FLx, "Sensitive Plant Species Surveys: Santa Clara River" (2004; 2004A)

SENSITIVE PLANT SPECIES SURVEYS

SANTA CLARA RIVER
NEWHALL RANCH/VALENCIA COMPANY PROJECT SITES
LOS ANGELES COUNTY, CALIFORNIA

Submitted to:

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1. INTRODUCTION

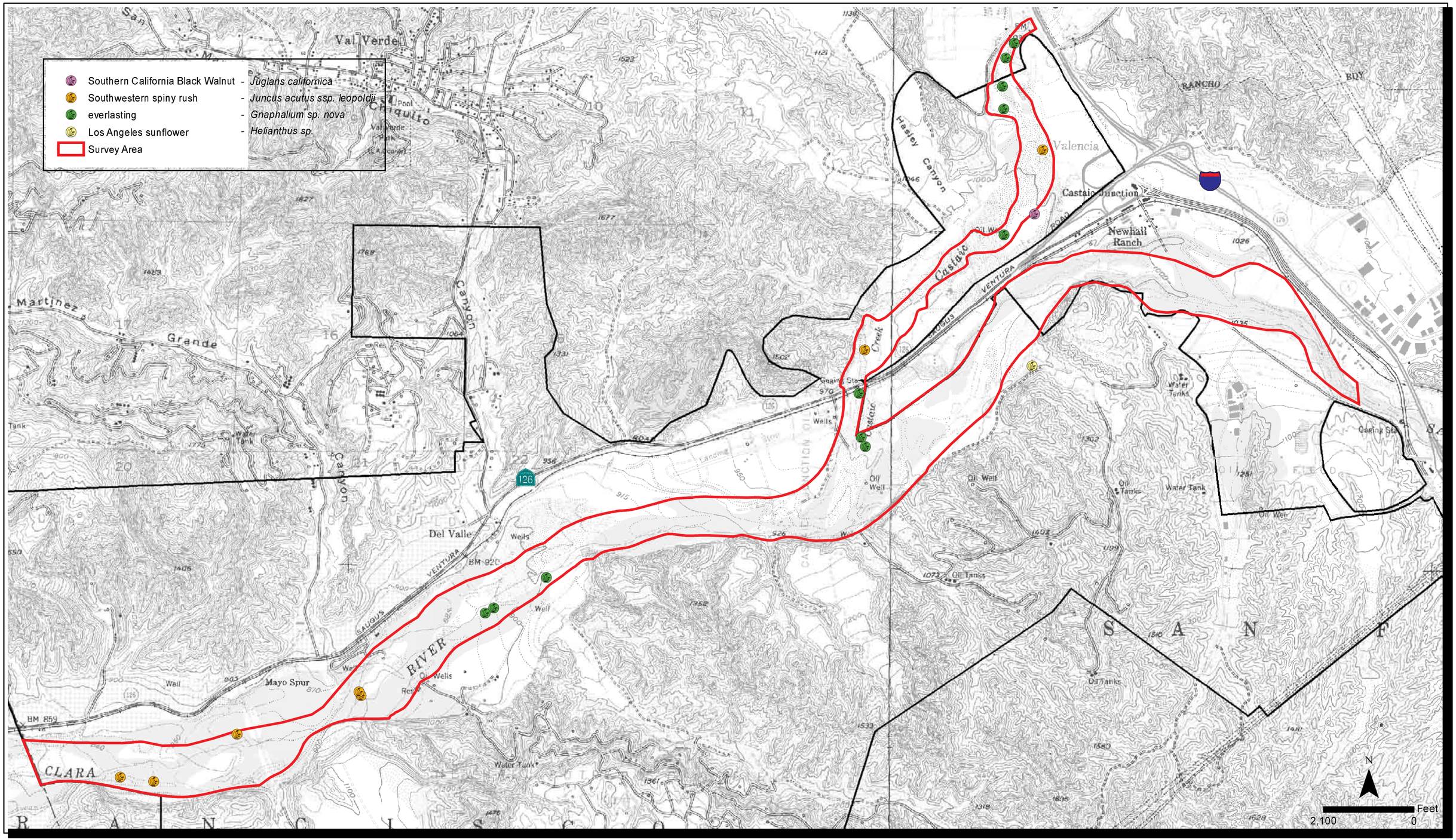
The Santa Clara River in the Newhall Ranch/Valencia Company project area, Los Angeles County, California, was surveyed for sensitive plant species and vegetation types in 2004. The area surveyed in the main channel of the river extended from the Water Reclamation Plant, located at Rye Canyon Road south of the junction of Interstate 5 and State Highway 126, westwards to the Los Angeles/Ventura County line. In addition, the tributary Castaic Creek was surveyed from Interstate 5 southwest to its confluence with the main river channel (Figure 1). The length of the Santa Clara River surveyed was approximately 6.8 miles, and that of Castaic Creek was about 2.6 miles. In both these riparian corridors, the extent of surveys included the scoured channel bottom, sandbars and islands in the channel, and low terraces at the immediate edge of the channels. Agricultural activities currently constitute the primary land use in most of the surrounding area.

A team of two consultants from FL*x* (Dr. Anuja Parikh and Dr. Nathan Gale) conducted the vegetation and sensitive plant species surveys in two phases. The first survey was carried out from May 31 through June 3, and from June 15 through June 17, 2004. The second survey was conducted from September 8 through September 10, and from September 13 through September 16. The focus of the first survey phase was for spring-flowering plants, in particular for spineflowers, including the slender-horned spineflower (*Dodecahema leptoceras*) and San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*). The focus of the second survey phase was primarily for the late-flowering Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*). A list of plant species observed in both drainages, including sensitive and commonly occurring plants, was compiled (see Appendix). Plant community descriptions in this report follow Holland (1986) where applicable; species nomenclature follows Hickman (1993).

