

Appendix 13

Botanical Resources

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Appendix 13A Weed Species Potentially Present in Secondary Study Area

**APPENDIX 13A-1
Weed Species Potentially Present in Secondary Study Area**

Scientific Name	Common Name	Cal-IPC Wildland Impact Potential Rating	Habitats of Concern and Comments
<i>Acacia dealbata</i>	Silver Wattle	Moderate	Coastal prairie, riparian woodland, riparian forest, North Coast coniferous forest, closed cone coniferous forest.
<i>Acacia melanoxylon</i>	Black Acacia, Blackwood Acacia	Limited	Coniferous forest, chaparral, woodland, riparian. Impacts are low in most areas.
<i>Acroptilon repens</i>	Russian Knapweed	Moderate	Scrub, grasslands, riparian, pinyon-juniper woodland, forest. Severe impacts in other western states. Spreading in many areas of California.
<i>Agrostis stolonifera</i>	Creeping Bentgrass	Limited	Wetlands, riparian; grown for domestic forage. Limited distribution and impacts unknown.
<i>Ailanthus altissima</i>	Tree-of-Heaven	Moderate	Riparian areas, grasslands, oak woodland. Impacts highest in riparian areas.
<i>Alhagi maurorum</i>	Camelthorn	Moderate	Grassland, meadows, riparian and desert scrub, Sonoran thorn woodland. Very invasive in southwestern states. Limited distribution in California.
<i>Alternanthera philoxeroides</i>	Alligator Weed	High	Freshwater aquatic systems, including marshes.
<i>Arundo donax</i>	Giant Reed	High	Riparian areas, commercially grown for such items as musical instrument reeds and structural material.
<i>Asparagus asparagoides</i>	Bridal Creeper	Moderate	Riparian woodland.
<i>Brassica rapa</i>	Birdsrape Mustard, Field Mustard	Limited	Coastal scrub, grasslands meadows, riparian. Primarily in disturbed areas, Impacts appear to be minor or unknown in wildlands.
<i>Cardaria chalepensis</i>	Lens-Podded White-Top	Moderate	Central Valley wetlands. Limited distribution in California. May not be as invasive as <i>C. draba</i> .
<i>Cardaria draba</i>	Hoary Cress	Moderate	Riparian areas, marshes of central coast. More severe invasive in northern California.
<i>Centaurea maculosa</i>	Spotted Knapweed	High	Riparian, grasslands, wet meadows, forests. More widely distributed in other western states.
<i>Centaurea solstitialis</i>	Yellow Starthistle	High	Grasslands, woodlands, occasionally riparian.
<i>Cirsium vulgare</i>	Bull Thistle	Moderate	Riparian areas, marshes, meadows. Widespread, can be very problematic regionally.
<i>Conium maculatum</i>	Poison-Hemlock	Moderate	Riparian woodland, grassland. Widespread in disturbed areas. Abiotic impacts unknown. Impacts can vary locally.
<i>Cortaderia selloana</i>	Pampasgrass	High	Coastal dunes, coastal scrub, Monterey pine, riparian, grasslands, wetlands, serpentine soils. Still spreading both coastal and inland.

