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Steve Boyd

Rancho Santa Ana Botanic Garden

Timothy S. Ross

Rancho Santa Ana Botanic Garden

Orlando Mistreta

Rancho Santa Ana Botanic Garden

David Bramlet

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VASCULAR FLORA OF THE SAN MATEO CANYON WILDERNESS AREA, CLEVELAND NATIONAL FOREST, CALIFORNIA

STEVE BOYD, TIMOTHY S. ROSS,
ORLANDO MISTRETTA

*Rancho Santa Ana Botanic Garden
1500 N. College Avenue
Claremont, California 91711*

AND

DAVID BRAMLET
*1691 Mesa Drive no. A-2
Santa Ana, California 92707*

ABSTRACT

The Santa Ana Mountains, as a whole, have been well-studied floristically. Little work, however, has been conducted previously in the southwestern portion of the range which includes the San Mateo Canyon Wilderness Area of the Cleveland National Forest. This study reports the results of our floristic surveys conducted in the wilderness over a three-year period, from December 1991 through October 1994. The study area, encompassing the headwaters of the San Mateo Canyon watershed, is topographically and geologically diverse. Vegetation is characterized by a complex assemblage of chaparral and coastal sage scrub, oak woodland, native and nonnative grasslands, and riparian woodland and scrub formations. A total of 626 vascular plant taxa is reported for the wilderness, including 500 here considered native and 126 considered nonnative. Among these are 88 taxa not previously reported for the Santa Ana Mountains. Populations of 12 sensitive plant taxa are documented from the study area; these include *Baccharis vanessae*, *Brodiaea filifolia*, *B. orcuttii*, *Chorizanthe polygonoides* var. *longispina*, *C. procumbens*, *Dudleya multicaulis*, *D. viscida*, *Harpagonella palmeri*, *Horkelia truncata*, *Mimulus diffusus*, *Polygala cornuta* ssp. *fishiae*, and *Quercus engelmannii*.

Key words: California, chaparral, coastal sage scrub, floristics, grassland, oak woodland, Peninsular Ranges, riparian woodland, Santa Ana Mountains, sensitive plants.

INTRODUCTION

The Santa Ana Mountains of southern California are often considered to be one of the best botanically documented ranges in the southern part of the state. In the last 65 years, various workers have reported on the flora of portions of the range (Howell 1929; Pequegnat 1951; Boughey 1968; Lathrop and Thorne 1968, 1985; Little 1977; and Boyd 1983), and in 1978, Lathrop and Thorne presented a preliminary flora of the entire range. Little detailed information has been available, however, for a sizable area at the southern end of the range included in the San Mateo Canyon Wilderness Area of the Cleveland National Forest.

This wilderness area serves to protect a rich diversity of habitat types and plant taxa characteristic of lower-elevation regions of cismontane southern California, resources which are rapidly disappearing on privately held lands outside of the forest. Until our study, there had been almost no information on presence and abundance of sensitive plants in this region. In large part, this paucity of information could be at-

tributed to the rugged terrain and dense vegetation which limit access into many parts of the wilderness. In this paper, we present the findings of our recent survey of the botanical resources in the San Mateo Canyon Wilderness Area.

Floristic field surveys were originally conducted for the Cleveland National Forest from December 1991 to September 1992, with a few supplementary surveys between October 1992 and October 1994. Above-average precipitation during the spring seasons of 1992 and 1993, and the resultant favorable growing conditions, provided an excellent opportunity to document the wilderness flora. A total of 42 days was spent engaged in fieldwork. Our efforts were largely focused on areas adjacent to the established trail network due to the relative inaccessibility of most other areas. Trail segments not surveyed were limited to four relatively short stretches: the trail south from Indian Potrero to the Camp Pendleton border, Tenaja Trail from Pigeon Spring west to Four Corners, the firebreak from Round Potrero to the Tenaja Trail, and the upper portion of the new trail from the Sitton Peak Road into Lucas

Canyon. [Use of place names is discussed under Physical Setting.] In addition to surveys along trails, we selected several areas not accessible by trail including upper and central Devil Canyon, upper north fork of Cold Spring Canyon, lower San Mateo Canyon, Miller Mountain (via "Miller Canyon"), lower Lucas and Aliso canyons, lower Wildhorse Canyon, and "Potrero Escondido." An effort was made to survey representative areas of all geologic substrates and as much of the topographic diversity within the wilderness as possible.

Voucher specimens were collected for nearly all taxa encountered, with special attention given to documenting new populations of sensitive plants, taxonomically difficult groups, species of relatively limited distribution within the Santa Ana Mountains, and new additions to the flora of the range.

PHYSICAL SETTING

The San Mateo Canyon Wilderness Area, one of 23 wilderness areas established by the California Wilderness Act of 1984, is situated in the southern portion of the Santa Ana Mountains roughly between the Ortega Highway (Hwy 74) on the north, Camp Pendleton Marine Corps base on the south, the Santa Rosa Plateau to the east, and Rancho Mission Viejo to the west (Fig. 1). The wilderness encompasses approximately 15,816 ha (39,540 acres) in portions of Orange, San Diego, and Riverside counties. Elevations range from 1078 m (3536 ft) in the northeastern corner to 152 m (500 ft) where San Mateo Creek exits the wilderness in the southwestern corner.

Throughout this paper, we have attempted to use only place names which appear on the USGS 7.5' topographic maps covering the study area (Sitton Peak, Wildomar, Fallbrook, Alberhill, and Cañada Gobernadora quadrangles, modified for Forest Service use). In two cases, however, important physical features pertinent to this project lacked official place names. One, the major canyon draining the south flank of Miller Mountain through T7S R5W, sections 10 and 15, is referred to as "Miller Canyon" or "Miller Creek." The other, "Potrero Escondido," is an isolated flat in T7S R5W, section 16, west of the confluence of San Mateo and Los Alamos creeks.

San Mateo Canyon is here interpreted as originating in Potrero de la Cienega. Los Alamos Canyon, which joins San Mateo Canyon near the intersection of Forest Service roads 7S01 and 7S02, although technically the larger drainage, is treated as a major tributary. Our use of the name "San Mateo Creek" refers to the stream in San Mateo Canyon, not the major tributary of Devil Canyon in T8S R5W section 14, which unfortunately also bears this name on some maps.

The bulk of the wilderness is centered around the

upper watershed of San Mateo Creek. In addition to the main trunk of San Mateo Canyon, there are numerous major and minor tributary drainages. Some of the major tributaries of San Mateo Canyon include Tenaja, Devil, Los Alamos, Wildhorse, Bluewater, and Nickel canyons. Ultimately, San Mateo Creek flows into the Pacific Ocean at San Onofre, just south of San Clemente. A limited portion of the wilderness includes areas outside of the San Mateo watershed, notably Lucas, Aliso, Verdugo, and Talega canyons to the west, and Bear and Morrell canyons to the north.

The topography of the San Mateo Canyon Wilderness Area is fairly typical of the Santa Ana Mountains as a whole. The area is dominated by rugged, steep-sided ridges. Boulder outcrops are frequent on the slopes and ridgetops, and cliff-faces occur in the head walls of some steep side canyons. Most of the canyon bottoms are filled with large to medium-sized boulders, with development of large gravel benches mostly limited to the largest drainages. In many areas, the canyon floors have been eroded to bedrock. In these areas, bedrock pools, or tenajas, are common. In a few locations, sizable waterfalls are present. The rugged topography, in conjunction with dense scrub vegetation, makes cross-country travel exceptionally difficult. Easy access can be gained only along developed trails, relatively open canyon floors, and on slopes in the first year or two following a burn.

Areas of more gentle relief are also present, however. These relatively level areas are the fragmented remains of old erosional surfaces. Four discrete surfaces have been identified in the Santa Ana Mountains including: 1) Santa Rosa surface, from 518 to 579 m in elevation (1700–1900 ft); 2) La Cienega surface, from 640 to 778 m (2100–2550 ft); 3) Los Piños surface, from 884 to 1,076 m (2900–3530 ft); and 4) Trabuco surface, from 1189 to 1395 m (3900–4575 ft) (Engle 1959). Most of the flats within the wilderness correspond to the La Cienega surface. These may be manifested as small flattish areas on the tops of ridges, or may be considerably larger. Some of the largest flats include areas such as Verdugo Potrero, Oak Flats, Potrero de la Cienega, Indian Potrero, and "Potrero Escondido." Miller Mountain has areas corresponding in elevation to both the La Cienega and Los Piños surfaces. The most extensive development of Los Piños surface topography is in the northeastern corner of the wilderness. No areas corresponding to the Trabuco surface occur within the wilderness, and only a very limited area of Santa Rosa surface is found on the north side of upper Tenaja Canyon.

The bedrock geology of the wilderness is relatively simple and characteristic of the Santa Ana Mountains as a whole (Rogers 1965). Granitic rocks, principally granodiorite, are predominant over much of the eastern and central portions of the wilderness. A relatively

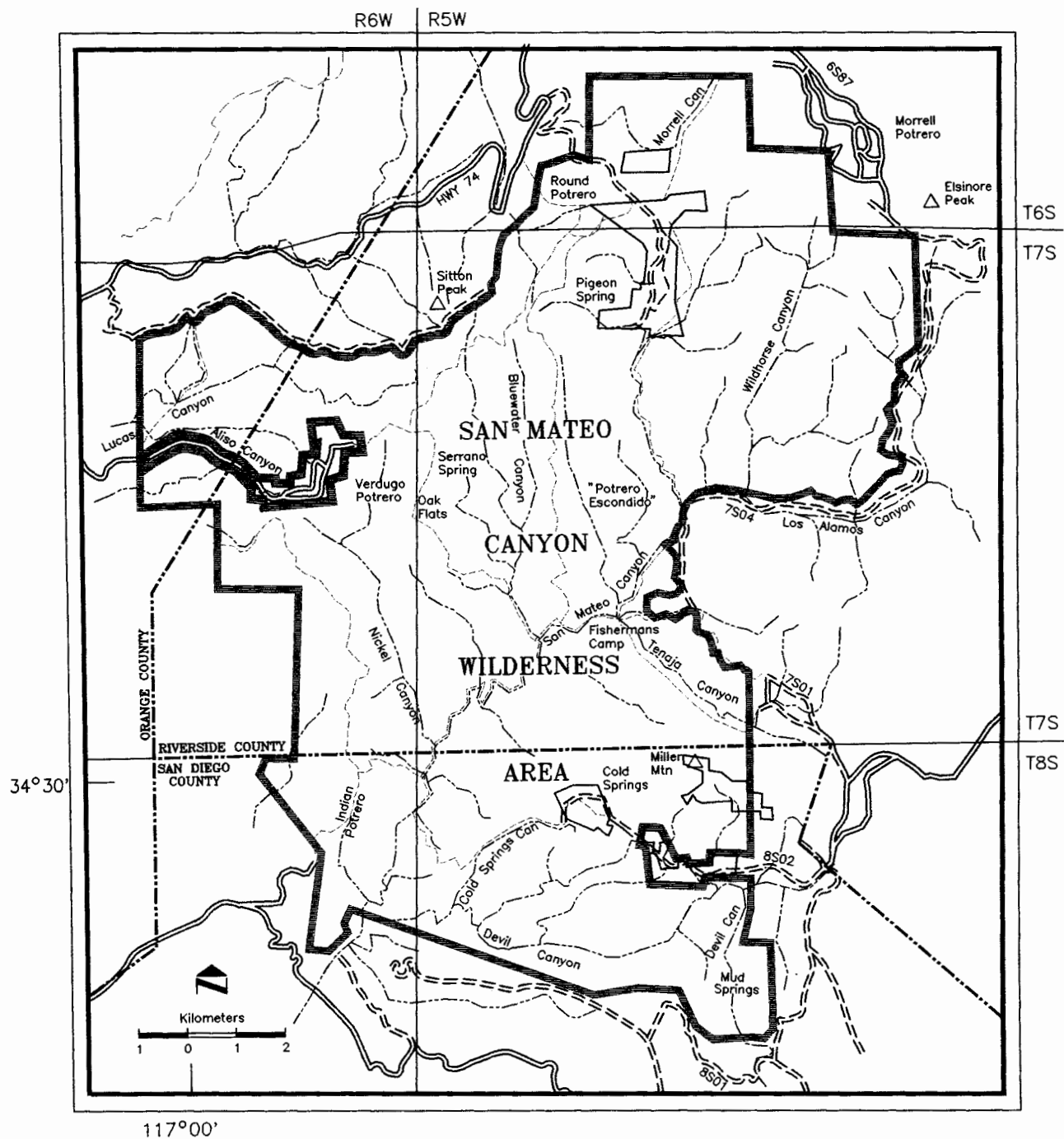


Fig. 1. Map of the San Mateo Canyon Wilderness Area and vicinity showing the principal drainages (long dash, two short dashes), trail network (short dashes), access roads (broken or solid parallel lines), larger peaks, and place names commonly referenced in the text. Private land inholdings within the national forest are indicated by irregular polygons of thin solid lines.

large island of granitic rock is present about the confluence of San Mateo and Devil canyons. This unit is surrounded by metavolcanic rocks of the Santiago Peak formation which characterize the western third of the wilderness. Metasedimentary rocks of the Bedford Canyon formation are present in a southeast-northwest trending band across the center of the wilderness from

Tenaja Canyon to Sittón Peak. Scattered outcroppings of metasedimentary rocks are also present northeast of Sittón Peak and in upper Devil Canyon, at the southeastern corner of the wilderness. Miller Mountain, between Tenaja and Devil canyons, is capped by Santa Rosa Basalt and represents the westernmost extension of the Santa Rosa Plateau. Of considerably more lim-

ited distribution are areas of San Marcos Gabbro and upper Cretaceous marine sediments. San Marcos Gabbro is present along the east-central border of the wilderness, north of Tenaja Canyon, and in the vicinity of Potrero de la Cienega. The upper Cretaceous marine sediments are limited to the extreme western edge of the wilderness from Verdugo Canyon north to Lucas Canyon.

The climate of the wilderness is typical of the Mediterranean-type regime which prevails in southern California with cool, rainy winters and hot, dry summers. Marine air flowing inland from the Pacific Ocean has a moderating effect on temperatures, with local topography playing an active role in controlling the degree of influx (Bailey 1966). The relatively low ridges west of the wilderness do not appear to be a major barrier to the inland penetration of marine air and coastal clouds. Although no records are available on rainfall within the wilderness, an annual average estimate of 300–450 mm (12–18 in.) seems reasonable based on precipitation records in adjacent areas (Boyd 1983).

VEGETATION

Many workers have attempted to identify, define, and catalog all major plant associations in California. Building upon relatively simple systems such as the life zone concepts of Merriam (1898), and floristically based communities of Munz and Keck (1949, 1950), lengthier and more detailed schemes have been proffered for use by ecologists, conservationists, land use planners, and other students of the California flora. Thorne (1976) presented a classification of southern California plant communities consisting of 21 habitats or vegetation types and comprising 78 communities or subcommunities. This system was used to describe vegetation in the Santa Ana Mountains and on the Santa Rosa Plateau (Lathrop and Thorne 1978, 1985).

In 1975, Cheatham and Haller (unpublished mimeograph) compiled an extensive list of California habitat types. The state's Natural Diversity Data Base (NDDDB) later adopted this system with some modifications. Under the NDDDB scheme, the vegetation of California was subdivided into approximately 375 communities. Although these communities were given names, they were not circumscribed or defined, the consequence being considerable confusion on the part of workers attempting to use the classification. Finally, a conspectus of the system was produced by Holland (1986) in which the communities were defined with the provision of typical site factors, characteristic species, and distribution patterns. The result is both useful, and burdensome.

Holland's classification scheme has, in turn, inspired additional variations. One such scheme has been constructed by Gray and Bramlet (1992) which modified

the state system to better characterize habitats within Orange County. This habitat classification system has been adopted by the Cleveland National Forest for delimiting vegetation types on lands under its jurisdiction.

During the course of our study, we attempted to employ the Gray and Bramlet system to characterize the vegetation encountered in the wilderness. Actual vegetation patterns, however, necessitated further modifications in order to apply it locally. In this paper we have used this modified Gray and Bramlet terminology to discuss the vegetation assemblages, but in the floristic catalogue that follows, we have discussed distribution patterns in broader terms relating to general habitat preferences of the individual taxa.

The vegetation of the wilderness can be divided into four, broad categories: scrub, riparian, oak woodland, and grassland. Within each of these, major and minor subunits can often be identified based largely on physiognomy and relative abundance of the various component species.

Scrub Vegetation

Scrub habitats in the Mediterranean-type climate of the Californian Floristic Province largely fall into two main types: coastal sage scrub and chaparral. It is these scrub habitats which form the dominant vegetative cover in the wilderness, and, within each, several variably distinctive associations (*sensu* Paysen et al. 1980) can be recognized. Scrub vegetation is dominated by one or more species of shrubs or subshrubs with a general absence of trees. Although the physiognomy of the vegetation may be fairly uniform, the composition can vary greatly depending on such factors as exposure, slope, substrate, moisture availability, and seral stage. While the Gray and Bramlet system (1992) treated scrub and chaparral habitats separately, here we include chaparral as a subcategory within scrub habitats, as treated by Holland (1986).

Fire plays an integral regenerative role in the life cycle of many California scrub communities. Some plants, such as *Ceanothus crassifolius* and *Arctostaphylos glauca*, regenerate almost entirely from seed following fires. Others, such as *Adenostoma fasciculatum*, *Arctostaphylos glandulosa* var. *glandulosa*, and *Quercus berberidifolia*, readily resprout from heavily lignified basal burls, but also experience significant seed germination after burning. Many annuals and perennial herbs primarily reproduce following burns.

In the wake of a wildfire in chaparral, and to a lesser extent coastal sage scrub, a rather predictable succession of taxa follows. Seed germination is greatest during the first year. If there is adequate winter precipitation following a fire, the development of annuals such as *Eschscholzia californica* var. *peninsularis*,

Phacelia minor, *P. grandiflora*, *Papaver californicum*, *Salvia columbariae*, and many others may be spectacular. Also germinating are coarse perennial herbs, such as *Dicentra chrysantha*, *Venegasia carpesioides*, *Helianthus gracilentus*, and *Delphinium cardinale*, as well as subshrubs like *Helianthemum scoparium*, *Lotus scoparius*, and *Solanum xanti*. In addition, seedlings of the shrub species become established, and crown sprouting species begin to regenerate. During the second and third years, annuals are still prevalent, but the perennial herbs and subshrubs become better developed and begin to dominate. By the fourth and fifth years, the annuals and perennial herbs wane as the regenerating shrubs form the dominant cover once again. Often by the sixth or seventh year, much of the shrub cover has reformed and perennial herbs such as *Dicentra* and *Lotus scoparius* have replenished the soil seed bank and become senescent.

Records maintained by the Cleveland National Forest indicate that the oldest stands of scrub vegetation in the wilderness, limited to a small area southwest of the Morrell Potrero area, last burned in 1917. Other areas of relatively old stands include those at the southeastern end of the wilderness which last burned in 1958 and 1969. Much of the wilderness has burned since 1980, including a sizable area of the southwestern and north-central portions in 1989, and most recently, the northwestern end in 1993. The diversity of stand ages present in the wilderness allowed us to assess floristic composition at various stages of post-fire succession.

Coastal sage scrub.—This is typically a low-statured vegetation dominated by relatively soft-wooded, malacophyllous shrubs and subshrubs which are, in large part, facultatively drought-deciduous (O'Leary 1990). Species composition is variable, but *Eriogonum fasciculatum* and *Artemisia californica* are the most common elements. Other shrubs and subshrubs frequently encountered include *Salvia apiana*, *S. mellifera*, *Eriophyllum confertiflorum*, *Lotus scoparius*, *Hazardia squarrosa* var. *grindelioides*, *Mimulus aurantiacus* s.l., *Bebbia juncea*, and *Solanum xanti*. *Malosma laurina* and *Rhus ovata*, usually considered chaparral species because they possess stronger wood and somewhat coriaceous evergreen leaves, are frequently found in coastal sage scrub, although usually in relatively low numbers.

The term coastal sage scrub was coined by Munz and Keck (1949, 1950), who broadly circumscribed the community. Subsequently, a number of botanists have described variants of coastal sage scrub based on geographic location. Thorne (1976) recognized a maritime sage scrub for localities on the immediate coast, and a drier, inland sage scrub for interior sites. Axelrod (1978) recognized a more complex geographical as-

semblage and proposed the terms "venturan," "riversidian," and "diegan" to describe coastal sage scrub in southern California. In general, the venturan and diegan units incorporated the maritime sage scrub and more mesic elements of inland sage scrub of Thorne's classification system. Riversidian comprised the most xeric, interior expression of this community. Westman (1983) further amplified these geographical distinctions and the resulting changes were incorporated into the habitat classification scheme developed by Holland (1986).

However, the wilderness area falls within the transition zone between the diegan and riversidian areas, making application of this scheme difficult and somewhat arbitrary. Coastal sage scrub within the wilderness could be considered to be a more mesic expression of the riversidian sage scrub, or a more xeric phase of the diegan sage scrub. Since the coastal sage scrub in this borderline region does not always correspond with those units used in Gray and Bramlet (1992), we have decided to concentrate instead on the floristic associations of this community as manifested within the wilderness. Here, at least four associations of coastal sage scrub can be recognized: California sagebrush-California buckwheat scrub, mixed sage scrub, California buckwheat-white sage scrub, and floodplain sage scrub.

California sagebrush-California buckwheat scrub is the most mesic expression of coastal sage scrub locally. It is best developed along the more coastal, westerly edge of the wilderness where it generally interdigitates with chaparral or oak woodland. It is well developed along Lucas Canyon Trail heading into Aliso Canyon, and along Indian Potrero Trail just south of Verdugo Potrero.

The dominant shrub is *Artemisia californica*, followed by *Eriogonum fasciculatum*. In many areas, *Mimulus aurantiacus* s.l., *Eriophyllum confertiflorum*, *Galium angustifolium*, *Gnaphalium californicum*, *G. bicolor*, and *Lotus scoparius* are prevalent. Scattered *Malosma* and *Toxicodendron* are present in more mesic areas. Cover may be relatively dense, forming nearly closed canopies with little understory development, or more open with sizable clearings supporting a diversity of perennial herbs and annuals.

The understory commonly contains native bunchgrasses such as *Stipa lepida* and *Melica imperfecta*. Perennial herbs include *Marah macrocarpus*, *Erigeron foliosus*, *Sanicula crassicaulis*, *Dichelostemma pulchellum*, *Calochortus splendens*, *Chlorogalum pom-eridianum*, *C. parviflorum*, *Lathyrus vestitus* ssp. *laetiflorus*, and *Corethrogyne filaginifolia*. Common annuals include natives such as *Gilia angelensis*, *Las-thenia californica*, *Phacelia cicutaria* var. *hispida*, *P. distans*, *P. minor*, *Lotus strigosus*, *L. hamatus*, *Lupinus bicolor*, *Daucus pusillus*, and *Clarkia purpurea*, as

well as nonnative taxa such as *Bromus madritensis* ssp. *rubens*, *B. hordeaceus*, *Erodium cicutarium*, *Gastri-dium ventricosum*, *Vulpia myuros*, *Avena barbata*, *A. fatua*, *Filago gallica*, and *Silene gallica*.

Mixed sage scrub is a fairly widespread association of coastal sage scrub found on mesic slopes, often in a mosaic with chaparral and oak woodland. As recognized here, it is extremely variable as to the composition and relative dominance of the component shrub species. Dominant shrubs include *Artemisia californica*, *Eriogonum fasciculatum*, *Salvia apiana*, and in some areas, *Keckiella antirrhinoides*. Other typical shrubs and subshrubs include *Mimulus aurantiacus* s.l., *Hazardia squarrosa* var. *grindelioides*, *Lonicera subspicata* var. *denudata*, *Rhus ovata*, *Malosma laurina*, *Toxicodendron diversilobum*, *Lotus scoparius*, *Eriophyllum confertiflorum*, *Rhus trilobata* and *Galium angustifolium*.

Compared to the California sagebrush-California buckwheat association, the canopy of mixed sage scrub is more open. The assemblage of understory elements is similar, but with a preponderance of nonnative annual grasses, such as *Avena barbata*, *Bromus madritensis* ssp. *rubens*, *B. hordeaceus*, *Vulpia bromoides*, and *V. myuros*, which may be particularly abundant in openings.

California buckwheat-white sage scrub is a widespread association found on the most xeric sites. It is composed of very open stands of *Eriogonum fasciculatum* and *Salvia apiana*. Other associated shrubs and subshrubs include *Brickellia californica*, *Yucca whipplei*, *Artemisia californica*, *Bebbia juncea*, *Galium angustifolium*, *Malosma laurina*, and *Solanum xanti*. This unit frequently occurs embedded within chaparral, especially more xeric stands dominated by *Adenostoma fasciculatum* and *Ceanothus crassifolius*. Therefore, it is not unusual to find these and other "typical chaparral shrubs" sparingly scattered within stands of California buckwheat-white sage scrub. In the northeastern portion of the wilderness, stands dominated by *Keckiella antirrhinoides* frequently form a transition between sage scrub and more mesic chaparral.