2. VEGETATION TYPES AND PLANT SPECIES ASSOCIATIONS

The main channel of the Santa Clara River had flowing water throughout its length during both survey periods. Numerous braided secondary channels also were present; some of these had flowing water, some had ponded water, and some had saturated soils. Castaic Creek had very little flowing water during the survey periods, and had a few areas with ponded water or saturated soils. These wetter areas occurred primarily just upstream of the confluence of Castaic Creek and the river. Similar vegetation types exist in both survey corridors, but corresponding with hydrology, the main river channel had more and larger areas with marsh vegetation. Plant communities common to the two survey corridors include riverwash, freshwater marsh, mule fat scrub, and southern cottonwood-willow riparian forest. In addition, two other scrub communities, southern willow scrub and southern riparian scrub, were observed in the Santa Clara River.

Riverwash. In areas where scouring has occurred, the main channel of the Santa Clara River is relatively sparsely vegetated. Similarly, the northern part of Castaic Creek lacks continuous vegetation cover. The soils in these scoured areas are sandy riverwash and gravel, and in places form sand bars and low terraces within the channels. No well-defined plant community is found here, although scattered elements of riparian scrub were observed. Shrub species found in and adjacent to the channel include mule fat (*Baccharis salicifolia*), narrow-leaved willow (*Salix exigua*), Mediterranean tamarisk (*Tamarix ramosissima*), scale-broom (*Lepidospartum squamatum*), sandwash groundsel (*Senecio flaccidus* var. *douglasii*), tree tobacco (*Nicotiana glauca*), giant reed (*Arundo donax*), big saltbush (*Atriplex lentiformis* ssp. *lentiformis*), and Great Basin sagebrush (*Artemisia tridentata* ssp. *parishii*). Other plants growing in these areas include white



Sensitive Plant Surveys - Santa Clara River - Newhall Ranch/Valencia Company Project Sites

2004 Sensitive Plant Occurrence Data

FIGURE 1

sweetclover (*Melilotus alba*), annual bur-sage (*Ambrosia acanthicarpa*), cocklebur (*Xanthium strumarium*), hairy goldenaster (*Heterotheca sessiliflora* ssp. *fastigiata*), California croton (*Croton californicus*), buckwheat (*Eriogonum baileyi* var. *baileyi*), California evening primrose (*Oenothera californica* ssp. *californica*), Mediterranean schismus (*Schismus barbatus*), and foxtail chess (*Bromus madritensis* ssp. *rubens*).

Freshwater Marsh. Relatively extensive wet areas of the main and secondary channels of the Santa Clara River, and the southernmost part of Castaic Creek have freshwater marsh vegetation. This community typically is dominated by emergent perennial monocots, often up to 5 meters tall and forming closed canopies. Marshes are found on relatively deep organic soils on sites permanently flooded with fresh water (Holland, 1986). Species found in the wettest parts of the survey area are cattails (*Typha latifolia, T. domingensis*), bulrushes (*Scirpus americanus, S. acutus* var. *occidentalis, S. maritimus*), smartweeds (*Polygonum lapathifolium, P. punctatum, P. persicaria*), nutsedges (*Cyperus odoratus, C. eragrostis, C. involucratus*), water speedwell (*Veronica anagallis-aquatica*), water cress (*Rorippa nasturtium-aquaticum*), yellow waterweed (*Ludwigia peploides* ssp. *peploides*), Mexican sprangletop (*Leptochloa uninervia*), cocklebur (*Xanthium strumarium*), and barnyard grass (*Echinochloa crus-galli*).

Mule Fat Scrub. This community mostly is found in linear patches along the main and secondary channels of the Santa Clara River and in the northern part of Castaic Creek. Mule fat scrub typically is a tall, semi-woody and herbaceous riparian scrub, and is relatively species-poor. An early seral community, it often grades to riparian woodland or forest (Holland, 1986). The dominant species in this community is mule fat (*Baccharis salicifolia*); narrow-leaved willow (*Salix exigua*), Mediterranean tamarisk (*Tamarix ramosissima*), giant reed (*Arundo donax*), tree tobacco (*Nicotiana glauca*), and arrow weed (*Pluchea sericea*) also are common. In this community, the understory generally is sparse or absent, and includes species such as western ragweed (*Ambrosia psilostachya*), salt heliotrope (*Heliotropium curassavicum*), and annual grasses.

Southern Willow Scrub. This community occurs in a limited zone of the Santa Clara River survey area, mostly in the eastern part near Castaic Junction, where the river turns from a northeasterly to a southwesterly direction. The floodplain here is dominated by relatively dense, even-aged stands of southern willow scrub. Willow scrub is a broadleaved, winter-deciduous riparian community, typically too dense to allow understory development. It is a relatively early seral community, succeeding to cottonwood-sycamore forests (Holland, 1996). In this portion of the survey area, saplings and small trees of arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*), and shining willow (*Salix lucida* ssp. *lasiandra*) are found, with some tree tobacco (*Nicotiana glauca*) at the edges. The understory generally is sparse or absent.

Southern Riparian Scrub. This community is found on low, flat terraces of the Santa Clara River, adjacent to the channel. A combination of mule fat scrub and southern willow scrub species is found on the terraces, including mule fat (*Baccharis salicifolia*), willows (*Salix exigua, S. laevigata*), scale-broom (*Lepidospartum squamatum*), tree tobacco (*Nicotiana glauca*), and giant reed (*Arundo donax*). In addition, other native species include California-aster (*Lessingia filaginifolia* var. *filaginifolia*), California broom (*Lotus scoparius* var. *scoparius*), telegraph weed (*Heterotheca grandiflora*), Great Basin sagebrush (*Artemisia tridentata* ssp. *parishii*), sandwash groundsel (*Senecio flaccidus* var. *douglasii*), thickleaf yerba santa (*Eriodictyon crassifolium* var. *nigrescens*), California buckwheat (*Eriogonum fasciculatum* var. *foliolosum*), and chollas (*Opuntia littoralis, O. parryi*). Introduced annual grasses also are present in the understory of southern riparian scrub.