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Scientific Name	Common Name	Cal-IPC Wildland Impact Potential Rating	Habitats of Concern and Comments
<i>Crataegus monogyna</i>	Hawthorn	Limited	Riparian habitats, woodland. Limited distribution. Impacts appear to be minor.
<i>Cupressus macrocarpa</i>	Monterey Cypress	Native	Native to Monterey area. Invades coastal prairie, desert scrub, riparian areas.
<i>Dipsacus fullonum</i>	Common Teasel	Moderate	Grasslands, seep, riparian scrub. Impacts regionally variable, forms dense stands on occasion.
<i>Dittrichia graveolens</i>	Stinkwort	Moderate	Grasslands, riparian scrub. Spreading rapidly, impacts may become more important in future.
<i>Egeria densa</i>	Brazilian Egeria	High	Streams, ponds, sloughs, lakes, Sacramento-San Joaquin Delta.
<i>Eichhornia crassipes</i>	Water Hyacinth	High	Aquatic systems in Sacramento-San Joaquin Delta.
<i>Elaeagnus angustifolia</i>	Russian-Olive	Moderate	Interior riparian. Impacts more severe in other western states. Current distribution limited in California.
<i>Eucalyptus globulus</i>	Tasmanian Blue Gum	Moderate	Riparian areas, coastal grasslands, scrub. Impacts can be much higher in coastal areas.
<i>Ficus carica</i>	Edible Fig	Moderate	Riparian woodland. Can spread rapidly. Abiotic impacts unknown. Can be very problematic locally.
<i>Hirschfeldia incana</i>	Shortpod Mustard, Summer Mustard	Moderate	Scrub, grasslands, riparian areas. Impacts not well understood, but appear to be greater in southern California.
<i>Holcus lanatus</i>	Common Velvet Grass	Moderate	Coastal grasslands, wetlands. Impacts can be more severe locally, especially in wetland areas.
<i>Hordeum marinum</i> , <i>H. murinum</i>	Mediterranean Barley, Hare Barley, Wall Barley	Moderate	Grasslands; <i>H. marinum</i> invades drier habitats, while <i>H. murinum</i> invades wetlands. Widespread, but generally do not form dominant stands.
<i>Hydrilla verticillata</i>	Hydrilla	High	Freshwater aquatic systems. The most important submerged aquatic invasive in southern states.
<i>Iris pseudacorus</i>	Yellowflag Iris	Limited	Riparian, wetland areas, esp. southern California. Limited distribution. Abiotic impacts unknown.
<i>Lepidium latifolium</i>	Perennial Pepperweed, Tall Whitetop	High	Coastal and inland marshes, riparian areas, wetlands, grasslands; potential to invade montane wetlands.
<i>Ligustrum lucidum</i>	Glossy Privet	Eval No List	May prove to be problematic in riparian areas.
<i>Linaria vulgaris</i>	Yellow Toadflax, Butter and Eggs	Moderate	Valley and foothill grassland, Great Basin grassland, riparian woodland, lower montane coniferous forest, upper montane coniferous forest.
<i>Ludwigia hexapetala</i>	Uruguay Water-Primrose	High	Freshwater aquatic systems. Clarification needed on taxonomic identification.
<i>Lythrum hyssopifolium</i>	Hyssop Loosestrife	Limited	Grasslands, wetlands, vernal pools. Widespread. Impacts unknown but appear to be minor.
<i>Lythrum salicaria</i>	Purple Loosestrife	High	Wetlands, marshes, riparian areas

