails, and fuel breaks, but also in understory of chaparral and oak woodland. *Wolf 147, 5 Apr 1926 (RSA)*.

***Silene laciniata* Cav. subsp. *laciniata*,** CARDINAL CATCHFLY. Perennial herb. Occasional but widespread throughout the range, generally on mesic exposures or shaded situations in oak woodland and chaparral. *Soza et al. 715, 20 Apr 2000 (RSA)*.

\****Spergula arvensis* L.**, STICKWORT. Annual. Infrequent, documented by historic collections from Eagle Rock and, more recently, collected in Henderson Canyon at the northern base of the range; along road margins, especially where shallow depressions in compacted soil collect rain water, mostly within chaparral. *Gross 350, 23 Mar 2001 (RSA)*.

\****Spergularia bocconi* (Scheele) Graebn.**, BOCCONE'S SANDSPURRY. Annual. Occasional in the San Rafael Hills and across the southern and southwestern flanks of the range; generally in somewhat disturbed situations, e.g., along road margins, ruts of dirt roads, graded areas, and other places where shallow depressions in compacted soil collect rain water, mostly within chaparral. *Soza et al. 984, 6 Jun 2000 (RSA)*.

\****Stellaria media* (L.) Vill.**, COMMON CHICKWEED. Annual. Common and widespread on slopes and alluvial benches throughout the range, generally on mesic exposures and shaded sites within openings of chaparral and coastal scrub, and in understory of oak woodland and adjacent riparian woodland; common as an urban weed. *Ewan 10798, Jun 1933 (RSA)*.

***Stellaria nitens* Nutt.**, SHINING CHICKWEED. Annual. Infrequent, at scattered sites on the southern and southwestern flank of the range, and in La Tuna Canyon; generally on mesic exposures and shaded sites within openings of chaparral and coastal scrub. *Gross et al. 1051, 17 Jun 2003 (RSA)*.

## CISTACEAE

\**Cistus incanus* L., HAIRY ROCKROSE. Small shrub. Scarce, but locally common where present, in southern San Rafael Hills near junction of 134 Freeway and Highway 2; escaping from plantings and naturalizing down slope, within chaparral and coastal scrub. *Soza & Gross 1199, 9 May 2001 (RSA)*.

*Helianthemum scoparium* Nutt., PEAK RUSH-ROSE. Suffruticose perennial. Infrequent on slopes and ridges at scattered sites throughout the range, more common on the northern and northwestern flanks of the range; generally in chaparral and coastal scrub, especially in areas recovering from fire. *Soza & Moore 845, 10 May 2000 (RSA)*.

## CONVOLVULACEAE

*Calystegia macrostegia* (Greene) Brummitt subsp. *intermedia* (Abrams) Brummitt, ISLAND FALSE BINDWEED. Perennial herb. Common and widespread on slopes and ridges throughout the range, in openings in chaparral and coastal scrub, on fuel breaks, and especially as a post-fire species. *MacFadden s.n., 1 Apr 1931 (RSA)*.

*Cuscuta californica* Hook. & Arn. var. *californica*, CHAPARRAL DODDER. Parasitic annual. Occasional throughout the range, generally in chaparral and coastal scrub, most often parasitizing soft-wooded shrubs, e.g., *Artemisia californica*, *Eriogonum fasciculatum*, and *Salvia mellifera*, as well as perennial herbs and annuals (especially following fire); in some areas, it may be locally common, forming large patches at lower elevations. *Gross 548, 24 Jun 2002 (RSA)*.

*Cuscuta campestris* Yunck., FIVEANGLED DODDER. Parasitic perennial herb. Scarce, documented by a historic collection from Devils Gate Dam, and collected more recently in Big Tujunga Wash at the western end of the range, where surface water is present throughout much of the year, generally in riparian woodland: primarily parasitizing hydrophytic or phreato-phytic, herbaceous perennials. *Wheeler s.n., 6 Oct 1965 (RSA)*.

## CORNACEAE

*Cornus sericea* L. subsp. *sericea*, AMERICAN DOGWOOD. Large shrub. Presumed extirpated, but documented by historic collections from Verdugo Canyon (at Colima Drive) and Verdugo Woodlands, in riparian woodland; apparently, once locally common, but largely eliminated by the 1930s. *Ewan 3634, 9 Jun 1928 (POM)*.

## CRASSULACEAE

*Crassula connata* (Ruiz & Pav.) A. Berger, PYGMY-WEED. Annual. Frequent, on slopes, ridges, and alluvial benches throughout the range, especially at lower elevations; generally in openings in chaparral and coastal scrub, often in areas with cryptogamic soil, sometimes in small depressions. *Soza & Moore 859, 10 May 2000 (RSA)*.

\**Crassula tillaea* Lest.-Garl., MOSS PYGMYWEED. Annual. Infrequent on slopes, ridges, and alluvial benches throughout the range, although more frequent across the northern flank of the range and in the San Rafael Hills; generally in openings in chaparral and coastal scrub, often in areas with cryptogamic soil, sometimes in small depressions along fire roads, etc. *Keefe 22844, 28 Apr 1978 (RSA)*.

*Dudleya lanceolata* (Nutt.) Britton & Rose, LANCELEAF LIVEFOREVER. Succulent perennial herb. Occasional throughout the range, generally on steep, rocky slopes, cliffs, crevices of bedrock outcrops, and old road cuts in chaparral, coastal scrub, oak woodland, and riparian woodland; some exceptionally robust plants occur at the northwest end of the study area, growing on relatively gentle slopes with volcanic soil. *Soza et al. 896, 12 May 2000 (RSA)*.

*Dudleya pulverulenta* (Nutt.) Britton & Rose, CHALK DUDLEYA. Succulent perennial herb. Scarce on scree slope at entrance to Stough Canyon Nature Center, possibly derived from cultivated material. *Gross 2673, 2 May 2007. (RSA)*.

## CUCURBITACEAE

*Cucurbita foetidissima* Kunth, CALABAZILLA. Geophyte. Scarce, documented by historic collections from La Tuna Canyon, presumably in sandy soils of alluvial benches and fans. *MacFadden 1799, 2 Sep 1929 (RSA)*.

*Marah macrocarpa* (Greene) Greene, CUCAMONGA MANROOT. Geophyte. Common and widespread on slopes and ridges throughout the range, generally in chaparral, coastal scrub, and oak woodland; especially frequent following fire. *Moore et al. 45, 8 Jun 2000 (RSA)*.

## DATISCAEAE

*Datisca glomerata* (C. Presl) Baill., DURANGO ROOT. Perennial herb. Occasional, in larger and wetter canyons throughout the range, generally near water in openings within riparian woodland. *Gross et al. 1068, 17 Jun 2003 (RSA)*.

## ERICACEAE

- Arctostaphylos glandulosa* Eastw. subsp. *mollis* (J. E. Adams) P. V. Wells, EASTWOOD'S MANZANITA. Large shrub. Occasional along the main crest and slopes of the northern and northwestern flanks of the range; generally on mesic exposures in chaparral. *Soza et al. 990, 6 Jun 2000 (RSA)*.
- Arctostaphylos glauca* Lindl., BIGBERRY MANZANITA. Large shrub. Occasional along the main crest and slopes of the northern and northwestern flanks of the range; generally on xeric exposures in chaparral. *Soza et al. 991, 6 Jun 2000 (RSA)*.
- Xylococcus bicolor* Nutt., MISSION MANZANITA. Large shrub. Infrequent, although locally common where present, documented by historic collections from the south fork of La Tuna Canyon and, more recently, on the ridge between Engleheard and Henderson canyons, along northern flank of the range; otherwise, mostly restricted to north-facing slopes of canyons on the southwestern flank of the range (e.g., Brand, Stough, and Wildwood canyons), reaching the crest above Brand Canyon; generally in relatively dense chaparral. *Ewan & Macfadden 4182, 25 Apr 1931 (POM)*.

## EUPHORBIACEAE

- \**Chamaesyce maculata* (L.) Small, SPOTTED SPURGE. Annual. Infrequent, at scattered sites throughout the range at the urban-wildland interface, generally in disturbed situations; common as an urban weed. *Keefe 31169, 19 Mar 2001 (RSA)*.
- Chamaesyce melanadenia* (Torr.) Millsp., RED-GLAND SPURGE. Perennial herb. Occasional on slopes throughout the range, generally in rocky, xeric openings in chaparral and coastal scrub. *Ewan 4169, 25 Apr 1931 (RSA)*.
- Chamaesyce polycarpa* (Benth.) Millsp., SMALLSEED SANDMAT. Perennial herb. Scarce, documented by historic collections from scattered sites around the base of the range, e.g., Eagle Rock and La Tuna Canyon; collected recently in the low hills at the northwestern end of the study area and on the southern flank near Bel Aire Park, in open coastal scrub and annual grassland. *Gross 376, 1 Apr 2001 (RSA)*.
- Croton californicus* Muell. Arg., CALIFORNIA CROTON. Suffruticose perennial. Scarce, documented by historic collections from larger drainages at the base of the range, e.g., Arroyo Seco and La Tuna Canyon, presumably on sandy, alluvial benches; collected more recently in Arroyo Seco, south of Devil's Gate Dam. *MacFadden 1237, Apr 1929 (RSA)*.
- Croton setiger* Hook., TURKEY MULLEIN. Annual. Scarce, documented by historic collections from scattered sites around the base of the range, e.g.,

Eagle Rock, La Tuna Canyon, and Pasadena, and collected more recently between Eagle Rock Valley and York Valley (Highland Park area); presumably in xeric open areas, especially fallow fields and overgrazed pastures. *Moxley s.n.*, 4 Sep 1917 (RSA).

*Euphorbia crenulata* Engelm., CHINESE CAPS. Annual. Scarce, documented by historic collections from Eagle Rock Canyon and Verdugo Woodlands. *Grant 425*, Mar 1901 (RSA).

\**Euphorbia lathyris* L., CAPER SPURGE. Biennial herb. Scarce, along southeastern side of the range at the urban-wildland interface. *Gross & Riefner 2827*, 25 Jun 2007 (RSA).

\**Euphorbia peplus* L., PETTY SPURGE. Annual. Occasional on mesic exposures, from scattered sites around the base of the range at the urban-wildland interface, in disturbed sites in chaparral, coastal scrub, and oak woodland; common as an urban weed. *Keefe 31184*, 19 Mar 2001 (RSA).

\**Ricinus communis* L., CASTOR BEAN. Large shrub. Occasional at scattered sites throughout the range, especially at the urban-wildland interface, generally in sandy canyon bottoms, debris basins, and other moist, disturbed areas; also present as an urban weed. *Templeton 9294*, 24 Mar 1962 (RSA).

*Stillingia linearifolia* S. Watson, QUEEN'S-ROOT. Suffruticose perennial. Scarce, documented by historic collections from La Tuna Canyon, collected recently near the mouth of McDonald Creek at the northwestern end of the range (although this site is apparently now extirpated by development); on gentle slopes with open coastal scrub and annual grassland. *Gross 425*, 27 May 2001 (RSA).

## FABACEAE

\**Acacia baileyana* F. Muell., COOTAMUNDRA WATTLE. Tree. Scarce, escaping from cultivation in McDonald Creek, naturalizing into chaparral and coastal scrub on slopes directly below plantings; to be expected as an escape elsewhere throughout the range, especially at the urban-wildland interface. *Soza et al. 1146*, 18 Apr 2001 (RSA).

*Acmispon americanus* (Nutt.) Rydb., AMERICAN BIRD'S-FOOT TREFOIL. Annual. Occasional on slopes and alluvial benches throughout the range, generally in openings in chaparral and coastal scrub, and also along road margins, fuel breaks, and other moist, slightly disturbed situations near the urban-wildland interface. *Soza et al. 975*, 6 Jun 2000 (RSA).

*Acmispon glaber* (Vogel) Brouillet var. *glaber*, CALIFORNIA BROOM. Suffruticose perennial. Common and widespread on slopes, ridges, and alluvial benches throughout the range, often abundant two to three years following fire or other light disturbance; generally in chaparral and coastal scrub. *Gross & Moore 202*, 5 Jun 2000 (RSA).

- Acmispon heermannii* (Durand & Hilg.) Brouillet var. *heermannii*. HEERMANN'S BIRD'S-FOOT TREFOIL. Perennial herb. Scarce, documented by historic collections from Arroyo Seco, and more recently collected in lower Brand Canyon and at the extreme southwestern end of the range in Big Tujunga Wash; generally on alluvial benches and adjacent lower slopes in riparian woodland and oak woodland, or at interface between these and chaparral or coastal scrub. *Gross et al. 1059, 17 Jun 2003 (RSA)*.
- Acmispon maritimus* (Nutt.) D.D. Sokoloff var. *maritimus*. COASTAL BIRD'S-FOOT TREFOIL. Annual. Occasional, on slopes throughout the range, generally in chaparral and coastal scrub, especially as a post-fire species. *Soza et al. 697, 20 Apr 2000 (RSA)*.
- Acmispon strigosus* (Nutt.) Brouillet, STRIGOSE BIRD'S-FOOT TREFOIL. Annual. Common on slopes, ridges, and alluvial benches throughout the range, in openings in chaparral and coastal scrub, especially frequent as a post-fire species. *Soza & Moore 841, 10 May 2000 (RSA)*.
- Acmispon wrangelianus* (Fisch. & C.A. Mey.) D.D. Sokoloff, CHILEAN BIRD'S-FOOT TREFOIL. Annual. Infrequent, documented by a historic collection from near Eagle Rock, and collected more recently at the northwestern end of the range, in coastal scrub, on slopes of volcanic substrate; to be expected elsewhere as a post-fire species in chaparral and coastal scrub, especially on heavier soils. *Soza et al. 902, 12 May 2000 (RSA)*.
- Amorpha californica* Nutt. var. *californica*, CALIFORNIA FALSE INDIGO. Large shrub. Infrequent, on lower slopes and benches of canyons throughout the range; most frequent in La Tuna Canyon and its tributary drainages, generally in riparian woodland and adjacent oak woodland and chaparral. *MacFadden 2630, 26 Apr 1931 (RSA)*.
- \**Bituminaria bituminosa* (L.) C. H. Stirt., ARABIAN PEA. Geophyte. Scarce, at Chamberlin Debris Basin, east side of the San Rafael Hills, established in disturbed soil. Also, well-established in debris basins and other disturbed sites across the southern front of the San Gabriel Mountains, and probably being moved around by contaminated soil on heavy equipment. *Bramlet 3526, 1 Oct 2003 (RSA)*.
- \**Ceratonia siliqua* L., ST. JOHN'S BREAD. Tree. Infrequent, widely planted and naturalizing at scattered sites across the range, e.g., La Tuna Canyon and Arroyo Seco; generally in chaparral and riparian woodland. *Soza et al. 676, 30 Mar 2000 (RSA)*.
- \**Cytisus multiflorus* (L'Hér.) Sweet, SPANISH BROOM. Large shrub. Scarce, naturalizing from plantings along north side of the range, along road cut of the 210 freeway (between La Tuna Canyon and Lowell Avenue exits), and spreading a short distance into the chaparral of adjacent slope. *Gross 1212, 30 Mar 2004 (RSA)*.