The understory elements are largely the same as in the other coastal sage scrub associations described above. In addition, more xerophytic taxa well developed in this habitat include *Stipa coronata*, *Selaginella bigelovii*, *Mirabilis californica*, *Mimulus brevipes*, *Chaenactis artemisiifolia*, *Camissonia californica*, *Chorizanthe fimbriata*, *C. staticoides*, *Phacelia minor*, *P. cicutaria* var. *hispida*, *P. ramosissima* var. *latifolia*, and *Helianthus gracilentus*.

Floodplain sage scrub is developed on relatively stabilized benches of alluvium and is characterized by extensive gravelly or sandy flat areas. These benches of boulders, coarse gravels, and sands occur along the

margins of the broader drainages, especially San Mateo and Los Alamos canyons, and consist of materials deposited during powerfully erosive storms or wet cycles. Lower water levels in subsequent years cut a lower, narrower stream channel exposing the gravelly benches for colonization. Early succession on lower benches with relatively high water tables leads to development of riparian scrubs. As the stream continues to cut a lower channel, isolated benches are left high above the water table and above all but the most catastrophic floods.

Among the shrubs and subshrubs often encountered on these higher benches are *Baccharis salicifolia*, *Eriodictyon crassifolium*, *Lupinus excubitus* var. *hallii*, *Eriogonum fasciculatum*, *Artemisia californica*, *Salvia apiana*, *Adenostoma fasciculatum*, *Malosma laurina*, *Gnaphalium beneolens*, and *Senecio flaccidus* var. *douglasii*. One species normally considered characteristic of this habitat, *Lepidospartum squamatum*, is apparently scarce within the wilderness. Generally, a few large *Platanus racemosa* or *Quercus agrifolia* are present as remnants from earlier successional stages. Coarse perennial herbs, which may be locally common, include *Artemisia douglasiana*, *Ambrosia psilostachya*, *Corethrogyne filaginifolia*, and *Solidago californica*. Among the annuals which may be found in these areas are *Chaenactis glabriuscula*, *Stephanomeria exigua* ssp. *deanei*, *Eriogonum gracile*, *Lastarriaea coriacea*, *Minuartia douglasii*, *Coreopsis californica*, *Erodium cicutarium*, *Hypochoeris glabra*, *Stylocline gnaphaloides*, *Crassula connata*, and *Las-thenia californica*.

Chaparral.—This is a broad category of scrub vegetation dominated by hard-wooded, evergreen, sclerophyllous shrubs. As in coastal sage scrub, the composition and relative dominance of species present are highly variable. The unifying physiognomic characteristic, however, is the dense, often impenetrable overstory of intricately branched shrubs. Chaparral forms the dominant cover in the wilderness, its composition varying considerably depending on which component species are best adapted to the local environment. The most readily recognized forms include chamise chaparral, *Ceanothus crassifolius* chaparral, and southern mixed chaparral.

Chamise chaparral, dominated by *Adenostoma fasciculatum*, is the most xeric and widespread expression of chaparral within the wilderness. It is especially prevalent on the granitic substrates of the eastern and central portions of the wilderness. Depending on such factors as slope angle, exposure, and stand age, cover can be nearly complete or relatively open. Common associated shrubs include *Salvia mellifera*, *Eriogonum fasciculatum*, *Ceanothus crassifolius*, *Hazardia squarrosa* var. *grindelioides*, and *Yucca whipplei*. *Salvia*

clevelandii and *Dendromecon rigida* may be locally common constituents of this association in the southeastern corner of the wilderness. Common subshrubs and coarse perennial herbs include *Lotus scoparius*, *Helianthemum scoparium*, *Porophyllum gracile*, *Eriophyllum confertiflorum*, *Solanum xanti*, *Gnaphalium beneolens*, and *Helianthus gracilentus*.

The understory of chamise chaparral can be poorly developed, as in dense, middle-aged stands, or well developed, as in open, or senescent stands. Common understory perennial herbs include *Acourtia microcephala*, *Pedicularis densiflora*, *Sanicula crassicaulis*, *Tauschia arguta*, *Lomatium dasycarpum*, *Dichelostemma pulchellum*, and *Paeonia californica*. A variety of annuals may be found in sunny openings, including *Chorizanthe fimbriata*, *Cryptantha intermedia*, *C. microstachys*, *Phacelia cicutaria* var. *hispida*, *P. minor*, *Rafinesquia californica*, *Centaureum venustum*, *Navarretia hamata*, *Chaenactis artemisiifolia*, *Camissonia californica*, *C. hirtella*, *Caulanthus heterophyllus*, *Mimulus brevipes*, *Salvia columbariae*, *Bromus madritensis* ssp. *rubens*, *Avena barbata*, *Erodium cicutarium*, and *Filago californica*.

Ceanothus crassifolius chaparral is floristically similar to chamise chaparral but is characterized by a greater abundance of *Ceanothus crassifolius* relative to *Adenostoma fasciculatum*. In general, *Ceanothus crassifolius* chaparral occupies more mesic exposures than adjacent chamise chaparral, such as north- and east-facing upper slopes. It is best developed in the eastern and central portions of the wilderness, especially on granitic substrates. In addition to *Adenostoma*, common associated shrubs include *Salvia mellifera*, *Eriogonum fasciculatum*, *Lonicera subspicata* var. *denudata*, *Hazardia squarrosa* var. *grindelioides*, and *Yucca whipplei*. Common subshrubs and coarse perennial herbs include *Lotus scoparius*, *Helianthemum scoparium*, *Eriophyllum confertiflorum*, *Solanum xanti*, *Gnaphalium californicum*, and *Helianthus gracilentus*.

Although the overstory canopy cover is usually dense, the understory is better developed than equally dense chamise chaparral. The understory associates include perennial herbs such as *Tauschia arguta*, *Sanicula crassicaulis*, *Paeonia californica*, *Acourtia microcephala*, *Melica imperfecta*, *Scutellaria tuberosa*, and *Marah macrocarpus*, as well as such annuals as *Cryptantha intermedia*, *C. microstachys*, *Phacelia cicutaria* var. *hispida*, *P. minor*, *Bromus madritensis* ssp. *rubens*, *Clarkia epilobioides*, *Claytonia perfoliata* s.l., *Collinsia heterophylla*, and *Rafinesquia californica*.

Southern mixed chaparral, the most mesic expression of chaparral within the wilderness, is extremely dense and nearly impenetrable. It is present on the lower and middle portions of steep, north-facing canyon slopes and commonly grades into adjacent oak

woodland vegetation. Southern mixed chaparral is best developed on substrates other than granitics. Excellent examples of this vegetation type occur in lower San Mateo, Tenaja, central Devil, Cold Spring, Aliso, and Lucas canyons.

Southern mixed chaparral is the most diverse of the three chaparral types, and is defined by its rich assortment of typical chaparral species without any individual element being strongly dominant. Among its common components are *Heteromeles arbutifolia*, *Quercus berberidifolia*, *Rhamnus ilicifolia*, *R. californica*, *Cercocarpus minutiflorus*, *Rhus ovata*, *Arctostaphylos glandulosa*, *A. rainbowensis*, *Keckiella cordifolia*, *Adenostoma fasciculatum*, *Ceanothus oliganthus*, *C. crassifolius*, *C. spinosus*, *Malosma laurina*, *Toxicodendron diversilobum*, *Ribes indecorum*, *R. malvaceum*, *Eriogonum fasciculatum*, *Artemisia californica*, *Symphoricarpos mollis*, *Mimulus aurantiacus* s.l., *Lonicera subspicata* var. *denudata*, and *Clematis lasiantha*. The following species may also be encountered, but tend to be less common and of more localized distribution: *Styrax officinalis* var. *redivivus*, *Prunus ilicifolia*, *Xylococcus bicolor*, *Keckiella antirrhinoides*, *Garrya veatchii*, *Cercocarpus betuloides*, *Lepidodactylon californicum*, *Ribes californicum* var. *hesperium*, *R. speciosum*, and *Umbellularia californica*.

Among the herbaceous perennials commonly encountered in the understory and occasional openings are *Dryopteris arguta*, *Polypodium californicum*, *Adiantum jordanii*, *Pellaea andromedifolia*, *Melica imperfecta*, *Agrostis diegoensis*, *Stipa lepida*, *Elymus condensatus*, *Acourtia microcephala*, *Venegasia carpesioides*, *Tauschia arguta*, *Paeonia californica*, *Galium porrigens*, *Cirsium occidentale* vars. *californicum* and *occidentale*, *Gnaphalium bicolor*, *G. californicum*, *Silene laciniata* ssp. *major*, *Marah macrocarpus*, *Scrophularia californica* ssp. *floribunda*, *Delphinium cardinale*, *Solanum xanti*, *Calochortus splendens*, *Mulla maritima*, *Lathyrus vestitus* ssp. *laetiflorus*, *Sanicula tuberosa*, *Eriophyllum confertiflorum*, and *Chenopodium californicum*. Common annuals include *Claytonia perfoliata* s.l., *Eucrypta chrysanthemifolia*, *Clarkia epilobioides*, *C. bottae*, *Pholistoma auritum*, *Meconella denticulata*, *Galium aparine*, *Rafinesquia californica*, *Collinsia heterophylla*, *C. parryi*, *Nemophila menziesii*, *Aphanes occidentalis*, *Thysanocarpus laciniatus*, *Athysanus pusillus*, *Pterostegia drymarioides*, *Hesperocnide tenella*, *Madia gracilis*, and *Apiastrum angustifolium*.

Riparian Vegetation

Riparian vegetation is associated with areas of surface drainage and is characterized by plants tolerant of, or requiring, perennial surface or subsurface water.

Due to the diverse and largely rugged nature of the topography, riparian plant associations are well represented throughout the wilderness. Major associations include: southern sycamore woodland, southern willow riparian forest, southern willow scrub, mulefat scrub, white alder riparian forest, and southern coast live oak riparian forest.

Southern sycamore woodland is the characteristic vegetation in the bottoms of San Mateo Canyon, its major tributaries such as Devil, Bluewater, Wildhorse, and Nickel canyons, as well as Lucas and Aliso canyons. It is an open woodland where the dominant overstory tree, *Platanus racemosa*, may be intermixed with scattered individuals of *Quercus agrifolia*, *Fraxinus velutina*, *Salix laevigata*, *S. lucida* ssp. *lasiandra*, *Populus balsamifera* ssp. *trichocarpa*, and rarely, *Alnus rhombifolia* and *Populus fremontii*. The understory includes a diverse array of shrubs, perennial herbs, and annuals. *Salix lasiolepis*, *Baccharis salicifolia*, *Amorpha fruticosa*, and *Datisca glomerata* form dense to open stands in the wettest areas along stream channels and frequently flooded low benches. *Toxicodendron diversilobum*, *Rubus ursinus*, *Rosa californica*, and *Vitis girdiana* are frequent on somewhat higher, drier benches, as are various other species from surrounding scrub and oak woodland vegetation. Sandy and gravelly stream beds, pools, and seasonally inundated rocky outcrops provide habitat for such tenacious perennials as *Euthamia occidentalis*, *Hoita macrostachya*, *Juncus macrophyllus*, *J. textilis*, *J. rugulosus*, *J. xiphioides*, *Eleocharis macrostachya*, *E. montevidensis*, *Carex senta*, *C. barbarae*, *C. spissa*, *Scirpus acutus* var. *occidentalis*, *S. microcarpus*, *Typha dominicensis*, *T. latifolia*, *Equisetum laevigatum*, and *E. hyemale* ssp. *affine*. These taxa are well adapted to a regime of destructive seasonal flooding. Despite burial under sandy or gravelly alluvium deposited by runoff from winter rains, these plants are usually able to re-emerge from extensive rhizomes or thick rootstocks.

Southern willow riparian forest is floristically similar to southern sycamore woodland, but is characterized by dense stands of arborescent willows, especially *Salix laevigata*, and to a lesser extent, *S. lucida* ssp. *lasiandra*. Other common trees include *Quercus agrifolia*, *Populus balsamifera* ssp. *trichocarpa*, *Fraxinus velutina*, and *Platanus racemosa*. *Populus fremontii*, typically a common component of this association, is scarce in those areas of the wilderness that we surveyed. Southern willow riparian forests are found in only a few areas of the wilderness, principally in Devil and San Mateo canyons.

Southern willow scrub is characterized by dense stands of *Salix lasiolepis*, *S. laevigata*, *Datisca glomerata*, and to lesser extent, *Baccharis salicifolia*, *Salix exigua*, and *Amorpha fruticosa*. Essentially, this association is composed of the same elements as southern

sycamore woodland but without, or with less development of, the arborescent overstory. Within the larger drainages, this habitat is encountered in scattered open stretches of floodplain where the larger tree species are, for one reason or another, absent. In the secondary and tertiary drainages, southern willow scrub occurs as intermittent bands along the stream channels in areas with a fairly consistent supply of water.

Mulefat scrub is very similar to southern willow scrub, but differentiated by a predominance of *Baccharis salicifolia* over the shrubby *Salix* species. Typically, mulefat scrub is associated with drier conditions than southern sycamore woodland and southern willow scrub and, as a result, the more aquatic elements are generally not well represented. In the larger drainages subject to severe scouring, as in San Mateo Canyon, mulefat scrub develops as a seral community on recently formed benches and cleared areas within the surrounding southern sycamore woodland. In secondary and tertiary drainages, a moderately to poorly formed mulefat scrub may be encountered intermittently along the stream channels.

White alder riparian forests are characterized by dense stands of *Alnus rhombifolia* with scattered individuals of *Platanus racemosa*, *Quercus agrifolia*, and *Umbellularia californica*. The understory is poorly developed due to dense shading but, where present, is generally composed of the same elements found in the southern sycamore woodland. White alder riparian forests are apparently limited in distribution within the wilderness, with the best-developed examples observed in central Devil Canyon and lower Tenaja Canyon. A large logjam composed largely of *Alnus*, and apparently deposited by 1992 floods, was encountered in lower San Mateo Canyon. This strongly suggests that at some time in the recent past, there must have been well-developed alder forests in the main trunk of San Mateo Canyon, probably in the central portion which was heavily impacted by fire in 1989. Perhaps over the next few decades, a new stand of white alder riparian forest will become established within middle San Mateo Canyon.

Southern coast live oak riparian forest is characterized by riparian habitats dominated by *Quercus agrifolia*. For the purposes of mapping riparian habitats, this vegetation is often treated as a discrete unit. In reality, however, this unit grades into "typical" coast live oak woodland in many areas. Therefore, we have included a description of the community within the general discussion of coast live oak woodland, below.

Oak Woodland Vegetation

Oak woodlands form one of the most distinctive communities in the wilderness and are characterized by the physiognomic dominance of arborescent species

of *Quercus*. As used here, we include the most open manifestations (oak savannahs), as well as the densest (oak forests). Two types of oak woodland are present in the wilderness: coast live oak woodland and Engelmann oak woodland.

Coast live oak woodland is widely distributed throughout the wilderness and is defined by well-developed stands of *Quercus agrifolia*. These stands, which form broad, overarching canopies, are usually encountered in fairly mesic areas. Consequently, these woodlands may be found in association with riparian communities along both permanent and intermittent stream courses, as in San Mateo Canyon; within scrub communities on canyon slopes, as in Tenaja Canyon; or forming a border between scrub-covered slopes and grassland-dominated flats, as at Oak Flats.

The densest stands of coast live oak woodlands are found in mesic canyon bottoms and adjacent north-facing slopes. Despite the heavy shading, the understory is generally well developed and includes many of the shrubs and perennial herbs from adjacent chaparral habitats, especially *Rhamnus ilicifolia*, *R. californica*, *Ribes indecorum*, *Adenostoma fasciculatum*, *Arctostaphylos glandulosa*, *Heteromeles arbutifolia*, *Quercus berberidifolia*, *Rhus trilobata* s.l., *Lonicera subspicata* var. *denudata*, *Toxicodendron diversilobum*, *Venegasia carpesioides*, and *Symphoricarpos mollis*. Other common understory elements include *Osmorhiza brachypoda*, *Elymus glaucus*, *Dryopteris arguta*, *Pteridium aquilinum* var. *pubescens*, *Madia gracilis*, *Rupertia physodes*, *Rubus ursinus*, *Rosa californica*, and *Thalictrum polycarpum*. Of more local distribution in this habitat are such interesting taxa as *Polygala cornuta* ssp. *fishiae*, *Lilium humboldtii* ssp. *ocellatum*, and *Piperia cooperi*.

In drier situations, the understory is more open with a lower diversity of shrub species. *Eriogonum fasciculatum* and *Salvia apiana* are more prevalent, along with *Elymus glaucus*, *E. condensatus*, *Rhus trilobata*, *Toxicodendron diversilobum*, *Agoseris grandiflora*, *Sanicula crassicaulis*, and *Cirsium occidentale* var. *occidentale*. As the oak canopy becomes more discontinuous, the openings may support small stands of chaparral, coastal sage scrub, perennial grassland, or annual grassland vegetation.

Engelmann oak woodland is characterized by the greater abundance of *Quercus engelmannii* relative to *Q. agrifolia*. It is otherwise floristically similar to coast live oak woodland. This woodland is very well developed on the Santa Rosa Plateau to the east (Lathrop and Thorne 1985). In the wilderness, however, Engelmann oak woodland was encountered only on Miller Mountain, which floristically and physiographically represents the westernmost extension of the Santa Rosa Plateau. The best-developed stands are found on the upper northern flank of the mountain at the ecotone

between southern coastal needlegrass grassland and southern mixed chaparral. Common understory shrubs include *Heteromeles arbutifolia*, *Rhamnus ilicifolia*, and *Eriogonum fasciculatum*.

The other principal populations of *Quercus engelmannii*—on the south-central flank of Miller Mountain and in "Potrero Escondido"—occur as intermittent trees within stands of more common *Q. agrifolia*. As such, these woodland areas have been included within the broadly circumscribed coast live oak woodland.

Grassland Vegetation

Grasslands are characterized by the prevalence of grasses and other nonwoody species over shrubs and trees. Within cismontane southern California, grassland habitats can be coarsely divided into two types: those dominated by annual, frequently nonnative species, and those dominated by native perennial grasses. In the wilderness, both grassland types are represented at scattered localities.

Annual grasslands are dominated by nonnative annual grasses and herbs and are highly variable in species composition. Annual grassland has a limited distribution in the wilderness, usually present as small stands in locally disturbed situations within areas otherwise characterized by coast live oak woodland or chaparral. In other cases, annual grassland may cover fairly broad expanses, usually as a result of anthropogenic activities. The best examples are found in the heavily grazed inholdings, such as Stewart Ranch, Rancho Carrillo, and Round Potrero.

The most common nonnative grasses in annual grassland include *Bromus madritensis* ssp. *rubens*, *B. diandrus*, *B. hordeaceus*, *Avena barbata*, *A. fatua*, *Lolium perenne* ssp. *multiflorum*, *Hordeum murinum* ssp. *leporinum*, *Vulpia bromoides*, *V. myuros*, and *Schismus barbatus*. Other common, introduced annual herbs include *Erodium cicutarium*, *E. brachycarpum*, *Hypochoeris glabra*, *Centaurea melitensis*, *Silene gallica*, and *Filago gallica*. Scattered individuals of native grasses, such as *Stipa lepida*, *Melica imperfecta*, and *Poa secunda*, may be present, but are never common. In areas not too heavily disturbed, native annuals and perennial herbs may be reasonably well developed and may include *Lupinus bicolor*, *L. agardhianus*, *Lathenia californica*, *Micropus californicus*, *Gilia angelensis*, *Microseris heterocarpa*, *M. lindleyi*, *Hemizonia fasciculata*, *Cryptantha intermedia*, *Plagiobothrys nothofulvus*, *Lotus strigosus*, *L. unifoliolatus*, *Trifolium willdenovii*, *Plantago erecta*, *Linanthus androsaceus* ssp. *micranthus*, *Cordylanthus rigidus*, *Dichelostemma pulchellum*, and *Calochortus splendens*.

Southern coastal needlegrass grassland is characterized by native perennial bunchgrasses, in particular *Stipa pulchra*. These grasslands are generally best de-

Table 1. Numerical summary of the flora of the San Mateo Canyon Wilderness Area.

Major groups	Families	Genera	Species and lower taxa*		
			Native	Non-native	Total
Pteridophytes	7	12	17	0	17
Gymnosperms	0	0	0	0	0
Dicotyledones	69	261	402	86	488
Monocotyledones	15	59	81	40	121
Total	92	332	500	126	626

* Includes species, subspecies, varieties, and interspecific hybrids.

veloped on heavy soils in areas of low topographic relief. At their margins, these grasslands may gradually grade into oak woodland or scrub habitats but often have a sharp zone of demarcation. The best examples of southern coastal needlegrass grassland in the wilderness include stands at Oak Flats, Verdugo Potrero, Indian Potrero, Miller Mountain, and, in particular, "Potrero Escondido."

In addition to *Stipa pulchra*, other native grasses which may be present include *Stipa lepida*, *Poa secunda*, *Melica imperfecta*, and *Elymus condensatus*. Nonnative annual grasses have also become well-established, particularly *Avena barbata*, *A. fatua*, *Bromus hordeaceus*, and *B. madritensis* ssp. *rubens*. In more disturbed sites, the taller *Avena* spp. may obscure the *Stipa* and other natives, giving the false impression of an annual grassland. In southern coastal needlegrass grasslands that have remained relatively intact (i.e., that have not been too heavily grazed), the number of associated species, particularly of annuals, can be sizable. Commonly associated native perennial herbs and subshrubs include *Dichelostemma pulchellum*, *Allium haematociton*, *Mulla maritima*, *Isocoma menziesii* var. *vernionoides*, *Corethrogyne filaginifolia*, *Sidalcea malvaeflora*, *Asclepias eriocarpa*, *Sanicula bipinnatifida*, *S. arguta*, *Lomatium dasycarpum*, *L. utriculatum*, *Fritillaria biflora*, *Sisyrinchium bellum*, *Viola pedunculata*, *Chlorogalum pomeridianum*, and *C. parviflorum*. Common annuals include *Lupinus bicolor*, *L. agardhianus*, *Hemizonia fasciculata*, *Erodium cicutarium*, *E. brachycarpum*, *Micropus californicus*, *Plantago erecta*, *Lasthenia californica*, *Linanthus androsaceus* ssp. *micranthus*, *L. liniflorus*, *Eschscholzia californica* var. *peninsularis*, *Silene gallica*, *Thysanocarpus laciniatus*, *Plagiobothrys californicus*, *P. nothofulvus*, *Amsinckia intermedia*, *Hypochoeris glabra*, *Microseris heterocarpa*, *M. lindleyi*, *Madia gracilis*, *Trifolium albopurpureum*, *T. ciliolatum*, *T. microcephalum*, and *Osmadenia tenella*.

FLORA

Numerical Summary

Based on fieldwork conducted to date, we have identified 626 vascular plant taxa (species, subspecies,

Table 2. Comparison of native vs. nonnative taxa reported for various areas of southern California.

Geographic area	Native		Nonnative	
	No. taxa	(%)	No. taxa	(%)
San Mateo Canyon Wilderness Area	500	(80)	126	(20)
Santa Rosa Plateau (Lathrop and Thorne 1985*)	463	(80)	117	(20)
Santa Ana Mountains (S. Boyd, et al. 1995)	793	(78)	230	(22)
Gavilan Hills (Boyd 1983)	353	(82)	177	(18)
Santa Monica Mountains (Raven, et al. 1986)	644	(73)	236	(27)
Santa Catalina Island (Thorne 1967)	393	(70)	166	(30)
San Clemente Island (Raven 1963)	233	(78)	66	(22)
Orange County (Roberts 1989)	806	(70)	351	(30)
San Diego County (Beauchamp 1986)	1741	(78)	469	(22)

* Based on Lathrop and Thorne (1985), adjusted to conform to taxonomy used here for the San Mateo Canyon Wilderness Area flora.

varieties, and natural hybrids) occurring within the wilderness. These are distributed among 92 families and 333 genera (Table 1). Not unexpectedly, the wilderness flora is characteristic of low- to mid-elevation areas of cismontane southern California. The largest families are: Asteraceae (60 genera/93 species and lower taxa), Poaceae (32/62), Fabaceae (12/45), Scrophulariaceae (14/29), and Brassicaceae (12/21). Other well-represented families include Lamiaceae, Onagraceae, Polygonaceae, Cyperaceae, Hydrophyllaceae, Rosaceae, Apiaceae, Caryophyllaceae, Polemoniaceae, and Boraginaceae. These 15 families account for 64% of the total flora of the wilderness. The largest genera are *Lupinus* (10 taxa), *Juncus* (9), *Lotus* (8), *Trifolium* (8), *Phacelia* (8), *Bromus* (8), *Gnaphalium* (8), *Mimulus* (7), *Camissonia* (6), *Linanthus* (6), and *Carex* (6). Other well-represented genera include *Cryptantha*, *Chenopodium*, *Vicia*, *Salvia*, *Eriogonum*, *Ceanothus*, *Salix*, *Solanum*, *Elymus*, and *Vulpia*. A complete list of the taxa is provided below in the annotated catalogue.