Southern Cottonwood-Willow Riparian Forest. This community occurs on terraces above the main channel of the Santa Clara River, and dominates the Castaic Creek channel and terraces. It consists of tall, open, broadleaved, winter-deciduous trees, and is dominated by Fremont cottonwood (*Populus fremontii* ssp. *fremontii*) and willows (*Salix lasiolepis, S. laevigata, S. exigua*). These species require moist, bare mineral soil for germination and establishment, provided after floodwaters recede; this forest type therefore is found mostly along perennially wet streams (Holland, 1996). Understory plants in this community in the survey area include mule fat (*Baccharis salicifolia*), Mexican elderberry (*Sambucus mexicana*), mugwort (*Artemisia douglasiana*), salt heliotrope (*Heliotropium curassavicum*), western ragweed (*Ambrosia psilostachya*), cocklebur (*Xanthium strumarium*), and annual grasses. In many portions of the survey corridors, the cottonwood-willow forest is degraded by the invasion of non-native plants such as giant reed (*Arundo donax*), Mediterranean tamarisk (*Tamarix ramosissima*), and tree tobacco (*Nicotiana glauca*).

3. SENSITIVE PLANT SPECIES

The sensitive plant species surveys were carried out in two phases, May/June and September, to accommodate the blooming periods of various species found in the region, or previously reported by the California Natural Diversity Database (CNDDB). The focus of the earlier survey was for spring-flowering plants, in particular for spineflowers, including the slender-horned spineflower (*Dodecahema leptoceras*) and San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*). The focus of the second survey was for late-blooming species, primarily the Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*). Populations of these species known to occur in the vicinity of the survey area or in the region were checked in the field before commencing surveys to ensure that the plants were flowering, and therefore readily visible.

A list of target species potentially occurring in the Santa Clara River survey area, including Castaic Creek, is presented in Table 1; these species were searched for during the focused sensitive plant species surveys. The species included in the table are those that occur in wetland habitats, and also sensitive upland plant species potentially occurring in the vicinity of the river survey area. Upland species are included because it is not uncommon for such plants to be washed down from higher elevations and habitats and to become established in the drier portions of the riparian corridor and the riverbed.

Two sensitive species were found in the 2004 Santa Clara River and Castaic Creek survey area: southern California black walnut (*Juglans californica*) and southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*). Both are CNPS List 4 species with no federal or state listing. CNDDB California Native Species Field Survey Forms were not completed for these plants due to their relatively low sensitivity. The observed sensitive plant species occurrences are mapped in Figure 1.

Southern California black walnut (*Juglans californica*). One southern California black walnut (*Juglans californica*) tree was found along the southern bank of Castaic Creek, west of the junction of Interstate 5 and State Highway 126. The tree occurred at the edge of cottonwood-willow forest on relatively flat terrain at an elevation of about 1,000 feet. Many trees of this species occur on the higher terraces of the Santa Clara River in the riparian forest habitat immediately adjacent to the currently-defined survey zone.

TABLE 1: SENSITIVE PLANT SPECIES POTENTIALLY OCCURRING IN THE SANTA CLARA RIVER SURVEY AREA AND VICINITY

Scientific Name	Common Name	Family	Status* Federal/State/CNPS
Arenaria paludicola	Marsh sandwort	Caryophyllaceae	FE/SE/1B
Berberis nevinii	Nevin's barberry	Berberidaceae	FE/SE/1B
Calochortus clavatus var. *gracilis*	Slender mariposa lily	Liliaceae	-/-/1B
Calochortus plummerae	Plummer's mariposa lily	Liliaceae	-/-/1B
Calochortus weedii var. *vestus*	Late-flowered mariposa lily	Liliaceae	-/-/1B
Calystegia peirsonii	Peirson's morning-glory	Convolvulaceae	-/-/4
Centromadia parryi ssp. *australis*	Southern tarplant	Asteraceae	-/-/1B
Cercocarpus betuloides var. *blancheae*	Island mountain-mahogany	Rosaceae	-/-/4
Chorizanthe parryi var. *fernandina*	San Fernando Valley spineflower	Polygonaceae	FC/SE/1B
Deinandra minthornii	Santa Susana tarplant	Asteraceae	-/SR/1B
Delphinium parryi ssp. *blochmaniae*	Dune larkspur	Ranunculaceae	FSC/-/1B
Dodecahema leptoceras	Slender-horned spineflower	Polygonaceae	FE/SE/1B
Erodium macrophyllum	Round-leaved filaree	Geraniaceae	-/-/2
Harpagonella palmeri	Palmer's grappling hook	Boraginaceae	-/-/4
Helianthus nuttallii ssp. *parishii*	Los Angeles sunflower	Asteraceae	-/-/1A
Juglans californica	Southern California black walnut	Juglandaceae	-/-/4
Juncus acutus ssp. *leopoldii*	Southwestern spiny rush	Juncaceae	-/-/4
Malacothamnus davidsonii	Davidson's bush mallow	Malvaceae	FSC/-/1B
Muhlenbergia californica	California muhly	Poaceae	-/-/4
Nama stenocarpum	Mud nama	Hydrophyllaceae	-/-/2
Navarretia setiloba	Piute Mountains navarretia	Polemoniaceae	FSC/-/1B
Nemacladus gracilis	Slender nemacladus	Campanulaceae	-/-/4
Nemophila parviflora var. *quercifolia*	Oak-leaved nemophila	Hydrophyllaceae	-/-/4
Opuntia basilaris var. *brachyclada*	Short-joint beavertail	Cactaceae	-/-/1B
Rorippa gambelii	Gambel's watercress	Brassicaceae	FE/ST/1B
Senecio aphanactis	Rayless ragwort	Asteraceae	-/-/2
Sidalcea neomexicana	Salt spring checkerbloom	Malvaceae	-/-/2
Thelypteris puberula var. *sonorensis*	Sonoran maiden fern	Thelypteridaceae	-/-/2

* - = No listing
FE = Federal endangered
FT = Federal threatened
FC = Federal candidate
FSC = Federal species of concern
SE = State/California endangered
ST = State/California threatened
SR = State/California rare
1A = CNPS List 1A, plants presumed extinct in California
1B = CNPS List 1B, plants rare, threatened, or endangered in California and elsewhere
2 = CNPS List 2, plants rare, threatened, or endangered in California, but more common elsewhere
3 = CNPS List 2, plants about which more information is needed, a review list
4 = CNPS List 4, plants of limited distribution, a watch list

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*). Five locations with a total of about 15 plants of southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*) were observed along the edges of the western portion of the Santa Clara River survey area. In the Castaic Creek survey zone, two locations of this species were seen. One population had about 50 plants; the other location had a single plant. This species generally occurred at elevations ranging from 900 feet to 1,000 feet, and was associated with mule fat (*Baccharis salicifolia*), narrow-leaved willow (*Salix exigua*), and Mediterranean tamarisk (*Tamarix ramosissima*).