- \**Cytisus striatus* (Hill) Rothm., STRIATED BROOM. Large shrub. Infrequent, planted and naturalizing along the 210 freeway at the northern base of the range, locally common near the La Tuna Canyon exit; generally restricted to previously disturbed sites, but spreading somewhat into chaparral of adjacent slopes. *Gross et al. 1073, 17 Jun 2003 (RSA)*.
- \**Genista canariensis* L., CANARY BROOM. Large shrub. Scarce, documented by historic collections from near Scholl Canyon and Arroyo Seco. *Jillson 3682, 19 Mar 1961 (RSA)*.
- Hoita macrostachya* (DC.) Rydb., LARGE LEATHER-ROOT. Perennial herb. Scarce, and perhaps extirpated, documented by historic collections from Verdugo Woodlands near Glendale, presumably in riparian woodland. *Hoffman s.n., 10 Aug 1932 (POM)*.
- Hosackia oblongifolia* Benth. var. *oblongifolia*, STREAMBANK BIRD'S-FOOT TREFOIL. Perennial herb. Scarce, documented by historic collections from Devil's Gate area, Arroyo Seco, and upper La Tuna Canyon drainage. *Davidson s.n., 3 May 1892 (RSA)*.
- Lathyrus vestitus* Nutt. var. *vestitus*, PACIFIC PEA. Perennial herb. Frequent and widespread on slopes throughout the range, generally in chaparral. *Ewan 3705, 27 Apr 1929 (POM)*.
- Lupinus bicolor* Lindl., MINIATURE LUPINE. Annual. Frequent and widespread throughout the range, in openings in chaparral and coastal scrub, and also along road margins and in fuel breaks; common as a post-fire species. *Bisbee s.n., 10 Apr 1917 (POM)*.
- Lupinus concinnus* J. Agardh, BAJADA LUPINE. Annual. Occasional in the San Rafael Hills, but not elsewhere in the main body of the range; in openings in chaparral, and along road margins, fuel breaks and recent burns. *Gross et al. 200, 27 Apr 2000 (RSA)*.
- Lupinus formosus* Greene, SUMMER LUPINE. Perennial herb. Occasional and locally common on slopes and ridges throughout the range, generally in openings in chaparral, and especially along road margins and on fuel breaks. *Gross et al. 699, 10 Feb 2003 (RSA)*.
- Lupinus hirsutissimus* Benth., STINGING LUPINE. Annual. Frequent on slopes, ridges, and alluvial benches throughout the range, generally in openings in chaparral and coastal scrub, and along road margins, fuel breaks, and trails; most frequent as a post-fire species. *Soza et al. 698, 20 Apr 2000 (RSA)*.
- Lupinus latifolius* J. Agardh var. *parishii* C. P. Sm., BROADLEAF LUPINE. Perennial herb. Scarce, and presumably extirpated, documented by historic collections from Verdugo Canyon and near Pasadena, presumably in riparian woodland. *Bisbee s.n., 27 May 1917 (RSA)*.

- Lupinus sparsiflorus* Benth., COULTER'S LUPINE. Annual. Frequent on lower elevation slopes and ridges throughout the range, in xeric openings and after fire in chaparral, coastal scrub, and annual grassland. *Keefe 31203, 8 Apr 2001 (RSA)*.
- Lupinus succulentus* Douglas ex K. Koch, ARROYO LUPINE. Annual. Infrequent, known from historic collections from scattered sites around the San Rafael Hills to near Eagle Rock; collected more recently in Brand Canyon and near Scholl Canyon, in openings at disturbed sites and following fire in chaparral and coastal scrub, generally on heavy soil. *Gross et al. 693, 10 Feb 2003 (RSA)*.
- Lupinus truncatus* Nutt., COLLARED ANNUAL LUPINE. Annual. Occasional on lower elevation slopes, ridges, and alluvial benches throughout the range, generally in openings in chaparral, coastal scrub, and annual grassland; common as a post-fire species. *Keefe 22914, 11 May 1978 (RSA)*.
- \**Medicago lupulina* L., BLACK MEDICK. Perennial herb. Scarce weed in moist open soil at the wildland-urban interface, such as Stough Canyon Nature Center and in debris basin in Wildwood Canyon; documented as an urban weed from historic collections on the campus of Occidental College, Eagle Rock. *Gross 2665, 2 May 2007 (RSA)*.
- \**Medicago polymorpha* L., CALIFORNIA BURCLOVER. Annual. Occasional, at scattered sites throughout the range, especially near the urban-wildland interface, generally in openings or disturbed situations in chaparral, coastal scrub, oak woodland, and riparian woodland; common as an urban weed. *Gross 527, 13 Apr 2002 (RSA)*.
- \**Medicago sativa* L., ALFALFA. Perennial herb. Infrequent overall, documented by historic collections from the Pasadena area; currently, locally common along La Tuna Canyon Road near Sunland Blvd., in the community of Shadow Hills, in an area with horse stables, and generally restricted to road margins, presumably introduced through straw and hay. *Gross 543, 24 Jun 2002 (RSA)*.
- \**Melilotus albus* Medik., WHITE SWEETCLOVER. Annual to perennial herb. Infrequent, documented by historic collections from Arroyo Seco and Verdugo Woodlands near Glendale; collected more recently just outside of the study area near the ponds in Big Tujunga Wash, in riparian woodland. *Hoffman s.n., 10 Aug 1932 (POM)*.
- \**Melilotus indicus* (L.) All., SOURCLOVER. Annual. Occasional, at scattered sites throughout the range, generally in moist, somewhat disturbed soil, as in irrigated situations at the urban-wildland interface, and along drainages in riparian woodland. *Soza & Boyd 793, 26 Apr 2000 (RSA)*.
- \**Parkinsonia aculeata* L., MEXICAN PALO VERDE. Tree or large shrub. Scarce, escaping from cultivation into debris basin in Bel Aire Park. *Gross 2660, 27 Apr 2007 (RSA)*.

- Pickeringia montana* Nutt. var. *montana*, CHAPARRAL PEA. Small shrub. Scarce, near the northern base of the range, on the ridge dividing Henderson and Engleheard canyons; only two shrubs observed in thick chaparral. *Gross 411, 28 May 2001 (RSA)*.
- \**Spartium junceum* L., SPANISH BROOM. Large shrub. Infrequent, at scattered sites throughout the range; generally planted on disturbed soils of cut and fill slopes along roads and naturalizing down slope into adjacent chaparral. *Gross 1209, 19 Mar 2004 (RSA)*.
- Trifolium ciliolatum* Benth., FOOTHILL CLOVER. Annual. Scarce, documented by historic collections from near Eagle Rock and just outside the study area in Pasadena; on grassy hillsides, presumably on heavy soil. *Moxley 317, 9 May 1915 (POM)*.
- \**Trifolium hirtum* All., ROSE CLOVER. Annual. Scarce, in lower Engleheard Canyon near Camp Max Straus, along road margins in chaparral and oak woodland; to be expected elsewhere throughout the range, especially along road margins and at the urban-wildland interface. *Soza et al. 878, 12 May 2000 (RSA)*.
- Trifolium obtusiflorum* Hook. & Arn., CLAMMY CLOVER. Annual. Scarce, collected along a small tributary of Brand Canyon, in chaparral that burned the year before (2002), in moist soil along stream. *Gross et al. 1044, 17 Jun 2003 (RSA)*.
- Vicia americana* Willd. subsp. *americana*, AMERICAN VETCH. Perennial herb. Scarce, documented by a historic collection from near Glendale. *Davidson s.n., May 1890 (POM)*.
- \**Vicia benghalensis* L., PURPLE VETCH. Annual. Scarce, in southern San Rafael Hills, at the urban-wildland interface, along road margin in chaparral. *Soza & Gross 1210, 9 May 2001 (RSA)*.
- Vicia ludoviciana* Torr. & A. Gray subsp. *ludoviciana*, LOUISIANA VETCH. Annual. Scarce, documented by a historic collection near Glendale. *Davidson s.n., Jun 1890 (RSA)*.
- \**Vicia villosa* Roth subsp. *varia* (Host) Corb., HAIRY VETCH. Annual. Occasional, at scattered sites throughout the range, although more frequent along the northern flank; generally along road margins and fuel breaks in chaparral. *Soza et al. 899, 12 May 2000 (RSA)*.

## FAGACEAE

- Quercus agrifolia* Née var. *agrifolia*, COAST LIVE OAK. Tree. Common in canyon bottoms, on steep mesic slopes, and alluvial benches throughout the range; historically, more common in the lowlands around the base. Some especially old stands, or remnants thereof, are present across the northern flank. This is the dominant species of oak woodlands, and also occurs in

chaparral and riparian woodlands. *Keefe 22904B, 11 May 1978 (RSA)*. See entry in Appendix 2 for *Q. agrifolia* var *oxyadenia* (Torr.) J.T. Howell.

***Quercus berberidifolia*** Liebm., SCRUB OAK. Large shrub. Common on slopes, ridges, and alluvial benches throughout the range, generally in chaparral and coastal scrub; apparently hybridizing introgressively with other white oak species in the range (see below). The more pure forms of this species are found at lower elevations along the southern and western flanks, and across the northwestern end of the study area into La Tuna Canyon. *Gross 315, 4 Nov 2000 (RSA)*.

***Quercus berberidifolia*** Liebm. X ***Quercus durata*** Jeps. var. ***gabrielensis*** Nixon & C. H. Muller. SCRUB OAK-LEATHER OAK HYBRID. Large shrub. Frequent and widespread throughout the range, in chaparral on both northern and southern flanks, and into coastal scrub at the northwestern end of the study area. *Gross 304, 28 Oct 2000 (RSA)*.

***Quercus berberidifolia*** Liebm. X ***Quercus engelmannii*** Greene. SCRUB OAK-ENGELMANN OAK HYBRID. Large shrub. Occasional and, in some areas, locally common, across the southern front of the San Rafael Hills and across the northern flank of the range from the San Rafael Hills westward to Scholl Canyon. These shrubs tend to resemble *Q. engelmannii* more than *Q. berberidifolia* but were identified as hybrids due to their smaller stature and mixture of trichomes diagnostic for these two species as described in Roberts (1995) on the underside of leaves. *Soza & Gross 1198, 9 May 2001 (RSA)*.

***Quercus chrysolepis*** Liebm., CANYON LIVE OAK. Tree or large shrub. Scarce, a single individual documented along the Stough Canyon fire road, on a north-facing slope in mixed chaparral and coastal scrub. *Gross 751, 1 Mar 2003 (RSA)*.

†***Quercus durata*** Jeps. var. ***gabrielensis*** Nixon & C. H. Muller. LEATHER OAK. Large shrub. Frequent and widespread, but generally more common along the northern front of the range, and in dense chaparral; apparently hybridizing introgressively with *Q. berberidifolia* (see above) and *Q. engelmannii* (see Appendix 2). *Soza et al. 988, 6 Jun 2000 (RSA)*.

***Quercus*** X ***grandidentata*** Ewan, [= *Q. durata* Jeps. var. *gabrielensis* Nixon & C. H. Muller X *Q. engelmannii* Greene]. COASTAL SAGE SCRUB OAK-ENGELMANN OAK HYBRID. Tree. Infrequent overall, but locally common in a very distinct hybrid swarm, forming a grove in chaparral on a north-facing slope on the north side of the San Rafael Hills; also, a few small trees scattered across the northeast flank of the main body of the range. *Gross et al. 196, 27 Apr 2000 (RSA)*.

***Quercus wislizeni*** A. DC. var. ***frutescens*** Engelm., INTERIOR LIVE OAK. Large shrub. Infrequent, on slopes and ridges at uppermost elevations

across the northern flank of the main body of the range; generally in dense chaparral. *Gross et al.* 292, 18 Oct 2000 (RSA).

## GARRYACEAE

*Garrya veatchii* Kellogg, CANYON SILKTASSEL. Large shrub. Occasional across the northern flank of the range, more frequent at higher elevations and occasionally forming distinct stands in dense chaparral; otherwise, scattered in canyons in chaparral, occasionally reaching lower elevations, as in La Tuna Canyon. *MacFadden* 2940, 16 Mar 1931 (RSA).

## GENTIANACEAE

*Zeltnera venusta* (A. Gray) G. Mans., CANCHALAGUA. Annual. Scarce, documented by historic collections at scattered sites throughout the range, and more recently collected near La Tuna Canyon at the northwestern end of the study area; generally in openings within chaparral, or at ecotone between coastal scrub and grassland vegetation. *Wolf* 680, 24 Jul 1927 (RSA).

## GERANIACEAE

\**Erodium botrys* (Cav.) Bertol., LONGBEAK STORK'S BILL. Annual. Occasional at scattered sites throughout the range, though somewhat more frequent across the southern flank of the range; generally at the urban-wildland interface, in disturbed sites within chaparral, coastal scrub, and annual grassland, especially along road margins and fuel breaks. Also present as an urban weed, although less frequent than *E. moschatum* and *E. cicutarium* (see below). *Soza et al.* 976, 6 Jun 2000 (RSA).

\**Erodium cicutarium* (L.) L'Hér. ex Aiton, REDSTEM STORK'S BILL. Annual. Common and widespread on slopes, ridges, alluvial benches, and in disturbed situations throughout the range, in virtually all types of vegetation. Common as an urban weed, although perhaps less so than *E. moschatum* (see below). *Keefe* 30894, 19 Jan 2001 (RSA).

\**Erodium moschatum* (L.) L'Her. ex Aiton, MUSKY STORK'S BILL. Annual. Infrequent, at scattered sites throughout the range, especially at the urban-wildland interface, generally along road margins and other disturbed sites within chaparral, coastal scrub, and oak woodland; primarily an urban (and, historically, orchard) weed. *Gross* 343, 23 Mar 2001 (RSA).

*Geranium carolinianum* L., CAROLINA GERANIUM. Annual. Scarce, documented by a historic collection from Eagle Rock. *Scott* 714, 27 Apr 1921 (LOC).

\**Geranium rotundifolium* L., ROUNDLEAF GERANIUM. Annual. Infrequent, in La Tuna Canyon and its tributary drainages, in sandy soil, in understory of oak woodland and riparian woodland. *Gross et al.* 1065, 17 Jun 2003 (RSA).

## GROSSULARIACEAE

*Ribes aureum* Pursh var. *gracillimum* (Coville & Britton) Jeps., GOLDEN CURRANT. Small shrub. Frequent, on alluvial benches and slopes with mesic exposures; generally in deeper, sandy soil, in riparian woodland, oak woodland, and chaparral. *MacFadden s.n.*, 17 Mar 1931 (RSA).

*Ribes indecorum* Eastw., WHITE FLOWERING CURRANT. Small shrub. Infrequent in the San Rafael Hills, but not seen in the main body of the range; on mesic exposures in chaparral and oak woodland. *Gross & Fraga* 2444, 20 Jan 2006 (RSA).

*Ribes malvaceum* Sm. var. *viridifolium* Abrams, CHAPARRAL CURRANT. Small shrub. Occasional on mesic slopes at scattered sites, especially across the northern flank of the range; generally in dense chaparral. *Gross* 121, 25 Feb 1999 (RSA).

*Ribes speciosum* Pursh, FUSCHIA-FLOWERED GOOSEBERRY. Small shrub. Frequent on slopes and ridges within the San Rafael Hills, generally in chaparral; not observed west of Verdugo Canyon, except for single individual near restrooms in Wildwood Canyon, presumably planted. *Gross et al.* 187, 27 Apr 2000 (RSA).