Of the 626 taxa reported for the wilderness, 500 (80%) are here considered native. The ratio of native:nonnative taxa is consistent with that reported for the Santa Rosa Plateau and Santa Ana Mountains s.l. (Lathrop and Thorne 1978, 1985; Boyd et al. 1995). Table 2 provides a comparison of the ratio of native:nonnative taxa reported for these and other areas of southern California.

Moran (1992) correctly observed that no floristic study is ever complete; therefore, it is not surprising that we encountered 88 taxa previously unreported for the Santa Ana Mountains. This figure includes 53 native and 35 nonnative taxa (Table 3). The additions to the Santa Ana Mountains reported here, combined with new records for the range reported elsewhere (La-

Table 3. Additions to the flora of the Santa Ana Mountains encountered in the San Mateo Canyon Wilderness Area

Native Taxa	<i>Scirpus pungens</i>
<i>Achyrrachaena mollis</i>	<i>Silene multinervia</i>
<i>Aphanes occidentalis</i>	<i>Solanum parishii</i>
<i>Arctostaphylos glandulosa</i> × <i>A. rainbowensis</i>	<i>Stephanomeria diegensis</i>
<i>Baccharis vanessae</i>	<i>Symphoricarpos albus</i> var. <i>laevigatus</i>
<i>Brodiaea filifolia</i> × <i>B. orcuttii</i>	<i>Trichostema austromontanum</i> ssp. <i>austromontanum</i>
<i>Bromus anomalus</i>	<i>Triodanis biflora</i>
<i>Calystegia fulcrata</i>	
<i>Camissonia graciliflora</i>	Nonnative Taxa
<i>Camissonia strigulosa</i>	<i>Agave americana</i>
<i>Carex athrostachya</i> vel. aff.	<i>Allium ampeloprasum</i>
<i>Caulanthus lasiophyllus</i> var. <i>inalienus</i>	<i>Aloe arborescens</i>
<i>Caulanthus lasiophyllus</i> var. <i>lasiophyllus</i>	<i>Aloe chabaudii</i> vel aff.
<i>Clarkia botatae</i>	<i>Aloe saponaria</i> vel aff.
<i>Clarkia similis</i>	<i>Anthriscus caucalis</i>
<i>Claytonia parviflora</i> ssp. <i>viridis</i>	<i>Callicore rosea</i>
<i>Coreopsis californica</i>	<i>Carduus pycnocephalus</i>
<i>Cryptantha micromeres</i>	<i>Centaurea solstitialis</i>
<i>Cyperus squarrosus</i>	<i>Cynosurus echinatus</i>
<i>Eleocharis acicularis</i> var. <i>bella</i>	<i>Dichondra</i> cf. <i>micrantha</i>
<i>Elymus condensatus</i> × <i>E. triticoideus</i>	<i>Digitalis purpurea</i>
<i>Eragrostis pectinacea</i>	<i>Eschscholzia californica</i> var. <i>douglasii</i>
<i>Filago arizonica</i>	<i>Eucalyptus camaldulensis</i>
<i>Gilia australis</i>	<i>Eucalyptus globulus</i>
<i>Guthopsis diffusa</i> ssp. <i>candida</i>	<i>Festuca arundinacea</i>
<i>Gutierrezia sarothrae</i>	<i>Hordeum murinum</i> ssp. <i>murinum</i>
<i>Harpagonella palmeri</i>	<i>Hordeum vulgare</i> var. <i>trifurcatum</i>
<i>Hesperocnide tenella</i>	<i>Iris</i> × <i>germanica</i>
<i>Hordeum depressum</i>	<i>Lamium amplexicaule</i>
<i>Horkelia cuneata</i> ssp. <i>puberula</i>	<i>Malus</i> cf. <i>sylvestris</i>
<i>Horkelia truncata</i>	<i>Morus alba</i>
<i>Juncus patens</i>	<i>Narcissus tazetta</i>
<i>Lupinus formosus</i> var. <i>formosus</i>	<i>Opuntia ficus-indica</i>
<i>Madia exigua</i>	<i>Phalaris paradoxa</i>
<i>Microseris elegans</i>	<i>Physalis philadelphica</i>
<i>Nemacladus ramosissimus</i>	<i>Prunus</i> cf. <i>persica</i>
<i>Opuntia</i> × <i>occidentalis</i>	<i>Punica granatum</i>
<i>Orobanche parishii</i> ssp. <i>parishii</i>	<i>Pyrus</i> sp.
<i>Phacelia minor</i> × <i>P. parryi</i>	<i>Schismus arabicus</i>
<i>Pholistoma racemosum</i>	<i>Sisymbrium orientale</i>
<i>Plagiobothrys tenellus</i>	<i>Tamarix ramosissima</i>
<i>Polycarpon depressum</i>	<i>Tragopogon porrifolius</i>
<i>Rhus integrifolia</i> × <i>R. ovata</i>	<i>Trifolium hirtum</i>
<i>Rhus trilobata</i> var. <i>anisophylla</i>	<i>Triticum aestivum</i>
<i>Salvia apiana</i> × <i>S. mellifera</i>	<i>Vicia benghalensis</i>
	<i>Vicia sativa</i> s.l.

of taxa in one area; B = number of taxa in a second area, and C = number of taxa common to both areas). Comparison of the wilderness flora (native and non-native) with the revised total for the Santa Ana Mountains s.l. indicates 76% overall similarity. In comparison, the SI for the Santa Rosa Plateau compared with the entire range is 72%. The SI of the combined wilderness and Santa Rosa Plateau flora compared to the entire range is 86%.

Surprisingly, the SI for the wilderness compared with the Santa Rosa Plateau is only 72.5%, even though these two areas of roughly similar size are directly adjacent to each other. This low SI may be attributed to marked differences in geologic substrate, topographic diversity, and the resultant habitats. The floristic dissimilarity is directly related to the presence of species-rich vernal pools on the plateau which are absent from our study area, and is further accentuated by the presence of more diverse riparian and mesic chaparral associations in the wilderness than are found on the plateau. These differences are reflected in the life-form spectra for the two regions—the wilderness exhibiting slightly higher percentages for woody taxa, with the Santa Rosa Plateau supporting a greater percentage of obligate hydrophytes (Table 4). Despite these differences, however, both floristic units are characterized by a predominance of annuals and herbaceous perennials, a typical feature of regions with Mediterranean-type climates (Thorne 1967).

Sensitive Taxa

From the outset of our study, one of the primary objectives was to document the occurrence of sensitive plant populations within the wilderness. Sensitive plants include those taxa with a status of threatened, or endangered, as designated by the Cleveland National Forest, California Department of Fish and Game, United States Fish and Wildlife Service, and/or the California Native Plant Society (Skinner and Pavlik 1994). Prior to our work, only one sensitive species, *Dudleya viscida*, had been documented from within the San Mateo Canyon Wilderness Area. Twelve sensitive plant taxa were encountered during our surveys: *Baccharis vanessae*, *Brodiaea filifolia*, *B. orcuttii*, *Chorizanthe polygonoides* var. *longispina*, *C. procumbens*, *Dudleya multicaulis*, *D. viscida*, *Harpagonella palmeri*, *Horkelia truncata*, *Mimulus diffusus*, *Polygala cornuta* ssp. *fishiae*, and *Quercus engelmannii*. The general habitat and distribution of these taxa are addressed in the catalogue. A more detailed discussion is provided below for those taxa considered here to have phytogeographically significant populations within the wilderness.

The southern end of the Santa Ana Mountains represents one of the few areas where the ranges of *Bro-*

throp and Thorne 1985; Boyd et al. 1993; Boyd et al. 1995) bring the known flora of the Santa Ana Mountains to 1023 taxa (Table 2).

The relative floristic similarity of two regions may be evaluated using the similarity index (SI) of Soerensen (Balgooy 1971) where $SI = \frac{2C}{A + B}$. (A = number

Table 4. Comparison of life-form spectra for the San Mateo Canyon Wilderness Area and other selected regions.

Floristic unit	No. of taxa	Percentage distribution of taxa among life-forms*											
		Tr	Shl	Shs	Li	SfP	PH	G	An	Ep	Pa	Su	Aq
San Mateo Cyn Wilderness													
Native taxa	500	3	7	8	1	7	23	9	39	0	1	1	1
Total taxa	626	3	6	7	<1	6	22	7	44	0	<1	2	1
Santa Rosa Plateau													
Native taxa	463	3	6	7	<1	7	24	8	38	0	<1	1	5
Total taxa	580	3	6	5	<1	6	24	7	43	0	<1	1	4
Santa Ana Mtns s.l.													
Native taxa	793	2	6	10	<1	8	24	7	36	0	1	2	3
Total taxa	1023	3	6	8	<1	7	24	6	39	0	<1	2	3
Santa Monica Mtns													
Native taxa	640	2	5	8	<1	9	29	5	36	0	2	<1	2
Total taxa	874	2	4	7	<1	8	28	4	42	0	<1	<1	2
Santa Catalina Is.													
Native taxa	391	2	7	9	1	5	27	2	41	0	1	2	3
Total taxa	557	1	6	8	1	3	27	2	48	0	1	1	2
California mediterranean areas (Shmida 1981)													
	307	4	7	13	2	14	29	3	27	0	<1	0	0
Raunkiaer's Normal Spectrum (Raunkiaer 1934)													
	400	6	17	20	0	9	27	3	13	3	0	1	1

* **Tr** = trees (mesophanerophytes, 8–25 m tall); **Shl** = large shrubs (microphanerophytes, 2–8 m tall); **Shs** = small shrubs (nanophanerophytes, 0.5–2 m tall); **Li** = lianas (climbing phanerophytes with persistent stems); **SfP** = suffruticose perennials (chamaephytes, vegetative buds not over 0.5 m above the ground); **PH** = perennial herbs (hemicytrophytes, vegetative buds at or just below soil surface); **G** = geophytes (herbaceous, vegetative buds well below soil surface); **An** = annuals (therophytes, including facultative biennials); **Ep** = epiphytes (nonparasitic); **Pa** = strict parasites (depending on other plants for much or all of their sustenance); **Su** = succulents (including stem succulents, leaf succulents, and rosette-leaved shrubs); **Aq** = aquatic plants (obligate hydrophytes, submersed or floating).

diaea filifolia and *B. orcuttii* overlap (Hoover 1939a, 1939b; Niehaus 1971; Skinner and Pavlik 1994). Both species have been reported from vernal moist clay soils on the Santa Rosa Plateau (Lathrop and Thorne 1985). Although largely distinct on the Santa Rosa Plateau, populations of these species within the wilderness are characterized by many morphologically intermediate individuals, here interpreted to be of hybrid origin. The two species are apparently closely related, distinguished from one another and other *Brodiaea* species by characters of the staminal filament and staminode. *Brodiaea filifolia* has well-developed staminodes that are narrow, pointed, and uncolored, and the filaments of the fertile stamens are short (± 1 mm) and project into the throat of the flower. In *B. orcuttii*, the staminodes are lacking, and the filaments of the fertile stamens are longer (± 4 –6 mm) and erect. In both, the flowers are deep bluish purple.

The morphologically intermediate *Brodiaea* encountered in the wilderness combine the staminode character of *B. filifolia* with the filament character of *B. orcuttii*. Although most of the plants observed were rather uniform in filament length, the staminode character appeared to be more variable: plants exhibiting long, medium, and vestigial staminodes frequently occurred together in a given stand. Although Niehaus

(1971) reported that natural hybrids are rare or unknown in *Brodiaea*, and there appear to be no earlier reports of introgression between *B. filifolia* and *B. orcuttii*, it seems most likely that these plants represent such a series of hybrids.

Dudleya viscida is a distinctive species distributed disjunctly from the vicinity of San Juan Canyon in the Santa Ana Mountains south to Escondido Creek in northwestern San Diego County (Beauchamp 1986; Skinner and Pavlik 1994). The bright green clumps of *D. viscida* are readily visible on the rock outcrop and cliff face habitats favored by the species, a feature which facilitated our surveys for the plant. Populations occurring in inaccessible areas could be viewed through binoculars from some distance to determine distribution and general abundance.

Prior to our work, only the easternmost population of *Dudleya viscida* in San Mateo Canyon (near Fisherman's Camp) had been reported (K. Winter, pers. comm.). This species was, however, the most abundant and widely distributed of the sensitive plants encountered in the wilderness. Scattered populations were encountered from Lucas Canyon south to Devil Canyon, but most were concentrated in the lower half of San Mateo Canyon. All populations were associated with rock outcrops and cliffs of granitic, metavolcanic, and

metasedimentary origin. Usually, mesic exposures (east, northeast, and north) are favored over more xeric aspects (west, southwest, and south). It appears that the San Mateo Canyon Wilderness Area harbors the most extensive known populations of *D. viscida*. Based on the habitat occupied by this plant, we anticipate that additional large populations will be found in the extensive unsurveyed portions of Devil Canyon and its tributaries, such as Cold Spring Canyon. It is also likely that populations may be present in Aliso Canyon, Nickel Canyon, and in the other tributary drainages of lower San Mateo Canyon.

Three other sensitive plant species encountered, *Harpagonella palmeri*, *Horkelia truncata*, and *Baccharis vanessae*, were previously unreported from the Santa Ana Mountains s.l. The *Horkelia* and *Baccharis* are of particular note, as these two species reach the northern limits of their range in the wilderness.

Horkelia truncata is a Peninsular Range endemic known from Sierra de Juarez of Baja California, Mexico, northward to the southern end of the Santa Ana Mountains (Munz 1974; Beauchamp 1986). Apparently, this species is restricted in the wilderness to the upper watershed of Devil Canyon. Here it occurs as a locally common understory species of grassy openings in chaparral and oak woodland.

Baccharis vanessae is a relatively narrow endemic of chaparral habitats in central-coastal San Diego County, known primarily from Encinitas eastward to Woodson Mountain, near Poway, and southward to Mira Mesa (Beauchamp 1980, 1986). A small population of this species was encountered at the extreme southern end of the wilderness in lower Devil Canyon. This population represents a significant northward extension of the range of *B. vanessae*, given its relatively restricted previously known distribution (Boyd et al. 1993).

ANNOTATED CATALOGUE OF THE VASCULAR FLORA

The following list includes all vascular plant taxa observed during our surveys in the San Mateo Canyon Wilderness Area. A representative voucher specimen is cited for each taxon listed (with one exception), including collector name(s) and number. Because all cited vouchers were taken between 1991 and 1994, collection dates have been omitted in the interest of brevity. All vouchers are deposited in the herbarium of Rancho Santa Ana Botanic Garden (RSA). Duplicates of most taxa have also been deposited at the San Diego Natural History Museum (SD), while selected duplicates have been distributed more widely but are not itemized here.

For ease of reference, an alphabetical arrangement has been followed for families within subdivisions,

classes, or subclasses, as well as for genera within families and species within genera. Nomenclature used in this list follows, for the most part, Hickman (1993). In some instances, we have elected to follow alternate treatments and have thus indicated the Hickman equivalent in brackets. Family nomenclature is that of Thorne (1992) for the flowering plants and Crabbe, et al. (1975) for ferns.

Nonnative taxa are indicated by an asterisk (*) before the name. Plants considered sensitive by the Cleveland National Forest, California Native Plant Society, California Department of Fish and Game, and/or United States Fish and Wildlife Service are indicated by a dagger (†). Taxa which have been provisionally determined are indicated by "cf." before the generic or specific epithet, or "vel aff." following the taxon authority. Abbreviations in the text have largely been limited to "cyn" for canyon, "mtn" for mountain, and "jtn" for junction.

LYCOPODIAE

SELAGINELLACEAE

SELAGINELLA BIGELOVII Underw. Perennial herb. Common and often abundant on xeric slopes, cliffs, and rock outcrops. *Boyd & Ross 7204*.

EQUISETAE

EQUISETACEAE

EQUISETUM ARVENSE L. Geophyte. Local along streams, as in Cold Spring Cyn and Lucas Cyn. *Boyd & Ross 7093*.

EQUISETUM HYEMALE L. ssp. AFFINE (Engelm.) Calder & R. L. Taylor Geophyte. Local along streams at scattered sites. *Boyd & Ross 7117*.

EQUISETUM LAEVIGATUM A. Braun Geophyte. Local along streams. *Boyd & Ross 7140*.

FILICAE

ADIANTACEAE

ADIANTUM CAPILLUS-VENERIS L. Perennial herb. Relatively uncommon and local on alkaline seepages, as in Cold Spring Cyn and Lucas Cyn. *Boyd & Ross 7157*.

ADIANTUM JORDANI C. Mueller Perennial herb. Occasional in mesic situations on shaded rock outcrops, and in the understory of chaparral and oak woodland. *Boyd, Ross, & K. McCulloh 6723*.

ASPIDOTIS CALIFORNICA (Mett.) Nutt. ex Copel. Perennial herb. Common about rock outcrops, usually in shady, mesic situations. *Boyd, Ross, & Mistretta 6637*.

CHEILANTHES CLEVELANDII D. Eaton Perennial herb. Occasional about rock outcrops, but apparently more common in the eastern portion of the wilderness. *Boyd & Ross 7588*.

CHEILANTHES NEWBERRYI (D. Eaton) Domin Perennial herb. Occasional about rock outcrops. *Boyd & Ross 7277*.

PELLAEA ANDROMEDIFOLIA (Kaulf.) Fée Perennial herb. Common on mesic slopes, shaded benches, and about rock outcrops. *Boyd, Ross, & Bramlet 7312*.

PELLAEA MUCRONATA (D. Eaton) D. Eaton var. MUCRONATA Perennial herb. Common in both mesic and xeric situations, especially about rock outcrops. *Boyd & Ross 7220*.

PENTAGRAMMA TRIANGULARIS (Kaulf.) G. Yatskievych, M. D. Windham, & E. Wollenweber ssp. TRIANGULARIS Perennial herb. Common, especially on mesic slopes. *Boyd, Ross, & Bramlet 7312.*

ASPLENIACEAE

ASPLENIUM VESPERTINUM Maxon Perennial herb. Apparently scarce. Encountered only once in crevices of rock outcrops on a mesic slope in lower Devil Cyn, but to be expected elsewhere. *Boyd, Ross, & Mistretta 7709.*

DRYOPTERIS ARGUTA (Kaulf.) Maxon Perennial herb. Common to locally abundant, especially in understory of mesic chaparral-covered slopes and in oak woodland. *Boyd, Ross, & Mistretta 6642.*

BLECHNACEAE

WOODWARDIA FIMBRIATA Smith Herbaceous to suffrutescent perennial. Generally infrequent along streams at scattered sites, but locally abundant in oak-riparian understory of lower Wildhorse Cyn, and about Mud Springs in upper Devil Cyn. *Boyd & W. Appleby 7958.*

DENNSTAEDTIACEAE

PTERIDIUM AQUILINUM (L.) Kuhn var. PUBESCENS L. Underw. Geophyte. Occasional to locally abundant on mesic slopes and stream benches at scattered sites. *Boyd, Ross, & Bramlet 7313.*

POLYPODIACEAE

POLYPODIUM CALIFORNICUM Kaulf. Perennial herb. Common on mesic slopes and rock outcrops, but especially abundant in the understory of mesic chaparral in Tenaja Cyn. *Boyd & Ross 7122.*

ANGIOSPERMAE—DICOTYLEDONES

ADOXACEAE

SAMBUCUS MEXICANA C. Presl ex DC. Arborescent shrub to small tree. Occasional on mesic, chaparral-covered slopes; generally more frequent along drainages. *Boyd & Ross 7257.*

AMARANTHACEAE

*AMARANTHUS ALBUS L. Annual. Occasional in gravelly areas along streams and in other disturbed situations, as along San Mateo Creek. *Boyd & Ross 7442.*

AMARANTHUS BLITOIDES S. Watson Annual (considered introduced in some treatments). Occasional on open sandy benches in lower San Mateo, Aliso, and Lucas cyns, and along Verdugo Trail in the Oak Flats area. *Boyd, Ross, & Mistretta 7697.*

*AMARANTHUS RETROFLEXUS L. Annual. Encountered sporadically in somewhat disturbed areas, as along the trail and streambed in Lucas Cyn. *Boyd & Ross 7430.*

ANACARDIACEAE

MALOSMA LAURINA (Nutt.) Nutt. ex Abrams Large shrub. Common and widespread, especially in mesic chaparral and coastal sage scrub. *Boyd & Ross 7620.*

RHUS INTEGRIFOLIA (Nutt.) Brewer & S. Watson Large shrub. Occasional, but generally more common in the westerly portions of the wilderness in mesic chaparral, amid rocky outcrops, etc. *Boyd & Mistretta 7000.*

RHUS INTEGRIFOLIA × R. OVATA Large shrub. Uncommon, but generally present where both parent species occur sympatrically near the western edge of the wilderness. *Boyd & Mistretta 7001.*

RHUS OVATA S. Watson Large shrub. Common, mostly in mesic chaparral and oak woodland understory. *Boyd, Ross, & Mistretta 6744.*

RHUS TRILOBATA Nutt. ex Torrey & A. Gray var. ANISOPHYLLA (E.

Greene) Jepson Small shrub. Common on benches along streams, and frequently dominant in oak woodland understory, but sporadically encountered in other habitats. Although the plants observed in the wilderness most closely approach this variety, many individuals are, in fact, variably intermediate to var. *quinata* Jepson. *Boyd, Ross, & Bramlet 7325.*

TOXICODENDRON DIVERSILOBUM Torrey & A. Gray Small shrub or liana. Abundant, especially on mesic canyon slopes in chaparral and oak woodland understory. *Boyd, Ross, & Bramlet 7362A.*

APIACEAE

*ANTHRISCUS CAUCALIS M. Bieb. Annual. Local in a mesic chaparral opening in "Miller Cyn," and also in Devil Cyn. *Boyd, Ross, & M. Wall 7518.*

APIASTRUM ANGUSTIFOLIUM Nutt. Annual. Common, especially in burned chaparral, understory of coastal sage scrub, and in native grassland. *Boyd 6839.*

DAUCUS PUSILLUS Michaux Annual. Common and generally distributed in most habitats, particularly native grassland and openings amid scrub. *Boyd & Ross 7635.*

*FOENICULUM VULGARE Miller Suffrutescent perennial. Scattered, and nowhere abundant where observed. *Boyd, Ross, & Mistretta 7702.*

LOMATIUM DASYCARPUM (Torrey & A. Gray) J. Coulter & Rose ssp. DASYCARPUM Geophyte. Locally common in open habitats, especially on clay soils. *Boyd & Ross 7295.*

LOMATIUM LUCIDUM (Nutt.) Jepson Geophyte. Relatively uncommon, mostly in understory of chaparral. *Boyd & Ross 7476.*

LOMATIUM UTRICULATUM (Nutt.) J. Coulter & Rose Geophyte. Infrequent on heavy soils in native grassland on Miller Mtn. *Boyd 6976.*

OSMORHIZA BRACHYPODA Torrey ex Durand Geophyte. Common in oak woodland understory. *Boyd 6801.*

SANICULA ARGUTA E. Greene ex J. Coulter & Rose Geophyte. Occasional on heavy soils, especially in native grassland. *Boyd, Ross, & Mistretta 6766.*

SANICULA BIPINNATIFIDA Douglas ex Hook. Geophyte. Locally common on heavy soils in native grassland on Miller Mtn. *Boyd 6992.*

SANICULA CRASSICAULIS Poepp. ex DC. Geophyte. Common, especially in understory of chaparral and oak woodland. *Boyd & Ross 7086.*

SANICULA TUBEROSA Torrey Geophyte. Infrequent but widespread on mesic rock outcrops and on heavy soils. *Boyd & W. Appleby 7936.*

TAUSCHIA ARGUTA (Torrey & A. Gray) J. F. Macbride Geophyte. Occasional in chaparral understory. *Boyd, Ross, & Mistretta 6745.*

*TORILIS NODOSA (L.) Gaertner Annual. Generally uncommon, but abundant where present as in Lucas Cyn and Devil Cyn. *Boyd, Ross, & M. Wall 7518.*

APOCYNACEAE

APOCYNUM CANNABINUM L. Suffrutescent perennial. Occasional along streams at scattered sites, as along San Mateo Creek. *Boyd, Ross, & Bramlet 7327.*

ASCLEPIAS ERIOCARPA Benth. Perennial herb. Occasional in native grassland and coastal sage scrub at scattered sites, as Oak Flats, Miller Mtn, "Potrero Escondido," etc. *Boyd & Ross 7602.*

ASCLEPIAS FASCICULARIS Decne. Perennial herb. Infrequent along drainages at scattered sites. *Boyd & Ross 7616.*

SARCOSTEMMA CYNANCHOIDES Decne. ssp. HARTWEGII (Vail) R. Holm Twining perennial herb. Infrequent in coastal sage scrub, alluvial sage scrub, and chaparral in lower San Mateo Cyn below Clark Trail, upper San Mateo Cyn near Tenaja Falls, and Los Alamos Cyn at its confluence with Wildhorse Cyn. To be expected elsewhere in similar habitats. *Boyd & D. Banks 8337.*