Everlasting (*Gnaphalium* sp. *nova*). A previously undescribed species of everlasting (*Gnaphalium* sp. *nova*) was found in several locations in the survey area. In the past, plants of this species have been described as Sonora everlasting (*Gnaphalium leucocephalum*), which, however, does not occur in California. Two main populations of this undescribed species, totaling about 600 individuals, were documented in 2003 in the Santa Clara River and in Castaic Creek south of State Highway 126 (Dudek and Associates, 2004). In the current 2004 surveys, these two occurrences were noted again with about 700 plants. In addition, a population of about 250 individuals was observed in the portion of Castaic Creek west of the Interstate 5 bridge and east of Commerce Center Drive. Currently, this undescribed species of everlasting (*Gnaphalium* sp. *nova*) has no recognized sensitivity status.

Slender-horned spineflower (*Dodecahema leptoceras*). This species is known to occur in alluvial scrub vegetation on low terraces of drainages. Species associates include lastarriaea (*Lastarriaea coriacea*), red-stemmed filaree (*Erodium cicutarium*), valley lessingia (*Lessingia glandulifera* var. *glandulifera*), and Mediterranean schismus (*Schismus barbatus*). A known location (not on Newhall property) of this sensitive species was checked in May 2004 as a reference. A few plants of the species had germinated and were flowering. If slender-horned spineflower (*Dodecahema leptoceras*) exists in the Santa Clara River and Castaic Creek survey areas, where some limited potential habitat is present, it should have been observable in 2004, but it was not found.

San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*). Many populations of this species occur on Newhall property in upland coastal sage scrub and grassland vegetation near the Santa Clara River and Castaic Creek survey areas. Since the year 2000, when it was found on Newhall Ranch, extensive surveys have been conducted each year for the San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*). In Spring 2004, the plants were smaller and fewer than in 2003, but were flowering and identifiable. Potential habitat exists on the upper terraces of the Santa Clara River and Castaic Creek survey areas, and it is possible that plants could wash down from adjacent upland populations. If San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) exists in the survey area, it should have been observable, but it was not found. A few scattered plants of the common species Turkish rugging (*Chorizanthe staticoides*) were the only spineflowers observed in the survey area.

Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*). In June 2002, a sunflower species was found in a spring-fed marsh on Newhall Ranch property on the south bank of the Santa Clara River, and was thought possibly to be the presumed-extinct Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*). Following later field visits in August and September when the plants were flowering, samples were sent for

identification to experts at University of California, Berkeley, Indiana University, and Rancho Santa Ana Botanic Garden (RSABG). The plants were identified variously as Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*), Nuttall's sunflower (*Helianthus nuttallii* ssp. *nuttallii*), and California sunflower (*Helianthus californicus*). Since 2002, staff members at RSABG have conducted investigations on the chromosome number and pollen of the Newhall sunflower plants and compared them to related taxa. The most recent report from these studies (Porter and Fraga, 2004), made available during the September 2004 surveys, concludes that the Newhall plants are not likely to be Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*). They likely represent a unique entity, but it is not known if they are a hybrid between Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*) and California sunflower (*Helianthus californicus*), or an intermediate step in the evolution of California sunflower (*Helianthus californicus*). The Newhall sunflower was not found in any new locations in the Santa Clara River or in Castaic Creek during the 2004 surveys. Habitats similar to the spring-fed marsh where the plants currently are known to occur were not observed during the field surveys. Scattered plants of the annual native common sunflower (*Helianthus annuus*) were seen in several locations in the survey area.

4. REFERENCES

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APPENDIX

PLANT SPECIES LIST,
SANTA CLARA RIVER, LOS ANGELES COUNTY, CALIFORNIA

PLANT SPECIES LIST
SANTA CLARA RIVER, LOS ANGELES COUNTY, CALIFORNIA

SCIENTIFIC NAME	COMMON NAME	GROWTH FORM	RIVER CHANNEL	CASTAIC CREEK
FERNS AND FERN-ALLIES				
Azollaceae	**Mosquito Fern Family**			
Azolla filiculoides	Pacific mosquito fern	AH, PH	✓	
Equisetaceae	**Horsetail Family**			
Equisetum hyemale ssp. *affine*	Common scouring rush	PH	✓	
Equisetum laevigatum	Smooth scouring rush	PH	✓	
ANGIOSPERMS - MONOCOTS				
Arecaceae	**Palm Family**			
*Washingtonia robusta**	Mexican fan palm	T	✓	✓
Cyperaceae	**Sedge Family**			
*Cyperus difformis**	Rice flatsedge	AH	✓	
Cyperus eragrostis	Tall umbrella-sedge	PH	✓	✓
*Cyperus involucratus**	Umbrella plant	PH	✓	✓
Cyperus odoratus	Fragrant umbrella-sedge	AH	✓	✓
Eleocharis macrostachya	Pale spikerush	PH		✓
Eleocharis montevidensis	Slender creeping spikerush	PH	✓	
Eleocharis parishii	Parish's spikerush	PH	✓	✓
Scirpus acutus var. *occidentalis*	Tule	PH	✓	✓
Scirpus americanus	Common three-square	PH	✓	✓
Scirpus californicus	California bulrush	AH	✓	
Scirpus maritimus	Saltmarsh bulrush	PH	✓	
Scirpus robustus	Coastal bulrush	PH	✓	
Scirpus saximontanus	Club-rush	AH		
Hydrocharitaceae	**Waterweed Family**			
Najas guadalupensis	Common water-nymph	AH	✓	
Juncaceae	**Rush Family**			
Juncus acutus ssp. *leopoldii* ■	Southwestern spiny rush	PH	✓	✓
Juncus bufonius var. *bufonius*	Toad rush	AH	✓	
Juncus mexicanus	Mexican rush	PH	✓	
Juncus torreyi	Torrey's rush	PH	✓	
Juncus xiphioides	Iris-leaved rush	PH	✓	✓
Lemnaceae	**Duckweed Family**			
Lemna minuscula	Least duckweed	PH	✓	
Lemna valdiviana	Valdivia duckweed	PH	✓	✓
Liliaceae	**Lily Family**			
Yucca whipplei	Our Lord's candle	Ss		✓
Poaceae	**Grass Family**			
*Agrostis viridis**	Water bent	PG	✓	✓
*Arundo donax**	Giant reed	PG	✓	✓
*Avena barbata**	Slender wild oat	AG	✓	✓
*Avena fatua**	Wild oat	AG	✓	✓