## JUGLANDACEAE

†*Juglans californica* S. Watson, SOUTHERN CALIFORNIA BLACK WALNUT. Tree or large shrub. Occasional, at scattered sites across the southern and western flanks of the range, e.g., San Rafael Hills, La Tuna Canyon, east branch of Jeffries Canyon, and Brand Canyon; generally in open chaparral and annual grasslands. *MacFadden s.n.*, 15 Mar 1931 (RSA).

## LAMIACEAE

\**Lamium amplexicaule* L., HENBIT DEADNETTLE. Annual. Disturbed areas at the urban-wildland interface, such as Engleheard Canyon at Camp Max Straus, etc. *Gross* 2597, 12 Mar 2007 (RSA).

\**Marrubium vulgare* L., HOREHOUND. Suffruticose perennial. Frequent on slopes and alluvial benches, especially at the urban-wildland interface; most common in disturbed situations, e.g., along road margins, trails, graded sites, etc., but also in openings in chaparral, coastal scrub, oak

woodland and riparian woodland. Common as an urban weed. *Soza et al.* 820, 27 Apr 2000 (RSA).

*Mentha canadensis* L., WILD MINT. Perennial herb. Scarce, documented by a historic collection from near Glendale. *Davidson s.n.*, Jul 1889 (RSA).

*Salvia apiana* Jeps., WHITE SAGE. Small shrub. Common on steep slopes, cliffs, and rock outcrops throughout the range, especially along the southern side; generally in open chaparral and coastal scrub. *Gross & Soza* 390, 31 May 2001 (RSA).

*Salvia apiana* Jeps. X *Salvia mellifera* Greene, WHITE SAGE- BLACK SAGE HYBRID. Small shrub. Scarce, documented by historic collections from a hybrid swarm on an open fuel break adjacent to chaparral, along the west rim of Verdugo Canyon; to be expected in other open or disturbed situations where both parental species occur. *Ewan* 7465, 10 May 1932 (RSA).

*Salvia columbariae* Benth., CHIA. Annual. Occasional on slopes and ridges throughout the range, generally in open, sandy areas within chaparral and coastal scrub; common as a post-fire species. *MacFadden s.n.*, 1 Jul 1931 (RSA).

*Salvia mellifera* Greene, BLACK SAGE. Small shrub. Common and widespread on ridges, slopes, and drier alluvial benches throughout the range; generally in chaparral and coastal scrub, occasionally present at edges of oak woodland and riparian woodland. *Keefe* 23218, 23 May 1978 (RSA).

*Salvia spathacea* Greene, PITCHER SAGE. Perennial herb. Documented by historic collections from the San Rafael Hills, and collected more recently in Chamberlin Debris Basin, northwest of the Rose Bowl in Arroyo Seco, along the eastern base of the San Rafael Hills; apparently not documented from within the main body of the range. *Peirson* 1054, 8 May 1920 (RSA).

*Scutellaria tuberosa* Benth., DANNY'S SKULLCAP. Geophyte. Infrequent, at scattered sites throughout the range; generally on heavy soil, in openings in chaparral, including disturbed or burned areas. *Gross* 136, 23 Apr 1999 (RSA).

*Stachys albens* A. Gray, WHITESTEM HEDGENETTLE. Perennial herb. Scarce, documented by a historic collection from Verdugo Canyon, presumably in riparian woodland; recently observed, but not collected, in Engleheard Canyon; recently collected from vicinity of Tujunganga Ponds in Big Tujunganga Wash, just outside the study area. *Hoffman* 17694, 10 Aug 1932 (RSA).

*Stachys bullata* Benth., CALIFORNIA HEDGENETTLE. Perennial herb. Infrequent on slopes in the San Rafael Hills, in mesic openings in chaparral and coastal scrub; not documented elsewhere within the main body of the range. *Soza & Gross* 1205, 9 May 2001 (RSA).

*Trichostema lanatum* Benth., WOOLLY BLUECURLS. Small shrub. Occasional on slopes and ridges across the southern flank of the range and above La

Tuna Canyon at the northwestern end; generally in xeric, open areas, e.g., fuel breaks and recently burned chaparral and coastal scrub. *Ewan 4183, 25 Apr 1931 (POM)*.

*Trichostema lanceolatum* Benth., VINEGAR WEED. Annual. Scarce, documented by a historic collection from Eagle Rock area, presumably in an open, xeric disturbed site; historically collected just outside the southern boundary of the study area near Occidental College, and more recently near Highland Park. *Bisbee s.n., 25 Sep 1017 (RSA)*.

## LAURACEAE

*Umbellularia californica* (Hook. & Arn.) Nutt., CALIFORNIA BAY. Tree. Infrequent in deep drainages and mesic slopes at scattered sites throughout the range; generally associated with riparian woodland on the northern flank, and with oak woodland and riparian woodland on the southern flank. *Griese s.n., 27 Feb 1986 (RSA)*.

## LOASACEAE

*Mentzelia micrantha* (Hook. & Arn.) Torr. & A. Gray, SAN LUIS BLAZING-STAR. Annual. Infrequent at scattered sites throughout the range, especially the southern flank, generally on xeric, granitic talus; relatively scarce in unburned areas, more common following fire. *Soza & Caplow 1630, 11 Apr 2003 (RSA)*.

## LYTHRACEAE

*Lythrum californicum* Torr. & A. Gray, CALIFORNIA LOOSESTRIFE. Perennial herb. Scarce, documented by historic collections from Glendale and Eagle Rock Valley, presumably in wet soil of drainages; more recently collected just outside the study area in Big Tujunga Wash near Hansen Dam. *Greata s.n., Oct 1900 (RSA)*.

\**Lythrum hyssopifolia* L., HYSSOP LOOSESTRIFE. Annual. Scarce, at edge of debris basin in Wildwood Canyon. *Gross 2672, 2 May 2007 (RSA)*.

## MALVACEAE

‡*Malacothamnus davidsonii* (B. L. Rob.) Greene, DAVIDSON'S BUSH MALLOW. Small shrub. Scarce, documented by historic collections from La Tuna Canyon; and collected more recently at the southern base of the range in Stough Canyon, in coastal scrub. *MacFadden 2956, 1 Jun 1931 (RSA)*.

*Malacothamnus fasciculatus* (Nutt. ex Torr. & A. Gray) Greene var. *fasciculatus*, CHAPARRAL MALLOW. Small shrub. Scarce, on slopes, ridges, and alluvial benches in and near La Tuna Canyon, at the northwestern end of the range; generally in coastal scrub. *Gross 418, 27 May 2001 (RSA)*.

\**Malva parviflora* L., CHEESEWEED. Annual. Occasional on slopes and alluvial benches at scattered sites throughout the range, generally in disturbed situations, e.g., along road margins, fuel breaks, and cleared areas; common as an urban weed. *Soza et al. 1142, 18 Apr 2001 (RSA)*.

## MONTIACEAE

†*Calandrinia breweri* S. Watson, BREWER'S REDMAIDS. Annual. Infrequent, in somewhat flat areas along ridges; generally in chaparral and coastal scrub, especially following fires. *Soza et al. 770, 25 Apr 2000 (RSA)*.

*Calandrinia ciliata* (Ruiz & Pav.) DC., RED MAIDS. Annual. Occasional on slopes and ridges throughout the range; generally in grassy openings in chaparral and coastal scrub. *Spalding s.n., 16 Mar 1923 (POM)*.

*Calyptridium monandrum* Nutt., COMMON PUSSYPAWS. Annual. Occasional on sandy road margins, alluvial benches, and somewhat flat areas on ridges; generally in openings in chaparral and coastal scrub, especially common following fire. *Soza & Moore 849, 10 May 2000 (RSA)*.

*Claytonia parviflora* Douglas ex Hook. subsp. *parviflora*, STREAMBANK SPRINGBEAUTY. Annual. Common on slopes throughout the range; generally in understory of chaparral and coastal scrub. *Soza et al. 885, 12 May 2000 (RSA)*.

*Claytonia perfoliata* Donn ex Willd. subsp. *mexicana* (Rydb.) John M. Mill. & K. L. Chambers, MINER'S LETTUCE. Annual. Occasional on slopes and ridges throughout the range; generally on mesic exposures in understory of chaparral, coastal scrub, oak woodland, and riparian woodland. *Bisbee s.n., 27 May 1917 (RSA)*.

*Claytonia perfoliata* Donn ex Willd. subsp. *perfoliata*, MINER'S LETTUCE. Annual. Occasional on slopes and ridges throughout the range; generally on mesic exposures in understory of chaparral and coastal scrub. *Soza et al. 706, 20 Apr 2000 (RSA)*.

## MORACEAE

\**Ficus carica* L., EDIBLE FIG. Large shrub. Infrequent at scattered sites in La Tuna and Engelheard canyons, generally in riparian woodland; to be expected in other riparian areas, especially near the urban-wildland interface. *Gross et al. 1105, 19 Jun 2003 (RSA)*.

\**Morus alba* L., WHITE MULBERRY. Tree. Scarce, in tributaries of La Tuna Canyon drainage, e.g., Sheep Corral Canyon, generally in riparian woodland; to be expected in other riparian areas, especially near the urban-wildland interface. *Gross et al.* 965, 29 May 2003 (RSA).

## MYRSINACEAE

\**Anagallis arvensis* L., POOR-MAN'S WEATHERGLASS. Annual. Infrequent at scattered sites throughout the range, in openings in chaparral, understory of oak woodland, and disturbed areas along road margins and trails, especially at the urban-wildland interface; common as an urban weed. *Wolf s.n.*, 22 Mar 1926 (RSA).

## NYCTAGINACEAE

*Mirabilis laevis* (Benth.) Curran var. *crassifolia* (Choisy) Spellenb., WISHBONE BUSH. Suffruticose perennial. Occasional on slopes and ridges, primarily across the southern flank of the range and in the lower hills around the La Tuna Canyon area; generally in xeric openings and about rock outcrops in chaparral and coastal scrub. *MacFadden s.n.*, 16 Mar 1931 (RSA).

## OLEACEAE

*Forestiera pubescens* Nutt., DESERT OLIVE. Large shrub. Scarce, documented from the northwestern end of the range near Sunland, as a large colony with both staminate and pistillate plants on a north-facing slope in mixed coastal scrub and chaparral. *Gross* 360, 25 Mar 2001 (RSA).

*Fraxinus dipetala* Hook. & Arn., CALIFORNIA ASH. Large shrub. Scarce, but relatively common where present, generally on northwest-facing slopes of the lower hills surrounding La Tuna Canyon and its tributary drainages; mostly in chaparral and coastal scrub, both on and off volcanic substrates. *Gross* 354, 25 Mar 2001 (RSA).

\**Fraxinus uhdei* (Wenz.) Lingelsh., SHAMEL ASH. Tree. Scarce, locally established along stream beds and alluvial benches in La Tuna, Engleheard, and Sheep Corral canyons, in riparian woodland; to be expected elsewhere in riparian areas, especially near the urban-wildland interface. Widely cultivated as a street and yard tree and a frequent volunteer in urban situations. *Boyd et al.* 11684, 21 Sep 2006 (RSA).

*Fraxinus velutina* Torr., VELVET ASH. Tree. Scarce in canyon bottoms and adjacent lower slopes within the La Tuna Canyon drainage, generally in riparian woodland. *Gross* 544, 24 Jun 2002 (RSA).

## ONAGRACEAE

- Camissonia strigulosa* (Fisch. & C. A. Mey.) P. H. Raven, SANDY SOIL SUNCUP. Annual. Infrequent, documented by historic collections from La Tuna Canyon. *MacFadden s.n.*, 15 Mar 1931 (RSA).
- Camissoniopsis bistorta* (Torr. & A. Gray) W.L. Wagner & Hoch, CALIFORNIA SUNCUP. Annual. Occasional on slopes, ridges, and alluvial benches throughout the range, generally in sandy or decomposed granitic soils, in openings in chaparral and coastal scrub; common as a post-fire species. *Bisbee s.n.*, 27 May 1917 (RSA).
- Camissoniopsis hirtella* (Greene) W.L. Wagner & Hoch, SANTA CRUZ ISLAND SUNCUP. Annual. Frequent and widespread on slopes, ridges, and alluvial benches throughout the range, in openings in chaparral and coastal scrub; common as a post-fire species. *Keefe 20155*, 8 May 1976 (RSA).
- Camissoniopsis ignota* (Jeps.) W.L. Wagner & Hoch, JURUPA HILLS SUNCUP. Annual. Scarce on slopes and ridges, generally in coastal scrub or open chaparral. *Gross 825*, 4 May 2003 (RSA).
- Camissoniopsis micrantha* (Spreng.) W.L. Wagner & Hoch, MINIATURE SUNCUP. Annual. Occasional, on slopes and alluvial benches throughout the range, but most frequently in larger washes, e.g., Verdugo and La Tuna canyons, in openings in chaparral. *Beymer s.n.*, s.d. (RSA #449026).
- Clarkia bottae* (Spach) F. H. Lewis & M. E. Lewis, PUNCHBOWL GODETIA. Annual. Scarce, documented by a historic collection from the San Rafael Hills. *Leesch 656-1*, 1 Jun 1965 (LOC).
- Clarkia dudleyana* (Abrams) J. F. Macbr., DUDLEY'S CLARKIA. Annual. Scarce, in lower hills along the northwestern flank of the range, in upper tributary of La Tuna Canyon; in openings in chaparral, just above canyon bottom. *Gross et al. 1100*, 19 Jun 2003 (RSA).
- Clarkia epilobioides* (Nutt. ex Torr. & A. Gray) A. Nelson & J. F. Macbr., CANYON CLARKIA. Annual. Occasional on slopes and ridges at scattered sites at the northwestern end of the range, in and about La Tuna Canyon; in openings in chaparral and coastal scrub, generally on decomposed granitic soils. *Soza et al. 1161*, 18 Apr 2001 (RSA).
- Clarkia purpurea* (Curtis) A. Nelson & J. F. Macbr. subsp. *quadrivulnera* (Douglas ex Lindl.) F. H. Lewis & M. E. Lewis, FOUR-SPOT. Annual. Infrequent on slopes and ridges, generally in eastern half of the range, in grassy openings in chaparral. *Soza & Lubinsky 1225*, 16 May 2001 (RSA).
- Clarkia unguiculata* Lindl., ELEGANT CLARKIA. Annual. Frequent on slopes throughout the range, generally in openings in chaparral and coastal scrub. *Hill s.n.*, 8 May 1933 (RSA).
- Epilobium canum* (Greene) P. H. Raven subsp. *canum*, CALIFORNIA FUS-

CHIA. Suffruticose perennial. Occasional on slopes, cliffs, and road cuts throughout the range, but most frequent on the southern flank; generally within chaparral and coastal scrub on granitic substrates. *Moxley s.n.*, 5 Oct 1917 (RSA).

*Epilobium ciliatum* Raf. subsp. *ciliatum*, FRINGED WILLOWHERB. Perennial herb. Frequent in canyon bottoms, debris basins, and about seeps and springs throughout the range, generally in riparian woodland, but also found in other types of vegetation where water is present; relatively common as an urban weed in wet soil. *Gross et al.* 553, 17 Jul 2002 (RSA).