ASTERACEAE

- ACHILLEA MILLEFOLIUM L. Perennial herb. Occasional in openings in mesic chaparral, coastal sage scrub, and oak woodland along the western edge of the wilderness. *Boyd & Ross 7455.*
- ACHYRACHAENA MOLLIS Schauer Annual. Uncommon on heavy soil in native grassland at Oak Flats. *Boyd & Ross 7236.*
- ACOURTIA MICROCEPHALA DC. Perennial herb. Common amid chaparral and coastal sage scrub. *Boyd, Ross, & M. Wall 7525.*
- AGOSERIS GRANDIFLORA (Nutt.) E. Greene Perennial herb. Common, especially in native grassland and about oak woodlands. *Boyd & Ross 7223.*
- AMBROSIA PSILOSTACHYA DC. Perennial herb. Common on benches in drainages, especially in riparian woodland and oak woodland. *Boyd, Ross, & Bramlet 7659.*
- ARTEMISIA CALIFORNICA Less. Small shrub. Common, especially in coastal sage scrub and xeric chaparral. *Boyd, Ross, & Bramlet 7668.*
- ARTEMISIA DOUGLASIANA Besser Suffrutescent perennial. Common on benches in drainages, especially in riparian woodland and oak woodland. *Boyd, Ross, & Bramlet 7662.*
- ARTEMISIA DRACUNCULUS L. Suffrutescent perennial. Occasional at widespread sites, especially on benches in drainages. *Boyd, Ross, & T. Columbus 8193.*
- BACCHARIS EMORYI A. Gray Large shrub. Infrequent along streams at scattered sites. *Boyd, Ross, & Bramlet 7663.*
- BACCHARIS PILULARIS DC. Large shrub. Infrequent along streams and in oak woodland understory. *Boyd, Ross, & Mistretta 7706.*
- BACCHARIS SALICIFOLIA (Ruiz Lopez & Pavon) Persoon Large shrub. Common and locally abundant along streams, at seeps, and in seasonally moist disturbed areas. *Boyd, Ross, & Mistretta 6686.*
- †BACCHARIS VANESSAE Beauchamp Small shrub. Local on open rocky outcrops of mesic exposure, lower Devil Cyn. This population represents a significant northward extension of the taxon's range and additional populations are to be expected in adjacent portions of Devil and lower San Mateo Cyns. *Boyd, Ross, & Mistretta 7711.*
- BEBBIA JUNCEA (Benth.) E. Greene var. ASPERA E. Greene Small shrub. Occasional on xeric slopes in coastal sage scrub and chaparral, usually on rock outcrops and scree. *Boyd & Ross 7103.*
- BRICKELLIA CALIFORNICA (Torrey & A. Gray) A. Gray Small shrub. Common on xeric, rocky slopes and dry benches in drainages. *Boyd, Ross, & Bramlet 7685.*
- *CARDUUS PYNOCOPHALUS L. Annual. Locally common along trails and streamside benches in Lucas Cyn. *Boyd & Ross 7427.*
- *CENTAUREA MELITENSIS L. Annual. Abundant in native grassland and understory of xeric chaparral and coastal sage scrub. *Boyd & Ross 7477.*
- *CENTAUREA SOLSTITIALIS L. Annual. Well established in disturbed annual grassland and oak woodland in Potrero de la Cienega, and encountered as far downstream as Tenaja Falls in San Mateo Cyn; also local in disturbed grassland in the Oak Flats area. *Boyd, Ross, & Bramlet 7690.*
- CHAENACTIS ARTEMISIIFOLIA (A. Gray) A. Gray Annual. Locally common on burns, trailside clearings, and openings in chaparral and coastal sage scrub. *Boyd & Ross 7454.*
- CHAENACTIS GLABRIUSCULA DC. var. GLABRIUSCULA Annual. Locally common on sandy or gravelly benches in drainages. *Boyd, Ross, & M. Wall 7532.*
- *CHAMOMILLA SUAVEOLENS (Pursh) Rydb. Annual. Occasional in moist sand along streams, on beaten paths, and in other disturbed situations. *Boyd, Ross, & Mistretta 6768.*
- CIRSIMUM OCCIDENTALE (Nutt.) Jepson var. CALIFORNICUM (A. Gray) Keil & C. Turner Biennial herb. Occasional, but widespread in scrub, grassland, and woodland habitats. *Boyd & Ross 7296.*
- CIRSIMUM OCCIDENTALE (Nutt.) Jepson var. OCCIDENTALE Biennial herb. Common and widespread in scrub, grassland, and woodland habitats. *Boyd, Ross, & M. Wall 7551.*
- *CIRSIMUM VULGARE (Savi) Ten. Biennial herb. Uncommon in disturbed habitats, as along Indian Potrero Trail and in Lucas Cyn. *Boyd & Ross 8341.*
- *CONYZA BONARIENSIS (L.) Cronquist Annual. Apparently uncommon, as in Aliso Cyn along disturbed edge of Lucas Cyn trail. *Boyd & Ross 8361.*
- CONYZA CANADENSIS (L.) Cronquist Annual (sometimes treated as introduced). Occasional, mostly in damp sand along streams. *Boyd, Ross, & Bramlet 7657.*
- COREOPSIS CALIFORNICA (Nutt.) H. K. Sharsmith Annual. Locally common on sandy benches in San Mateo Cyn near its confluence with Bluewater Cyn. *Boyd, Ross, & Mistretta 6701.*
- CORETHROGYNE FILAGINIFOLIA (Hook. & Arn.) Nutt. s.l. [*Lessingia filaginifolia* (Hook. & Arn) M. A. Lane] Suffrutescent perennial. Common and widespread in scrub, grassland, and woodland habitats. *Boyd, Ross, & Bramlet 7665.*
- *COTULA AUSTRALIS (Sieber ex Sprengel) Hook. f. Annual. Uncommon, but widespread in the wilderness. Usually on compacted soil along trails, in oak woodland understory, and on moist sand along streams. *Boyd & Ross 7096.*
- *CYNARA CARDUNCULUS L. Perennial herb. Occasional in native and disturbed grasslands on the western edge of the wilderness, as about Oak Flats, Verdugo Potrero, and Lucas Cyn. *Boyd & D. Banks 8255.*
- ERICAMERIA PARISHII (E. Greene) H. M. Hall var. PARISHII Large shrub. Apparently scarce; observed only about Margarita Peak. *Boyd & D. Banks 8329.*
- ERICAMERIA PINIFOLIA (A. Gray) H. M. Hall Small shrub. Apparently scarce; scattered in chaparral along northern portions of Tenaja Trail. *Boyd, Ross, & Mistretta 6753A.*
- ERIGERON FOLIOSUS Nutt. var. FOLIOSUS Perennial herb. Common in coastal sage scrub, xeric chaparral, and occasionally in oak woodland. *Boyd & Ross 7303.*
- ERIOPHYLLUM CONFERTIFLORUM (DC.) A. Gray var. CONFERTIFLORUM Suffrutescent perennial. Common, especially in coastal sage scrub and on burns. *Boyd & Ross 7132.*
- EUTHAMIA OCCIDENTALIS Nutt. Perennial herb. Locally common in sandy alluvium along San Mateo Creek, but to be expected in other drainages. *Boyd, Ross, & Bramlet 7674.*
- FILAGO ARIZONICA A. Gray Annual. Uncommon; only found on open clay soil in native grassland—coastal sage scrub mosaic on the south flank of Miller Mtn. *Boyd 6968.*
- FILAGO CALIFORNICA Nutt. Annual. Common and locally abundant, especially in open situations. *Boyd 6824.*
- *FILAGO GALICA L. Annual. Common and locally abundant, especially in open situations. *Boyd 6960.*
- GNAPHALIUM BENEOLENS A. Davidson [*G. canescens* DC. ssp. *b.* (A. Davidson) Stebbins & Keil] Suffrutescent perennial. Occasional in coastal sage scrub, chaparral, and on alluvial benches. *Boyd, Mistretta, & Bramlet 7645.*
- GNAPHALIUM BICOLOR Bioletti Suffrutescent perennial. Common, especially in coastal sage scrub and chaparral. *Boyd & Ross 7211.*
- GNAPHALIUM CALIFORNICUM DC. Biennial to short-lived perennial herb. Common in most communities. *Boyd & Ross 7246.*
- GNAPHALIUM LEUCOCOPHALUM A. Gray Suffrutescent perennial. Apparently uncommon and local, on sandy benches in central San Mateo Cyn and on burn in central Lucas Cyn. *Boyd 8385.*
- *GNAPHALIUM LUTEO-ALBUM L. Annual. Common and widespread, and typically on moist sand along streams. *Boyd & Mistretta 7041.*
- GNAPHALIUM MICROCEPHALUM Nutt. [*G. canescens* DC. ssp. *m.* (Nutt.) Stebbins & Keil] Suffrutescent perennial. Occasional to locally common in scrub, woodland, and grassland habitats; generally on xeric, often rocky exposures. *Boyd & Ross 7105.*
- GNAPHALIUM PALUSTRE Nutt. Annual. Relatively uncommon and lo-

- cal in vernal moist situations, as about Oak Flats area. *Boyd & Ross 7175*.
- GNAPHALUM STRAMINEUM HBK. Annual or biennial herb. Uncommon, but widely scattered; usually on moist sand along streams. *Boyd, Ross, & Bramlet 7379B*.
- GUTIERREZIA SAROTHRAE (Pursh) Britton & Rusby Suffrutescent perennial. Locally common on xeric slopes and ridgetops, especially in post-burn chaparral in the northern part of the wilderness. *Boyd, Ross, & Bramlet 7688*.
- HAZARDIA SQUARROSA (Hook. & Arn.) E. Greene var. GRINDELIOIDES (DC.) W. Clark Small shrub. Common and widespread in chaparral and coastal sage scrub; occasional in woodland and grassland habitats. *Boyd, Ross, & Bramlet 7667*.
- *HEDYNOIS CRETICA (L.) Dum.-Courset Annual. Uncommon and local in upper Cold Spring Cyn and in Lucas Cyn. *Boyd & Ross 7089B*.
- HELIANTHUS GRACILENTUS A. Gray Perennial herb. Common, especially in coastal sage scrub and chaparral. Often locally abundant on cleared or fire-scarred ridgetops. *Boyd, Ross, & M. Wall 7544*.
- HEMIZONIA FASCICULATA (DC.) Torrey & A. Gray Annual. Common in native grasslands, as on Miller Mtn. *Boyd & Ross 7599B*.
- HEMIZONIA KELLOGGII E. Greene Annual. Occasional in grassy openings in scrub and oak woodland habitats, as in Potrero de la Cienega. *Boyd, Ross, & Bramlet 7691*.
- HEMIZONIA PANICULATA A. Gray Annual. Apparently uncommon; encountered in lower San Mateo Cyn. *Boyd, Ross, & Mistretta 7698*.
- HETEROOTHECA GRANDIFLORA Nutt. Biennial herb, sometimes annual. Apparently uncommon, as about Potrero de la Cienega and Tenaja Falls. To be expected along trails, gravelly riparian benches, and other open, somewhat disturbed situations. *Boyd, Ross, & Bramlet 7675*.
- HETEROOTHECA SESSILIFLORA (Nutt.) Shinnery ssp. ECHIOIDES (Benth.) Semple Perennial herb. Uncommon in native grasslands as at the southern end of Verdugo Potrero and Oak flats, as well as on old-formation alluvial benches in San Mateo Cyn. *Boyd 8381*.
- HOLOCARPHA VIRGATA (A. Gray) Keck ssp. ELONGATA Keck Annual. Locally common in native grassland and openings in chaparral in the southeastern corner of the wilderness. *Boyd & D. Banks 8330*.
- *HYPOCHOERIS GLABRA L. Annual. Abundant and widespread, particularly in the understory of coastal sage scrub and in native grasslands. *Boyd & Mistretta 7043*.
- ISOCOMA MENZIESII (Hook. & Arn.) G. Nesom var. VERNONIOIDES (Nutt.) G. Nesom Small shrub. Primarily in the western portion of the wilderness in coastal sage scrub, and locally common in grasslands about Oak Flats and "Potrero Escondido." *Boyd & Ross 8344*.
- *LACTUCA SERRIOLA L. Annual. Uncommon but widely scattered, particularly in grassland and disturbed situations. *Boyd, Ross, & Bramlet 7678*.
- LAGOPHYLLA RAMOSISSIMA Nutt. ssp. RAMOSISSIMA Annual. Local in native grasslands in the Oak Flats area. *Boyd & Ross 8342*.
- LASTHENIA CALIFORNICA DC. ex Lindley Annual. Widespread and often locally abundant, especially in native grasslands and on burns. *Boyd, Ross, & Mistretta 6680*.
- LEPIDOSPARTUM SQUAMATUM (A. Gray) A. Gray Small shrub. Uncommon, on stabilized gravel benches in San Mateo Cyn. *Boyd 8386*.
- MADIA EXIGUA (Smith) A. Gray Annual. Widespread, but relatively uncommon and localized. Most frequently in mesic chaparral openings and on margins of native grassland. *Boyd & Ross 7260*.
- MADIA GRACILIS (Smith) Keck Annual. Common in scrub, woodland, and grassland habitats. *Boyd & Ross 7210*.
- MALACOTHRIX CLEVELANDII A. Gray Annual. Uncommon and local, as in Bluewater Cyn and the northern portion of Tenaja Trail. *Boyd & Ross 7397*.
- MALACOTHRIX SAXATILIS (Nutt.) Torrey & A. Gray var. TENUIFOLIA (Nutt.) A. Gray Perennial herb. Apparently uncommon in chaparral openings, as along upper Morrell Cyn. *Boyd, Ross, & T. Columbus 8191*.
- MICROPUS CALIFORNICUS Fischer & C. Meyer Annual. Common and locally abundant in native grassland, chaparral openings, etc. *Boyd & Ross 7190*.
- MICROSERIS DOUGLASII (DC.) Schultz-Bip. ssp. PLATYCARPHA (A. Gray) Chambers Annual. Apparently uncommon; open clay soil on Miller Mtn. *Boyd 6980*.
- MICROSERIS ELEGANS A. Gray Annual. Occasional in native grassland on heavy soil on the summit and upper south flank of Miller Mtn. *Boyd et al. 8295*.
- MICROSERIS HETEROCARPA (Nutt.) Chamb. [*Stebbinsoseris h.* (Nutt.) Chambers] Annual. Common and locally abundant on open, heavy soils. *Boyd 6971*.
- MICROSERIS LINDLEYI (DC.) A. Gray [*Uropappus l.* (DC.) Nutt.] Annual. Common in grassland and in understory of scrub and woodland habitats. *Boyd 6856*.
- OSMADENIA TENELLA Nutt. Annual. Locally common in open areas with heavy soil, particularly in native grassland and xeric chaparral, as at Oak Flats and Miller Mtn. *Boyd & Ross 7288*.
- PENTACHAETA AUREA Nutt. Annual. Local on open heavy soil on the summit of Miller Mtn. *Boyd et al. 8292*.
- POROPHYLLUM GRACILE Benth. Suffrutescent perennial. Occasional on xeric, rocky slopes. *Boyd & Ross 7447*.
- PSILOCARPHUS TENELLUS Nutt. var. TENELLUS Annual. Locally common along hard-packed soil of trails and in chaparral openings at scattered sites. *Boyd & Ross 7165*.
- RAFINESQUIA CALIFORNICA Nutt. Annual. Common, especially in chaparral and coastal sage scrub habitats; occasional in oak woodland. *Boyd 6884*.
- SENECIO FLACIDUS Lessing var. DOUGLASII (DC.) B. Turner & T. Barkley Small shrub. Apparently uncommon on benches along stream in "Miller Canyon," and in chaparral in San Mateo Canyon above Tenaja Falls. *Boyd, Ross, & Bramlet 7687*.
- *SENECIO VULGARIS L. Annual. Uncommon and scattered in scrub, woodland, and grassland habitats. *Boyd, Ross, & K. McCulloh 6726*.
- *SILYBUM MARIANUM (L.) Gaertner Annual. Uncommon and localized, as in lower San Mateo, Devil, Lucas, and Aliso cyns. *Boyd & Ross 7138*.
- SOLIDAGO CALIFORNICA Nutt. Perennial herb. Common and widespread, especially in oak woodland understory, but also occurring in scrub, riparian, and grassland habitats. *Boyd, Ross, & Bramlet 7673*.
- *SONCHUS ASPER (L.) Hill ssp. ASPER Annual. Occasional and widespread, especially in moist sand along streams. *Boyd & Ross 7120*.
- *SONCHUS OLERACEUS L. Annual. Occasional and widespread; most common in moist sand along streams, but also found in vernal moist scrub, woodland, and grassland habitats. *Boyd & Ross 7216*.
- STEPHANOMERIA CICHORIACEA A. Gray Suffrutescent perennial. Locally common on rocky slopes and outcrops in lower San Mateo and Devil cyns, and above Lucas Cyn along the Sitton Peak road. *Boyd, Ross, & Mistretta 7708*.
- STEPHANOMERIA DIEGENSIS Gottlieb Annual. Locally common in burned chaparral of central San Mateo Cyn, and also encountered in lower San Mateo Cyn. To be expected more widely in the wilderness. *Boyd, Ross, & Mistretta 7703*.
- STEPHANOMERIA EXIGUA Nutt. ssp. DEANEI (J. F. Macbride) Gottlieb Annual. Common and widespread, especially in coastal sage scrub and chaparral habitats. *Boyd, Ross, & Bramlet 7684*.
- STEPHANOMERIA VIRGATA Benth. ssp. VIRGATA Annual. Locally common in burned chaparral in Lucas Cyn; to be expected more widely. *Boyd & Ross 8360*.

STYLOCLINE GNAPHALOIDES Nutt. Annual. Common and widespread in open situations within scrub and grassland habitats, especially on heavy soils. *Boyd 6961.*

***TARAXACUM OFFICINALE** Webber Perennial herb. Apparently scarce; known from a springy side drainage of Bluewater Cyn and wet sand along Lucas Creek, but to be expected elsewhere in moist situations. *Boyd 6866.*

TETRADYMIA COMOSA A. Gray Small shrub. Occasional and scattered, generally as small colonies in coastal sage scrub or semi-open chaparral. *Boyd, Ross, & T. Columbus 8195.*

***TRAGOPOGON PORRIFOLIUS** L. Biennial herb. Uncommon and local in Lucas Cyn near site of old mining camp. *Boyd & Ross 7437.*

VENEGASIA CARPESIOIDES DC. Small shrub. Common and widespread in the wilderness, especially in the southern and eastern portions, generally on mesic slopes and in oak woodland understory. Exceptionally dense stands were observed on some mesic slopes burned in the 1989 fires, especially along the Clark Trail between Cold Spring Cyn and San Mateo Cyn. *Boyd 6878.*

WYETHIA OVATA Torrey & A. Gray Perennial herb. Locally common on open benches in oak woodland at the head of Devil Cyn, and to be expected elsewhere on the flanks of Margarita Peak. *Boyd & Ross 7589.*

XANTHIUM STRUMARIUM L. Annual (sometimes treated as introduced). Occasional along streams. *Boyd, Ross, & Bramlet 7658.*

BERBERIDACEAE

BERBERIS DICTYOTA Jepson Large shrub. [*B. aquifolium* Pursh var. *d.* (Jepson) Jepson] Local in dense, mesic chaparral in upper Cold Spring Cyn. *Boyd & Ross 7088.*

BETULACEAE

ALNUS RHOMBIFOLIA Nutt. Tree. Forming dense woodlands along streams in central Devil Cyn, and scattered in San Mateo and Tenaja cys. *Boyd, Ross, & Mistretta 6653.*

BORAGINACEAE

AMSINCKIA MENZIESII (Lehm.) Nelson & J. F. Macbride var. *INTERMEDIA* (Fischer & C. Meyer) Ganders Annual. Occasional to locally common; widespread on burns, in coastal sage scrub, and in native grasslands. *Boyd 6867.*

CRYPTANTHA CLEVELANDII E. Greene Annual. Apparently uncommon; grassy openings on rock outcrops in San Mateo Cyn, upstream from Fisherman's Camp. To be expected in similar habitats. *Boyd, Ross, & Bramlet 7341.*

CRYPTANTHA INTERMEDIA (A. Gray) E. Greene Annual. Common and widespread in scrub, grassland, and woodland habitats. *Boyd & Ross 7610.*

CRYPTANTHA MICROMERES (A. Gray) E. Greene Annual. Apparently uncommon, as in Bluewater Cyn on a xeric recently burned slope. *Boyd & Mistretta 7060.*

CRYPTANTHA MICROSTACHYS (E. Greene ex A. Gray) E. Greene Annual. Common to locally abundant, especially in chaparral understory. *Boyd & Ross 7239.*

CRYPTANTHA MURICATA (Hook. & Arn.) Nels. & J. F. Macbride var. *MURICATA* [C. *mur.* s. l.] Annual. Apparently relatively uncommon; chaparral burns, etc. *Boyd & Ross 7409.*

†**HARPAGONELLA PALMERI** A. Gray Annual. Locally common on open clay soil on the south slope of Miller Mtn. *Boyd & Ross 7302.*

HELIOTROPUM CURASSAVICUM DC. ssp. *OCULATUM* (Heller) Thorne [*H. cur.* s. l.] Perennial herb. Apparently uncommon. Encountered on drying stream bed in San Mateo Cyn at its confluence with Bluewater Cyn. To be expected in similar situations elsewhere in the wilderness. *Boyd 8388.*

PECTOCARYA LINEARIS DC. ssp. *FEROCULA* (I. M. Johnston) Thorne Annual. Occasional; open areas in scrub and grassland habitats. *Boyd et al. 8293.*

PECTOCARYA PENICILLATA (Hook. & Arn.) A. DC. Annual. Apparently uncommon. Collected in Devil Cyn, but to be expected more widely. *Boyd, Ross, & M. Wall 7541.*

PLAGIOBOTHRYS COLLINUS (Philippi) I. M. Johnston var. *CALIFORNICUS* (A. Gray) Higgins Annual. Widespread and common in scrub and grassland habitats. *Boyd & W. Appleby 7956.*

PLAGIOBOTHRYS FULVUS (Hook. & Arn.) I. M. Johnston Annual. Locally common in native grassland south of Oak Flats and on the southern flank of Miller Mountain. *Boyd & Ross 7247.*

PLAGIOBOTHRYS NOTHOFULVUS (A. Gray) A. Gray Annual. Locally common in grassland and openings in oak woodland. *Boyd 6799.*

PLAGIOBOTHRYS TENELLUS (Nutt.) A. Gray Annual. Occasional but widespread; mostly in chaparral understory and margins of native grassland. *Boyd & W. Appleby 7925.*

BRASSICACEAE

ATHYSANUS PUSILLUS (Hook.) E. Greene Annual. Common and widespread, especially in coastal sage scrub understory. *Boyd, Ross, & K. McCulloh 6733.*

BARBAREA ORTHOCERAS Ledeb. Biennial herb. Local along streams and mesic benches, as in upper Bluewater Cyn, Oak Flats, San Mateo Cyn, and Lucas Cyn. To be expected in similar situations throughout wilderness. *Boyd 6793.*

***BRASSICA GENICULATA** (Desf.) J. Ball [*Hirschfeldia incana* (L.) Lagr.-Fossat] Annual to short-lived perennial herb. Widespread and locally common in most habitats, especially in relatively disturbed areas. *Boyd & Ross 7214.*

***BRASSICA RAPA** L. Annual. Uncommon and localized along San Mateo Trail between Bluewater Cyn and Tenaja Trail, and along Lucas Cyn Trail in Aliso Cyn. *Boyd & Mistretta 7062.*

***CAPSELLA BURSA-PASTORIS** (L.) Medikus Annual. Occasional at scattered sites, especially in oak woodland understory. *Boyd, Ross, & Mistretta 6708.*

CARDAMINE CALIFORNICA (Torrey & A. Gray) E. Greene var. *CALIFORNICA* Geophyte. Widespread and common in moist shaded situations, especially oak woodland understory. *Boyd, Ross, & K. McCulloh 6725.*

CAULANTHUS HETEROPHYLLUS (Nutt.) Payson [C. *h.* var. *pseudosimulans* R. Buck, *nomen nudum*] Annual. Occasional on chaparral burns at scattered sites. *Boyd 6833.*

CAULANTHUS LASIOPHYLLUS (Hook. & Arn.) Payson var. *INALIENUS* (Rob.) Payson [*Guillenia lasiophylla* (Hook. & Arn.) E. Greene s. l.] Annual. Infrequent, mostly on chaparral burns, as on Clark Trail between San Mateo and Cold Spring Cyns. *Boyd & Ross 6712.*

CAULANTHUS LASIOPHYLLUS (Hook. & Arn.) Payson var. *LASIOPHYLLUS* [*Guillenia lasiophylla* (Hook. & Arn.) E. Greene s. l.] Annual. Infrequent at scattered sites, especially on chaparral burns. *Boyd & Mistretta 7042.*

LEPIDIUM LASIOCARPUM Nutt. var. *LASIOCARPUM* Annual. Locally common at scattered sites in xeric openings of coastal sage scrub and chaparral. *Boyd, Ross, & Mistretta 6640.*

LEPIDIUM NITIDUM Nutt. Annual. Widespread, especially in native grasslands, and xeric openings in coastal sage scrub and chaparral. *Boyd, Ross, & K. McCulloh 6732.*

LEPIDIUM VIRGINICUM L. s. l. Annual. Common and widespread on somewhat xeric slopes in coastal sage scrub and chaparral. *Boyd 6838.*

***RAPHANUS SATIVUS** L. Annual. Uncommon; found on disturbed streambed in Aliso Cyn, but to be expected in grazed or other disturbed areas. *Boyd & Ross 7446.*

RORIPPA NASTURTIUM-AQUATICUM (L.) Hayek Perennial herb (sometimes treated as introduced). Locally common in slow-moving water of streams. *Boyd & Ross 7091.*

***SISYMBRIUM ALTISSIMUM** L. Annual. Apparently uncommon; a few plants observed on Clark Trail between San Mateo and Cold

Spring cys, but to be expected elsewhere in the wilderness. *Boyd & Ross 7156*.