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SCIENTIFIC NAME	COMMON NAME	GROWTH FORM	RIVER CHANNEL	CASTAIC CREEK
*Avena sativa**	Cultivated oat	AG	✓	
*Bromus diandrus**	Ripgut grass	AG	✓	✓
*Bromus hordeaceus**	Soft chess	AG	✓	✓
Bromus madritensis ssp. *rubens**	Foxtail chess	AG	✓	✓
*Bromus tectorum**	Cheat grass, Downy brome	AG	✓	✓
*Cortaderia jubata**	Pampas grass	PG	✓	✓
*Cynodon dactylon**	Bermuda grass	PG	✓	✓
*Digitaria sanguinalis**	Crab grass	AG	✓	
Distichlis spicata	Saltgrass	PG	✓	
*Echinochloa crus-galli**	Barnyard grass	AG	✓	
*Eragrostis barrelieri**	Lovegrass	AG	✓	
Eragrostis mexicana ssp. *mexicana*	Lovegrass	AG	✓	
Eragrostis mexicana ssp. *virescens*	Lovegrass	AG	✓	
Eragrostis pectinacea var. *pectinacea*	Lovegrass	AG	✓	
*Festuca arundinacea**	Tall fescue	PG		✓
Hordeum murinum ssp. *leporinum**	Hare barley	AG	✓	✓
Leptochloa uninervia	Mexican sprangletop	AG	✓	
Leymus condensatus	Giant wild-rye	PG	✓	✓
Leymus triticoides	Beardless wild-rye	PG	✓	✓
*Lolium multiflorum**	Italian ryegrass	AG, BG	✓	✓
*Lolium perenne**	Perennial ryegrass	PG	✓	
*Panicum hillmanii**	Panicgrass	AG	✓	
Paspalum distichum	Knotgrass	PG	✓	
*Piptatherum miliaceum**	Smilo grass	PG	✓	✓
Poa secunda ssp. *secunda*	One-sided bluegrass	PG	✓	
*Polypogon interruptus**	Ditch beard grass	PG	✓	
*Polypogon monspeliensis**	Annual beard grass	AG	✓	✓
*Schismus barbatus**	Mediterranean schismus	AG	✓	✓
Setaria gracilis	Knotroot bristle grass	PG	✓	
*Triticum aestivum**	Wheat	AG		✓
Vulpia myuros var. *hirsuta**	Rat-tail fescue	AG	✓	✓
Potamogetonaceae	**Pondweed Family**			
Potamogeton foliosus var. *foliosus*	Leafy pondweed	PH	✓	
Potamogeton pectinatus	Fennel-leaf pondweed	PH	✓	
Typhaceae	**Cattail Family**			
Typha domingensis	Southern cattail	PH	✓	✓
Typha latifolia	Broad-leaved cattail	PH	✓	✓
Zannichelliaceae	**Horned-Pondweed Family**			
Zannichellia palustris	Horned-pondweed	PH	✓	

PLANT SPECIES LIST
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SCIENTIFIC NAME	COMMON NAME	GROWTH FORM	RIVER CHANNEL	CASTAIC CREEK
ANGIOSPERMS - DICOTS				
Aizoaceae	**Fig-Marigold Family**			
Sesuvium verrucosum	Western sea-purslane	PH	✓	
Amaranthaceae	**Amaranth Family**			
*Amaranthus albus**	Tumbleweed	AH	✓	✓
Amaranthus blitoides	Prostrate pigweed	AH	✓	
Anacardiaceae	**Sumac or Cashew Family**			
Rhus ovata	Sugar bush	S	✓	✓
Toxicodendron diversilobum	Western poison oak	S	✓	
Apiaceae	**Carrot Family**			
*Apium graveolens**	Celery	PH	✓	
Berula erecta	Cutleaf water-parsnip	PH	✓	✓
Asteraceae	**Sunflower Family**			
Ambrosia acanthicarpa	Annual bur-sage	AH	✓	✓
Ambrosia psilostachya	Western ragweed	AH	✓	✓
Artemisia californica	California sagebrush	S	✓	✓
Artemisia douglasiana	Mugwort	PH	✓	✓
Artemisia dracunculus	Tarragon	PH	✓	✓
Artemisia tridentata ssp. *parishii*	Great Basin sagebrush, Big sagebrush	S	✓	✓
Baccharis emoryi	Emory's baccharis	S	✓	
Baccharis pilularis	Coyote brush, Chaparral broom	S	✓	✓
Baccharis salicifolia	Mule fat, Seep-willow, Water-wally	S	✓	✓
Brickellia californica	California brickellbush	S	✓	
*Carduus pycnocephalus**	Italian thistle	AH, BH	✓	
*Centaurea melitensis**	Tocalote	AH	✓	✓
*Chamomilla suaveolens**	Pineapple weed, Rayless chamomile	AH	✓	✓
Chrysothamnus nauseosus ssp. *hololeucus*	Rubber rabbitbrush	S	✓	✓
Cirsium occidentale var. *californicum*	California thistle	BH	✓	
Cirsium occidentale var. *occidentale*	Cobwebby thistle	BH		✓
*Cnicus benedictus**	Blessed thistle	AH	✓	✓
Conyza canadensis	Horseweed	AH	✓	✓
*Coreopsis tinctoria**	Calliopsis	AH	✓	
*Cotula coronopifolia**	Brass-buttons	PH	✓	
Eclipta prostrata	False daisy	AH	✓	
Ericameria palmeri var. *pachylepis*	Palmer's goldenbush	S	✓	✓
Erigeron foliosus var. *foliosus*	Fleabane aster	Ss	✓	
Euthamia occidentalis	Western goldenrod	PH	✓	
Filago californica	California filago	AH	✓	✓
*Gaillardia pulchella**	Indian-blanket	AH	✓	
Gnaphalium sp. *nova* (undescribed)	Everlasting	PH	✓	✓
Gnaphalium californicum	California everlasting	AH, BH	✓	✓