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Scientific Name	Common Name	Cal-IPC Wildland Impact Potential Rating	Habitats of Concern and Comments
<i>Marrubium vulgare</i>	White Horehound	Limited	Grasslands scrub, riparian areas. Widespread. Rarely in dense stands. Impacts relatively minor.
<i>Mentha pulegium</i>	Pennyroyal	Moderate	Vernal pools, wetlands. Poisonous to livestock. Spreading rapidly. Impacts largely unknown.
<i>Myriophyllum aquaticum</i>	Parrotfeather	High	Freshwater aquatic systems.
<i>Myriophyllum spicatum</i>	Eurasian Watermilfoil	High	Freshwater aquatic systems.
<i>Nerium oleander</i>	Oleander	Eval No List	Not known to be invasive, although reported from riparian areas in Central Valley and San Bernardino Mountains.
<i>Phalaris aquatica</i>	Hardinggrass	Moderate	Coastal sites, especially moist soils. Limited distribution. Can be highly invasive locally.
<i>Phytolacca americana</i>	Common pokeweed	Limited	Riparian forest, riparian woodland.
<i>Picris echioides</i>	Bristly oxtongue	Limited	Coastal prairie, scrub, riparian woodland. Widespread locally. Abiotic impacts unknown.
<i>Piptatherum miliaceum</i>	Smilgrass	Limited	Coastal dunes, scrub, riparian, grassland. Expanding range. Impacts largely unknown.
<i>Poa pratensis</i>	Kentucky Bluegrass	Limited	Grasslands scrub, riparian areas. Widespread turf plant. Abiotic impacts unknown.
<i>Polygonum cuspidatum</i>	Japanese Knotweed	Moderate	Riparian areas, wetlands, forest edges. More severe impacts in northwest wetlands. Distribution limited in California.
<i>Polygonum sachalinense</i>	Sakhalin Knotweed	Moderate	Riparian areas. More severe impacts in northwest wetlands. Distribution limited in California.
<i>Prunus cerasifera</i>	Cherry Plum	Limited	Riparian habitats, chaparral, woodland. Limited distribution. Abiotic impacts unknown.
<i>Robinia pseudoacacia</i>	Black Locust	Limited	Riparian areas, canyons. Severe impacts in southern states. Impacts minor in California.
<i>Rubus armeniacus</i>	Himalaya Blackberry	High	Riparian areas, marshes, oak woodlands.
<i>Rumex acetosella</i>	Red Sorrel, Sheep Sorrel	Moderate	Many habitats, riparian areas, forest, wetlands. Widespread. Abiotic impacts unknown. Impacts can vary locally.
<i>Rumex crispus</i>	Curly Dock	Limited	Grasslands, vernal pool, meadows, riparian. Widespread. Impacts appear to be minor.
<i>Saccharum ravennae</i>	Ravennagrass	Moderate	Riparian scrub, marsh and swamp.
<i>Salsola soda</i>	Oppositeleaf Russian Thistle	Moderate	Marine systems, estuaries, vernal pool, marsh and swamp.
<i>Salvinia molesta</i>	Giant Salvinia	High	Freshwater aquatic systems. Population in San Diego River was eradicated.
<i>Sapium sebiferum</i>	Chinese Tallowtree	Moderate	Riparian areas. Impacts severe in southeast U.S. Limited distribution in California, but spreading rapidly regionally.