**SISYMBRIUM OFFICINALE* L. Annual. Occasional, mostly in understory of oak woodlands. *Boyd & Ross 7174*.

**SISYMBRIUM ORIENTALE* L. Annual. Occasional, mostly in understory of oak woodlands. *Boyd and Mistretta 7047*.

THYSANOCARPUS CURVIPES Hook. var. *CURVIPES* Annual. Local in native grassland about Oak Flats. *Boyd & D. Banks 8256*.

THYSANOCARPUS CURVIPES Hook. var. *ELEGANS* (Fischer & C. Meyer) Rob. [*T. curvipes*, s. l.] Annual. Locally common at scattered sites, mostly in native grassland and openings in chaparral. *Boyd et al. 6719*.

THYSANOCARPUS LACINIATUS Nutt. ex Torrey & A. Gray var. *CRENATUS* (Nutt.) Brewer [*T. laciniatus*, s. l.] Annual. Common in native grassland and understory of scrub habitats. *Boyd et al. 6722*.

TROPIDOCARPUM GRACILE Hook. Annual. Apparently scarce. This distinctive species was encountered once (26 Feb 1992) on alluvial benches along San Mateo Cyn, just downstream from Fisherman's Camp. A voucher was not collected at that time on the incorrect assumption that better material would be encountered later in the season. Despite its apparent rarity, we expect this species to be encountered more widely as an early spring annual in scrub and grassland habitats.

CACTACEAE

**OPUNTIA FICUS-INDICA* (L.) Miller Succulent shrub. Persisting in Lucas Cyn about old mining homesteads, and escaping locally. *Boyd & Ross 7465*.

OPUNTIA LITTORALIS (Engelm.) Cockerell *vel aff.* Succulent shrub. Uncommon, but widely scattered in scrub and grassland habitats. *Boyd & Ross 7600*.

OPUNTIA OCCIDENTALIS Engelm. *vel aff.* Succulent shrub. Uncommon and highly variable; in scrub habitats along Lucas Cyn Trail near Aliso Cyn. *Boyd & Ross 7424*.

CALLITRICHACEAE

CALLITRICHE HETEROPHYLLA Pursh var. *BOLANDERI* (Hegelm.) Fassett Aquatic annual. Apparently scarce; only encountered once in Devil Cyn but to be expected more widely in streams, especially in deeper pools. *Boyd, Ross, & M. Wall 7501*.

CAMPANULACEAE

GITHOPSIS DIFFUSA A. Gray ssp. *CANDIDA* (Ewan) N. Morin Annual. Apparently uncommon; openings in chaparral at head of Cold Spring Trail, in native grassland in the Oak Flats area, etc. *Boyd & Ross 7084*.

GITHOPSIS DIFFUSA A. Gray ssp. *DIFFUSA* Annual. Occasional at scattered sites, but mostly in chaparral openings on shaded slopes. *Boyd & Ross 7081*.

HETEROCODON RARIFLORUM Nutt. Annual. Occasional at widely scattered sites, especially in moist sand along streams, as in "Miller Cyn," Devil Cyn, and Wildhorse Cyn. *Boyd, Ross, & Bramlet 7380B*.

NEMAELADUS RAMOSISSIMUS Nutt. Annual. Occasional but widespread on xeric slopes and on gravelly benches of the larger streams. *Boyd, Ross, & Bramlet 7355*.

TRIODANIS BIFLORA (Ruiz Lopez & Pavon) E. Greene Annual. Infrequent at widely scattered sites, although it may be locally common in moist sand along streams and in scrub and woodland understory. *Boyd & Ross 7631*.

CAPRIFOLIACEAE

LONICERA SUBSPICATA Hook. & Arn. var. *DENUATA* Rehder Liana, sometimes a scandent shrub. Common in chaparral and oak woodland. *Boyd & Ross 7230*.

SYMPHORICARPOS ALBUS (L.) S. F. Blake var. *LAEVIGATUS* (Fern.) S. F. Blake Small shrub. Apparently scarce; encountered on riparian benches under oaks in Lucas Cyn, near Lucas Cyn trail. *Boyd & Ross 8355*.

SYMPHORICARPOS MOLLIS Nutt. Small shrub. Common and locally abundant, especially on higher alluvial benches in oak woodland understory. *Boyd 6860*.

CARYOPHYLLACEAE

**CERASTIUM GLOMERATUM* Thuill. Annual. Occasional and widespread in mesic understory of scrub and woodland habitats. *Boyd 6847*.

MINUARTIA DOUGLASII (Fenzl ex Torrey & A. Gray) Mattf. Annual. Relatively uncommon in the wilderness, although it may be locally abundant, especially on open, xeric outcrops in alluvial scrub, chaparral, oak woodland, and native grassland. *Boyd, Ross, & Bramlet 7340*.

POLYCARPON DEPRESSUM Nutt. Annual. Apparently scarce in understory of coastal sage scrub in lower Lucas Cyn, and on slope in burned chaparral between Oak Flats and Verdugo Potrero. To be watched for elsewhere. *Boyd & Ross 7438*.

**POLYCARPON TETRAPHYLLUM* (L.) L. Annual. Relatively uncommon, as along beaten path in Lucas Cyn, and in moist sand along Devil Creek. *Boyd & Ross 7451*.

SAGINA DECUMBENS (Elliott) Torrey & A. Gray ssp. *OCCIDENTALIS* (S. Watson) G. Crow Annual. Infrequent and local, as along Cold Spring Trail in mesic chaparral understory. *Boyd & Ross 7164*.

SILENE ANTIRRHINA L. Annual. Infrequent and local in understory of woodland and scrub habitats, as in Bluewater Cyn. *Boyd 6876*.

**SILENE GALICA* L. Annual. Common and widespread in grassland, and understory of scrub and woodland habitats. *Boyd & Mistretta 7056*.

SILENE LACINIATA Cav. ssp. *MAJOR* C. Hitchc. & Maguire Perennial herb. Common and widespread, especially in chaparral and coastal sage scrub. *Boyd & Ross 7118*.

SILENE MULTINERVA S. Watson Annual. Apparently infrequent in understory of scrub habitats, but locally common as a post-fire annual. *Boyd & D. Banks 8264*.

**SPERGULARIA BOCCONEI* (Scheele) Merino [Often misspelled "*bocconi*"] Annual. Apparently uncommon, as along Lucas Cyn Trail in Aliso Cyn. *Boyd & Ross 7431*.

SPERGULARIA MARINA (L.) Griseb. Annual. Apparently uncommon, as on moist sand in Devil Cyn. *Boyd, Ross, & M. Wall 7490*.

**SPERGULARIA VILLOSA* (Persoon) Cambess. Perennial herb. Apparently uncommon, as along Indian Potrero Trail north of Indian Potrero. *Boyd & Mistretta 7021*.

**STELLARIA MEDIA* (L.) Villars Annual. Common and widespread, especially in oak woodland understory. *Boyd, Ross, & Mistretta 6638*.

STELLARIA NITENS Nutt. Annual. Apparently uncommon in chaparral openings, as in "Miller Cyn" and Tenaja Cyn. *Boyd 6951*.

CHENOPODIACEAE

**CHENOPODIUM AMBROSIOIDES* L. Annual. Uncommon, mostly in moist sand along streams as in San Mateo Cyn and Aliso Cyn. *Boyd & Ross 6663*.

CHENOPODIUM BERLANDIERI Moq. Annual. Locally common in moist sand and disturbed situations in oak woodland, riparian woodland, etc., as in San Mateo Cyn. *Boyd, Ross, & Bramlet 7661*.

CHENOPODIUM CALIFORNICUM (S. Watson) S. Watson Perennial herb. Occasional, especially in oak woodland understory and about margins of chaparral. *Boyd & Ross 7235*.

**CHENOPODIUM MURALE* L. Annual. Locally common in moist sand along streams, and in other disturbed situations at scattered sites. *Boyd, Ross, & T. Columbus 8201*.

**CHENOPODIUM PUMILIO* R. Br. Annual. Occasional on moist sand in

Devil Cyn and "Miller Cyn," and to be expected elsewhere in similar situations. *Boyd, Ross, & M. Wall 7486.*

**SALSOLA AUSTRALIS* R. Br. [*S. tragus* L.] Annual. Infrequent in disturbed areas. *Boyd, Ross, & Mistretta 6755.*

CISTACEAE

HELIANTHEMUM SCOPARIUM Nutt. Suffrutescent perennial. Common and often locally abundant on open ridgetops and xeric slopes, especially after chaparral burns. *Boyd, Ross, & M. Wall 7534.*

CONVOLVULACEAE

CALYSTEGIA FULCRATA (A. Gray) Brummitt [*C. occidentalis* (A. Gray) Brummitt ssp. *f.* (A. Gray) Brummitt] Perennial herb. Apparently uncommon in native grassland on Miller Mtn, and at chaparral margin in upper Tenaja Cyn. *Boyd et al. 8291.*

CALYSTEGIA MACROSTEGIA (E. Greene) Brummitt ssp. *ARIDA* (E. Greene) Brummitt Perennial herb. Occasional to locally common on xeric slopes in scrub habitats, especially in post-burn situations. Apparently more common in western portions of the wilderness. *Boyd & Mistretta 7017.*

CALYSTEGIA MACROSTEGIA (E. Greene) Brummitt ssp. *INTERMEDIA* (Abrams) Brummitt Perennial herb. Common and locally abundant, especially on xeric slopes and after fires. Apparently the more common subspecies within the wilderness. *Boyd, Ross, & Mistretta 6695.*

**CONVOLVULUS ARVENSIS* L. Perennial herb. Apparently scarce; encountered along trail at stream crossing in Lucas Cyn. *Boyd & Ross 8350.*

CUSCUTA CALIFORNICA Hook. & Arn. s.l. Parasitic annual. Common, primarily on *Eriogonum fasciculatum*. *Boyd & Ross 7611.*

CUSCUTA SUBINCLUSA Durand & Hilg. Parasitic annual. Common on various chaparral, coastal sage scrub, and woodland shrubs. *Boyd, Ross, & Mistretta 7701.*

**DICHONDRA* cf. *MICRANTHA* Urban Perennial herb. Local in disturbed oak woodland understory along Lucas Cyn Trail in Lucas Cyn. *Boyd & Ross 8357.*

CRASSULACEAE

CRASSULA CONNATA (Ruiz Lopez & Pavon) A. Berger Annual. Common and locally abundant in open situations within scrub, woodland, and grassland habitats. *Boyd 6812.*

DUDLEYA LANCEOLATA (Nutt.) Britton & Rose Succulent perennial herb. Common, especially on rocky outcrops in scrub, woodland, and grassland habitats. *Boyd & Ross 7300.*

†*DUDLEYA MULTICAULIS* (Rose) Moran Succulent perennial herb. Apparently uncommon in rocky, clay soil in coastal sage scrub south of Lucas Cyn, and in native grassland in the Oak Flats area. *Boyd & Ross 7418.*

DUDLEYA PULVERULENTA (Nutt.) Britton & Rose Succulent perennial herb. Common on rocky canyon walls and mesic exposures of rock outcrops, especially in coastal sage scrub, chaparral, and riparian oak woodland. *Boyd, Ross, & T. Columbus 8202.*

†*DUDLEYA VISCIDA* (S. Watson) Moran Succulent perennial herb. Locally abundant in the western half of the wilderness on mostly mesic rocky canyon slopes, especially in the lower halves of San Mateo and Devil Cyns; also in Lucas and Cold Spring Cyns. To be expected in other tributaries of Devil Cyn and, possibly, in Nichols Cyn. Apparently most common on metasedimentary and intrusive volcanic substrates. *Boyd, Ross, & M. Wall 7524.*

CUCURBITACEAE

MARAH MACROCARPUS (E. Greene) E. Greene Geophyte. Common in scrub and woodland habitats. *Boyd, Ross, & Mistretta 6747.*

DATISCAEAE

DATISCA GLOMERATA (C. Presl) Baillon Perennial herb. Common and locally abundant in streams. *Boyd, Ross, & M. Wall 7549.*

ERICACEAE

ARCTOSTAPHYLOS GLANDULOSA Eastw. ssp. *GLANDULOSA* Large shrub. Common in chaparral, especially on mesic slopes. Considerable morphological variation observed. *Boyd 7727.*

ARCTOSTAPHYLOS GLANDULOSA ssp. *GLANDULOSA* × *A. RAINBOWENSIS* Large shrub. Relatively uncommon in chaparral at the eastern edge of the wilderness—from the southern boundary at least as far north as Tenaja Cyn. *Boyd, Ross, & K. McCulloh 6728.*

ARCTOSTAPHYLOS GLAUCA Lindley Large shrub. Apparently uncommon in chaparral at the northeast edge of the wilderness. *Boyd 7716.*

ARCTOSTAPHYLOS RAINBOWENSIS Keeley & Massihi Large shrub. Relatively uncommon in chaparral at the eastern edge of the wilderness—from the southern boundary at least as far north as the Fisherman's Camp Trail. *Boyd 6987.*

XYLOCOCCUS BICOLOR Nutt. Large shrub. Uncommon and highly localized in chaparral, as in Tenaja Cyn, lower San Mateo Cyn, and on Miller Mtn. To be expected at other scattered sites, especially in the southern portions of the wilderness. *Boyd 6990.*

EUPHORBIACEAE

CHAMAESYCE ALBOMARGINATA (Torrey & A. Gray) Small Perennial herb. Occasional; mostly on xeric slopes in understory of coastal sage scrub and chaparral. *Boyd & Ross 7638.*

CHAMAESYCE POLYCARPA (Benth.) Millsp. var. *POLYCARPA* Perennial herb. Occasional, mostly on xeric slopes in understory of coastal sage scrub and chaparral. *Boyd & Ross 7473.*

CHAMAESYCE SERPYLLIFOLIA (Persoon) Small Annual. Local in sandy openings in burned chaparral along Tenaja Trail north of its jtn with Morgan Trail. *Boyd & Ross 7399.*

EREMOCARPUS SETIGER (Hook.) Benth. [Often misspelled "setigerus"] Annual. Occasional, but sometimes locally common, especially in grasslands, and to a lesser extent in coastal sage scrub and on recent burns. *Boyd, Ross, & T. Columbus 8194.*

**EUPHORBIA PEPLUS* L. Annual. Apparently uncommon in moist sand along lower Lucas Cyn. *Boyd & Ross 7439.*

EUPHORBIA SPATHULATA Lam. Annual. Occasional in native grassland, on chaparral burns, etc. Apparently more common on heavy soils. *Boyd, Ross, & Bramlet 7351.*

FABACEAE

AMORPHA CALIFORNICA Nutt. var. *CALIFORNICA* Small shrub. Occasional at scattered sites; mostly in chaparral and oak woodland. *Boyd & Mistretta 7023.*

AMORPHA FRUTICOSA L. Small shrub. Common in riparian and oak woodland. *Boyd & Mistretta 7038.*

ASTRAGALUS GAMBELIANUS E. Sheldon Annual. Occasional in understory of scrub and in native grassland habitats, especially on heavy soils. *Boyd & Mistretta 7010.*

ASTRAGALUS POMONENSIS M. E. Jones Perennial herb. Relatively uncommon and local at scattered sites; mostly in openings in coastal sage scrub, chaparral and oak woodlands. *Boyd, Ross, & Mistretta 6702.*

HOITA MACROSTACHYA (DC.) Rydb. Suffrutescent perennial. Occasional and locally common in moist soil along streams. *Boyd, Ross, & Bramlet 7669.*

HOITA ORBICULARIS (Lindley) Rydb. Perennial herb. Local at scattered locations along "Miller Cyn," and in Devil Cyn, in standing water and moist soil along the streams. To be expected elsewhere in similar habitats. *Boyd & Ross 7622.*

LATHYRUS VESTITUS Nutt. ssp. *ALEFELDII* (T. White) Broich [*L. v. var.*

- a. (T. White) Isely] Perennial herb. Apparently uncommon; vicinity of Mud Spring, upper Devil Cyn. *Boyd & W. Appleby* 7932.
- LATHYRUS VESTITUS Nutt. ssp. LAETIFLORUS (E. Greene) Broich [L. v. var. v. sensu Isely] Perennial herb. Common and widespread in scrub and woodland habitats. *Boyd, Ross, & Mistretta* 6648.
- LOTUS HAMATUS E. Greene Annual. Common and widespread, especially on heavy soil in native grassland and in open areas of scrub habitats. *Boyd* 6974.
- LOTUS HEERMANNII (Dur. & Hilg.) E. Greene var. HEERMANNII Perennial herb. Occasional and locally common on benches and along streams in canyons. *Boyd, Ross, & Bramlet* 7348.
- LOTUS MICRANTHUS Benth. Annual. Apparently uncommon; grassy openings in oak woodland in the Oak Flats area. To be expected in similar habitats. *Boyd & Ross* 7256.
- LOTUS SALSUGINOSUS E. Greene var. SALSUGINOSUS Annual. Occasional at scattered sites, and apparently most common following chaparral burns. *Boyd & Mistretta* 7028.
- LOTUS SCOPARIUS (Nutt.) Ottley s.l. Suffrutescent perennial. Very common and widespread in scrub and woodland habitats. Especially abundant after chaparral burns and forming a dominant cover on much of the area burned in the 1989 fires. *Boyd & Ross* 7101.
- LOTUS STRIGOSUS (Nutt.) E. Greene Annual. Common and widespread, especially in native grassland and understory of coastal sage scrub and chaparral. Both large- and small-flowered forms are present, either as pure, or mixed populations. *Boyd & Ross* 7110.
- LOTUS UNIFOLIOLATUS (Hook.) Benth. [*L. purshianus* (Benth.) Clements & E. G. Clements var. *p.*] Annual. Common and widespread, especially in coastal sage scrub, oak woodland, and native grassland habitats. *Boyd & Ross* 7463.
- LOTUS WRANGELIANUS Fischer & C. Meyer Annual. Occasional at scattered sites, and mostly on heavy soils in native grassland and in open scrub habitats. *Boyd & Ross* 7168.
- LUPINUS AGARDHIANUS Heller [*L. concinnus* Agardh s. l.] Annual. Occasional at scattered sites, generally on heavy soils in native grassland or open scrub habitats. *Boyd & Mistretta* 7054.
- LUPINUS BICOLOR Lindley ssp. MARGINATUS D. Dunn [*L. bic.* s. l.] Annual. Common and widespread in native grassland and scrub habitats. *Boyd & Ross* 7229.
- LUPINUS BICOLOR Lindley ssp. MICROPHYLLUS (S. Watson) D. Dunn [*L. bicolor* s. l.] Annual. Common and widespread in native grassland and scrub habitats. *Boyd & Ross* 7227.
- LUPINUS CONCINNUS Agardh ssp. CONCINNUS [*L. concinnus* s. l.] Annual. Apparently uncommon, as at the mouth of Bluewater Cyn and in the Oak Flats area. *Boyd & Ross* 7198.
- LUPINUS EXCUBITUS M. E. Jones var. HALLII (Abrams) C. P. Smith Small shrub. Occasional, and locally common at scattered sites, mostly in native grassland and on alluvial benches. *Boyd, Ross, & Mistretta* 6703.
- LUPINUS FORMOSUS E. Greene var. FORMOSUS Perennial herb. Apparently uncommon and local in understory of oak woodland, north fork of Bear Creek along the Morgan Trail. *Boyd, Ross, & Mistretta* 6752B.
- LUPINUS HIRSUTISSIMUS Benth. Annual. Occasional and widespread, especially on burns in scrub habitats. *Boyd* 6832.
- LUPINUS LATIFOLIUS Agardh var. PARISHII C. P. Smith Perennial herb. Common in riparian woodlands and in understory of oak woodlands on lower benches. *Boyd* 6851.
- LUPINUS LONGIFOLIUS (S. Watson) Abrams Small shrub. Locally common on alluvial benches along San Mateo Cyn at its confluence with Bluewater Cyn. To be expected in similar situations elsewhere in the wilderness. Easily confused with *L. excubitus* ssp. *hallii*. *Boyd* 6881.
- LUPINUS TRUNCATUS Nutt. ex Hook. & Arn. Annual. Common and widespread; openings in scrub, woodland and grassland habitats, and especially on recent burns. *Boyd* 6861.
- *MEDICAGO POLYMORPHA L. Annual. Occasional at scattered sites, especially in more disturbed situations as along trails. *Boyd, Ross, & Mistretta* 6673.
- *MEDICAGO SATIVA L. Perennial herb. Scarce; only a few plants encountered in Devil Cyn in sandy soil along stream. *Boyd, Ross, & M. Wall* 7513.
- *MELILOTUS ALBUS Medikus Annual to perennial herb. Common, mostly on open benches and moist sandy soil along streams. *Boyd, Ross, & Mistretta* 6630.
- *MELILOTUS INDICUS (L.) All. Annual. Occasional, mostly on open benches and moist sandy soil along streams. *Boyd, Ross, & Mistretta* 6634.
- RUPERTIA PHYSODES (Douglas ex Hook.) J. Grimes Perennial herb. Occasional; oak woodland understory, and less frequently in understory of mesic chaparral. *Boyd & Ross* 7401.
- *SPARTIUM JUNCEUM L. Large shrub. Local along trail in Cold Spring Cyn and especially about old mining structures in Lucas Cyn. *Boyd & Ross* 7459.
- TRIFOLIUM ALBOPURPUREUM Torrey & A. Gray Annual. Occasional at scattered sites; mostly on heavy soil in native grassland as about Oak Flats and Miller Mtn. *Boyd & Ross* 7305.
- TRIFOLIUM CILIOLATUM Benth. Annual. Occasional in openings in scrub, woodland, and grassland habitats, especially on recent burns. *Boyd & Ross* 7259.
- TRIFOLIUM DEPAUPERATUM Desv. var. TRUNCATUM (E. Greene) Isely Annual. Apparently uncommon at scattered sites; mostly in native grassland and grassy openings in scrub habitats on heavy soil. *Boyd* 6973.
- *TRIFOLIUM HIRTUM All. Annual. Scarce; grassy bench along stream in lower Wildhorse Cyn. *Boyd, Ross, & Bramlet* 7379A.
- TRIFOLIUM MICROCEPHALUM Pursh Annual. Occasional in scrub and grassland habitats, especially on recent burns. *Boyd & Ross* 7181.
- TRIFOLIUM OBTUSIFLORUM Hook. & Arn. Annual. Occasional in moist soil along streams. *Boyd, Ross, & Bramlet* 7328.
- TRIFOLIUM VARIEGATUM Nutt. Annual. Occasional in moist soil along streams, as near Serrano Spring, and in San Mateo Canyon. *Boyd, Ross, & Bramlet* 7332.
- TRIFOLIUM WILLDENOVII Sprengel Annual. Common and widespread in scrub and grassland habitats, and especially on recent burns. *Boyd & Ross* 7226.
- VICIA AMERICANA Muhl. ex Willd. var. AMERICANA Perennial herb. Apparently uncommon; climbing on shrubs in oak woodland openings, as in upper Bluewater Cyn, upper Devil Cyn, and Verdugo Potrero. *Boyd* 6796.
- *VICIA BENGHALENSIS L. Annual. Apparently uncommon. Encountered only in central Devil Cyn. *Boyd, Ross, & M. Wall* 7515.
- VICIA LUDOVICIANA Nutt. var. LUDOVICIANA Annual. Occasional in scrub and grassland habitats. *Boyd, Ross, & Bramlet* 7337.
- *VICIA SATIVA L. s.l. Annual. Common, mostly in native grassland and grassy openings in oak woodland. *Boyd, Ross, & Mistretta* 6764.
- *VICIA VILLOSA Roth ssp. VILLOSA Annual. Common in scrub, woodland, and grassland habitats. *Boyd & Ross* 7464.

FAGACEAE

- QUERCUS AGRIFOLIA Neé var. AGRIFOLIA Tree. Common throughout the wilderness and locally abundant in oak woodland and riparian woodland habitats. *Boyd & Ross* 7217.
- QUERCUS BERBERIDIFOLIA Liebm. Large shrub. Common and locally abundant, especially in mesic chaparral and in oak woodland. Occasional plants were encountered which suggest introgression with *Q. engelmannii*. These individuals are characterized by a more arborescent habit and larger, grayer leaves. *Boyd & Ross* 7218.
- †QUERCUS ENGELMANNII E. Greene Tree. Local in oak woodlands on Miller Mtn and in "Potrero Escondido." *Boyd* 6991.