PLANT SPECIES LIST
SANTA CLARA RIVER, LOS ANGELES COUNTY, CALIFORNIA

SCIENTIFIC NAME	COMMON NAME	GROWTH FORM	RIVER CHANNEL	CASTAIC CREEK
Gnaphalium canescens ssp. *microcephalum*	Felty everlasting	BH, PH		✓
*Gnaphalium luteo-album**	Weedy cudweed	AH	✓	✓
Gnaphalium palustre	Lowland cudweed	AH	✓	
Helianthus annuus	Common sunflower	AH	✓	✓
Heterotheca grandiflora	Telegraph weed	AH, PH	✓	✓
Heterotheca sessiliflora ssp. *fastigiata*	Hairy goldenaster	PH	✓	✓
*Lactuca serriola**	Prickly lettuce	AH	✓	✓
Lepidospartum squamatum	Scale-broom	S	✓	✓
Lessingia filaginifolia var. *filaginifolia*	California-aster	PH, Ss	✓	✓
Malacothrix saxatilis var. *commutata*	Cliff malacothrix	PH	✓	✓
Malacothrix saxatilis var. *tenuifolia*	Cliff malacothrix	PH	✓	✓
Pluchea odorata	Salt marsh fleabane	AH, PH	✓	
Pluchea sericea	Arrow weed	S	✓	✓
*Pulicaria paludosa**	Spanish sunflower	AH, PH	✓	
Senecio flaccidus var. *douglasii*	Sandwash groundsel, Bush senecio	Ss	✓	✓
*Silybum marianum**	Milk thistle	AH, BH	✓	✓
Sonchus asper ssp. *asper**	Prickly sow thistle	AH	✓	✓
*Sonchus oleraceus**	Common sow thistle	AH	✓	✓
Stephanomeria exigua	Small wreath-plant	AH		✓
Stephanomeria virgata	Wand chicory	AH	✓	✓
Xanthium strumarium	Cocklebur	AH	✓	✓
Betulaceae	**Birch Family**			
Alnus rhombifolia	White alder	T	✓	
Boraginaceae	**Borage Family**			
Amsinckia menziesii var. *intermedia*	Rancher's fireweed	AH	✓	✓
Cryptantha intermedia	Large-flowered popcorn flower	AH	✓	
Cryptantha micrantha	Hairy purpleroot cryptantha	AH	✓	✓
Cryptantha muricata	Prickly popcorn flower	AH	✓	
Heliotropium curassavicum	Salt heliotrope	PH	✓	✓
Pectocarya penicillata	Winged pectocarya	AH	✓	
Brassicaceae	**Mustard Family**			
*Brassica nigra**	Black mustard	AH	✓	✓
*Capsella bursa-pastoris**	Shepherd's purse	AH	✓	
*Coronopus didymus**	Wart cress	AH	✓	
*Hirschfeldia incana**	Shortpod mustard	BH, PH	✓	✓
*Lepidium latifolium**	Broad-leaved peppergrass	PH	✓	✓
*Lobularia maritima**	Sweet alyssum	PH	✓	✓
Rorippa nasturtium-aquaticum	Water cress	PH	✓	✓
*Sisymbrium altissimum**	Tumble or Jim Hill mustard	AH	✓	✓
*Sisymbrium irio**	London rocket	AH	✓	
*Sisymbrium orientale**	Oriental mustard	AH	✓	

PLANT SPECIES LIST
SANTA CLARA RIVER, LOS ANGELES COUNTY, CALIFORNIA

SCIENTIFIC NAME	COMMON NAME	GROWTH FORM	RIVER CHANNEL	CASTAIC CREEK
Cactaceae	**Cactus Family**			
Opuntia littoralis	Coast prickly-pear	S	✓	✓
Opuntia parryi	Cane cholla, Snake cholla	S	✓	✓
Caprifoliaceae	**Honeysuckle Family**			
Sambucus mexicana	Mexican elderberry, Blue elderberry	S	✓	✓
Caryophyllaceae	**Pink Family**			
*Polycarpon tetraphyllum**	Four-leaved allseed	AH	✓	✓
Spergularia marina	Saltmarsh sand-spurrey	AH	✓	
Chenopodiaceae	**Goosefoot Family**			
Atriplex lentiformis ssp. *lentiformis*	Big saltbush	S	✓	✓
*Atriplex semibaccata**	Australian saltbush	PH, S	✓	
Atriplex triangularis	Spearscale	AH	✓	
*Bassia hyssopifolia**	Five-hooked bassia	AH	✓	
*Chenopodium album**	Lamb's quarters, Pigweed	AH	✓	
*Chenopodium ambrosioides**	Mexican tea	AH, PH	✓	
Chenopodium berlandieri	Pitseed goosefoot	AH	✓	✓
*Chenopodium botrys**	Jerusalem oak	AH	✓	
*Chenopodium murale**	Nettle-leaved goosefoot	AH	✓	
*Salsola tragus**	Russian thistle, Tumbleweed	AH	✓	✓
Convolvulaceae	**Morning-Glory Family**			
Calystegia longipes	Piute morning-glory	Ss	✓	
Crassulaceae	**Stonecrop Family**			
Dudleya lanceolata	Lance-leaf live-forever	PH	✓	✓
Cucurbitaceae	**Gourd Family**			
Cucurbita foetidissima	Calabazilla	PH	✓	✓
Cuscutaceae	**Dodder Family**			
Cuscuta californica var. *californica*	California dodder	AV	✓	✓
Datiscaceae	**Datisca Family**			
Datisca glomerata	Durango root	PH	✓	
Euphorbiaceae	**Spurge Family**			
*Chamaesyce maculata**	Spotted spurge	AH	✓	
Chamaesyce polycarpa	Small-seed sandmat	PH	✓	
Croton californicus	California croton	PH	✓	✓
Eremocarpus setigerus	Dove weed, Turkey mullein	AH	✓	✓
*Ricinus communis**	Castor bean	S	✓	✓
Fabaceae	**Legume Family**			
Astragalus trichopodus var. *phoxus*	Santa Barbara locoweed	PH	✓	✓
Glycyrrhiza lepidota	Wild licorice	PH	✓	
Lotus purshianus var. *purshianus*	Spanish clover	AH	✓	
Lotus salsuginosus var. *salsuginosus*	Coastal lotus	AH	✓	
Lotus scoparius var. *scoparius*	California broom	PH, S	✓	✓