*Eulobus californicus* Torr. & A. Gray, CALIFORNIA SUNCUP. Annual. Occasional, on slopes, ridges, and alluvial benches throughout the range, generally in sandy or decomposed granitic soils, in openings in chaparral and coastal scrub; more common as a post-fire species *Soza & Moore* 850, 10 May 2000 (RSA).

## OROBANCHACEAE

*Castilleja affinis* Hook. & Arn. subsp. *affinis*, COAST INDIAN PAINTBRUSH. Parasitic perennial herb. Scarce, documented by a historic collection from near Eagle Rock. *Bisbee s.n.*, 20 May 1917 (RSA).

*Castilleja applegatei* Fernald subsp. *martinii* (Abrams) T. I. Chuang & Heckard, WAVYLEAF INDIAN PAINTBRUSH. Parasitic perennial herb. Infrequent, on slopes and ridges at higher elevations along the northern flank and main crest of the range; generally in chaparral. *Soza et al.* 993, 6 Jun 2000 (RSA).

*Castilleja exserta* (A. Heller) T. I. Chuang & Heckard subsp. *exserta*, PURPLE OWL'S-CLOVER. Parasitic annual. Scarce, and perhaps extirpated, documented by historic collections from Eagle Rock and vicinity. *Moxley s.n.*, 15 Apr 1917 (RSA).

*Castilleja foliolosa* Hook. & Arn., WOOLLY INDIAN PAINTBRUSH. Parasitic perennial herb. Infrequent on slopes, documented by historic collections from La Tuna Canyon, and more recently collected in a recently burned area in lower hills at the northwestern end of the range; generally in chaparral and coastal scrub. *Dreher & Gross* 614, 12 Apr 2001 (RSA).

*Castilleja minor* (A. Gray) A. Gray subsp. *spiralis* (Jeps.) T. I. Chuang & Heckard, LESSER INDIAN PAINTBRUSH. Parasitic annual. Scarce, documented by a historic collection from near Glendale, presumably in moist areas. *Davidson s.n.*, Jun 1889 (RSA).

*Cordylanthus rigidus* (Benth.) Jeps. subsp. *setigerus* T.I. Chuang & Heckard, STIFFBRANCH BIRD'S BEAK. Parasitic annual. Scarce, documented by historic collections from scattered sites about the base of the range, e.g., near Montrose and Glendale. *Wolf* 671, 24 Jul 1927 (RSA).

***Orobanche bulbosa*** Beck, CHAPARRAL BROOMRAPE. Parasitic perennial herb. Scarce on ridges, along northern flank of the range; in chaparral and generally associated with *Adenostoma fasciculatum*. *Gross et al.* 239, 8 Jun 2000 (RSA).

## OXALIDACEAE

\****Oxalis corniculata*** L., CREEPING WOODSORREL. Perennial herb. Scarce, documented by historic collections from Eagle Rock, and to be expected elsewhere in the range in disturbed situations at the urban-wildland interface; common as an urban weed. *Selle* 725, 17 Jun 1931 (LOC).

\****Oxalis pes-caprae*** L., BERMUDA BUTTERCUP. Geophyte. Occasional at scattered sites throughout the range, generally found along fire roads or graded areas near the urban-wildland interface; frequently cultivated, or persisting from weeds of former orchards and agricultural fields. *Soza et al.* 673, 30 Mar 2000 (RSA).

## PAEONIACEAE

***Paeonia californica*** Nutt., CALIFORNIA PEONY. Perennial herb. Occasional on lower elevation slopes and alluvial benches throughout the range; generally occurring as clusters of plants in openings in chaparral and coastal scrub, or in understory of oak woodland. *Detmers s.n.*, 2 Feb 1929 (RSA).

## PAPAVERACEAE

***Dendromecon rigida*** Benth., BUSH POPPY. Large shrub. Infrequent on slopes and ridges at scattered sites across the range; generally in chaparral, especially areas that burned a few years earlier. *Soza & Moore* 843B, 10 May 2000 (RSA).

***Eschscholzia caespitosa*** Benth., TUFTED POPPY. Annual. Infrequent on slopes and ridges, along northwestern end of the range, in La Tuna Canyon, and southern flank, on divide between Brand and Childs canyons; in recently burned chaparral. *Soza et al.* 728, 20 Apr 2000 (RSA).

***Eschscholzia californica*** Cham., CALIFORNIA POPPY. Perennial herb. Occasional on slopes and ridges throughout the range, generally in grassy openings in chaparral and coastal scrub and in recent burns; widely cultivated and some occurrences, especially of perennial forms in disturbed sites near the urban-wildland interface, may be derived from wildflower seed mixes. *Bisbee s.n.*, 26 May 1917 (RSA).

***Meconella denticulata*** Greene, SMALLFLOWER FAIRYPOPPY. Annual. Occasional on slopes and cliffs at scattered sites throughout the range; generally

on mesic exposures in chaparral. *MacFadden s.n.*, 29 Mar 1931 (RSA).

*Papaver californicum* A. Gray, FIRE POPPY. Annual. Infrequent on slopes and ridges, in San Rafael Hills and La Tuna Canyon; generally restricted to recent burns in chaparral. *Soza & Moore 857*, 10 May 2000 (RSA).

*Papaver heterophyllum* (Benth.) Greene, WINDPOPPY. Annual. Scarce, documented by historic collections from moist, shaded slopes in La Tuna Canyon; to be expected as a post-fire species. *MacFadden s.n.*, 15 Mar 1931 (RSA).

*Platystemon californicus* Benth., CREAM CUPS. Annual. Scarce, documented by historic collections from Verdugo Woodlands and Eagle Rock area, in meadows or grassy openings. *Hill s.n.*, 15 Apr 1929 (RSA).

## PHRYMACEAE

*Diplacus brevipes* (Benth.) G.L. Nesom [= *Mimulus brevipes* Benth.], WIDE-THROAT YELLOW MONKEYFLOWER. Annual. Infrequent on slopes and ridges throughout the range, generally in xeric openings and rock outcrops in chaparral and coastal scrub; most common as a post-fire species. *Moxley 221*, 30 May 1914 (RSA).

*Diplacus fremontii* (Benth.) G.L. Nesom [= *Mimulus fremontii* (Benth.) A. Gray], FREMONT'S MONKEYFLOWER. Annual. Scarce, and perhaps extirpated, documented by a historic collection from Glendale. *Davidson s.n.*, Jun 1891 (RSA).

*Diplacus longiflorus* Nuttall [= *Mimulus aurantiacus* Curtis var. *pubescens* (Torr.) D. M. Thompson], SOUTHERN BUSH MONKEYFLOWER. Small shrub. Common and widespread on slopes, cliffs, and alluvial benches throughout the range; generally in chaparral, but occasionally occurs in most plant communities. *Soza et al. 714*, 20 Apr 2000 (RSA).

\**Diplacus puniceus* Nutt. [= *Mimulus aurantiacus* Curtis var. *puniceus* (Nutt.) D. M. Thompson], RED BUSH MONKEYFLOWER. Small shrub. Infrequent, but locally common where present, on slopes, cliffs, and terraced road cuts in the San Rafael Hills and adjacent eastern portions of the main body of the range; in chaparral at the urban-wildland interface. Most populations, e.g., near the Oakmont V development, appear to have been intentionally seeded; therefore, it is unlikely that this variety occurs naturally within the range. *Gross 364*, 31 Mar 2001 (RSA).

*Erythranthe cardinalis* (Douglas ex Benth.) Spach [= *Mimulus cardinalis* Douglas ex Benth.], SCARLET MONKEYFLOWER. Perennial herb. Occasional, in drainages throughout the range, especially in San Rafael Hills, generally in openings in riparian woodland; less frequent in debris basins and about seeps in chaparral. *Ward LASCA-931*, 18 Jun 1970 (RSA).

- Erythranthe floribunda*** (Douglas ex Lindl.) G.L. Nesom [= *Mimulus floribundus* Douglas ex Lindl.], MANYFLOWERED MONKEYFLOWER. Annual. Occasional in drainages throughout the range, generally in moist gravelly soil, in openings and understory of riparian woodland. *Detmers s.n.*, 17 Oct 1928 (RSA).
- Erythranthe guttata*** (Fisch. ex DC.) G.L. Nesom [= *Mimulus guttatus* DC.], SEEP MONKEYFLOWER. Annual or perennial herb. Occasional in drainages and about springs, seeps, and other seasonally wet situations throughout the range; generally in riparian woodland, less frequent in chaparral, coastal scrub, and oak woodland. *Peirson 2116*, 25 Apr 1920 (RSA).
- Erythranthe moschata*** (Douglas ex Lindl.) G.L. Nesom [= *Mimulus moschatus* Douglas ex Lindl.], MUSK MONKEYFLOWER. Perennial herb. Scarce, documented by historic collections from near Glendale and in La Tuna Canyon. *Davidson s.n.*, May 1889 (RSA).
- Mimetanthe pilosa*** (Benth.) Greene [= *Mimulus pilosus* (Benth.) S. Watson], FALSE MONKEYFLOWER. Annual. Scarce, documented by a historic collection from La Tuna Canyon; more recently collected just outside the study area on alluvial benches in Big Tujunga Wash. *MacFadden 11036*, 15 Jun 1933 (RSA).

## PLANTAGINACEAE

- Antirrhinum coulterianum*** Benth. ex DC., COULTER'S SNAPDRAGON. Annual. Occasional on slopes and ridges throughout the range, generally in chaparral and coastal scrub; most common as a post-fire species. *Gross & Moore 228*, 5 Jun 2000 (RSA).
- Antirrhinum kelloggii*** Greene, KELLOGG SNAPDRAGON. Annual. Infrequent, on slopes and ridges throughout the range, generally in chaparral and coastal scrub; most common as a post-fire species. *Soza et al. 694*, 20 Apr 2000 (RSA).
- Antirrhinum multiflorum*** Pennell, SIERRA SNAPDRAGON. Suffruticose perennial. Scarce, documented along the main crest of the range at the head of Sheep Canyon, along dirt road, in opening in chaparral; to be expected as a post-fire species in chaparral at higher elevations elsewhere in the range. *Soza et al. 995*, 6 Jun 2000 (RSA).
- Collinsia heterophylla*** Buist ex Graham var. *heterophylla*, CHINESE HOUSES. Annual. Scarce, documented primarily from the San Rafael Hills near Eagle Rock, in chaparral and understory of oak woodland. *Keefe 31200*, 8 Apr 2001 (RSA).
- Collinsia parryi*** A. Gray, PARRY'S BLUE EYED MARY. Annual. Scarce, documented by a historic collection from Verdugo Park. *Scott 1093*, 3 May 1921 (LOC).

- Keckiella cordifolia*** (Benth.) Straw, HEARTLEAF KECKIELLA. Small shrub. Occasional on slopes and canyon bottoms at scattered sites throughout the range, generally on mesic exposures in chaparral. *Ward LASCA-933, 19 Apr 1970 (RSA)*.
- \****Linaria bipartita*** (Vent.) Willd., CLOVENLIP TOADFLAX. Annual. Scarce, documented by a historic collection from near Brookside Park in Arroyo Seco. *Kline s.n., 19 Apr 1924 (RSA)*.
- \****Linaria maroccana*** Hook. f., MOROCCAN TOADFLAX. Annual. Scarce, documented by a historic collection from near Brookside Park in Arroyo Seco, and collected more recently on a steep, xeric slope of decomposing granite in La Tuna Canyon, in chaparral and coastal scrub recovering from 1999 fire; common as an element of wildflower seed mixes, but rarely persisting more than a season or two. *Schiffman s.n., 29 Apr 2001 (SFV)*.
- Nuttallanthus texanus*** (Scheele) D.A. Sutton, TEXAS TOADFLAX. Annual. Scarce, documented by historic collections from the San Rafael Hills. *Webb s.n., 16 Feb 1935 (RSA)*.
- Penstemon centranthifolius*** (Benth.) Benth., SCARLET BUGLER. Suffruticose perennial. Scarce, documented by historic collections from around the base of the range, e.g., Sycamore Canyon in Glendale, Eagle Rock, and La Tuna Canyon. *Perkins s.n., 30 May 1909 (RSA)*.
- Penstemon centranthifolius*** (Benth.) Benth. X ***Penstemon spectabilis*** Thurb. var. ***spectabilis*** SCARLET BUGLER-SHOWY PENSTEMON HYBRID. Suffruticose perennial. Scarce, documented by a historic collection from near Glendale. *Cushman s.n., 4 Jun 1933 (RSA)*.
- Penstemon heterophyllus*** Lindl. var. ***australis*** Munz & I. M. Johnst., FOOT-HILL BEARDTONGUE. Suffruticose perennial. Scarce, documented by historic collections from low elevations around the San Rafael Hills and adjacent areas. *Moxley 407, 15 Jun 1913 (RSA)*.
- Penstemon heterophyllus*** Lindl. var. ***heterophyllus***, BUNCHLEAF PENSTEMON. Suffruticose perennial. Scarce, documented by a historic collection from Devil's Gate, Arroyo Seco. *Peirson 202, s.d. (RSA)*.
- Penstemon spectabilis*** Thurb. var. ***subviscosus*** (D. D. Keck) McMinn, SHOWY PENSTEMON. Suffruticose perennial. Infrequent, on xeric slopes in the San Rafael Hills, in chaparral and coastal scrub. *Keefe 23305, 2 Jun 1978 (RSA)*.
- Plantago erecta*** E. Morris, DOTSEED PLANTAIN. Annual. Scarce, documented by historic collections from the Eagle Rock area and at scattered sites at the eastern and western base of the range. *Steele s.n., 3 Mar 1935 (POM)*.
- \****Plantago lanceolata*** L., ENGLISH PLANTAIN. Perennial herb. Occasional, but in some areas locally common, at scattered sites throughout the range, generally in disturbed situations at the urban-wildland interface, such as road margins and fuel breaks, also in sandy soil along drainages, e.g., La

Tuna Canyon; common as a weed in urban areas. *Gross et al. 563, 17 Jul 2002 (RSA)*.

- \**Plantago major* L., COMMON PLANTAIN. Perennial herb. Scarce, documented by historic collections from Verdugo Canyon, in moist soil in riparian woodland; sometimes observed as a lawn and landscaping weed in urban areas. *Bardell s.n., Jan 1930 (RSA)*.
- \**Veronica anagallis-aquatica* L., WATER SPEEDWELL. Perennial herb. Infrequent, but locally common in moist soil of debris basins across the southern flank of the range; to be expected in other open moist situations, especially in Arroyo Seco and La Tuna Canyon. *Gross 2628, 6 Apr 2007 (RSA)*.
- \**Veronica arvensis* L., CORN SPEEDWELL. Annual. Scarce, in disturbed area near Stough Park and in lawn and dirt at edge of Wildwood Canyon Park; to be expected elsewhere in disturbed sites near the urban-wildland interface. More common as an urban lawn weed. *Keefe 22740, 25 Apr 1978 (RSA)*.

## PLATANACEAE

*Platanus racemosa* Nutt., CALIFORNIA SYCAMORE. Tree. Occasional throughout the range in washes and canyon bottoms, generally in riparian woodland and oak woodland; frequently cultivated as a street and yard tree. *Soza et al. 668, 30 Mar 2000 (RSA)*.