GARRYACEAE

GARRYA VEATCHII Kellogg Large shrub. Apparently uncommon in chaparral, as in central Devil Cyn. *Boyd, Ross, & M. Wall 7533.*

GENTIANACEAE

CENTAURIUM VENUSTUM (A. Gray) Robinson Annual. Locally common, mostly in openings in scrub and woodland habitats, and less often in native grassland and in moist soil along streams. *Boyd & Ross 7627.*

SWERTIA PARRYI (Torrey) Kuntze Biennial herb. Occasional at scattered sites, mostly openings in chaparral and oak woodland. *Boyd & Ross 7412.*

GERANIACEAE

*ERODIUM BRACHYCARPUM (Godron) Thell. Annual. Occasional to locally abundant in scrub, woodland, and grassland habitats, especially in disturbed situations. *Boyd & Ross 7166.*

*ERODIUM CICUTARIUM (L.) L'Hér. Annual. Very common in scrub, woodland, and grassland habitats, especially in disturbed situations. *Boyd & Ross 7228.*

*ERODIUM MOSCHATUM (L.) L'Hér. Annual. Relatively uncommon at widely scattered sites, and usually growing with other *Erodium* species. *Boyd & Ross 7415.*

GERANIUM CAROLINIANUM L. Annual. Apparently uncommon; encountered at several widely scattered sites, but mostly in grassy openings in oak woodland. *Boyd 6875.*

GROSSULARIACEAE

RIBES CALIFORNICUM Hook. & Arn. var. HESPERIUM (McClatchie) Jepson Small shrub. Occasional, mostly in the western end of the wilderness in mesic chaparral and oak woodland understory. *Boyd & Mistretta 6994.*

RIBES INDECORUM Eastw. Small shrub. Common and widespread, mostly in understory of mesic chaparral and oak woodland. *Boyd, Ross, & Mistretta 6646.*

RIBES MALVACEUM Sm. var. VIRIDIFOLIUM Abrams Small shrub. Occasional at scattered sites, mostly in oak woodland understory. *Boyd & Ross 7237.*

RIBES SPECIOSUM Pursh Small shrub. Occasional, mostly in the western and southern portions of the wilderness in chaparral and oak woodland understory. *Boyd & Mistretta 7011.*

HYDROCOTYLACEAE

BOWLESIA INCANA Ruiz Lopez & Pavon Annual. Occasional, mostly in mesic, shaded situations. *Boyd, Ross, & Bramlet 7336.*

HYDROCOTYLE UMBELLATA L. Perennial herb. Apparently uncommon. Encountered in moist mud along the stream in upper San Mateo Cyn. To be expected in similar situations. *Boyd, Ross, & Bramlet 7317.*

HYDROPHYLLACEAE

EMMENANTHE PENDULIFLORA Benth. Annual. Common and widespread; mostly in xeric openings in scrub habitats, and especially on recent burns. *Boyd & Ross 7128.*

ERIODICTYON CRASSIFOLIUM Benth. var. CRASSIFOLIUM Small shrub. Common and widespread, especially on recent burns in chaparral, on alluvial benches, and on other disturbed sites. *Boyd 6989.*

EUCRYPTA CHRYSANTHEMIFOLIA (Benth.) E. Greene var. CHRYSANTHEMIFOLIA Annual. Common and widespread, especially in understory of scrub and woodland habitats. *Boyd 6829.*

NEMOPHILA MENZIESII Hook. & Arn. var. INTEGRIFOLIA Parish Annual. Apparently uncommon; encountered in chaparral openings about Mud Springs, upper Devil Cyn. *Boyd & W. Appleby 7959.*

NEMOPHILA MENZIESII Hook. & Arn. var. MENZIESII Annual. Occa-

sional and widespread in understory of scrub and woodlands. *Boyd & Ross 7275.*

PHACELIA BRACHYLOBA (Benth.) A. Gray Annual. Apparently uncommon, as along the Tenaja Trail south of Hwy 74 on recent chaparral burn. To be expected as a fire-following species in chaparral habitats. *Boyd & Ross 7388.*

PHACELIA CICUTARIA E. Greene var. HISPIDA (A. Gray) J. Howell Annual. Common and widespread in scrub, woodland, and grassland habitats, especially on recent burns. *Boyd & Ross 7456.*

PHACELIA DISTANS Benth. Annual. Occasional at scattered sites in scrub habitats, especially on recent burns. *Boyd & Mistretta 7069.*

PHACELIA GRANDIFLORA (Benth.) A. Gray Annual. Occasional at scattered sites in the western half of the wilderness, mostly on recent burns in chaparral. *Boyd & Mistretta 7026.*

PHACELIA IMBRICATA E. Greene ssp. BERNARDINA (E. Greene) Heckard [*P. i. ssp. imbricata* s. l.] Perennial herb. Relatively uncommon on rocky outcrops in native grassland, north side of Miller Mtn. *Boyd & Ross 7606.*

PHACELIA MINOR (Harvey) Thell. Annual. Common and widespread in scrub, woodland, and grassland habitats, especially on recent burns. *Boyd 6786.*

PHACELIA MINOR × P. PARRYI Torrey Annual. Apparently uncommon, although easily mistaken for small flowered *P. minor*; openings in scrub as in San Mateo Cyn between Fisherman's Camp and Los Alamos Cyn. *Boyd, Ross, & Bramlet 7310.*

PHACELIA RAMOSISSIMA Douglas ex Lehm. var. LATIFOLIA (Torrey) Cronquist Perennial herb. Occasional, mostly about rock outcrops in coastal sage scrub, chaparral, and oak woodland habitats. *Boyd & Ross 7445.*

PHOLISTOMA AURITUM (Lindley) Lilja var. AURITUM Annual. Occasional at scattered sites, mostly in openings in mesic chaparral. *Boyd 6870.*

PHOLISTOMA RACEMOSUM (Nutt.) Constance Annual. Apparently uncommon, as in Tenaja Cyn and Cold Spring Cyn; mesic openings and rocky outcrops in chaparral. *Boyd, C. Boyd, & K. Boyd 6737.*

HYPERICACEAE

HYPERICUM ANAGALLOIDES Cham. & Schldl. Perennial herb. Apparently scarce; only seen in upper Devil Cyn in streamside rock outcrop. *Boyd & W. Appleby 7940.*

HYPERICUM FORMOSUM Kunth var. SCOULEI (Hook.) J. Coulter Perennial herb. Relatively uncommon in gravel beds of streams, and margins of bedrock pools at scattered sites, as in Lucas Cyn and especially Devil Cyn. *Boyd, Ross, & M. Wall 7517.*

LAMIACEAE

*LAMIUM AMPLEXICAULE L. Annual. Relatively uncommon at scattered sites; mostly in understory of oak woodland. *Boyd, Ross, & Mistretta 6694.*

*MARRUBIUM VULGARE L. Suffrutescent perennial. Occasional and widespread, especially in disturbed areas along trails and in oak woodland understory. *Boyd & Ross 7265.*

*MENTHA SPICATA L. var. SPICATA Perennial herb. Common along stream in Devil Cyn, occasional along San Mateo Creek, etc. *Boyd, Ross, & Mistretta 7705.*

MONARDELLA HYPOLEUCA A. Gray spp. HYPOLEUCA Suffrutescent perennial. Occasional at scattered sites; mostly in understory of oak woodland and chaparral on mesic slopes. *Boyd & Ross 8352.*

MONARDELLA LANCEOLATA A. Gray Annual. Occasional at scattered sites; openings in scrub and woodland habitats. *Boyd, Mistretta, & Bramlet 7649.*

PHYCANTHEMUM CALIFORNICUM Torrey Perennial herb. Apparently very uncommon and local. Infrequently encountered in moist soil along streams as in the north fork of Cold Spring Cyn, San Mateo Cyn above Tenaja Falls, and central Lucas Cyn. *Boyd, Ross, & Bramlet 7681.*

SALVIA APIANA Jepson Small shrub. Common and widespread, especially in coastal sage scrub, xeric slopes in chaparral, and about the edges of oak woodland. *Boyd & Ross 7293.*

SALVIA APIANA × *S. MELLIFERA* Small shrub. Infrequent, but encountered sporadically where both parents occur together. *Boyd & Ross 7484.*

SALVIA CLEVELANDII (A. Gray) E. Greene Small shrub. Occasional to locally common in chaparral from the south flank of Miller Mtn southward. Only encountered in San Diego County. *Boyd & Ross 7283.*

SALVIA COLUMBARIAE Benth. Annual. Common and widespread in coastal sage scrub, openings in chaparral, and especially on recent burns. *Boyd 6787.*

SALVIA MELLIFERA E. Greene Small shrub. Common and widespread in coastal sage scrub and xeric chaparral. *Boyd, Ross, & Mistretta 6742.*

SCUTELLARIA TUBEROSA Benth. Geophyte. Relatively common and widespread in understory of chaparral, especially on heavy soils. *Boyd & Ross 7187.*

STACHYS AJUGOIDES Benth. var. *RIGIDA* Jepson & Hoover Perennial herb. Common in moist soil of streams and seepages. *Boyd & Ross 7436.*

TRICHOSTEMA AUSTROMONTANUM H. Lewis ssp. *AUSTROMONTANUM* Annual. Scarce; encountered once on moist sand along Devil Creek. *Boyd, Ross, & M. Wall 7497.*

TRICHOSTEMA LANATUM Benth. Small shrub. Occasional at scattered sites in xeric chaparral. *Boyd & Ross 7205.*

TRICHOSTEMA LANCEOLATUM Benth. Annual. Occasional in native grassland and grassy openings in scrub and woodland habitats. *Boyd & Ross 8340.*

LAURACEAE

UMBELLULARIA CALIFORNICA (Hook. & Arn.) Nutt. Tree. Relatively infrequent, but locally common in riparian and oak woodland and mesic chaparral, as in central Devil Cyn, Lucas Cyn, mouth of Tenaja Cyn, etc. Rarely occurring on more xeric slopes, as along Clark Trail between Cold Spring and San Mateo Cyns. *Boyd, Ross, & Mistretta 6656.*

LINACEAE

HESPEROLINON MICRANTHUM (A. Gray) Small Annual. Locally common on heavy soils in xeric chaparral openings in the Oak Flats area, and to be expected in similar situations elsewhere in the wilderness. *Boyd & Ross 7196.*

LOASACEAE

MENTZELIA MICRANTHA (Hook. & Arn.) Torrey & A. Gray Annual. Relatively uncommon, but widely scattered, mostly on recent burns in chaparral. *Boyd & Mistretta 7008.*

LYTHRACEAE

LYTHRUM CALIFORNICUM Torrey & A. Gray Annual. Occasional to locally common along streams, especially in San Mateo Cyn. *Boyd, Ross, & Mistretta 6632.*

**LYTHRUM HYSSOPIFOLIUM* L. Perennial herb, sometimes a facultative annual. Infrequent on moist sand along streams at widely scattered sites. *Boyd, Ross, & M. Wall 7495.*

**PUNICA GRANATUM* L. Large shrub. Adventive on alluvial bench in San Mateo Cyn at its confluence with Bluewater Cyn. *Boyd 8394.*

MALVACEAE

MALACOTHAMNUS DENSIFLORUS (S. Watson) E. Greene Small shrub. Locally common on recovering burns in scrub and oak woodland habitats; occasional in unburned situations. *Boyd & Mistretta 7006.*

SIDALCEA MALVAEFLORA (DC.) A. Gray ex Benth. s.l. Perennial herb. Common, especially in vernal moist grassland and grassy openings in scrub and woodland habitats. *Boyd & Ross 7215.*

MORACEAE

**MORUS ALBA* L. Tree. Scarce; a single young tree was encountered in Cold Spring Cyn, near the lowest stream crossing on the Cold Spring Trail. *Boyd & Ross 7092.*

MYRTACEAE

**EUCALYPTUS CAMALDULENSIS* Denhardt Tree. Locally adventive near old plantings in the southern portion of Potrero de la Cienega. *Boyd & Ross 6671.*

**EUCALYPTUS GLOBULUS* Labill. Tree. Locally adventive near old plantings in the southern portion of Potrero de la Cienega. *Boyd & Ross 6670.*

NYCTAGINACEAE

MIRABILIS CALIFORNICA A. Gray Suffrutescent perennial. Common, mostly on xeric exposures in scrub habitats and on rocky outcrops. *Boyd & Mistretta 7032.*

OLEACEAE

FRAXINUS VELUTINA Torrey Tree. Occasional to locally common along larger streams. *Boyd & Mistretta 7068.*

**OLEA EUROPAEA* L. Tree. Persisting from cultivation, or possibly adventive, in Lucas Cyn and near Cold Spring. *Boyd & Ross 7461.*

ONAGRACEAE

CAMISSONIA BISTORTA (Nutt. ex Torrey & A. Gray) Raven Annual. Occasional and locally common on burns and in openings of scrub habitats. *Boyd & Ross 7396.*

CAMISSONIA CALIFORNICA (Nutt. ex Torrey & A. Gray) Raven Annual. Common on recent burns, alluvial benches, and on xeric exposures in scrub habitats. *Boyd & Mistretta 7029.*

CAMISSONIA GRACILIFLORA (Hook. & Arn.) Raven Annual. Uncommon and local on very open clay soil in native grassland at Oak Flats and on Miller Mountain. *Boyd 6985.*

CAMISSONIA HIRTELLA (E. Greene) Raven Annual. Common and widespread, especially on recent burns and openings in scrub habitats. *Boyd 6788.*

CAMISSONIA IGNOTA (Jepson) Raven Annual. Occasional and widespread, especially on recent burns and openings in scrub habitats. *Boyd, Ross, & Bramlet 7354.*

CAMISSONIA STRIGULOSA (Fischer & C. Meyer) Raven Annual. Apparently uncommon; encountered on alluvial bench in Los Alamos Cyn near confluence of Wildhorse Creek. To be expected in similar open habitats elsewhere in the wilderness. *Boyd, Ross, & Bramlet 7369.*

CLARKIA BOTTAE (Spach) H. Lewis & M. Lewis Annual. Occasional to locally common, usually on mesic rocky slopes and openings in chaparral. *Boyd & Ross 7159.*

CLARKIA EPILOBIOIDES (Nutt.) Nelson & J. F. Macbride Annual. Common in openings in scrub and oak woodland habitats. *Boyd, Ross, & M. Wall 7545.*

CLARKIA PURPUREA (Curtis) Nelson & J. F. Macbride ssp. *QUADRIVULNERA* (Douglas) H. Lewis & M. Lewis Annual. Occasional to locally common in native grasslands and openings in scrub and oak woodland habitats. *Boyd & Ross 7219.*

CLARKIA SIMILIS H. Lewis & Ernst Annual. Occasional to locally common, usually on mesic rocky outcrops and openings in chaparral. *Boyd, Ross, & Bramlet 7350.*

EPILOBIUM CANUM (E. Greene) Raven ssp. *ANGUSTIFOLIUM* (Keck) Raven [*E. c.* ssp. *c. s. l.*] Suffrutescent perennial. Common in scrub

and woodland habitats, especially on rocky, xeric slopes. *Boyd, Ross, & Bramlet 7686.*

EPILOBIUM CANUM (E. Greene) Raven ssp. *MEXICANUM* (C. Presl.) Raven [*E. c.* ssp. *c. s. l.*] Suffrutescent perennial. Locally common on rocky outcrops in lower San Mateo Cyn. *Boyd, Ross, & Mistretta 7696.*

EPILOBIUM CILIATUM Raf. ssp. *CILIATUM* Perennial herb. Occasional in moist sand along streams and about seepages. *Boyd & Ross 7114.*

EPILOBIUM DENSIFLORUM (Lindley) P. Hoch & Raven Annual. Occasional on moist sand along streams, as in Devil Cyn. *Boyd, Ross, & M. Wall 7504.*

LUDWIGIA PELOIDES (Kunth) Raven ssp. *PELOIDES* Perennial herb. Local in slow-moving water and on formerly inundated sandbars in San Mateo and Devil Creeks. *Boyd & Ross 7116.*

OENOTHERA ELATA Kunth ssp. *HIRSUTISSIMA* (A. Gray ex S. Watson) Dietrich Biennial herb. Apparently uncommon in moist sand along streams and on mesic benches, as in San Mateo and Devil Cyns. *Boyd & Ross 7133.*

OXALIDACEAE

OXALIS ALBICANS Kunth ssp. *CALIFORNICA* (Abrams) Eiten Perennial herb. Occasional, usually about rock outcrops in scrub and grassland habitats. *Boyd 6873.*

**OXALIS CORNICULATA* L. Perennial herb. Apparently scarce; encountered in moist soil along stream at Serrano Spring and on granitic boulders along upper Devil Creek. *Boyd & Ross 7258.*

PAEONIACEAE

PAEONIA CALIFORNICA Nutt. ex Torrey & A. Gray Perennial herb. Common and widespread in scrub, woodland, and native grassland habitats, but most abundant in openings in chaparral. *Boyd, Ross, & Mistretta 6746.*

PAPAVERACEAE

DENDROMECON RIGIDA Benth. Small shrub. Locally common in chaparral in the southeastern portion of the wilderness. To be expected as a post-fire element in chaparral; however, none were observed in areas affected by the 1989 fire. *Boyd & Ross 7577.*

DICENTRA CHRYSANTHA (Hook. & Arn.) Walp. Suffrutescent perennial. Common in areas affected by the 1989 fire and occasional in other locally disturbed areas. *Boyd & Mistretta 7033.*

**ESCHSCHOLZIA CALIFORNICA* Cham. var. *DOUGLASII* (Benth.) A. Gray [*E. calif.* s. l.] Perennial herb. Local on a gravelly bench in Devil Cyn, south of Miller Mountain. This is the variety of *Eschscholzia californica* typically grown from seed mixes; we interpret its presence at this site as likely adventive from plants cultivated upstream, probably at a nearby ranch. *Boyd, Ross, & M. Wall 7496.*

ESCHSCHOLZIA CALIFORNICA Cham. var. *PENINSULARIS* (E. Greene) Munz [*E. calif.* s. l.] Annual. Occasional in native grassland and open scrub habitats. Locally common on xeric slopes in some areas affected by the 1989 fire. *Boyd & Ross 7125.*

MECONELLA DENTICULATA E. Greene Annual. Occasional to locally common in mesic, open understory of scrub and oak woodland habitats. *Boyd 6859.*

PAPAVER CALIFORNICUM A. Gray Annual. Locally common in widely scattered localities, such as along recently cleared trail margin in Tenaja Cyn. To be expected as a post-fire annual. *Boyd, C. Boyd, & K. Boyd 6736.*

PLANTAGINACEAE

PLANTAGO ERECTA E. Morris Annual. Common and widespread, usually on thin, rocky or clayey soils of open areas in scrub and grassland habitats. *Boyd 6820.*

**PLANTAGO LANCEOLATA* L. Perennial herb. Occasional at scattered

sites; usually in grassy, somewhat disturbed situations, as along trails or in grazed areas. *Boyd & Ross 7262.*

**PLANTAGO MAJOR* L. Perennial herb. Occasional in moist sand along streams. *Boyd & Ross 7146.*

PLATANACEAE

PLATANUS RACEMOSA Nutt. Tree. Common and widespread in all major and most minor canyons, and often about seepages on slopes. *Boyd, Ross, & Bramlet 7666.*

POLEMONIACEAE

ALLOPHYLLUM GLUTINOSUM (Benth.) A. D. Grant & V. Grant Annual. Occasional in scrub and grassland openings. *Boyd & Ross 7452.*

ERIASTRUM SAPPHIRINUM (Eastw.) H. Mason Annual. Common in openings amid scrub and grassland. *Boyd, Ross, & Bramlet 7363.*

GILIA ANGELENSIS V. Grant Annual. Common in mesic scrub and grassland habitats. Often very common locally in post-fire situations. *Boyd 6872.*

GILIA AUSTRALIS (Mason & A. D. Grant) V. Grant & A. D. Grant Annual. Apparently uncommon at scattered sites as a post-fire annual, and in grassy openings amid scrub. To be expected following burns. *Boyd, Ross, & Bramlet 738.*

GILIA CAPITATA Sims ssp. *ABROTANIFOLIA* (Nutt. ex E. Greene) V. Grant Annual. Occasional to locally common in openings of scrub and woodland habitats, especially as a post-fire element. *Boyd & Mistretta 7066.*

LEPTODACTYLON CALIFORNICUM Hook. & Arn. s. l. Small shrub. Occasional in chaparral and about borders of oak woodland, especially in the northern portion of the wilderness. *Boyd, Ross, & Mistretta 6682.*

LINANTHUS ANDROSACEUS (Benth.) E. Greene ssp. *LUTEOLUS* (E. Greene) Mason [*L. parviflorus* (Benth.) E. Greene] Annual. Relatively uncommon, although locally abundant where present as in Oak Flats area. *Boyd & Ross 724.*

LINANTHUS ANDROSACEUS (Benth.) E. Greene ssp. *MICRANTHUS* (Steud.) Mason [*L. parviflorus* (Benth.) E. Greene] Annual. Common and widespread in native grassland, as well as openings in scrub and oak woodland habitats. *Boyd, Ross, & Bramlet 7347.*

LINANTHUS DIANTHIFLORUS (Benth.) E. Greene Annual. Occasional at scattered sites; usually in open situations on heavy soils. *Boyd 6969.*

LINANTHUS FLORIBUNDUS (A. Gray) E. Greene ex Milliken ssp. *FLORIBUNDUS* Suffrutescent perennial. Occasional; mostly in the southern portion of the wilderness in mesic chaparral openings, and on benches along streams as in upper to middle Devil Cyn. *Boyd, Ross, & M. Wall 7489.*

LINANTHUS LINIFLORUS (Benth.) E. Greene Annual. Locally common on heavy soils in chaparral openings and in native grasslands; Miller Mountain, about Oak Flats, etc. *Boyd, Ross, & T. Columbus 8192.*

LINANTHUS PYGMAEUS (Brand) J. Howell [ssp. *continentalis* Raven] Annual. Inconspicuous and local; openings in chaparral and margins of oak woodlands at scattered sites. *Boyd & Ross 7272.*

NAVARETTIA ATRACTYLOIDES (Benth.) Hook. & Arn. Annual. Relatively uncommon at scattered sites; mostly in openings of scrub habitats and on hard-packed soil along trails. *Boyd & Ross 7623.*

NAVARETTIA HAMATA E. Greene ssp. *HAMATA* Annual. Common and widespread in scrub openings and native grassland habitats, and often on hard-packed soil along trails. *Boyd & Ross 7598.*

POLYGALACEAE

†*POLYGALA CORNUTA* Kellogg ssp. *FISHIAE* (C. Parry) Munz [*P. c.* var. *fishiae* (C. Parry) Jepson] Small shrub. Local at widely scattered sites in habitats ranging from open, xeric ridgetops in chaparral, to mesic chaparral, to oak woodland understory. *Boyd, Ross, & M. Wall 7506.*

POLYGONACEAE

CHORIZANTHE FIMBRIATA Nutt. var. FIMBRIATA Annual. Common to locally abundant in open situations, especially xeric slopes and heavy soils. *Boyd & Ross 7625*.

†CHORIZANTHE POLYGONOIDES Torrey & A. Gray var. LONGISPINA (Goodman) Munz Annual. Apparently uncommon in open situations on clay soil, as at Miller Mountain, Oak Flats, and "Potrero Escondido." *Boyd & Ross 7234*.

†CHORIZANTHE PROCUMBENS Nutt. Annual. Locally common on xeric, rocky outcrops in chaparral at the southeastern end of the wilderness, and on old-formation alluvial benches in Los Alamos Cyn near its confluence with Wildhorse Cyn. Scattered plants were also found in open clayey areas in chaparral near Miller Mountain and at "Potrero Escondido." *Boyd & Ross 7581*.

CHORIZANTHE STATICOIDES Benth. Annual. Apparently uncommon and local at scattered sites. Occurring in similar situations to *C. fimbriata* and occasionally in close proximity, but never observed growing in mixed populations. *Boyd & Ross 7422*.

ERIOGONUM ELONGATUM Benth. var. ELONGATUM Suffrutescent perennial. Occasional, mostly on xeric slopes and rocky outcrops in scrub and grassland habitats. *Boyd, Ross, & Bramlet 7680*.

ERIOGONUM FASCICULATUM Benth. var. FOLIOLOSUM (Nutt.) S. Stokes ex Abrams Small shrub. Common to locally abundant in scrub, woodland, and grassland habitats throughout the wilderness. *Boyd, Ross, & M. Wall 7546*.

ERIOGONUM FASCICULATUM Benth. var. POLIFOLIUM (Benth.) Torrey & A. Gray Small shrub. Apparently uncommon. Plants approaching this variety were observed at scattered sites, in xeric situations. *Boyd, Ross, & Bramlet 7320*.

ERIOGONUM GRACILE Benth. var. GRACILE Annual. Occasional to locally common in scrub, woodland, and grassland habitats, most often in open, sandy situations. *Boyd, Ross, & Bramlet 7682*.

ERIOGONUM GRACILE Benth. var. INCULTUM Reveal Annual. Apparently scarce; open areas in chaparral along Fisherman's Camp Trail. To be expected elsewhere in similar situations. *Boyd 8379*.

LASTARRIAEA CORIAEA (Goodman) Hoover Annual. Locally common on old-formation alluvial benches of Los Alamos Creek near its confluence with Wildhorse Creek. To be expected elsewhere in similar open habitats. *Boyd, Ross, & Bramlet 7364*.