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Weed Species Potentially Present in Secondary Study Area**

Scientific Name	Common Name	Cal-IPC Wildland Impact Potential Rating	Habitats of Concern and Comments
<i>Saponaria officinalis</i>	Bouncing-Bet	Limited	Riparian scrub and woodland. Impacts unknown or minor but appear to be locally variable.
<i>Schinus molle</i>	Peruvian Peppertree	Limited	Riparian. Limited distribution. Impacts largely unknown in California.
<i>Schinus terebinthifolius</i>	Brazilian Peppertree	Limited	Riparian. Very invasive in tropics. Abiotic impacts unknown but appear significant locally.
<i>Senecio jacobaea</i>	Tansy Ragwort	Limited	Grasslands, riparian. Impacts generally minor. Can be locally important in northwest California.
<i>Sesbania punicea</i>	Red Sesbania, Scarlet Wisteria	High	Riparian areas.
<i>Silybum marianum</i>	Blessed Milkthistle	Limited	Grasslands, riparian. Widespread, primarily in disturbed areas Impacts can be higher locally.
<i>Spartina alterniflora</i> (and <i>S. alterniflora</i> x <i>foliosa</i> hybrids)	Smooth Cordgrass and Hybrids, Atlantic Cordgrass	High	San Francisco Bay salt marshes and mudflats. Hybridizes with native <i>S. foliosa</i> .
<i>Spartina anglica</i>	Common Cordgrass	Moderate	San Francisco Bay salt marshes. Very severe impact in other countries. Limited distribution in California.
<i>Spartina densiflora</i>	Dense-Flowered Cordgrass	High	San Francisco and Humboldt Bay salt marshes.
<i>Spartina patens</i>	Saltmeadow Cord Grass	Limited	San Francisco Bay salt marshes. Very limited distribution. Impacts currently minor in California, but high in other countries.
<i>Spartium junceum</i>	Spanish Broom	High	Coastal scrub, grasslands, wetlands, oak woodland, forests.
<i>Tamarix parviflora</i>	Smallflower Tamarisk	High	Riparian areas, desert washes, coastal scrub.
<i>Tamarix ramosissima</i>	Saltcedar, Tamarisk	High	Desert washes, riparian areas, seeps and springs.
<i>Tanacetum vulgare</i>	Common Tansy	Moderate	Riparian areas, forest. Limited distribution. Severe problem in other western states.
<i>Verbascum thapsus</i>	Common Mullein, Woolly Mullein	Limited	Meadows, riparian, sagebrush, pinyon-juniper woodlands. Widespread. Impacts minor.
<i>Verbena bonariensis</i> , <i>Verbena litoralis</i>	Tall Vervain, Seashore Vervain	Eval No List	Often in disturbed areas of irrigation canals.
<i>Vinca major</i>	Big Periwinkle	Moderate	Riparian, oak woodlands, coastal scrub. Distribution currently limited, but spreading in riparian areas. Impacts can be higher locally.
<i>Zantedeschia aethiopica</i>	Calla Lily	Limited	Coastal prairie, wetlands. Impacts high in other countries and local impacts may be high in California.