## PLUMBAGINACEAE

- \**Limonium duriusculum* (Girard) Fourr., EUROPEAN SEA LAVENDER. Perennial herb. Scarce, established in debris basin in Stough Canyon as an escape from cultivation. *Gross 2602, 13 Mar 2007 (RSA)*.
- \**Limonium sinuatum* (L.) Mill., WAVYLEAF SEA LAVENDER. Perennial herb. Scarce, established in vacant lot in Oakmont development. *Gross 2639, 21 Apr 2007 (RSA)*.

## POLEMONIACEAE

- Allophylllum divaricatum* (Nutt.) A. D. Grant & V. E. Grant, PURPLE FALSE GILLYFLOWER. Annual. Infrequent on xeric slopes and ridges in La Tuna Canyon drainage, generally in chaparral and coastal scrub. *Soza & Moore 851, 10 May 2000 (RSA)*.
- Eriastrum sapphirinum* (Eastw.) H. Mason, SAPPHIRE WOOLLYSTAR. Annual. Occasional on slopes, ridges, and alluvial benches throughout the range, generally in openings in chaparral. *Wheeler 1881, 24 Jun 1933 (POM)*.

- Gilia engelensis* V. E. Grant, CHAPARRAL GILIA. Annual. Infrequent on slopes, ridges, and alluvial benches throughout the range; in openings in chaparral and especially following fire or other light disturbance. *Abrams 1406, Apr 1901 (POM)*.
- Gilia capitata* Sims subsp. *abrotanifolia* (Nutt. ex Greene) V. E. Grant, BLUE-HEAD GILIA. Annual. Occasional on slopes, ridges, and alluvial benches throughout the range; generally in chaparral and coastal scrub, especially following fire or other light disturbance, occasionally in oak woodlands. *Moore et al. 41, 8 Jun 2000 (RSA)*.
- Leptosiphon liniflorus* (Benth.) J.M. Porter & L.A. Johnson, NARROWFLOWER FLAXFLOWER. Annual. Scarce, documented by a historic collection from near Glendale, presumably in heavy soil. *Davidson s.n., Sep 1889 (POM)*.
- Leptosiphon parviflorus* Benth., VARIABLE LINANTHUS. Annual. Scarce, documented by a historic collection from the San Rafael Hills. *Grinnell s.n., Apr 1910 (RSA)*.
- Linanthus californicus* (Hook. & Arn.) J.M. Porter & L.A. Johnson, PRICKLY PHLOX. Small shrub. Occasional on slopes throughout the range, but more frequent across the northern flank, generally in chaparral. *Soza et al. 894, 12 May 2000 (RSA)*.
- Linanthus dianthiflorus* (Benth.) Greene, FRINGED LINANTHUS. Annual. Scarce, documented by a historic collection from near Glendale and collected more recently on slopes at the far western end of the range, in openings in coastal scrub mixed with chaparral elements. *Soza et al. 1163, 18 Apr 2001 (RSA)*.
- Navarretia hamata* Greene subsp. *hamata*, HOOKED PINCUSHIONPLANT. Annual. Occasional on lower elevation slopes and alluvial benches at scattered sites throughout the range, especially at the eastern end, e.g., Engleheard and Dead Horse canyons, Bel Aire Park, etc.; in openings in chaparral and coastal scrub. *Braunton 891, Jun 1903 (POM)*.
- Navarretia intertexta* (Benth.) Hook. subsp. *intertexta*, NEEDLELEAF NAVARRETIA. Annual. Scarce, documented by a historic collection from Eagle Rock, presumably from a vernal pool or other area where water collects for an extended period during spring. *Bisbee s.n., 8 May 1917 (RSA)*.

## POLYGONACEAE

- Chorizanthe staticoides* Benth., TURKISH RUGGING. Annual. Occasional on slopes and ridges throughout the range, generally in xeric openings in chaparral; some populations on the upper northern flank of the main crest were characterized by white flowers and green stems versus the typical pink flowers and red stems. *Moxley 217, 30 May 1914 (RSA)*.

- Eriogonum elongatum*** Benth. var. *elongatum*, LONGSTEM BUCKWHEAT. Suffruticose perennial. Occasional, and in some areas locally common, on slopes and ridges throughout the range; generally in xeric openings and about rock outcrops in chaparral. *Gross 117, 25 Feb 1999 (RSA)*.
- Eriogonum fasciculatum*** Benth. var. *foliolosum* (Nutt.) S. Stokes ex Abrams, CALIFORNIA BUCKWHEAT. Small shrub. Common and widespread on slopes, ridges, and alluvial benches throughout the range, in xeric openings in chaparral and coastal scrub, occasionally in understory of oak woodland and riparian woodland; moderately tolerant of disturbance and frequent at the urban-wildland interface. *Soza et al. 818, 27 Apr 2000 (RSA)*.
- Eriogonum fasciculatum*** Benth. var. *polifolium* (Benth.) Torr. & A. Gray, CALIFORNIA BUCKWHEAT. Small shrub. Occasional on slopes, ridges, and alluvial fans at scattered sites throughout the range, generally in xeric openings in chaparral. *Soza & Sidibeh 1605, 26 Mar 2003 (RSA)*.
- Eriogonum gracile*** Benth. var. *gracile*, SLENDER WOOLLY BUCKWHEAT. Annual. Occasional, mostly documented by historic collections from scattered sites throughout the range, e.g., La Tuna Canyon and Eagle Rock, and more recently collected just outside the study area on sandy, gravelly soils of alluvial benches in Big Tujunga Wash. *MacFadden s.n., Jul 1931 (RSA)*.
- Pericaria maculosa*** Gray, LADY'S THUMB. Annual. Scarce, along the southern side of the range, in debris dam by Bel Aire Park. *Gross 2742, 16 May 2007 (RSA)*.
- Pericaria punctata*** (Elliott) Small, DOTTED SMARTWEED. Suffruticose perennial. Scarce, documented by a historic collection from Verdugo Woodlands, presumably in riparian woodland; and observed just outside the study area, but not collected, in Big Tujunga Wash. *de Forest s.n., 10 Aug 1932 (RSA)*.
- \**Polygonum aviculare*** L. subsp. *depressum* (Meisn.) Arcang., COMMON KNOTWEED. Annual. Occasional along roads and in other disturbed areas, especially at the urban-wildland interface, generally on open, hard-packed soil; common as an urban weed. *Keefe 30899, 19 Jan 2001 (RSA)*.
- Pterostegia drymarioides*** Fisch. & C. A. Mey., WOODLAND PTEROSTEGIA. Annual. Common on slopes and cliffs throughout the range, generally in partly shaded openings in chaparral, and occasionally in understory of oak woodlands; frequent as a post-fire species. *Moore et al. 49, 8 Jun 2000 (RSA)*.
- \**Rumex crispus*** L., CURLY DOCK. Perennial herb. Infrequent at widely scattered sites throughout the range; generally in debris basins, swales along roads, or other moist, disturbed sites, but also along drainages in riparian woodland. *Gross et al. 1070, 17 Jun 2003 (RSA)*.

*Rumex hymenosepalus* Torr., CANAIGRE. Perennial herb. Scarce, documented by a historic collection from La Tuna Canyon. *MacFadden 11073, Apr 1933 (RSA)*.

## PRIMULACEAE

*Dodecatheon clevelandii* Greene subsp. *clevelandii*, PADRE'S SHOOTING-STAR. Geophyte. Scarce, documented by historic collections from San Rafael Hills, presumably in heavy soil. *Webb s.n., 16 Feb 1935 (RSA)*.

*Samolus parviflorus* Raf., SEASIDE BROOKWEED. Perennial herb. Scarce, documented by a historic collection from near Glendale. *Davidson s.n., Jul 1889 (RSA)*.

## RANUNCULACEAE

*Clematis lasiantha* Nutt. Liana., PIPESTEM CLEMATIS. Infrequent, but locally common where present, on slopes on the northern flank of the range, e.g., Hostetter Motorway, Engleheard and La Tuna canyons, and San Rafael Hills; generally in chaparral and oak woodland. *Gross et al. 198, 27 Apr 2000 (RSA)*.

*Clematis ligusticifolia* Nutt., VIRGIN'S BOWER. Liana. Scarce, and perhaps extirpated, documented by a historic collection from Verdugo Woodlands, in riparian woodland. *Detmers s.n., 17 Oct 1928 (RSA)*.

*Delphinium cardinale* Hook., SCARLET LARKSPUR. Geophyte. Occasional on slopes throughout the range, generally in chaparral; more prevalent a few years following fire and in years of higher than average precipitation. *Ward LASCA-934, 19 Apr 1970 (RSA)*.

*Delphinium parryi* A. Gray subsp. *parryi*, PARRY'S LARKSPUR. Geophyte. Infrequent on slopes throughout the range, particularly around the upper tributaries, eastern side of La Tuna Canyon drainage; generally in openings on chaparral slopes. *Soza et al. 983A, 6 Jun 2000 (RSA)*.

*Ranunculus californicus* Benth., CALIFORNIA BUTTERCUP. Perennial herb. Scarce, documented by historic collections from the San Rafael Hills. *Grimmell s.n., Apr 1910 (RSA)*.

*Ranunculus hebecarpus* Hook. & Arn., DELICATE BUTTERCUP. Annual. Scarce, documented by historic collections from La Tuna Canyon, and more recently collected at the southern base of the range in Stough Canyon, on mesic exposures in understory of chaparral and oak woodland. *MacFadden s.n., 29 Mar 1931 (RSA)*.

*Thalictrum fendleri* Engelm. ex A. Gray var. *fendleri*, FENDLER'S MEADOW-RUE. Perennial herb. Infrequent, at lower elevations across the northern

flank of the range, in mesic sites in understory of oak woodland. *Soza et al.* 1343, 20 Jul 2001 (RSA). A historic collection from Scholl Canyon approaches *T. fendleri* var. *polycarpum* Torr., but lacks definitive fruit (*Jillson s.n.*, 29 Mar 1961 [RSA]).

## RHAMNACEAE

*Ceanothus crassifolius* Torr., HOARYLEAF CEANOTHUS. Large shrub. Common and widespread on slopes and ridges throughout the range; generally in thick chaparral. *Keefe* 31148, 19 Mar 2001 (RSA).

*Ceanothus crassifolius* Torr. X *Ceanothus megacarpus* Nutt. var. *megacarpus*, HOARYLEAF CEANOTHUS-BIGPOD CEANOTHUS HYBRID. Large shrub. Scarce, documented by a historic collection from "Verdugo Hills, Glendale," presumably in an area where both parental taxa were present; see also discussion of hybrid swarm between *C. crassifolius* and *C. megacarpus* near Occidental College in preface of Fross and Wilken (2006). *Kruckeberg* 31, 25 Feb 1939 (LOC).

*Ceanothus megacarpus* Nutt. var. *megacarpus*, BIGPOD CEANOTHUS. Large shrub. Scarce, documented by a historic collection from near Eagle Rock; see discussion of hybrid swarm between *C. crassifolius* and *C. megacarpus* near Occidental College (south of Eagle Rock) in preface of Fross and Wilken (2006). *Smiley* 34, 27 Feb 1939 (LOC).

*Ceanothus oliganthus* Nutt. var. *oliganthus*, HAIRY CEANOTHUS. Large shrub. Occasional, and locally common where present, on slopes at lower elevations across the northern flank of the range; generally in thick chaparral. *Gross* 335, 28 Jan 2001 (RSA).

*Frangula californica* (Eschsch.) A. Gray subsp. *californica*, CALIFORNIA COFFEEBERRY. Large shrub. Infrequent on slopes, primarily along northern flank of the range; in understory of oak woodland and riparian woodland. *Riefner* 00-755, 29 Aug 2000 (RSA).

*Rhamnus crocea* Nutt., SPINY REDBERRY. Large shrub. Occasional, generally on lower elevation slopes and alluvial benches in La Tuna Canyon and adjacent areas at the northwestern end of the range; mostly in coastal scrub. *Gross et al.* 501, 21 Mar 2002 (RSA).

*Rhamnus ilicifolia* Kellogg, HOLLY-LEAF REDBERRY. Large shrub. Occasional on slopes throughout the range; generally on mesic exposures in chaparral, occasionally in sunny openings in oak woodland. *Hill s.n.*, 19 Jul 1932 (RSA).

## ROSACEAE

- Adenostoma fasciculatum* Hook. & Arn. var. *fasciculatum*, CHAMISE. Large shrub. Common and widespread on slopes, ridges, and alluvial benches throughout the range; primarily on xeric exposures, in shallow, rocky soils, and chaparral. *Soza & Moore 827, 10 May 2000 (RSA)*.
- Cercocarpus betuloides* Nutt. var. *betuloides*, BIRCHLEAF MOUNTAIN MAHOGANY. Large shrub. Frequent on slopes, cliffs, ridges, and alluvial benches; generally in chaparral. *Wolf 679, 24 Jul 1927 (RSA)*.
- Drymocallis glandulosa* (Lindl.) Rydb. var. *glandulosa*, STICKY CINQUEFOIL. Perennial herb. Infrequent on lower slopes of canyons and alluvial benches, primarily across the northern flank of the range; in understory of oak woodland and riparian woodland. *Soza et al. 725, 20 Apr 2000 (RSA)*.
- Heteromeles arbutifolia* (Lindl.) M. Roem., TOYON. Large shrub. Frequent on slopes, ridges, and alluvial benches throughout the range; generally in chaparral, occasionally in coastal scrub, understory of oak woodland and riparian woodland. *Keefe 30949, 19 Jan 2001 (RSA)*.
- Holodiscus discolor* (Pursh) Maxim., OCEANSPRAY. Small shrub. Scarce, documented by a historic collection from Glendale. *Burlew s.n., 1 Jun 1922 (RSA)*.
- †*Horkelia cuneata* Lindl. var. *puberula* (Rydb.) Ertter & Reveal, WEDGELEAF HORKELIA. Perennial herb. Scarce, documented by historic collections from Devil's Gate and Montrose, presumably in openings in chaparral. *Abrams 1423, Apr 1901 (POM)*.
- \**Poterium sanguisorba* L., GARDEN BURNET. Perennial herb. Scarce, documented from near the Eagle Rock, in disturbed oak woodland and chaparral. *Keefe 31118, 16 Mar 2001 (RSA)*.
- Prunus ilicifolia* (Nutt. ex Hook. & Arn.) Walp. subsp. *ilicifolia*, HOLLY-LEAFED CHERRY. Large shrub. Occasional on slopes and alluvial benches throughout the range; generally on mesic exposures in chaparral and in understory of oak woodland. *Soza et al. 873, 12 May 2000 (RSA)*.
- \**Prunus ilicifolia* (Nutt. ex Hook. & Arn.) Walp. subsp. *ilicifolia* × *Prunus ilicifolia* (Nutt. ex Hook. & Arn.) Walp. subsp. *lyonii* (Eastw.) P. H. Raven, HOLLY-LEAFED CHERRY-CATALINA CHERRY HYBRID. Large shrub. Scarce. Plants of intermediate morphology between the putative parental taxa found on north-facing slope and ridge between Scholl and Sycamore canyons in the San Rafael Hills, in chaparral. *Prunus ilicifolia* subsp. *lyonii* is fairly common as a cultivated plant in adjacent urban areas. *Gross 798, 9 Mar 2003 (RSA)*.
- Rosa californica* Cham. & Schldtl., CALIFORNIA ROSE. Small shrub. Scarce, documented by a historic collection from the San Rafael Hills, but re-

cently observed in Engleheard Canyon; to be expected in shaded canyons throughout the range *Moxley 230, 30 May 1914 (RSA)*.