*POLYGONUM ARENASTRUM Boreau Annual or perennial herb. Infrequent in disturbed areas along trails and in moist areas along streams at scattered sites. Most common in areas of active cattle grazing. *Boyd & Ross 7176B*.

POLYGONUM LAPATHIFOLIUM L. Annual. Apparently uncommon in moist sand and slow-moving water along lower San Mateo Creek. *Boyd & Ross 7143*.

PTEROSTEGIA DRYMARIODES Fischer & C. Meyer Annual. Common as an understory element of scrub and oak woodland habitats, occasionally in grasslands. Generally associated with partially shaded, mesic situations. *Boyd, Ross, & Bramlet 7326*.

*RUMEX ACETOSELLA L. Perennial herb. Local under oak woodland in area below large falls, upper Devil Cyn. *Boyd, Ross, & K. McCulloh 6724*.

*RUMEX CONGLOMERATUS Murray Perennial herb. Occasional in moist sand along streams at scattered sites. *Boyd, Ross, & Bramlet 7342*.

*RUMEX CRISPUS L. Perennial herb. Occasional to locally common along streams as well as in moist swales in grasslands. *Boyd, Ross, & Bramlet 7343*.

RUMEX SALICIFOLIUS Weinm. s.l. Perennial herb. Common along streams and seasonally moist drainages. *Boyd, Ross, & M. Wall 7548*.

PORTULACACEAE

CALANDRINIA CILIATA (Ruiz Lopez & Pavon) DC. Annual. Occasional in native grassland and openings in scrub habitats. *Boyd 6842*.

CALYPTRIDIVM MONANDRUM Nutt. Annual. Relatively uncommon, but widespread. Usually in open, sandy situations in scrub habitats, and sometimes abundant on recent burns. *Boyd & Mistretta 7067*.

CLAYTONIA PARVIFLORA Hook. ssp. VIRIDIS (A. Davidson) J. M. Miller & Chambers Annual. Apparently uncommon at scattered sites in situations similar to those preferred by the following species, and often growing intermixed. *Boyd, Ross, & Mistretta 6754*.

CLAYTONIA PERFOLIATA Donn ex Willd. s.l. Annual. Common and locally abundant as an understory element of scrub, woodland, and native grassland habitats. Best developed in mesic, shaded situations. *Boyd & Ross 7161*.

PRIMULACEAE

*ANAGALLIS ARVENSIS L. Annual. Common in scrub, woodland, and grassland habitats. *Boyd & Ross 7121*.

DODECATHEON CLEVELANDII E. Greene ssp. CLEVELANDII Geophyte. Relatively uncommon; grassy openings in scrub habitats on heavy soil of ridge tops, as along Indian Potrero and Lucas Cyn Trails. To be expected in other areas of vernal moist heavy soil within the wilderness. *Boyd & Mistretta 7020*.

RANUNCULACEAE

CLEMATIS LASIANTHA Nutt. Liana. Occasional in scrub and woodland habitats. Most often encountered in chaparral. *Boyd, Ross, & Mistretta 6758*.

CLEMATIS LIGUSTICIFOLIA Nutt. Liana. Local in riparian woodlands, as above Tenaja Falls and in Cold Spring Cyn. *Boyd, Ross, & Bramlet 7676*.

CLEMATIS PAUCIFLORA Nutt. Liana. Apparently less common than *Clematis lasiantha*; encountered in scrub and woodland habitats, as in upper San Mateo Cyn and Tenaja Cyn. *Boyd, Ross, & Mistretta 6674*.

DELPHINIUM CARDINALE Hook. Geophyte. Occasional in openings in scrub habitats and on recent burns. *Boyd & Ross 7619*.

DELPHINIUM PARRYI A. Gray Geophyte. Occasional to locally common in open, vernal mesic situations in scrub and native grassland habitats. *Boyd & Ross 7191*.

DELPHINIUM PATENS Benth. ssp. HEPATICOIDEUM Ewan Geophyte. Occasional at scattered sites in situations similar to those preferred by *D. parryi*. May be found growing intermixed with the latter. *Boyd, C. Boyd, & K. Boyd 6738*.

RANUNCULUS CALIFORNICUS Benth. Perennial herb. Locally common on clay soil in native grassland and oak woodland habitats on Miller Mtn. To be expected elsewhere in similar situations. *Boyd & Ross 6716*.

RANUNCULUS HEBECARPUS Hook. & Arn. Annual. Common to locally abundant in open, mesic situations in scrub and oak woodland habitats. *Boyd, Ross, & Mistretta 6759*.

THALICTRUM FENDLERI A. Gray var. POLYCARPUM Torrey Perennial herb. Occasional in mesic situations in scrub and woodland habitats. *Boyd 6797*.

RHAMNACEAE

CEANOTHUS CRASSIFOLIUS Torrey Large shrub. Common to locally abundant on xeric slopes in chaparral. *Boyd & Ross 6667*.

CEANOTHUS LEUCODERMIS E. Greene Large shrub. Apparently uncommon. Encountered in chaparral in the southeastern portion of the wilderness from Tenaja Cyn southward. To be expected in areas of mesic chaparral elsewhere in the wilderness. *Boyd & Ross 7587*.

CEANOTHUS OLIGANTHUS Nutt. var. OLIGANTHUS Large shrub. Occasional to locally common in mesic chaparral. *Boyd & W. Appleby 7923*.

CEANOTHUS SPINOSUS Nutt. Shrub. Occasional to locally common in mesic chaparral in the western half of the wilderness. *Boyd & Mistretta 7009*.

CEANOTHUS TOMENTOSUS Parry Large shrub. Apparently uncommon. Plants approaching this taxon occur in relatively mesic chaparral at scattered sites. This species is known to intergrade with *C. oliganthus* in the Santa Ana Mountains. *Boyd, Ross, & Mistretta 6651.*

RHAMNUS CALIFORNICA Eschsch. ssp. **CALIFORNICA** Large shrub. Occasional to locally common in chaparral and woodland habitats, usually in mesic canyon bottoms. *Boyd, Ross, & M. Wall 7536.*

RHAMNUS ILICIFOLIA Kellogg Large shrub. Common in scrub and woodland habitats. *Boyd, Ross, & Mistretta 6750.*

ROSACEAE

ADENOSTOMA FASCICULATUM Hook. & Arn. var. **FASCICULATUM** [A. fasc. s. l.] Large shrub. Common to locally abundant in chaparral and, to a lesser degree, in woodland habitats. *Boyd & Ross 7106.*

APHANES OCCIDENTALIS (Nutt.) Rydb. Annual. Locally common at scattered sites; generally in relatively shaded, mesic openings in chaparral and oak woodland habitats. *Boyd, Ross, & Mistretta 6762.*

CERCOCARPUS BETULOIDES Nutt. ex Torrey & A. Gray var. **BETULOIDES** Large shrub. Apparently relatively uncommon (relative to *C. minutiflorus*) in chaparral at scattered sites. Plants approaching this taxon were most frequently encountered in the northeastern portion of the wilderness. *Boyd 7717.*

CERCOCARPUS MINUTIFLORUS Abrams Large shrub. Occasional to locally common in mesic chaparral and oak woodland habitats, but best developed in the southern and western portions. (Many showing introgression from *C. betuloides*.) *Boyd & Mistretta 7005.*

HETEROMELES ARBUTIFOLIA (Lindley) Roemer Large shrub. Occasional to locally common in scrub and woodland habitats, especially on mesic slopes. *Boyd & Ross 7299.*

HOLODISCUS DISCOLOR (Pursh) Maxim. Small shrub. Apparently scarce and localized in mesic chaparral near the confluence of Tenaja and San Mateo creeks. *Boyd, Ross, & Bramlet 7357.*

HORKELIA CUNEATA Lindley ssp. **PUBERULA** (E. Greene) Keck Perennial herb. Locally common in understory of oak woodland in the north fork of Bear Cyn at the jtn of Tenaja and Morgan trails. *Boyd & Ross 7404.*

†**HORKELIA TRUNCATA** Rydb. Perennial herb. Occasional to locally common in scrub and woodland habitats in the southeastern portion of the wilderness, about Santa Margarita Peak and in upper Devil Cyn. *Boyd & Ross 7590.*

***MALUS** cf. **SYLVESTRIS** Miller Tree. A single, sterile plant apparently adventive in oak-riparian woodland at confluence of "Miller" and Devil creeks. *Boyd, Mistretta, & Bramlet 7652.*

POTENTILLA GLANDULOSA Lindley ssp. **GLANDULOSA** Perennial herb. Occasional in relatively mesic situations in scrub and woodland habitats, especially about seepages. *Boyd & Ross 7249.*

PRUNUS ILICIFOLIA (Nutt.) Walp. ssp. **ILICIFOLIA** Large shrub. Relatively uncommon, but widespread in the wilderness in scrub and oak woodland habitats. *Boyd & Ross 7248.*

***PRUNUS** cf. **PERSICA** Batsch Tree. Waif seedling collected in disturbed oak woodland understory along Lucas Cyn trail in Lucas Cyn. *Boyd & Ross 8358.*

***PYRUS** sp. Tree. Single young plant, apparently adventive about old mining homesteads in Lucas Cyn. *Boyd & Ross 7468.*

ROSA CALIFORNICA Cham. & Schldl. Small shrub. Common in understory of oak woodland, on drier benches of riparian woodland, and occasionally on slopes in mesic chaparral. *Boyd, Ross, & M. Wall 7547.*

***RUBUS DISCOLOR** Weihe & Nees Trailing small shrub. Locally common in riparian woodland, Devil Cyn. *Boyd, Ross, & K. McCulloh 6734A.*

RUBUS URSINUS Cham. & Schldl. Trailing small shrub. Common to locally abundant in understory of oak and riparian woodlands. *Boyd & Ross 7119.*

RUBIACEAE

GALIUM ANGUSTIFOLIUM Nutt. ssp. **ANGUSTIFOLIUM** Suffrutescent perennial. Common, especially on rocky outcrops and xeric slopes in scrub, woodland, and grassland habitats. *Boyd, Ross, & M. Wall 7539.*

***GALIUM APARINE** L. Annual. Common to locally abundant in mesic understory of scrub and woodland habitats. *Boyd & Ross 7202.*

***GALIUM PARIENSE** L. Annual. Occasional in understory of scrub and woodland habitats as in upper Devil Cyn. *Boyd & Ross 7428.*

GALIUM PORRIGENS Dempster var. **PORRIGENS** Suffrutescent perennial. Common in understory of scrub and woodland habitats, particularly in more mesic situations. *Boyd & Ross 7221.*

SALICACEAE

POPULUS BALSAMIFERA L. ssp. **TRICHOCARPA** (Torrey & A. Gray) Brayshaw Tree. Locally common in riparian woodlands of the larger drainages, such as San Mateo and Devil Cyns. *Boyd, Ross, & Bramlet 7314.*

POPULUS FREMONTII S. Watson ssp. **FREMONTII** Tree. Relatively uncommon in drainages. *Boyd & D. Banks 8336.*

SALIX EXIGUA Nutt. Large shrub. Locally common in riparian woodlands of San Mateo and Devil Cyns, and to be expected in similar situations in other drainages. *Boyd & Ross 7142.*

SALIX GOODINGII C. Ball Tree. Relatively uncommon in riparian woodland of San Mateo Cyn, but to be expected in similar situations. *Boyd & Mistretta 7031.*

SALIX LAEVIGATA Bebb Tree. Relatively uncommon in riparian woodlands of San Mateo and Devil Cyns, and to be expected in similar situations in other drainages. *Boyd, Ross, & M. Wall 7550.*

SALIX LASIOLEPIS Benth. Large shrub. Common in riparian woodlands and about springs. *Boyd, Ross, & Mistretta 6685.*

SALIX LUCIDA Muhlenb. ssp. **LASIANDRA** (Benth.) E. Murray Tree. Common in riparian woodlands and about springs. *Boyd, Ross, & M. Wall 7507.*

SAXIFRAGACEAE

JEPSONIA PARRYI (Torrey) Small Geophyte. Common and locally abundant in open, mesic situations within scrub and native grassland habitats. *Boyd, Ross, & Mistretta 7710.*

LITHOPHRAGMA AFFINE A. Gray ssp. **MIXTUM** R. L. Taylor [L. affine s. l.] Geophyte. Occasional, mesic openings in scrub and woodland habitats. *Boyd, Ross, Mistretta, & McCulloh 6721.*

SAXIFRAGA CALIFORNICA E. Greene Geophyte. Locally common at scattered sites, generally in mesic openings in chaparral. *Boyd & Ross 6709.*

SCROPHULARIACEAE

ANTIRRHINUM COULTERIANUM Benth. Annual. Widely scattered in scrub habitats, but never common where present. *Boyd & Ross 7148.*

ANTIRRHINUM KELLOGGII E. Greene Annual. Apparently uncommon in scrub habitats at scattered sites. *Boyd & Mistretta 7007.*

ANTIRRHINUM NUTTALLIANUM Benth. ssp. **NUTTALLIANUM** Annual or facultative biennial. Occasional; mostly on xeric slopes and rock outcrops in scrub habitats. *Boyd, Ross, & M. Wall 7516.*

CASTILLEJA AFFINIS Hook. & Arn. ssp. **AFFINIS** Hemiparasitic perennial herb. Occasional at scattered sites, mostly in coastal sage scrub. *Boyd 6802.*

CASTILLEJA FOLIOLOSA Hook. & Arn. Hemiparasitic suffrutescent perennial. Occasional at scattered sites, mostly in chaparral. *Boyd, Ross, & Mistretta 6672.*

CASTILLEJA MINOR (A. Gray) A. Gray ssp. **SPIRALIS** (Jepson) Chuang & Heckard Hemiparasitic annual. Infrequent along streams and seepages. *Boyd, Ross, & Bramlet 7329.*

COLLINSIA HETEROPHYLLA Buist ex Grah. Annual. Common; mesic

- openings in scrub habitats and oak woodland understory. *Boyd & Mistretta 7073*.
- COLLINSIA PARRYI* A. Gray Annual. Locally common at scattered sites in mesic openings of scrub habitats. *Boyd 6955*.
- CORDYLANTHUS RIGIDUS* (Benth.) Jepson ssp. *SETIGER* Chuang & Heckard [often misspelled "*setigerus*"] Annual. Common in scrub and woodland habitats, but tending to be most common on burns and other disturbed sites. *Boyd & Ross 7644*.
- **DIGITALIS PURPUREA* L. Biennial herb. Locally established in an oak woodland opening at old mining homestead in Lucas Cyn. *Boyd & Ross 7480*.
- KECKIELLA ANTIRRHINOIDES* (Benth.) Straw var. *ANTIRRHINOIDES* Small shrub. Occasional to locally common in scrub habitats, mostly in the northern half of the wilderness. *Boyd, Ross, & Bramlet 7360*.
- KECKIELLA CORDIFOLIA* (Benth.) Straw Small shrub, often scandent. Common in scrub and woodland habitats, mostly in more mesic situations. *Boyd & Ross 7416*.
- LINARIA CANADENSIS* (L.) Dum.-Cours. var. *TEXANA* (Scheele) Pennell [*L. can.* s. l.] Annual. Apparently uncommon in scrub habitats, as at Oak Flats, Bluewater Cyn, and north fork of Bear Cyn, but to be expected in scrub and native grassland habitats, especially after fires. *Boyd & D. Banks 8260*.
- MIMULUS AURANTIACUS* Curtis s.l. Small shrub. Common in scrub and oak woodland habitats. Populations observed included plants with yellowish orange flowers, which have been treated as *M. a.* ssp. *australis* (McMinn) Munz (*Boyd & Ross 7213*), fully grading into plants with deep red flowers, which have been treated as *M. puniceus* (Nutt.) Steudel (*Boyd, Ross, & Mistretta 6645*).
- MIMULUS BREVIPES* Benth. Annual. Common in xeric openings within scrub habitats. May be locally common following burns. *Boyd, Ross, & Bramlet 7334*.
- MIMULUS CARDINALIS* Douglas ex Benth. Perennial herb. Occasional along streams and about seepages. *Boyd, Ross, & Bramlet 7679*.
- †*MIMULUS DIFFUSUS* A. L. Grant Annual. Apparently uncommon in mesic openings of scrub habitats, as in central San Mateo Cyn and on the south flank of Miller Mtn. To be expected in similar situations elsewhere, especially following chaparral fires. *Boyd, Ross, & Bramlet 7349*.
- MIMULUS FLORIBUNDUS* Dougl. ex Lindley Annual. Occasional in moist sand along streams and about seepages. *Boyd & Ross 7282*.
- MIMULUS GUTTATUS* Fisch. ex DC. Annual or perennial herb. Common in moist sand along streams, about seepages, and in seasonally moist areas about rock outcrops and minor drainages. *Boyd & Ross 7253*.
- MIMULUS PILOSUS* (Benth.) S. Watson Annual. Occasional to locally common; mostly mesic openings in scrub habitats and on moist soil along streams and seepages. *Boyd, Ross, & Bramlet 7371*.
- OROBANCHE BULBOSA* G. Beck Parasitic perennial herb. Infrequent at widely scattered sites in chaparral and generally occurring on the roots of *Adenostoma fasciculatum*. *Boyd & Ross 7603*.
- OROBANCHE PARISHII* (Jepson) Heckard ssp. *PARISHII* Parasitic perennial herb. Infrequent in areas of native grassland-scrub mosaic on Miller Mtn. Possibly occurring on the roots of *Corethrogyne filaginifolia*, a locally common associate, although we were unable to follow any parasitized roots to their source for verification. *Boyd & Ross 7605*.
- ORTHOCARPUS PURPURASCENS* Benth. var. *PURPURASCENS* [*Castilleja exserta* (A. A. Heller) Chuang & Heckard ssp. *exserta*] Hemiparasitic annual. Occasional to locally common in native grassland and grassy openings amid scrub. *Boyd 6966*.
- PEDICULARIS DENSIFLORA* Benth. ex Hook. Hemiparasitic perennial herb. Occasional to locally common in understory of *Adenostoma fasciculatum* and/or *Quercus berberidifolia* in mesic chaparral. *Boyd, Ross, & Mistretta 6763*.
- PENSTEMON CENTRANTHIFOLIUS* (Benth.) Benth. Suffrutescent perennial. Relatively uncommon in openings of oak woodland, as in San Mateo Cyn. *Boyd 6882*.
- PENSTEMON HETEROPHYLLUS* Lindley var. *AUSTRALIS* Munz & I. M. Johnston Suffrutescent perennial. Occasional to locally common in openings of scrub and oak woodland habitats. *Boyd & Ross 7592*.
- PENSTEMON SPECTABILIS* Thurber ex A. Gray var. *SPECTABILIS* Suffrutescent perennial. Occasional to locally common on recent burns, and in openings of scrub and woodland habitats. *Boyd & Ross 7407*.
- SCROPHULARIA CALIFORNICA* Cham. & Schldl. ssp. *FLORIBUNDA* (E. Greene) Shaw Perennial herb. Common in scrub habitats, particularly in mesic chaparral. *Boyd, Ross, & Bramlet 7380A*.
- **VERONICA ANAGALLIS-AQUATICA* L. Annual to perennial herb. Occasional in moist sand along streams, as in San Mateo and Devil Cyns. *Boyd & Mistretta 7049*.

SOLANACEAE

- DATURA WRIGHTII* Regel Perennial herb. Apparently uncommon; encountered on sandy bench in San Mateo Cyn at its confluence with Bluewater Cyn. To be expected in similar situations. *Boyd 8391*.
- **NICOTIANA GLAUCA* Graham Large shrub. Occasional in more-or-less disturbed situations on a recent burn in Lucas and Aliso Cyns; otherwise scarce in the wilderness. *Boyd & Ross 8346*.
- NICOTIANA QUADRIVALVIS* Pursh Annual. Apparently uncommon; encountered only along the Tenaja Trail north of its jtn with Morgan Trail in an area of chaparral burned in the 1989 fire. To be expected in more or less sandy scrub habitats, especially following fire. *Boyd & Ross 7394*.
- **PHYSALIS PHILADELPHICA* Lam. Annual. Apparently uncommon; encountered only on old-formation bench in Los Alamos Cyn near the confluence of Wildhorse Cyn. *Boyd, Ross, & Bramlet 7362*.
- **SOLANUM AMERICANUM* Miller Annual or perennial herb. Apparently uncommon on moist sand along lower San Mateo Creek. *Boyd & Ross 7135*.
- SOLANUM DOUGLASII* Dunal Suffrutescent perennial. Apparently uncommon in riparian woodlands of lower San Mateo Cyn. To be expected elsewhere in similar situations. *Boyd & Ross 7147*.
- SOLANUM PARISHII* A. A. Heller Suffrutescent perennial. Apparently uncommon in oak woodland and chaparral about Mud Springs, upper Devil Cyn. *Boyd & W. Appleby 7965*.
- SOLANUM UMBELLIFERUM* Eschsch. Suffrutescent perennial. Apparently uncommon in chaparral along Morgan Trail west of Round Potrero. Easily confused with, and possibly grading into, *S. xanti*. *Boyd, Ross, & Mistretta 6741*.
- SOLANUM XANTI* A. Gray s. l. Suffrutescent perennial. Common throughout the range in scrub and woodland habitats. *Boyd, Ross, & Mistretta 6658*.

STYRACACEAE

- STYRAX OFFICINALIS* L. var. *REDIVIVUS* (Torrey) H. Howard Large shrub. Localized, but common where present, in chaparral at northwestern edge of the wilderness along Sitton Peak Road, and at southeastern edge along Santa Margarita Peak Road. *Boyd & Ross 7593*.

TAMARICACEAE

- **TAMARIX RAMOSISSIMA* Ledeb. Large shrub. Infrequently established in riparian woodlands at scattered sites. *Boyd & Ross 7131*.

URTICACEAE

- HESPEROCNIDE TENELLA* Torrey Annual. Occasional in shaded, mesic understory of scrub and woodland habitats. *Boyd, Ross, & Bramlet 7359*.
- PARIETARIA HESPERA* B. D. Hinton var. *CALIFORNICA* B. D. Hinton Annual. Occasional in shaded, mesic understory of scrub and woodland habitats. *Boyd 6877*.

URTICA DIOICA L. ssp. HOLOSERICA (Nutt.) Thorne Perennial herb. Apparently uncommon; encountered only sporadically along San Mateo and Morrell cyns. Surprising in its apparent scarcity, it seems to be replaced in typical streamside habitats by *Datisca glomerata*. Boyd, Ross, & Bramlet 7660.

*URTICA URENS L. Annual. Apparently uncommon; moist sand along stream in Devil Cyn. Boyd, Ross, & K. McCulloh 6731.

VALERIANACEAE

PLECTRITIS CILIOSA (E. Greene) Jepson ssp. INSIGNIS (Suksd.) D. Morrey Annual. Occasional to locally common in grassy openings within scrub and oak woodland habitats. Boyd, Ross, & Mistretta 6761.

VERBENACEAE

VERBENA LASIOSTACHYS Link var. LASIOSTACHYS Suffrutescent perennial. Occasional along streams. Boyd & Ross 7591.

VIOLACEAE

VIOLA PEDUNCULATA Torrey & A. Gray Perennial herb. Occasional to locally common in native grassland and mesic, grassy openings in scrub and oak woodland habitats. Boyd, Ross, & Mistretta 6752A.

VIOLA PURPUREA Kellogg ssp. QUERCETORUM (M. Baker & J. Clausen) R. J. Little Perennial herb. Apparently uncommon and local; openings in oak woodland and chaparral in the northern portion of the wilderness. Boyd 6790.

VISCACEAE

PHORADENDRON MACROPHYLLUM (Engelm.) Cockerell Parasitic perennial herb. Occasional; mostly occurring on *Platanus*, but also on *Salix* spp., *Populus* spp., and *Alnus*. Boyd, Ross, & Mistretta 6689.

PHORADENDRON VILLOSUM (Nutt.) Nutt. Parasitic perennial herb. Relatively uncommon and local on *Quercus* spp. Boyd & Ross 7212.

VITACEAE

VITIS GIRDIANA Munson Liana. Common in riparian woodlands, particularly along margins of the larger drainages. Boyd & Ross 7150.

ANGIOSPERMAE—MONOCOTYLEDONES

AGAVACEAE

*AGAVE AMERICANA L. Succulent shrub. Persisting from cultivation about old mining homesteads in Lucas Cyn. Boyd & Ross 7469.

YUCCA WHIPPLEI Torrey ssp. WHIPPLEI [Y. wh. s. l.] Succulent shrub. Common in scrub, oak woodland, and, to a lesser degree, native grassland habitats. Most abundant on rocky, xeric slopes. Boyd & Ross 7200.

ALLIACEAE

*ALLIUM AMPELOPRASUM L. Geophyte. Established along Lucas Cyn trail near stream-crossing in Lucas Cyn. Boyd & Ross 8349.

ALLIUM HAEMATOCITON S. Watson Geophyte. Locally common on heavy soils in scrub and native grassland habitats and, occasionally, in crevices of water-smoothed bedrock outcrops along streams. Boyd & Ross 6710.