**APPENDIX 13A-1
Weed Species Potentially Present in Secondary Study Area**

Scientific Name	Common Name	Cal-IPC Wildland Impact Potential Rating	Habitats of Concern and Comments
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Notes:

Legend:

High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate – These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Eval No List—Evaluated but not listed due to inadequate information or species did not fit the criteria for listing categories.

Source: California Invasive Plant Council (Cal-IPC). 2010 California Invasive Plant Inventory. 2010 Update of Cal-IPC Publication 2006-02. California Invasive Plant Council: Berkeley, CA. Accessed online at <http://www.cal-ipc.org>.

**Appendix 13B
Special-Status Plant Species Potentially
Occurring in Secondary Study Area
Aquatic Habitats**

**APPENDIX 13B-1
Special-Status Plant Species Potentially Occurring in Secondary Study Area Aquatic Habitats**

Scientific Name	Common Name	Occ Count	Federal Listing Status	State Listing Status	Global Rank	State Rank	CNPS List	Other Status	N Coast	Shasta	CValley	Bay-Delta	Folsom	Habitat
<i>Cordylanthus palmatus</i>	Palmate-bracted bird's-beak	26	Endangered	Endangered	G1	S1.1	1B.1				X	X		Chenopod scrub Meadow and seep Valley and foothill grassland Wetland
<i>Lilium occidentale</i>	Western lily	15	Endangered	Endangered	G1	S1.2	1B.1		X					Bog and fen Coastal bluff scrub Coastal prairie Coastal scrub Freshwater marsh Marsh and swamp North coast coniferous forest Wetland
<i>Limnanthes floccosa</i> ssp. <i>californica</i>	Butte county meadowfoam	16	Endangered	Endangered	G4T1	S1.1	1B.1	USFS_S-Sensitive			X			Valley and foothill grassland Vernal pool Wetland
<i>Oenothera deltooides</i> ssp. <i>howellii</i>	Antioch dunes evening-primrose		Endangered	Endangered	G5T1	S1.1	1B.1					X		Inland dunes
<i>Orcuttia viscida</i>	Sacramento orcutt grass	11	Endangered	Endangered	G1	S1.1	1B.1						X	Vernal pool Wetland
<i>Tuctoria mucronata</i>	Crampton's tuctoria or solano grass	3	Endangered	Endangered	G1	S1.1	1B.1					X		Valley and foothill grassland Vernal pool Wetland
<i>Tuctoria greenei</i>	Greene's tuctoria	45	Endangered	Rare	G2	S2.2	1B.1	USFS_S-Sensitive			X			Valley and foothill grassland Vernal pool Wetland
<i>Cordylanthus mollis</i> ssp. <i>mollis</i>	Soft bird's-beak	26	Endangered	Rare	G2T1	S1.1	1B.2					X		Marsh and swamp Salt marsh Wetland
<i>Cirsium hydrophilum</i> var. <i>hydrophilum</i>	Suisun thistle	4	Endangered	None	G1T1	S1.1	1B.1					X		Marsh and swamp Salt marsh Wetland
<i>Lasthenia conjugens</i>	Contra costa goldfields	33	Endangered	None	G1	S1.1	1B.1					X		Cismontane woodland Valley and foothill grassland Vernal pool Wetland
<i>Suaeda californica</i>	California seablite	17	Endangered	None	G1	S1.1	1B.1					X		Freshwater marsh Marsh and swamp Wetland
<i>Neostapfia colusana</i>	Colusa grass	59	Threatened	Endangered	G3	S3.1	1B.1				X	X	X	Vernal pool Wetland
<i>Orcuttia tenuis</i>	Slender orcutt grass	91	Threatened	Endangered	G3	S3.1	1B.1	USFS_S-Sensitive			X	X	X	Valley and foothill grassland Vernal pool Wetland
<i>Eryngium racemosum</i>	Delta button-celery	26	None	Endangered	G2Q	S2.1	1B.1					X		Riparian scrub Wetland
<i>Gratiola heterosepala</i>	Boggs lake hedge-hyssop	90	None	Endangered	G3	S3.1	1B.2	BLM_S-Sensitive		X	X	X	X	Freshwater marsh Marsh and swamp Vernal pool Wetland
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	155	None	Rare	G3	S3.1	1B.1					X		Freshwater marsh Marsh and swamp Riparian scrub Wetland
<i>Cryptantha hooveri</i>	Hoover's cryptantha	*	None	None	GH	SH	1A					X		Inland dunes Valley and foothill grassland (sandy)
<i>Plagiobothrys glaber</i>	Hairless popcorn-flower	9	None	None	GH	SH	1A					X		Marsh and swamp Salt marsh Vernal pool Wetland
<i>Astragalus tener</i> var. <i>ferrisiae</i>	Ferris' milk-vetch	15	None	None	G1T1	S1.1	1B.1	BLM_S-Sensitive			X			Meadow and seep Valley and foothill grassland Wetland
<i>Blepharizonia plumosa</i>	Big tarplant	*	None	None	G1	S1.1	1B.1					X		Valley and foothill grassland
<i>California macrophylla</i>	Round-leaved filaree	*	None	None	G3	S3.1	1B.1				X	X		Cismontane woodland Valley and foothill grassland/ clay
<i>Cordylanthus mollis</i> ssp. <i>hispidus</i>	Hispid bird's-beak	29	None	None	G2T2	S2.1	1B.1	BLM_S-Sensitive				X	X	Alkali playa Meadow and seep Wetland