***Rubus ursinus*** Cham. & Schldl., CALIFORNIA BLACKBERRY. Small shrub. Frequent in canyon bottoms throughout the range; generally within riparian woodland and occasionally in understory of oak woodland. *Keefe 22904, 11 May 1978 (RSA)*.

## RUBIACEAE

***Galium angustifolium*** Nutt. ex Gray subsp. ***angustifolium***, NARROW-LEAVED BEDSTRAW. Suffruticose perennial. Occasional, on slopes and ridges throughout the range; generally in xeric openings and about rock outcrops in chaparral and coastal scrub. *MacFadden s.n., 12 Jul 1931 (POM)*.

\****Galium aparine*** L., GOOSE GRASS. Annual. Occasional, on slopes, ridges, cliffs, and alluvial benches throughout the range; generally on mesic exposures in chaparral, understory of oak woodland, and riparian woodland. *Soza et al. 727, 20 Apr 2000 (RSA)*.

***Galium porrigens*** Dempster var. ***porrigens***, CLIMBING BEDSTRAW. Suffruticose perennial. Infrequent on slopes and alluvial benches throughout the range; generally on mesic exposures in chaparral. *Soza et al. 892, 12 May 2000 (RSA)*.

## SALICACEAE

***Populus fremontii*** S. Watson subsp. ***fremontii***, FREMONT COTTONWOOD. Tree. Surprisingly scarce, documented from only a few canyons, e.g., lower Sunset and upper La Tuna canyons, in riparian woodland; to be expected in other drainages throughout the range. Undoubtedly, this taxon was once more common in the rich riparian woodlands that historically occurred in Arroyo Seco and Verdugo Wash prior to urbanization and channelization, and is still relatively common just outside the study area in Big Tujunga Wash. *Gross 2632, 6 Apr 2007 (RSA)*.

***Populus trichocarpa*** Torr. & A. Gray ex Hook., BLACK COTTONWOOD. Tree. Infrequent in moist canyons, e.g., Wildwood Canyon and tributaries of La Tuna Canyon, in riparian woodland. *Soza et al. 803, 27 Apr 2000 (RSA)*.

***Salix exigua*** Nutt., NARROW-LEAVED WILLOW. Large shrub. Infrequent along moist drainages, at scattered sites throughout the range, mainly at lower elevations; generally in riparian woodland, occasionally about seeps along roads or on slopes in chaparral. *Perkins s.n., 30 May 1909 (POM)*.

***Salix gooddingii*** C. R. Ball, GOODDING'S BLACK WILLOW. Tree. Scarce in debris basins, at Bel Aire Park and Wildwood and Sunset canyons, gener-

ally in sunny situations; to be expected in wet soil elsewhere in Arroyo Seco and La Tuna Canyon. *Gross 2627, 6 Apr 2007 (RSA)*.

*Salix laevigata* Bebb, RED WILLOW. Tree. Infrequent along streams in larger canyons and washes; generally in riparian woodland. *Gross 738, 22 Feb 2003 (RSA)*.

*Salix lasiandra* Benth. var. *lasiandra*, SHINING WILLOW. Tree. Infrequent along streams in larger canyons and washes, generally in riparian woodland; occasionally about seeps along roads or on slopes in chaparral. *Keefe s.n., 12 Dec 2000 (RSA)*.

*Salix lasiolepis* Benth., ARROYO WILLOW. Large shrub. Frequent in drainages throughout the range, generally in riparian woodland; occasionally about seeps along roads or on slopes in chaparral and coastal scrub. *Soza et al. 670, 30 Mar 2000 (RSA)*.

## SAPINDACEAE

*Acer macrophyllum* Pursh, BIG-LEAF MAPLE. Tree. Infrequent on the northern flank of the range, near streams, bases of steep, mesic slopes, or on cliffs in canyon bottoms; generally in oak woodland and riparian woodland. *Gross et al. 566, 17 Jul 2002 (RSA)*.

*Acer negundo* L., BOX ELDER. Tree. Scarce, in rocky to sandy mesic situations at the northwestern base of the range in La Tuna Canyon, near La Tuna Canyon Road on-ramp of the 210 Freeway, in riparian woodland; locally common just outside the study area near the ponds in Big Tujunga Wash between the 210 Freeway and Hansen Dam. *Boyd et al. 11675, 21 Sep 2006 (RSA)*.

## SAXIFRAGACEAE

*Boykinia rotundifolia* Parry, ROUND-LEAVED BOYKINIA. Perennial herb. Scarce, but locally common, on seeping rock face at waterfall in drainage in Santa Monica Mountains Conservancy Park, at north base of range near 210 Freeway, La Tuna Canyon Road exit, in understory of oak woodland. A small population was also observed recently in east branch of Engleheard Canyon, and others may occur elsewhere in the range on seeping rock faces in cool, moist drainages. *Riefner 00-757, 29 Aug 2000 (RSA)*.

*Lithophragma affine* A. Gray, SAN FRANCISCO WOODLAND-STAR. Geophyte. Occasional on slopes and cliffs at scattered sites throughout the range; generally on mesic exposures in understory of chaparral and coastal scrub. *Soza et al. 1154, 18 Apr 2001 (RSA)*.

*Micranthes californica* (Greene) Small, CALIFORNIA SAXIFRAGE. Geo-

phyte. Scarce, documented by historic collections from scattered sites throughout the range, e.g., Sycamore Canyon, San Rafael Hills, and La Tuna Canyon. *MacFadden 3161, Apr 1931 (RSA)*.

## SCROPHULARIACEAE

*Scrophularia californica* Cham. & Schtdl., CALIFORNIA FIGWORT. Perennial herb. Occasional on slopes, alluvial benches, and sunny canyon bottoms, primarily in San Rafael Hills and northeastern flank of the main body of the range; generally in mesic openings in chaparral, and occasionally in understory of oak woodland. *McNair s.n., 1 May 1934 (RSA)*.

\**Verbascum virgatum* Stokes, WAND MULLEIN. Biennial herb. Scarce. at lower elevations at scattered sites around the range; generally in openings in chaparral. *Gross 416, 28 May 2001 (RSA)*.

## SIMAROUBACEAE

\**Ailanthus altissima* (Mill.) Swingle, TREE OF HEAVEN. Tree. Occasional on slopes and in canyon bottoms, generally in chaparral, oak woodland, and riparian woodland; typically found in small groves, less frequently as single trees. *Gross et al. 1028, 17 Jun 2003 (RSA)*.

## SOLANACEAE

*Datura wrightii* Regel, SACRED THORN-APPLE. Perennial herb. Occasional at scattered sites throughout the range; generally in disturbed or open areas such as old fields, sandy washes, or margins of dirt roads and fuel breaks. *Gross et al. 286, 18 Oct 2000 (RSA)*.

\**Nicotiana glauca* Graham, TREE TOBACCO. Large shrub. Frequent on slopes, ridges, and alluvial benches throughout the range, in chaparral, coastal scrub, oak woodland, and especially on disturbed sites and in riparian woodlands near the urban-wildland interface. *Soza et al. 675, 30 Mar 2000 (RSA)*.

\**Physalis philadelphica* Lam., TOMATILLO. Annual. Scarce, documented by historic collections from Eagle Rock and near Glendale; collected more recently just outside the study area on alluvial benches in Big Tujunga Wash. *Wiggins 3033, 24 Oct 1926 (LOC)*.

*Solanum douglasii* Dunal, GREENSPOT NIGHTSHADE. Suffruticose perennial. Frequent in drainages throughout the range, in mesic sites in chaparral, coastal scrub, and riparian woodland. *Ewan 3715, 8 Mar 1930 (POM)*.

\**Solanum mauritanium* Scop., EARLEAF NIGHTSHADE. Large shrub. Scarce.

documented by a historic collection from La Tuna Canyon and collected more recently in Arroyo Seco, at the eastern base of the San Rafael Hills, and just outside the study area in Big Tujunga Wash; presumably escaped from cultivation. *Spilman s.n.*, 15 Jun 1996 (RSA).

*Solanum xanti* A. Gray, CHAPARRAL NIGHTSHADE. Suffruticose perennial. Occasional on slopes and alluvial benches throughout the range; generally in deeper soils in chaparral, oak woodland, and riparian woodland. *Soza et al.* 713, 20 Apr 2000 (RSA). See entry in Appendix 2 for *S. umbelliferum* Eschsch.

## STYRACACEAE

*Styrax redivivus* (Torr.) L. C. Wheeler, DRUG SNOWBELL. Large shrub. Scarce, documented by a historic collection from the hills north of Glendale. *Payne s.n.*, May 1904 (RSA).

## TAMARICACEAE

\**Tamarix ramosissima* Ledeb., SALT CEDAR. Large shrub. Scarce, in sunny area in Stough Canyon, in riparian woodland; to be expected in moist disturbed areas throughout the range. *Gross* 2605, 13 Mar 2007 (RSA).

## ULMACEAE

\**Celtis australis* L., EUROPEAN HACKBERRY. Tree. Scarce, in riparian woodland along the southeastern side of the range, near the urban-wildland interface. *Riefner* 06158, 29 Apr 2006 (RSA).

\**Ulmus parvifolia* Jacq., CHINESE ELM. Tree. Scarce, in disturbed rocky areas, e.g., along the 210 Freeway and in Engleheard Canyon; also documented from just outside the study area in Big Tujunga Wash, between the 210 Freeway and Hansen Dam. *Gross* 2618, 30 Mar 2007 (RSA).

## URTICACEAE

*Hesperocnide tenella* Torr., WESTERN STINGINGNETTLE. Annual. Occasional on slopes and alluvial benches throughout the range; in shaded sites in chaparral, coastal scrub, and oak woodland. *Gross et al.* 966, 29 May 2003 (RSA).

*Parietaria hespera* Hinton var. *hespera*, RILLITA PELLITORY. Annual. Infrequent on slopes and about rock outcrops at scattered sites throughout the range; in shaded areas in chaparral, coastal scrub, and oak woodland. *Riefner* 00-756, 29 Aug 2000 (RSA).

*Urtica dioica* L. subsp. *holosericea* (Nutt.) Thorne, HOARY NETTLE. Perennial herb. Infrequent along Deer Creek and La Tuna Canyon and its upper tributary drainages; to be expected in other canyons along the northeastern flank of the range in riparian woodland. *Gross 547, 24 Jun 2002 (RSA)*.

\**Urtica urens* L., DWARF NETTLE. Annual. Scarce, in lower La Tuna Canyon in understory of olive grove; to be expected elsewhere throughout the range in disturbed sites at the urban-wildland interface and as an urban weed in general. *Gross & Soza 913B, 15 May 2003 (RSA)*.

## VERBENACEAE

\**Lantana montevidensis* (Spreng.) Briq., TRAILING SHRUBVERBENA. Suffrutescent perennial. Occasional at scattered sites throughout the range at the urban-wildland interface; generally spreading from cultivation into adjacent chaparral and oak woodland. *Gross 745, 22 Feb 2003 (RSA)*.

*Verbena lasiostachys* Link var. *lasiostachys*, WESTERN VERVAIN. Perennial herb. Scarce, on slopes on the northern flank of the San Rafael Hills, in mesic openings in chaparral. *Soza & Lubinsky 1223, 16 May 2001 (RSA)*.

*Verbena scabra* Vahl, SANDPAPER VERVAIN. Perennial herb. Scarce, and presumably extirpated, documented by a historic collection from Verdugo Park, presumably in riparian woodland. *Davidson s.n., Aug 1892 (RSA)*.

## VIOLACEAE

*Viola pedunculata* Torr. & A. Gray, JOHNNY-JUMP-UP. Geophyte. Scarce, documented by historic collections from lower elevations around the base of the range, e.g., Eagle Rock, Glendale, and La Tuna Canyon, presumably in heavy soil. *MacFadden s.n., 18 Mar 1931 (RSA)*.

## ZYGOPHYLLACEAE

\**Tribulus terrestris* L., PUNCTUREVINE. Annual. Infrequent, at scattered sites at lower elevations, generally in disturbed areas at the urban-wildland interface; common as a weed in urban areas. *Gross 426, 27 May 2001 (RSA)*.

## ANGIOSPERMAE - MONOCOTYLEDONES

### ALISMATACEAE

*Alisma triviale* Pursh, NORTHERN WATER PLANTAIN. Aquatic perennial herb. Scarce, and perhaps extirpated, documented by a historic collection

from Devil's Gate Dam area, presumably in slow moving or standing water. *Wheeler 6836, 20 Aug 1951 (RSA)*.

*Sagittaria latifolia* Willd., BROADLEAF ARROWHEAD. Aquatic perennial herb. Scarce, and perhaps extirpated, documented by a historic collection from near Glendale, presumably in slow moving or standing water. *Davidson s.n., May 1889 (RSA)*.

## AMARYLLIDACEAE

*Allium haematochiton* S. Watson, REDSKIN ONION. Geophyte. Scarce, but locally common where present, on lower foothills at the northwestern edge of the range, just north and south of the 210 Freeway; in mixed chaparral and coastal scrub, on heavy soil derived from volcanic rock. *Soza et al. 904, 12 May 2000 (RSA)*.

*Allium peninsulare* Lemmon ex Greene var. *peninsulare*, PENISULA ONION. Geophyte. Scarce, documented by a historic collection from near Glendale. *Merritt s.n., May 1893 (RSA)*.

\**Amaryllis belladonna* L., BELLADONNA LILY. Geophyte. Scarce, on alluvial bench at northwestern end of the range, in side canyon off La Tuna Canyon, north of the 210 Freeway; in understory of oak woodland. *Boyd et al. 11700, 21 Sep 2006 (RSA)*.

## ARACEAE

*Lemna valdiviana* Phil., VALDIVIA DUCKWEED. Aquatic annual. Scarce, documented by a historic collection from Verdugo Woodlands, on surface of gently flowing stream. *Detmers s.n., 17 Oct 1928 (RSA)*.

## ARECACEAE

\**Phoenix canariensis* Chabaud, CANARY ISLAND DATE PALM. Tree. Infrequent, at scattered sites throughout the range, in canyon bottoms where water is reliably present at or near the surface, e.g., Brand Canyon; generally in riparian woodland. Commonly cultivated as a street and yard tree and is a frequent weedy escape in urban areas. *Gross 743, 22 Feb 2003 (RSA)*.

\**Washingtonia robusta* H. Wendl., WASHINGTON FAN PALM. Tree. Occasional throughout the range as a weed along roads, in moist disturbed areas, and in canyon bottoms where water is reliably present at or near the surface. Commonly cultivated as a street and yard tree and is a frequent weedy escape in urban areas. *Keefe 31042, 31 Jan 2001 (RSA)*.