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SANTA CLARA RIVER, LOS ANGELES COUNTY, CALIFORNIA

SCIENTIFIC NAME	COMMON NAME	GROWTH FORM	RIVER CHANNEL	CASTAIC CREEK
Lotus strigosus	Strigose lotus	AH	✓	
Lupinus bicolor	Miniature lupine	AH	✓	✓
Lupinus excubitus var. *excubitus*	Grape soda lupine	S	✓	
Lupinus hirsutissimus	Stinging lupine	AH	✓	✓
Lupinus microcarpus var. *microcarpus*	Chick lupine	AH		✓
Lupinus succulentus	Arroyo lupine	AH	✓	
*Medicago polymorpha**	California burclover	AH	✓	
*Melilotus alba**	White sweetclover	AH, BH	✓	✓
*Melilotus indica**	Sourclover	AH	✓	✓
*Robinia pseudoacacia**	Black locust	T	✓	
*Spartium junceum**	Spanish broom	S	✓	✓
Vicia villosa ssp. *villosa**	Hairy or winter vetch	AH	✓	✓
Fagaceae	**Oak Family**			
Quercus agrifolia var. *agrifolia*	Coast live oak	T	✓	✓
Quercus lobata	Valley oak, Roble	T	✓	✓
Geraniaceae	**Geranium Family**			
*Erodium cicutarium**	Red-stemmed filaree	AH	✓	✓
Grossulariaceae	**Gooseberry Family**			
Ribes aureum var. *gracillimum*	Golden currant	S		✓
Hydrophyllaceae	**Waterleaf Family**			
Emmenanthe penduliflora	Whispering bells	AH	✓	✓
Eriodictyon crassifolium var. *nigrescens*	Thickleaf yerba santa	S	✓	✓
Phacelia brachyloba	Short-lobed phacelia	AH	✓	
Phacelia cicutaria var. *hispida*	Caterpillar phacelia	AH	✓	
Phacelia minor	Wild canterbury-bell	AH	✓	
Phacelia parryi	Parry's phacelia	AH	✓	
Phacelia ramosissima var. *latifolia*	Branching phacelia	PH	✓	✓
Phacelia tanacetifolia	Tansy phacelia	AH	✓	✓
Phacelia viscida	Sticky phacelia	AH	✓	
Juglandaceae	**Walnut Family**			
Juglans californica ■	Southern California black walnut	S, T		✓
Lamiaceae	**Mint Family**			
*Marrubium vulgare**	Horehound	PH	✓	✓
Salvia apiana	White sage	Ss	✓	
Salvia leucophylla	Purple sage	S	✓	
Salvia mellifera	Black sage	S	✓	✓
Stachys albens	White hedge nettle	PH	✓	
Trichostema lanceolatum	Vinegar weed	AH		✓
Linaceae	**Flax Family**			
*Linum usitatissimum**	Common flax	AH	✓	

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SANTA CLARA RIVER, LOS ANGELES COUNTY, CALIFORNIA

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Loasaceae	**Loasa Family**			
Mentzelia laevicaulis	Blazing star	PH	✓	
Mentzelia micrantha	Small-flowered stick-leaf	AH	✓	
Petalonyx thurberi ssp. *thurberi*	Sandpaper plant	Ss	✓	
Malvaceae	**Mallow Family**			
Malacothamnus fasciculatus	Chaparral mallow	S	✓	✓
Myrtaceae	**Myrtle Family**			
*Eucalyptus camaldulensis**	Red gum, River red gum	T		✓
Nyctaginaceae	**Four O'clock Family**			
Mirabilis californica	Wishbone bush	PH, Ss		✓
Oleaceae	**Olive Family**			
Fraxinus dipetala	California ash	S, T		✓
Onagraceae	**Evening Primrose Family**			
Camissonia bistorta	California sun cup	AH, PH		✓
Camissonia californica	Mustard evening primrose	AH	✓	✓
Camissonia hirtella	Sun cup	AH	✓	
Clarkia unguiculata	Elegant clarkia	AH	✓	
Epilobium canum ssp. *canum*	California fuchsia, Zauschneria	PH, Ss	✓	
Epilobium ciliatum ssp. *ciliatum*	Willow-herb	PH	✓	✓
Ludwigia peploides ssp. *peploides*	Yellow waterweed	PH	✓	
Oenothera californica ssp. *californica*	California evening primrose	PH	✓	✓
Oenothera elata ssp. *hirsutissima*	Great marsh evening primrose	BH, PH	✓	
*Oenothera laciniata**	Evening primrose	AH, PH	✓	
Papaveraceae	**Poppy Family**			
Eschscholzia californica	California poppy	AH, PH	✓	
Plantaginaceae	**Plantain Family**			
*Plantago major**	Common plantain	PH	✓	✓
Platanaceae	**Sycamore Family**			
Platanus racemosa	Western sycamore	T	✓	✓
Polemoniaceae	**Phlox Family**			
Allophyllum glutinosum	Stinky gilia	AH	✓	
Eriastrum densifolium ssp. *elongatum*	Mesa phlox	PH	✓	✓
Gilia capitata ssp. *abrotanifolia*	Globe gilia	AH	✓	
Gilia scopulorum	Rock gilia	AH	✓	
Leptodactylon californicum	Prickly phlox	PH	✓	
Polygonaceae	**Buckwheat Family**			
Chorizanthe staticoides	Turkish rugging	AH	✓	
Eriogonum baileyi var. *baileyi*	Buckwheat	AH		✓
Eriogonum brachyanthum	Buckwheat	AH	✓	✓
Eriogonum covilleanum	Coville's eriogonum	AH	✓	
Eriogonum elongatum var. *elongatum*	Long-stemmed buckwheat	Ss, S	✓	✓