ALLIUM LACUNOSUM S. Watson var. LACUNOSUM Geophyte. Local in native grassland and adjacent chaparral, north flank of Miller Mtn. Boyd & Ross 7609.

ALLIUM PRAECOX Brandege Geophyte. Apparently uncommon, mesic openings in chaparral in Lucas Cyn. To be expected elsewhere in similar situations. Boyd & Ross 7432.

BLOOMERIA CROCEA (Torrey) Cov. var. CROCEA Geophyte. Common

in native grassland and mesic openings in scrub and oak woodland habitats. Boyd & Ross 7301.

†BRODIAEA FILIFOLIA S. Watson Geophyte. Occasional; vernal mesic, heavy soil of chaparral openings at the southeastern end of the wilderness in the Devil Cyn drainage. Included here are plants which possess relatively short filaments and long, more-or-less linear stamens. However, these plants occur in populations which apparently grade completely into the putative hybrid with *B. orcuttii*. Boyd, Mistretta, & Bramlet 7648.

†BRODIAEA FILIFOLIA × B. ORCUTTII Geophyte. Plants which possess the stamen character of *B. filifolia* and the filament length character of *B. orcuttii* may represent a natural hybrid between these two taxa. These are the most frequently encountered *Brodiaea* in the wilderness and are locally common in the native grasslands on Miller Mtn, on cobble deposits in "Miller Creek," in crevices of water-smoothed bedrock outcrops along Devil Creek, and in vernal moist rocky openings in chaparral northwest of Sky Ranch. Boyd & Ross 7289.

†BRODIAEA ORCUTTII (E. Greene) Baker Geophyte. A few plants on Miller Mtn and along "Miller Creek" may have flowers bearing long staminal filaments and lacking the stamens, and would therefore correspond morphologically to this species. However, these populations apparently grade completely into the putative hybrid with *B. filifolia*. Boyd & Ross 7596.

BRODIAEA TERRESTRIS Kellogg ssp. KERNENSIS (Hoov.) T. Niehaus Geophyte. Local about a seepage in native grassland on the north flank of Miller Mtn. Boyd & Ross 7604.

DICHELSTEMMA PULCHELLUM (Salisb.) Heller var. PULCHELLUM [*D. capitatum* Alph. Wood ssp. c.] Geophyte. Common to locally abundant in scrub, woodland, and native grassland habitats. Boyd & Ross 7250.

MUILLA MARITIMA (Torrey) S. Watson Geophyte. Infrequent to locally common in scrub and native grassland habitats, especially in the native grasslands of Miller Mtn. Boyd 6978.

AMARYLLIDACEAE

*CALLICORE ROSEA Link Geophyte. Forming a large, well-established colony in oak woodland about old mining homestead in Lucas Cyn. Boyd & Ross 7482.

*NARCISSUS TAZETTA L. Geophyte. Locally established in oak woodland about old mining homestead in Lucas Cyn. Boyd & Ross 7466.

ASPHODELACEAE

*ALOE ARBORESCENS Miller Succulent shrub. Persisting from cultivation about old mining homestead in Lucas Cyn. Boyd & Ross 7481.

*ALOE CHABAUDII Schönl. vel aff. Succulent perennial. Persisting from cultivation about old mining homestead in Lucas Cyn. Boyd & Ross 7470.

*ALOE SAPONARIA (Ait.) Haworth vel aff. Succulent perennial. Persisting from cultivation about old mining homesteads in Lucas Cyn, and apparently spreading into surrounding native vegetation. Boyd & Ross 7471.

CYPERACEAE

CAREX ATHROSTACHYA Olney vel aff. Perennial herb. Apparently uncommon along streams, as in "Miller Cyn" and Devil Cyn. Boyd, Ross, & M. Wall 7499.

CAREX BARBARAE Dewey Perennial herb. Occasional along streams throughout the wilderness. Boyd, Ross, & M. Wall 7505.

CAREX SCHOTTII Dewey Perennial herb. Apparently local, as along stream in Devil Cyn. Boyd, Ross, & M. Wall 7522.

CAREX SENTA Boott Perennial herb. Occasional in canyon bottoms, but mostly on lower benches in understory of oak woodland where it may be locally abundant. Boyd, Ross, & Bramlet 7664.

- CAREX SPISSA L. Bailey Perennial herb. Occasional along streams and about seepages. *Boyd, Ross, & Bramlet 7375.*
- CAREX TRIQUETRA Boott Perennial herb. Local at scattered sites in scrub and oak woodland habitats. *Boyd, Ross, & Bramlet 7311.*
- CYPERUS ERAGROSTIS Lam. Annual. Common along larger streams such as San Mateo and Devil creeks. *Boyd & Ross 7134.*
- CYPERUS SQUARROSUS L. Annual. Local in vernal seepage in chaparral along Tenaja Trail, north of its jtn with Morgan Trail. *Boyd & Ross 7391.*
- ELEOCHARIS ACICULARIS (L.) Roemer & Schultes var. BELLA Piper Annual. Local in vernal seepage in chaparral along Tenaja Trail, north of its jtn with Morgan Trail. *Boyd & Ross 7392.*
- ELEOCHARIS MACROSTACHYA Britton Perennial herb. Common along streams and about seepages. *Boyd, Ross, & M. Wall 7530.*
- ELEOCHARIS MONTEVIDENSIS Kunth Perennial herb. Common along streams and about seepages. *Boyd & Ross 7115.*
- ELEOCHARIS RADICANS (Poiret) Kunth Perennial herb. Local about a spring at the head of "Miller Cyn" on the south flank of Miller Mtn. *Boyd & Ross 7617.*
- SCIRPUS ACUTUS Muhlenb. ex Bigelow var. OCCIDENTALIS (S. Watson) Beetle Aquatic perennial herb. Occasional along streams in the larger drainages such as San Mateo and Devil cyns. *Boyd, Ross, & Bramlet 7318A.*
- SCIRPUS CERNUUS Vahl Annual. Localized on a seepage in lower Wildhorse Cyn. *Boyd, Ross, & Bramlet 7374.*
- SCIRPUS MICROCARPUS C. Presl Perennial herb. Occasional to locally common on moist sand and in slow-moving water near stream margins. *Boyd & Ross 7136.*
- SCIRPUS PUNGENS Vahl Aquatic perennial herb. Apparently uncommon; slow moving water in lower San Mateo Cyn. To be expected elsewhere in similar situations. *Boyd & Ross 7151.*

HYACINTHACEAE

- CHLOROGALUM PARVIFLORUM S. Watson Geophyte. Occasional; usually on heavy soil in scrub and native grassland habitats. *Boyd & Ross 7585.*
- CHLOROGALUM POMERIDIANUM (DC.) Kunth var. POMERIDIANUM Geophyte. Occasional in scrub, oak woodland, and native grassland habitats. *Boyd & Ross 7594.*

IRIDACEAE

- *IRIS XGERMANICA L. Perennial herb. Persisting from cultivation about old mining homestead in Lucas Cyn. *Boyd & Ross 7479.*
- SISYRINCHIUM BELLUM S. Watson Geophyte. Common to locally abundant in native grassland and mesic, grassy openings in scrub and woodland habitats. *Boyd & Ross 7167.*

JUNCACEAE

- JUNCUS BUFONIUS L. var. BUFONIUS Annual. Common in moist soil along streams and vernal moist areas in scrub, woodland, and native grassland habitats. *Boyd, Ross, & M. Wall 7531.*
- JUNCUS EFFUSUS L. var. PACIFICUS Fern. & Wieg. Perennial herb. Apparently uncommon; wet sand along streams in Devil and lower San Mateo cyns. To be expected elsewhere in similar situations. *Boyd, Ross, & M. Wall 7494.*
- JUNCUS MACROPHYLLUS Cov. Perennial herb. Common in moist soil along streams, about seepages, and in vernal moist areas in scrub, woodland, and native grassland habitats. *Boyd, Ross, & M. Wall 7543.*
- JUNCUS MEXICANUS Willd. ex Roemer & Schultes Perennial herb. Occasional in moist soil along streams, about seepages, and in understory of oak woodland on lower alluvial benches. *Boyd & Ross 7251.*
- JUNCUS PATENS E. Meyer Perennial herb. Apparently uncommon in moist sand along Devil Creek. To be expected elsewhere in similar situations. *Boyd, Ross, & M. Wall 7529.*

- JUNCUS RUGULOSUS Engelm. Perennial herb. Common along streams and about seepages. *Boyd, Ross, & M. Wall 7528.*
- JUNCUS TEXTILIS Buchenau Perennial herb. Occasional to locally common; mostly on lower alluvial benches in oak and riparian woodland understory, and about seepages in scrub habitats. *Boyd & Ross 7406.*
- JUNCUS TIEHMII Ertter Annual. Local in vernal seepage in chaparral along Tenaja Trail, north of its jtn with Morgan Trail. To be expected elsewhere in similar situations. *Boyd & Ross 7390.*
- JUNCUS XIPHIODES E. Meyer Perennial herb. Occasional in moist sand and slow-moving water along streams. *Boyd, Ross, & Mistretta 7699.*

LEMNACEAE

- LEMNA MINOR L. Aquatic herb. Scarce and local in shallow pools along the stream in upper Morrell Cyn. To be expected more widely in small, protected pools and near margins of slow-moving streams. *Boyd, Ross, & T. Columbus 8198.*

LILIACEAE

- CALOCHORTUS ALBUS Douglas ex Benth. Geophyte. Uncommon at scattered sites; mesic, often grassy, openings in scrub habitats. *Boyd & Mistretta 7074.*
- CALOCHORTUS SPLENDENS Douglas ex Benth. Geophyte. Common in scrub and native grassland habitats. *Boyd & Ross 7199.*
- CALOCHORTUS WEEDII Alph. Wood var. WEEDII Geophyte. Locally common on xeric, rocky slopes in scrub habitats of upper San Mateo, Devil, Lucas, and Aliso cyns. To be expected in similar situations, although possibly absent from areas of granitic substrates. *Boyd & Ross 7624.*
- FRITILLARIA BIFLORA Lindley var. BIFLORA Geophyte. Local in areas of heavy clay soils in native grassland, as at Oak Flats and on Miller Mountain; also in mesic chaparral understory, as along Lucas Cyn and Indian Potrero trails. *Boyd & Mistretta 7013.*
- LILIUM HUMBOLDTII Roehl & Leichtlin ssp. OCELLATUM (Kellogg) Thorne Geophyte. Infrequent to locally common in understory of oak woodland along larger drainages. *Boyd & D. Banks 8332.*

MELANTHIACEAE

- ZIGADENUS FREMONTII (Torrey) Torrey ex S. Watson var. FREMONTII Geophyte. Infrequent to locally common in understory of chaparral. *Boyd 6834.*

ORCHIDACEAE

- EPIPACTIS GIGANTEA Douglas ex Hook. Perennial herb. Locally common along San Mateo Creek downstream from its confluence with Los Alamos Creek. To be expected in other perennially wet areas including seepages. *Boyd, Ross, & Bramlet 7315.*
- PIPERIA COOPERI (S. Watson) Rydb. Geophyte. Local in understory of mesic chaparral and oak woodland at scattered sites. *Boyd & Ross 7232.*

POACEAE

- AGROSTIS DIEGOENSIS Vasey [A. pallens Trinius s. l.] Perennial herb. Common, mostly in relatively mesic situations in scrub and oak woodland habitats. *Boyd & Ross 7111.*
- AGROSTIS EXARATA Trinius Perennial herb. Apparently uncommon; a few robust plants were encountered in a seasonally moist opening in chaparral near Sky Ranch at the southeastern edge of the wilderness. *Boyd & Ross 7595.*
- *AIRA CARYOPHYLLEA L. Annual. Locally common in mesic openings in scrub and woodland habitats. *Boyd, Ross, & M. Wall 7510.*
- ARISTIDA ADSCENSIONIS L. Annual. Apparently uncommon on xeric boulder outcrops at Tenaja Falls and on the south flank of Miller Mtn. *Boyd & Ross 7290.*

- **AVENA BARBATA* Link Annual. Common in grasslands, openings in scrub and woodland habitats, and on recent burns and other disturbed situations. *Boyd & Ross 7095*.
- **AVENA FATUA* L. Annual. Common in grasslands, openings in scrub and woodland habitats, and on recent burns and other disturbed situations. *Boyd, Ross, & Mistretta 6684*.
- BOTHRIOCHLOA BARBINODIS* (Lagasca) Herter Perennial herb. Apparently uncommon at widely scattered sites; generally encountered in crevices of water-smoothed boulder outcrops along streams. *Boyd, Ross, & Mistretta 6697*.
- BROMUS ANOMALUS* Rupr. ex Fourn. Perennial herb. Apparently uncommon; openings in oak woodland as at "Potrero Escondido." *Boyd & Ross 7633*.
- **BROMUS ARENARIUS* Labill. Annual. Apparently rather local in oak woodland understory as in upper Bluewater Cyn, lower Wildhorse Cyn, and "Potrero Escondido." *Boyd, Ross, & Bramlet 7367*.
- BROMUS CARINATUS* Hook. & Arn. var. *CARINATUS* Annual. Local and scattered in scrub and oak woodland habitats. *Boyd & Ross 7280*.
- **BROMUS DIANDRUS* Roth Annual. Occasional to locally common, especially in somewhat disturbed situations in scrub, woodland, and grassland habitats. *Boyd & Ross 7129*.
- BROMUS GRANDIS* (Shear) A. Hitchc. Perennial herb. Occasional at scattered sites. Usually occurring in chaparral and oak woodland habitats. *Boyd, Ross, & Bramlet 7345*.
- **BROMUS HORDEACEUS* L. Annual. Common to locally abundant in scrub, woodland, and grasslands. Often replacing *B. madritensis* ssp. *rubens* in more mesic situations and on heavier soils. *Boyd 6785*.
- **BROMUS MADRITENSIS* L. ssp. *RUBENS* (L.) Husnot Annual. Common to locally abundant in scrub, woodland, and grassland habitats. Tending to favor sandier soils than *B. hordeaceus*, and becoming especially dense in heavily disturbed situations. *Boyd & Ross 7097*.
- **BROMUS TECTORUM* L. Annual. Occasional at scattered sites, but mostly in grassy openings in oak woodland habitats. *Boyd, Ross, & Bramlet 7381*.
- **CYNODON DACTYLON* (L.) Persoon Perennial herb. Apparently rather uncommon at scattered sites; mostly in disturbed areas in scrub and woodland habitats, and in moist soil along streams. *Boyd & Mistretta 7046*.
- **CYNOSURUS ECHINATUS* L. Annual. Occurring sporadically in disturbed understory of oak woodland and on moist soil along streams at scattered sites. *Boyd, Ross, & M. Wall 7523*.
- **DACTYLIS GLOMERATA* L. Perennial. Apparently uncommon about a spring on the southwest flank of Miller Mtn. *Boyd et al. 8288*.
- DESCHAMPSIA DANTHONIODES* (Trinius) Munro ex Benth. Annual. Locally common in vernal moist swales in native grassland, southern flank of Miller Mtn. *Boyd et al. 8294*.
- DISTICHLIS SPICATA* (L.) E. Greene Perennial herb. Apparently uncommon; encountered in a springy area along a small stream at Oak Flats. To be expected about other subalkaline springs and seepages. *Boyd & Ross 7252*.
- ELYMUS CONDENSATUS* C. Presl [*Leymus c.* (C. Presl) A. Löve] Perennial herb. Occasional to locally common in scrub, woodland, and grassland habitats. *Boyd & Ross 7632*.
- ELYMUS CONDENSATUS* × *E. TRITICOIDES* [*Leymus* × *multiflorus* (Gould) Barkworth & D. R. Dewey] Perennial herb. Local in oak woodland understory in upper Morrell Cyn where it was closely associated with both putative parental taxa, as well as *E. glaucus* ssp. *glaucus*. *Boyd, Ross, & T. Columbus 8196A*.
- ELYMUS GLAUCUS* Buckley ssp. *GLAUCUS* Perennial herb. Occasional to locally common, primarily in understory of oak woodlands. *Boyd, Ross, & M. Wall 7527*.
- ELYMUS MULTISETUS* (J. G. Smith) Burrill Davy Perennial herb. Apparently rather local in native grassland, as at Miller Mtn and "Potrero Escondido." *Boyd & Ross 7607*.
- ELYMUS TRITICOIDES* Buckley [*Leymus t.* (Buckley) Pilger] Perennial herb. Apparently uncommon at scattered sites; colonial on benches within oak and riparian woodlands. *Boyd, Ross, & Bramlet 7333*.
- ERAGROSTIS PECTINACEA* (Michaux) Nees Annual. Apparently uncommon in moist soil along Devil Creek. To be expected in similar situations elsewhere. *Boyd, Ross, & M. Wall 7493*.
- **FESTUCA ARUNDINACEA* Schreber Perennial herb. Apparently uncommon; moist sand along San Mateo Creek upstream from Fisherman's Camp. *Boyd, Ross, & Bramlet 7338*.
- **GASTRIDIVM VENTRICOSUM* (Gouan) Schinz & Thell. Annual. Occasional to locally common in grasslands and in grassy openings amid scrub and woodland habitats. *Boyd & Ross 7107*.
- HORDEUM DEPRESSUM* (Scribner & J. G. Smith) Rydb. Annual. Apparently uncommon; moist swales in native grassland about Oak Flats, and moist sand along "Miller Creek." *Boyd & Ross 7176A*.
- **HORDEUM MURINUM* L. ssp. *LEPORINUM* (Link) Arcang. Annual. Occasional in somewhat disturbed situations within scrub, woodland, and grassland habitats. *Boyd, Ross, & Mistretta 6767*.
- **HORDEUM MURINUM* L. ssp. *MURINUM* Annual. Apparently uncommon; disturbed oak woodland understory in the Oak Flats area. *Boyd & D. Banks 8273*.
- **HORDEUM VULGARE* L. var. *TRIFURCATUM* (Schlecht.) Alefeld Annual. Apparently uncommon; a few plants encountered in disturbed native grassland on the south flank of Miller Mtn. *Boyd & Ross 7614*.
- KOELERIA MACRANTHA* (Ledeb.) Sprengel Perennial herb. Occasional in grassy openings in scrub and woodland habitats, and in native grasslands. *Boyd & Ross 7177B*.
- **LAMARCKIA AUREA* (L.) Moench Annual. Occasional in the wilderness, mostly in xeric openings in scrub and grassland habitats. *Boyd 7724*.
- LEPTOCHLOA UNINERVIA* (C. Presl) A. Hitchc. & Chase Annual or perennial herb. Relatively uncommon along streams, as in San Mateo and "Miller" cyns. *Boyd, Ross, & M. Wall 7554*.
- **LOLIUM PERENNE* L. ssp. *MULTIFLORUM* (Lam.) Husnot [*L. m.* Lam.] Annual or biennial. Common to locally abundant in moist swales and along seasonal streams within grasslands; occasionally in openings of scrub and woodland habitats. *Boyd & Ross 7173*.
- **LOLIUM TEMULENTUM* L. Annual. Apparently uncommon in grassland, as on the north flank of Miller Mtn. *Boyd & Ross 7608*.
- MELICA FRUTESCENS* Scribner Perennial herb. Infrequent at scattered sites on fairly xeric slopes amid scrub, as in lower Aliso, lower Devil, and lower Wildhorse cyns. *Boyd, Ross, & Bramlet 7378*.
- MELICA IMPERFECTA* Trinius Perennial herb. Common in scrub, woodland, and grassland habitats, especially in more mesic situations. *Boyd, Ross, & M. Wall 7535*.
- MUHLBERGIA MICROSPERMA* (DC.) Trinius Annual. Local on fairly xeric slopes at scattered sites throughout the wilderness. *Boyd & Ross 7100*.
- MUHLBERGIA RIGENS* (Benth.) A. Hitchc. Perennial herb. Occasional to locally common on low benches and gravel deposits along streams, about seepages, and in moist swales in native grassland. Small poteros dominated by this tussock-forming species are occasionally encountered in the wilderness and form a habitat of very distinctive appearance. *Boyd, Ross, & Bramlet 7689*.
- PANICUM CAPILLARE* L. Annual. Occasional in moist soil along San Mateo Creek. To be expected elsewhere in similar habitats. *Boyd & Mistretta 7051*.
- PASPALUM DISTICHUM* L. Perennial herb. Common in slow-moving water of larger streams. *Boyd, Ross, & Mistretta 7700*.
- **PHALARIS AQUATICA* L. Perennial herb. Apparently uncommon at widely scattered sites, such as Lucas Cyn and on the summit of Miller Mtn. Generally occurring in disturbed areas of scrub, woodland, and grassland habitats. *Boyd & Ross 7450*.
- **PHALARIS MINOR* Retz. Annual. Apparently uncommon in moist soil along Devil Creek. To be expected elsewhere in similar situations as well as in disturbed grasslands. *Boyd, Ross, & M. Wall 7519*.

- **PHALARIS PARADOXA* L. Annual. Apparently uncommon in moist soil along Devil Creek. To be expected elsewhere in similar situations and in disturbed grasslands. *Boyd, Ross, & M. Wall* 7540.
- **PIPTATHERUM MILLACEUM* (L.) Cosson Perennial herb. Infrequent, but widely scattered on moist soil along streams and in somewhat disturbed areas in scrub and woodland habitats. *Boyd, Ross, & Bramlet* 7322.
- **POA ANNUA* L. Annual. Locally common at scattered sites. Generally occurring in areas of cattle grazing, and sporadically in moist soil along streams, as well as other vernal moist or springy places. *Boyd* 6816.
- POA SECUNDA* C. Presl ssp. *SECUNDA* Perennial herb. Common and widespread in scrub, oak woodland, and native grassland habitats. *Boyd* 6835.
- **POLYPOGON MONSPELIENSIS* (L.) Desf. Annual. Common in moist soil along streams, about seepages, and in vernal moist areas in scrub and woodland habitats. *Boyd, Ross, & Bramlet* 7321.
- **POLYPOGON VIRIDIS* (Gouan) Breistr. Annual to perennial herb. Occasional in moist sand along streams. *Boyd, Ross, & M. Wall* 7498.
- **SCHISMUS ARABICUS* Nees Annual. Local along the Verdugo Trail near trailhead in the Verdugo Potrero area, and to be expected elsewhere. *Boyd & Ross* 7264.
- **SCHISMUS BARBATUS* (L.) Thell. Annual. Occasional; mostly in xeric openings in scrub habitats, in annual grasslands, and along trails and other cleared areas. *Boyd & Ross* 6661.
- STIPA CORONATA* Thurber var. *CORONATA* [*Achnatherum coronatum* (Thurber) Barkworth] Perennial herb. Common in xeric, rocky areas in open scrub habitats. *Boyd, Ross, & Bramlet* 7366.
- STIPA LEPIDA* Hitchc. [*Nassella l.* (Hitchc.) Barkworth] Perennial herb. Common and widespread in scrub, oak woodland, and native grassland habitats. *Boyd & Mistretta* 7052.
- STIPA PULCHRA* Hitchc. [*Nassella p.* (Hitchc.) Barkworth] Perennial herb. Locally common in areas of native grassland, as about Oak Flats, "Potrero Escondido," and Miller Mtn. *Boyd & Ross* 7254.
- **TRITICUM AESTIVUM* L. Annual. Waif in a disturbed area near Verdugo Potrero. *Boyd & D. Banks* 8274.
- **VULPIA BROMOIDES* (L.) S. F. Gray Annual. Common in openings of scrub and woodland habitats, and in native grasslands. *Boyd, Ross, & Bramlet* 7325.
- VULPIA MICROSTACHYS* (Nutt.) Munro ex Benth. var. *PAUCIFLORA* (Beal) Lonard & Gould Annual. Infrequent to occasional; grassy openings in scrub and oak woodland habitats, but tending to be more common in native grasslands. *Boyd & Ross* 7306.
- **VULPIA MYUROS* (L.) C. Gmelin var. *HIRSUTA* (Hackel) Asch. & Graebner Annual. Common; openings in scrub and woodland habitats, and in native grasslands. Often intermixed with var. *myuros*. *Boyd & D. Banks* 8268.
- **VULPIA MYUROS* (L.) C. Gmelin var. *MYUROS* Annual. Common; openings in scrub and woodland habitats, and in native grasslands. Often intermixed with var. *hirsuta*. *Boyd & W. Appleby* 7972.
- VULPIA OCTOFLORA* (Walter) Rydb. var. *HIRTELLA* (Piper) Henrard Annual. Infrequent to occasional; grassy openings in scrub and oak woodland habitats, and in native grasslands. *Boyd* 6827.

POTAMOGETONACEAE

- POTAMOGETON FOLIOSUS* Raf. var. *FOLIOSUS* Aquatic perennial herb. Apparently uncommon; encountered in bedrock pools in central Devil Cyn, and San Mateo Cyn at its confluence with Bluewater Cyn. To be expected in similar pool habitats elsewhere in the wilderness. *Boyd* 8387.

TYPHACEAE

- TYPHA DOMINGENSIS* Persoon Aquatic perennial herb. Common in slow-moving water and pools along streams. *Boyd, Ross, & Bramlet* 7671.

TYPHA LATIFOLIA L. Aquatic perennial herb. Occasional in slow-moving water and pools along streams. *Boyd, Ross, & Bramlet* 7670.

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