## ASPARAGACEAE

- \**Agave americana* L., AMERICAN CENTURY PLANT. Succulent shrub. Scarce, documented at interface of urbanization and chaparral, along south side of the range, on an old overgrown road off of Via Montana at end of Olive Avenue, between Sunset and Story canyons. *Gross 2590, 17 Mar 2006 (RSA)*.
- Bloomeria crocea* (Torr.) Coville, COMMON GOLDENSTAR. Geophyte. Infrequent on slopes and ridges throughout the range, especially across the northern flank; in openings in chaparral, generally on gravelly loam or clay soil. *Soza et al. 901, 12 May 2000 (RSA)*.
- Chlorogalum pomeridianum* (DC.) Kunth var. *pomeridianum*, WAVYLEAF SOAP PLANT. Geophyte. Infrequent on slopes at scattered sites throughout the range; generally on gravelly and heavy soil, in openings in chaparral and coastal scrub. *Gross et al. 405, 4 Jun 2001 (RSA)*.
- Dichelostemma capitatum* (Benth.) Alph. Wood subsp. *capitatum*, BLUE DICKS. Geophyte. Common and widespread on slopes, ridges, and alluvial benches throughout the range, generally in grassy openings in chaparral and coastal scrub, and understory of oak woodland; especially abundant following fire. *Gross et al. 711, 10 Feb 2003 (RSA)*.
- Hesperoyucca whipplei* (Torr.) Trel., OUR LORD'S CANDLE. Succulent shrub. Frequent on slopes throughout the range; generally in openings and xeric exposures in chaparral, coastal scrub and oak woodland. *Moore et al. 40, 8 Jun 2000 (RSA)*.
- Muilla maritima* (Torr.) S. Watson, COMMON MUILLA. Geophyte. Occasional on slopes and rocky ridges at scattered sites across the range, generally in chaparral and coastal scrub; especially common following fire. *Soza et al. 703, 20 Apr 2000 (RSA)*.

## CYPERACEAE

- Carex alma* L. H. Bailey, STURDY SEDGE. Perennial herb. Occasional along stream channels of La Tuna Canyon and its tributary drainages; generally in open areas within riparian woodland. *Gross et al. 558, 17 Jul 2002 (RSA)*.
- Carex barbarae* Dewey, SANTA BARBARA SEDGE. Perennial herb. Infrequent on alluvial benches and along stream channels of wetter canyons and larger washes throughout the range; generally in understory of riparian woodland. *Hoffman, s.n., 10 Aug 1932 (RSA)*.
- Carex schottii* Dewey, SCHOTT'S SEDGE. Perennial herb. Scarce, documented by a historic collection from along a stream, "Verdugo Valley" near Glendale. *Detmers, s.n., 2 Feb 1929 (RSA)*.

- Carex spissa* L. H. Bailey, SAN DIEGO SEDGE. Perennial herb. Occasional along stream channels and about seeps on slopes and cliffs, primarily in La Tuna Canyon and its tributaries, but also in Wildwood Canyon; generally in riparian woodland. *Soza et al.* 712, 20 Apr 2000 (RSA).
- Carex triquetra* Boott, TRIANGULARFRUIT SEDGE. Perennial herb. Scarce, documented by historic collections from Glendale and La Tuna Canyon; collected more recently on slopes and ridges near McDonald Creek, in the foothills at the northwestern end of the range, in openings in coastal scrub. *Davidson, s.n., Apr 1890 (RSA).*
- Cyperus eragrostis* Lam., TALL FLATSEDEGE. Perennial herb. Occasional along stream channels and debris basins, at scattered sites throughout the range, generally in riparian woodland; common as an urban weed in wet areas. *Gross et al.* 549B, 17 Jul 2002 (RSA).
- \**Cyperus involucratus* Rottb., UMBRELLA PLANT. Perennial herb. Occasional along stream channels, at scattered sites throughout the range, generally in riparian woodland. *Soza et al.* 662, 30 Mar 2000 (RSA).
- Cyperus odoratus* L., FRAGRANT FLATSEDEGE. Annual. Scarce, documented by a historic collection from Verdugo Woodlands, presumably from a moist or seepy area. More recently collected just outside study area from Hansen Dam flood control basin along Big Tujunga Wash. *Detmers, s.n., 17 Oct 1928 (RSA).*
- Eleocharis montevidensis* Kunth, SAND SPIKERUSH. Perennial herb. Scarce, documented by a historic collection from near Glendale, presumably from a moist or seepy area. *Clare, s.n., 11 Apr 1929 (RSA).*

## IRIDACEAE

- Sisyrinchium bellum* S. Watson, BLUE-EYED-GRASS. Perennial herb. Occasional, documented by historic collections at scattered sites around the range at lower elevations, but especially near Eagle Rock and adjacent areas of the San Rafael Hills; collected more recently in the foothills at the northwestern end of the study area, on heavy soil, in grassy openings in chaparral. *Wolf s.n., 22 Mar 1926 (RSA).*

## JUNCACEAE

- Juncus balticus* Willd. subsp. *ater* (Rydb.) Snogerup, MOUNTAIN RUSH. Perennial herb. Scarce, documented by a historic collection from Verdugo Canyon, presumably in moist soil about a seep, spring, or sluggish stream. *Anonymous s.n., May s.a. (RSA#368128).*
- Juncus bufonius* L., TOAD RUSH. Annual. Scarce, documented by a historic

collection from La Tuna Canyon near Belmont Country Club, presumably in moist or seasonally inundated soil; to be expected throughout the range in areas with seasonally moist soil, in both natural habitats and disturbed sites at the urban-wildland interface. *MacFadden 11003, Jun 1933 (RSA)*.

***Juncus macrophyllus*** Coville, LONGLEAF RUSH. Perennial herb. Occasional along stream channels at scattered sites throughout the range, but especially in tributaries of upper La Tuna Canyon; in moist sand and gravel, generally in openings in riparian woodland. *Davidson s.n., Jul 1889 (RSA)*.

***Juncus mexicanus*** Willd., MEXICAN RUSH. Perennial herb. Scarce, documented by a historic collection from Eagle Rock, presumably in moist soil about a seep, spring, or sluggish stream. *Scott s.n., 5 Feb 1921 (LOC)*.

***Juncus rugulosus*** Engelm., WRINKLED RUSH. Perennial herb. Scarce, in moist soil in debris basin in Wildwood Canyon, and documented just outside the study area in moist soil along stream channels and around ponds in Big Tujunga Wash; to be expected elsewhere in the range, in perennially wet drainages. *Gross 2612, 13 Mar 2007 (RSA)*.

***Juncus textilis*** Buchenau, BASKET RUSH. Perennial herb. Occasional, and locally common where present, on lower slopes and alluvial benches in canyons throughout the range; generally in understory of oak woodland and riparian woodland. *Soza et al. 710, 20 Apr 2000 (RSA)*.

***Juncus xiphioides*** E. Mey., IRISLEAF RUSH. Perennial herb. Occasional along stream channels and other wet areas, at scattered sites throughout the range; generally in riparian woodland. *Gross et al. 1066, 17 Jun 2003 (RSA)*.

## LILIACEAE

***Calochortus albus*** (Benth.) Douglas ex Benth., FAIRY LANTERN. Geophyte. Scarce, in upper northern flank of the range, in tributary of La Tuna Canyon, west of Sheep Corral Canyon; on steep, mesic slope and cliffs in dense chaparral. *Gross & Soza 431, 6 Jun 2001 (RSA)*.

†***Calochortus clavatus*** S. Watson var. *gracilis* Ownbey, SLENDER MARIPOSA LILY. Geophyte. Infrequent on slopes, in upper northern flank of the range, along Wildwood Fire Road above La Tuna Canyon; on mesic exposures with heavy or gravelly soil, in chaparral or mixed chaparral and coastal scrub. *Gross & Soza 434, 6 Jun 2001 (RSA)*.

†***Calochortus plummerae*** Greene, PLUMMER'S MARIPOSA LILY. Geophyte. Frequent throughout the range, especially at lower elevations on the southern flank; generally in xeric openings and recent burns in chaparral and coastal scrub. *Hill s.n., 18 Jun 1932 (RSA)*.

***Calochortus splendens*** Douglas ex Benth., SPLENDID MARIPOSA LILY. Geophyte. Scarce, documented by a historic collection from Glendale. *Davidson, s.n., 17 May 1890 (RSA)*.

*Calochortus venustus* Douglas ex Benth., BUTTERFLY MARIPOSA LILY. Geophyte. Scarce on mesic exposures, in lower foothills at the northwestern edge of the range, north of the 210 Freeway; in grassy openings on heavy soil derived from volcanic rock, in mixed chaparral and coastal scrub. *Gross & Soza 921, 15 May 2003 (RSA)*.

*Fritillaria biflora* Lindl. var. *biflora*, CHOCOLATE LILY. Geophyte. Scarce, documented by historic collections from scattered sites in the San Rafael Hills; collected more recently in several areas on the northwestern flank of the range, generally on heavy soil derived from volcanic rock, in openings in chaparral and coastal scrub. *Gross 361, 25 Mar 2001 (RSA)*.

†*Lilium humboldtii* Roezl & Leichtlin ex Duch. subsp. *ocellatum* (Kellogg) Thorne, OCELLATED LILY. Geophyte. Occasional on slopes and benches of moist drainages, at scattered sites throughout the range; generally in understory of oak woodland and riparian woodland. *Riefner 00-758, 29 Aug 2000 (RSA)*.

## MELANTHIACEAE

*Toxicoscordion fremontii* (Torr.) Rydb., FREMONT'S DEATHCAMAS. Geophyte. Occasional on slopes and rocky ridges, at scattered sites throughout the range; generally in openings and recent burns in chaparral and coastal scrub. *Soza et al. 784, 25 Apr 2000 (RSA)*.

## ORCHIDACEAE

*Epipactis gigantea* Hook., STREAM ORCHID. Perennial herb. Scarce, documented by historic collections from near Glendale and Scholl Canyon in the San Rafael Hills, presumably near a seep, spring, or other perennial water source. More recently collected just outside study area from Hansen Dam flood control basin along Big Tujunga Wash. *Moxley 235, 30 May 1915 (RSA)*.

†*Piperia cooperi* (S. Watson) Rydb., COOPER'S REIN ORCHID. Geophyte. Scarce, documented by historic collections in La Tuna Canyon and near Eagle Rock. *Grinnell s.n., 20 May 1915 (RSA)*.

†*Piperia michaelii* (Greene) Rydb., MICHAEL'S PIPERIA. Geophyte. Scarce, documented by historic collections near Glendale and Eagle Rock. *Grinnell s.n., 29 May 1929 (RSA)*.

## POACEAE

*Agrostis pallens* Trin., SEASHORE BENTGRASS. Perennial herb. Infrequent on slopes, at scattered sites throughout the range, generally in understory of

chaparral and coastal scrub; often forming mats and sprawling over shorter plants, or climbing into and over lower branches of larger shrubs. *Soza et al.* 985, 6 Jun 2000 (RSA).

- Aristida adscensionis*** L., SIX-WEEKS THREE-AWN. Annual. Scarce, documented by a historic collection from La Tuna Canyon. *MacFadden 10114*, May 1931 (RSA).
- Aristida purpurea*** Nutt. var. ***parishii*** (Hitchc.) Allred, PARISH THREE-AWN. Perennial herb. Scarce, documented by a single collection at the north-western end of the range, west of La Tuna Canyon; restricted to small outcropping of reddish, oxidized soil in coastal scrub. *Gross et al.* 400, 4 Jun 2001 (RSA).
- \****Arundo donax*** L., GIANT REED. Perennial herb. Occasional, and at times locally common, along stream channels and debris basins of wetter canyons and larger drainages; generally in riparian woodland. *Wheeler 142*, 12 Sep 1931 (RSA).
- \****Avena barbata*** Pott ex Link, SLENDER WILD OAT. Annual. Common on slopes throughout the range; generally along road margins, trails, and grassy openings in coastal scrub, occasionally in debris basins. *Gross et al.* 694, 10 Feb 2003 (RSA).
- \****Avena fatua*** L., WILD OAT. Annual. Infrequent on slopes, at scattered sites across the range; generally along road margins, trails, and grassy openings in coastal scrub. *Gross 365*, 31 Mar 2001 (RSA).
- \****Avena sativa*** L., CULTIVATED OAT. Annual. Scarce, documented from single collection at the northern end of the range, in disturbed soil of fuel break. *Soza & Moore 846*, 10 May 2000 (RSA).
- Bromus arizonicus*** (Shear) Stebbins, ARIZONA BROME. Annual. Scarce, documented by historic collections from Glendale; collected more recently along the western end of the main crest of the range, in disturbed soil along road margin, in chaparral. *Gross 525*, 13 Apr 2002 (RSA).
- Bromus carinatus*** Hook. & Arn. var. ***carinatus***, CALIFORNIA BROME. Perennial herb. Scarce, documented by a historic collection in Arroyo Seco near Brookside Park; collected more recently at the northern base of the range, south fork of Engleheard Canyon, in riparian habitat. *Keefe 22103*, 11 Jun 1977 (RSA).
- \****Bromus catharticus*** Vahl, RESCUE GRASS. Annual or facultative perennial. Scarce, in moist, somewhat disturbed soil, in irrigated situations at the urban-wildland interface, e.g., Stough Canyon Nature Center. *Gross 2664*, 2 May 2007 (RSA).
- \****Bromus diandrus*** Roth, RIPGUT GRASS. Annual. Common on slopes, ridges, and alluvial benches throughout the range, in disturbed situations and mesic exposures in chaparral and coastal scrub; occasionally in debris basins.

Common as an urban weed. *Keefe 22104, 11 Jun 1977 (RSA)*.

- Bromus grandis*** (Shear) Hitchc., TALL BROME. Perennial herb. Scarce, on northern flank of the range, on steep, north-facing road cut along Hostetter Motorway; in chaparral and oak woodland. *Gross & Soza 430, 6 Jun 2001 (RSA)*.
- \****Bromus hordeaceus*** L., SOFT BROME. Annual. Infrequent, on slopes and ridges throughout the range; generally along road margins, trails, and disturbed areas in chaparral and coastal scrub. *Kruckeberg, s.n., 29 Mar 1940 (RSA)*.
- \****Bromus madritensis*** L. subsp. *rubens* (L.) Husn., FOXTAIL CHESS. Annual. Common on slopes, ridges, and alluvial benches throughout the range; generally along road margins, trails, disturbed areas and recent burns, in annual grassland, chaparral, coastal scrub and oak woodland. *Wright, s.n., 2 May 1942 (POM)*.
- \****Bromus sterilis*** L., POVERTY BROME. Annual. Scarce on slopes, ridges, and alluvial benches at widely scattered sites across the range; generally along road margins, trails, and disturbed areas, in chaparral, coastal scrub, and understory of riparian woodland. *Gross & Soza 441, 6 Jun 2001 (RSA)*.
- \****Cortaderia selloana*** (Schult. & Schult. f.) Asch. & Graebn., PAMPAS GRASS. Perennial herb. Scarce at scattered sites across the range, including a large colony on northern flank, off Hostetter Motorway; generally in mesic, disturbed areas in oak woodland and riparian woodland. *Gross et al. 297, 18 Oct 2000 (RSA)*.
- \****Cynodon dactylon*** (L.) Pers., BERMUDA GRASS. Perennial herb. Occasional, at scattered sites throughout the range, generally in disturbed areas, e.g., road margins; most frequent at the urban-wildland interface. Commonly cultivated as a lawn grass and aggressively weedy in urban situations. *Kruckeberg, s.n., 21 Dec 1939 (RSA)*.
- \****Ehrharta calycina*** Sm., VELDT GRASS. Perennial herb. Scarce, but locally common where present, on southern flank of the range. Established on slopes cleared for fire protection at the urban-wildland interface, and in debris basin near Bel Aire Park; to be expected in similar disturbed sites throughout the range. *Gross 2620, 6 Apr 2007 (RSA)*.
- \****Ehrharta erecta*** Lam., PANIC VELDTGRASS. Perennial herb. Scarce, along stream channels and benches of La Tuna Canyon and in the San Rafael Hills; in oak woodland and riparian woodland. *Riefner 00-764, 29 Aug 2000 (RSA)*.
- Elymus condensatus*** J. Presl, GIANT WILDRYE. Perennial herb. Frequent on lower elevation slopes and alluvial benches throughout the range; mostly in openings in chaparral and coastal scrub, and understory of oak woodland. *Gross et al. 399, 4 Jun 2001 (RSA)*.
- Elymus glaucus*** Buckley subsp. *glaucus*, BLUE WILDRYE. Perennial herb. Infrequent on lower elevation slopes and alluvial benches throughout the

range; mostly in chaparral and coastal scrub. *Gross et al.* 404, 4 Jun 2001 (RSA).