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SCIENTIFIC NAME	COMMON NAME	GROWTH FORM	RIVER CHANNEL	CASTAIC CREEK
Eriogonum fasciculatum var. *foliolosum*	California buckwheat	S	✓	✓
Eriogonum gracile var. *gracile*	Slender buckwheat	AH	✓	✓
Eriogonum maculatum	Buckwheat	AH		✓
*Polygonum arenastrum**	Common knotweed, Doorweed	AH, PH	✓	
Polygonum lapathifolium	Willow weed	AH	✓	✓
*Polygonum persicaria**	Lady's thumb	AH	✓	
Polygonum punctatum	Perennial smartweed	AH, PH	✓	
*Rumex crispus**	Curly dock	PH	✓	✓
Rumex maritimus	Golden dock	AH, BH	✓	
*Rumex obtusifolius**	Bitter dock	PH	✓	✓
*Rumex pulcher**	Fiddle dock	PH	✓	
Rumex salicifolius var. *salicifolius*	Willow dock	PH	✓	✓
Portulacaceae	**Purslane Family**			
*Portulaca oleracea**	Common purslane	AH	✓	
Primulaceae	**Primrose Family**			
*Anagallis arvensis**	Scarlet pimpernel, Poor-man's	AH	✓	✓
Rhamnaceae	**Buckthorn Family**			
Ceanothus crassifolius	Hoaryleaf ceanothus	S	✓	
Ceanothus oliganthus var. *oliganthus*	Hairyleaf ceanothus	S	✓	
Rosaceae	**Rose Family**			
Rosa californica	California rose	S	✓	✓
Rubus ursinus	California blackberry	PH	✓	
Rubiaceae	**Madder Family**			
Galium angustifolium ssp. *angustifolium*	Narrow-leaved bedstraw	PH	✓	✓
Salicaceae	**Willow Family**			
Populus fremontii ssp. *fremontii*	Fremont or Alamo cottonwood	T	✓	✓
Salix exigua	Narrow-leaved willow	S	✓	✓
Salix gooddingii	Goodding's black willow	T	✓	
Salix laevigata	Red willow	T	✓	✓
Salix lasiolepis	Arroyo willow	S, T	✓	✓
Salix lucida ssp. *lasiandra*	Shining willow, Pacific willow	S, T	✓	✓
Saururaceae	**Lizard's-Tail Family**			
Anemopsis californica	Yerba mansa	PH	✓	✓
Scrophulariaceae	**Figwort Family**			
Antirrhinum multiflorum	Sticky snapdragon	AH, PH	✓	
Castilleja affinis ssp. *affinis*	Coastal paintbrush	PH	✓	
Castilleja exserta	Purple owl's-clover	AH	✓	
Cordylanthus rigidus ssp. *setigerus*	Bird's-beak	AH		✓
*Linaria pinifolia**	Toadflax	AH	✓	
Mimulus aurantiacus	Bush monkeyflower	Ss, S	✓	✓
Mimulus brevipes	Yellow monkeyflower	AH	✓	

PLANT SPECIES LIST
SANTA CLARA RIVER, LOS ANGELES COUNTY, CALIFORNIA

SCIENTIFIC NAME	COMMON NAME	GROWTH FORM	RIVER CHANNEL	CASTAIC CREEK
Mimulus cardinalis	Scarlet monkeyflower	PH	✓	
Mimulus floribundus	Floriferous monkeyflower	AH	✓	
Mimulus guttatus	Creek monkeyflower	AH, PH	✓	
Mimulus pilosus	Downy mimetanthe	AH	✓	
Mimulus rubellus	Ciliolate-toothed monkeyflower	AH	✓	
Scrophularia californica ssp. *floribunda*	California figwort	PH	✓	
*Verbascum virgatum**	Wand mullein	BH	✓	
*Veronica anagallis-aquatica**	Water speedwell	PH	✓	✓
Solanaceae	**Nightshade Family**			
Datura wrightii	Jimson weed	AH, PH	✓	✓
*Nicotiana glauca**	Tree tobacco	T	✓	✓
Nicotiana quadrivalvis	Wallace's tobacco	AH	✓	
Solanum americanum	Little white nightshade	AH, Ss	✓	✓
Solanum douglasii	White nightshade	PH, Ss	✓	✓
Solanum xanti	Purple nightshade	PH, Ss		✓
Tamaricaceae	**Tamarisk Family**			
*Tamarix ramosissima**	Mediterranean tamarisk	S, T	✓	✓
Urticaceae	**Nettle Family**			
Urtica dioica ssp. *holosericea*	Hoary nettle	PH	✓	✓
Verbenaceae	**Vervain Family**			
Verbena lasiostachys var. *lasiostachys*	Western verbena	PH	✓	✓
*Verbena tenuisecta**	Verbena	AH, PH		✓
Viscaceae	**Mistletoe Family**			
Phoradendron macrophyllum	Big leaf mistletoe	S		✓
Vitaceae	**Grape Family**			
Parthenocissus vitacea	Virginia creeper, woodbine	PV	✓	
Vitis girdiana	Desert wild grape	PV	✓	
Zygophyllaceae	**Caltrop Family**			
*Tribulus terrestris**	Puncture vine	AH	✓	✓

NOTES:

1. Species observed during field surveys conducted by FL*x*, May 31, June 1, June 2, June 3, June 15, June 16, June 17, September 8, September 9, September 10, September 13, September 14, September 15, and September 16, 2004.

2. Scientific and common names are from Hickman (1993), Smith (1998), Abrams and Ferris (1960), and Sawyer and Keeler-Wolf (1995).

3. Growth Form indicates species growth habit:
AG = Annual Grass; AH = Annual Herb; AV = Annual Vine; BG = Biennial Grass; BH = Biennial Herb; PG = Perennial Grass; PH = Perennial Herb; PV = Perennial Vine; Ss = Subshrub; S = Shrub; T = Tree.

* Non-native plant species
■ Sensitive plant species