\**Eragrostis cilianensis* (All.) Vignolo ex Janch., STINKGRASS. Annual. Scarce, along road margin at picnic area in Wildwood Canyon Park, above debris basin. *Gross* 2733, 16 May 2007 (RSA).

\**Festuca arundinacea* Schreb., TALL FESCUE. Perennial herb. Scarce in La Tuna Canyon along stream channels, in riparian woodland. *Gross et al.* 554, 17 Jul 2002 (RSA).

\**Festuca bromoides* L., BROME FESCUE. Annual. Scarce, in disturbed road margin at mouth of Sheep Corral Canyon, growing with *F. myuros*. *Gross* 2728, 27 Apr 2007 (RSA).

*Festuca microstachys* Nutt., SMALL FESCUE. Annual. Scarce, on ridge near McDonald Creek at the northwestern end of the range, in disturbed opening of fuel break, in coastal scrub. *Gross & Soza* 910, 15 May 2003 (RSA).

\**Festuca myuros* L., RAT-TAIL FESCUE. Annual. Frequent on slopes, ridges, and alluvial benches throughout the range; generally in disturbed sites, recent burns, grassy openings in chaparral and coastal scrub, and understory of oak woodland and riparian woodland. Frequent as an urban weed. *Soza et al.* 690, 20 Apr 2000 (RSA).

*Festuca octoflora* Walter, SIXWEEKS FESCUE. Annual. Occasional on slopes, ridges, and alluvial benches throughout the range; generally on recent burns and xeric openings in chaparral and coastal scrub. *Soza & Moore* 861A, 10 May 2000 (RSA).

\**Festuca perennis* (L.) Columbus & J.P. Sm., ITALIAN RYEGRASS. Perennial herb. Scarce, on mesic slopes, southwest end of Scholl Canyon in the San Rafael Hills, in grassy opening in chaparral. *Soza & Gross* 1206, 9 May 2001 (RSA).

\**Hordeum murinum* L. subsp. *glaucum* (Steud.) Tzvelev, SMOOTH BARLEY. Annual. Infrequent on slopes and alluvial benches at scattered sites throughout the range, generally in disturbed situations, in openings in chaparral and understory of oak woodland; common as an urban weed. *Soza et al.* 875, 12 May 2000 (RSA).

\**Lamarckia aurea* (L.) Moench, GOLDENTOP GRASS. Annual. Infrequent at scattered sites throughout the range; generally on road margins and in other disturbed areas near the urban-wildland interface. *Wolf s.n.*, 17 Mar 1926 (RSA).

*Melica imperfecta* Trin., SMALLFLOWER MELICGRASS. Perennial herb. Common and widespread on slopes, ridges, cliffs, and alluvial benches throughout the range; generally in openings and understory of chaparral, coastal scrub, and oak woodland. *Soza et al.* 801, 27 Apr 2000 (RSA).

\**Melinis repens* (Willd.) Zizka subsp. *repens*, ROSE NATAL GRASS. Perennial herb. Scarce on xeric slopes, at scattered sites on both the northern and

southern flanks of the range, and in the low hills at the extreme western end; generally near the urban-wildland interface, in openings in coastal scrub. *Gross et al.* 499, 21 Mar 2002 (RSA).

*Muhlenbergia microsperma* (DC.) Trin., LITTLESEED MUHLY. Annual. Occasional on slopes and ridges, at scattered sites throughout the range, especially across the southern flank; generally on xeric exposures and recent burns in coastal scrub. *Abrams* 1383, Apr 1901 (POM).

*Muhlenbergia rigens* (Benth.) Hitchc., DEERGRASS. Perennial herb. Scarce, at northwestern end of the range, on cliff-side spring in chaparral. *Gross et al.* 1108, 19 Jun 2003 (RSA).

*Panicum capillare* L., WITCHGRASS. Annual. Scarce, on northern flank of the range in Deer Creek; in moist, shaded stream channel along road margin. *Soza et al.* 1361, 20 Jul 2001 (RSA).

\**Pennisetum setaceum* (Forssk.) Chiov., CRIMSON FOUNTAINGRASS. Perennial herb. Occasional, and often locally common, on xeric slopes and cliffs throughout the range, generally in coastal scrub, less frequently chaparral; especially invasive along the southern and southeastern flanks at the urban-wildland interface. *Keefe* 31089, 13 Mar 2001 (RSA).

\**Poa annua* L., ANNUAL BLUEGRASS. Annual. Infrequent at scattered sites throughout the range; generally in mesic, disturbed areas at the urban-wildland interface, e.g., along road margins, degraded fields, and trails. *Keefe* 22081A, 11 Jun 1977 (RSA).

*Poa fendleriana* (Steud.) Vasey subsp. *longiligula* (Scribn. & T. A. Williams) Soreng, LONGTONGUE MUTTON GRASS. Perennial herb. Scarce, documented by a historic collection from La Tuna Canyon. *MacFadden* 2499, Jul 1929 (MACF).

*Poa secunda* J. Presl subsp. *secunda*, ONE-SIDED BLUEGRASS. Perennial herb. Occasional on slopes throughout the range, especially the southwestern flank; generally in open coastal scrub. *Soza et al.* 763, 25 Apr 2000 (RSA).

\**Polypogon monspeliensis* (L.) Desf., ANNUAL BEARD GRASS. Annual. Infrequent along stream channels and debris basins at scattered sites throughout the range; generally in riparian woodland. *Gross & Soza* 439, 6 Jun 2001 (RSA).

\**Polypogon viridis* (Gouan) Breistr., BEARDLESS RABBITSFOOT GRASS. Annual. Scarce along stream channels in wet sandy soil, in understory of riparian woodland. *Gross et al.* 1058, 17 Jun 2003 (RSA).

\**Schismus arabicus* Nees, ARABIAN SCHISMUS. Annual. Scarce, in western San Rafael Hills, on disturbed road margin in mixed stand with *S. barbatus*. *Soza & Sidibeh* 1613b, 26 Mar 2003 (RSA).

\**Schismus barbatus* (Loefl. ex L.) Thell., COMMON MEDITERRANEAN

GRASS. Annual. Common and widespread throughout the range in generally disturbed areas, recent burns, and xeric openings in chaparral and coastal scrub; common as an urban weed. *Soza & Moore 862, 10 May 2000 (RSA)*.

\**Setaria adhaerens* (Forssk.) Chiov., BUR BRISTLEGRASS. Annual. Scarce, in disturbed stream channel and alluvial benches of Arroyo Seco, south of Arroyo Blvd. *Riefner 04-383, 22 Aug 2004 (RSA)*.

*Stipa cernua* Stebbins & Love, NODDING NEEDLEGRASS. Perennial herb. Infrequent in the low, rounded hills at the western end of the range, near the lower end of La Tuna Canyon; generally in xeric, grassy openings in coastal scrub. *Gross 424, 27 May 2001 (RSA)*.

*Stipa coronata* Thurb., GIANT RICEGRASS. Perennial herb. Frequent on steep, xeric slopes, cliffs, and old road cuts throughout the range, especially across the southern flank; generally in rocky sites in chaparral and coastal scrub. *Soza & Moore 835, 10 May 2000 (RSA)*.

*Stipa hymenoides* Roem. & Schult., INDIAN RICEGRASS. Perennial herb. Scarce, documented by a historic collection from La Tuna Canyon, presumably in a dry, sandy area. *MacFadden 10111, 1 Jul 1931 (RSA)*.

*Stipa lepida* Hitchc., FOOTHILL NEEDLEGRASS. Perennial herb. Occasional on slopes, ridges, and alluvial benches throughout the range; generally in openings in chaparral and coastal scrub. *Soza & Moore 840, 10 May 2000 (RSA)*.

\**Stipa miliacea* (L.) Hoover, SMILO GRASS. Perennial herb. Occasional, but often locally common where present, around the southern flank of the range at the urban-wildland interface; in canyon bottoms and alluvial benches, generally in oak woodland and riparian woodland. *Keefe 30921, 19 Jan 2001 (RSA)*.

*Stipa pulchra* Hitchc., PURPLE NEEDLEGRASS. Perennial herb. Scarce, along northwestern base of range near Sunland; restricted to heavy soil on small outcropping of volcanic rock, in grassy opening in mixed chaparral and coastal scrub. *Gross et al. 406, 4 Jun 2001 (RSA)*.

\**Triticum aestivum* L. Annual., COMMON WHEAT. Scarce, documented by a historic collection near Eagle Rock; apparently a waif derived from pigeon feed. Collected more recently near Flint Peak in the San Rafael Hills, in xeric openings in coastal scrub at the urban-wildland interface. *Gross 813, 9 Mar 2003 (RSA)*.

## TYPHACEAE

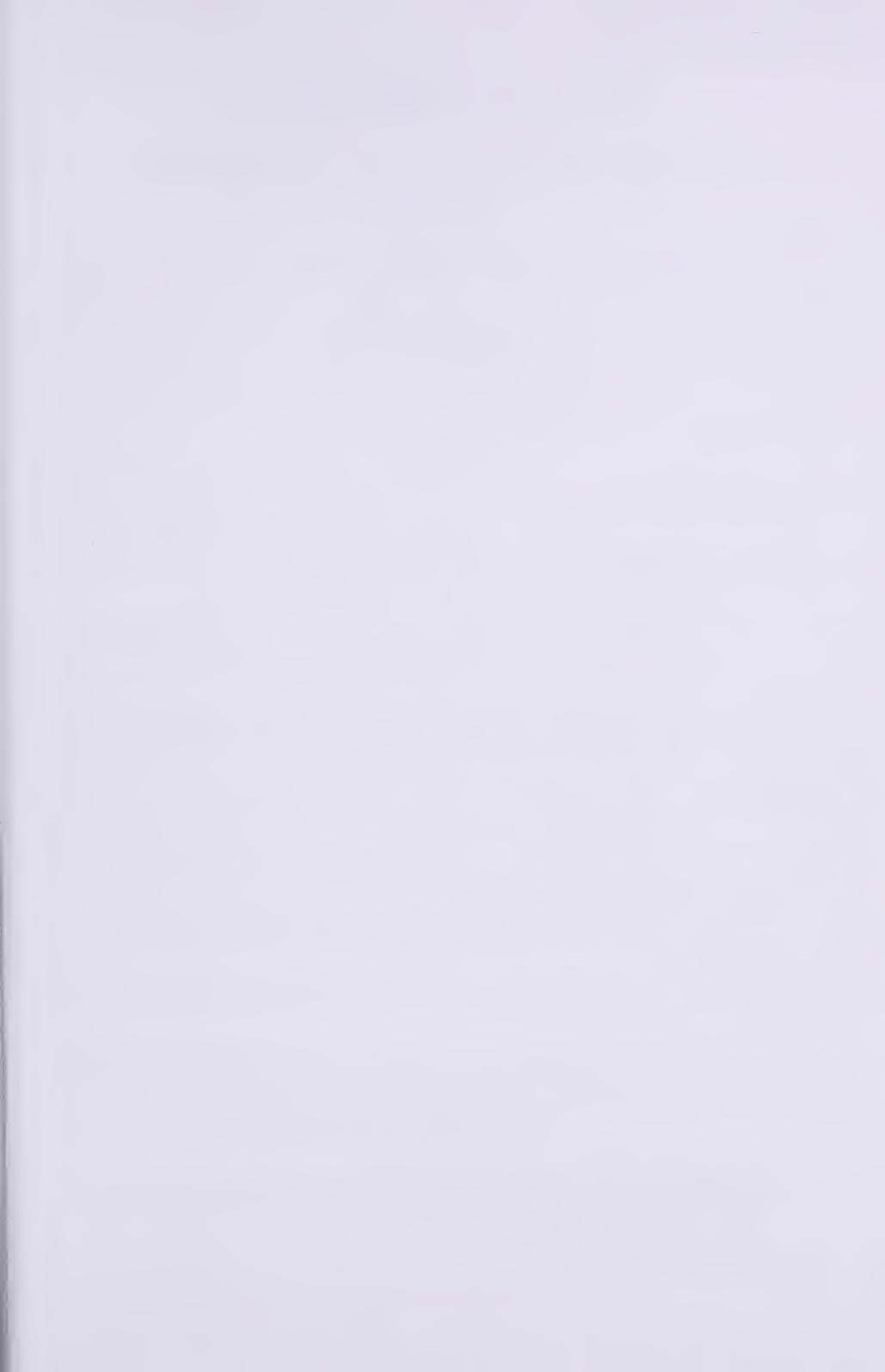
*Sparganium eurycarpum* A. Gray var. *greenei* (Morong) Graebn., SIMPLE-STEM BUR-REED. Aquatic perennial herb. Scarce, documented by a historic collection from near Glendale. *Davidson s.n., Aug 1907 (RSA)*.

*Typha domingensis* Pers., SOUTHERN CATTAIL. Perennial herb. Scarce, in wet soil in small seep along the main crest of the range near head of Sheep Corral Canyon (in mixed stand with *T. latifolia*), in debris basin; to be expected in wet drainages, debris basins, and near springs and seeps elsewhere in the range. *Soza et al. 1356B, 20 Jul 2001 (RSA)*.

*Typha latifolia* L., BROAD-LEAVED CATTAIL. Perennial herb. Scarce, wet soil in small seep along the main crest of the range near head of Sheep Corral Canyon (in mixed stand with *T. domingensis*), in debris basin, and on the western flank of the San Rafael Hills; to be expected in wet drainages, debris basins, and near springs and seeps elsewhere in the range. *Soza et al. 1356A, 20 Jul 2001 (RSA)*.

### XANTHORRHOEACEAE

\**Asphodelus fistulosus* L., ONIONWEED. Perennial herb. Scarce, in foothills at the northwestern edge of the range, in disturbed opening at edge of chaparral, at the urban-wildland interface. *Soza & Moore 825, 10 May 2000 (RSA)*.



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