**APPENDIX 13B-1
Special-Status Plant Species Potentially Occurring in Secondary Study Area Aquatic Habitats**

Scientific Name	Common Name	Occ Count	Federal Listing Status	State Listing Status	Global Rank	State Rank	CNPS List	Other Status	N Coast	Shasta	CValley	Bay-Delta	Folsom	Habitat
<i>Eschscholzia rhombipetala</i>	Diamond-petaled California poppy	*	None	None	G1	S1.1	1B.1					X		Valley and foothill grassland/ clay
<i>Hoita strobilina</i>	Loma prieta hoita	26	None	None	G2	S2.1	1B.1					X		Chaparral Cismontane woodland Riparian woodland Ultramafic
<i>Isocoma arguta</i>	Carquinez goldenbush	*	None	None	G1	S1.1	1B.1					X		Valley and foothill grassland (alkaline)
<i>Juglans hindsii</i>	Northern california black walnut	5	None	None	G1	S1.1	1B.1					X		Riparian forest Riparian woodland
<i>Juncus leiospermus</i> var. <i>leiospermus</i>	Red bluff dwarf rush	41	None	None	G2T2	S2.2	1B.1	BLM_S-Sensitive USFS_S-Sensitive			X			Chaparral Cismontane woodland Valley and foothill grassland Vernal pool Wetland
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	Coulter's goldfields	66	None	None	G4T3	S2.1	1B.1	BLM_S-Sensitive			X	X		Alkali playa Marsh and swamp Salt marsh Valley and foothill grassland Vernal pool Wetland
<i>Legenere limosa</i>	Legenere	61	None	None	G2	S2.2	1B.1	BLM_S-Sensitive			X	X	X	Vernal pool Wetland
<i>Madia radiata</i>	Showy golden madia	*	None	None	G2	S2.1	1B.1					X		Cismontane woodland Valley and foothill grassland
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	45	None	None	G4T2	S2.1	1B.1	BLM_S-Sensitive			X	X		Cismontane woodland Lower montane coniferous forest Meadow and seep Valley and foothill grassland Vernal pool Wetland
<i>Navarretia myersii</i> ssp. <i>myersii</i>	Pincushion navarretia	14	None	None	G1T1	S1.1	1B.1						X	Valley and foothill grassland Vernal pool Wetland
<i>Plagiobothrys hystriculus</i>	Bearded popcorn-flower	11	None	None	G1	S1.1	1B.1					X		Valley and foothill grassland Vernal pool Wetland
<i>Puccinellia howellii</i>	Howell's alkali grass	1	None	None	G1	S1.1	1B.1	BLM_S-Sensitive		X				Meadow and seep Wetland
<i>Amsinckia lunaris</i>	Bent-flowered fiddleneck	*	None	None	G2	S2.2	1B.2					X		Coastal bluff scrub Cismontane woodland valley and foothill grassland
<i>Astragalus tener</i> var. <i>tener</i>	Alkali milk-vetch	66	None	None	G1T1	S1.1	1B.2					X		Alkali playa Valley and foothill grassland Vernal pool Wetland
<i>Atriplex depressa</i>	Brittlescale	56	None	None	G2Q	S2.2	1B.2				X	X		Alkali playa Chenopod scrub Meadow and seep Valley and foothill grassland Vernal pool Wetland
<i>Atriplex joaquiniana</i>	San Joaquin spearscale		None	None	G2	S2	1B.2				X	X		Chenopod scrub Meadow and seep Valley and foothill grassland playa
<i>Atriplex persistens</i>	Vernal pool smallscale	33	None	None	G2	S2.2	1B.2				X	X		Vernal pool Wetland
<i>Calochortus pulchellus</i>	Mt. Diablo fairy-lantern	32	None	None	G2	S2.1	1B.2					X		Chaparral Cismontane woodland Riparian woodland Valley and foothill grassland
<i>Carex saliniformis</i>	Deceiving sedge	15	None	None	G2	S2.2	1B.2		X					Coastal prairie Coastal scrub Marsh and swamp Meadow and seep Wetland
<i>Castilleja ambigua</i> ssp. <i>humboldtensis</i>	Humboldt bay owl's-clover	27	None	None	G4T2	S2.2	1B.2	BLM_S-Sensitive	X					Marsh and swamp Salt marsh Wetland

**APPENDIX 13B-1
Special-Status Plant Species Potentially Occurring in Secondary Study Area Aquatic Habitats**

Scientific Name	Common Name	Occ Count	Federal Listing Status	State Listing Status	Global Rank	State Rank	CNPS List	Other Status	N Coast	Shasta	CValley	Bay-Delta	Folsom	Habitat
<i>Centromadia parryi</i> ssp. <i>congdonii</i>	Congdon's tarplant		None	None	G4T3	S3.2	1B.2					X		Valley and foothill grassland
<i>Centromadia parryi</i> ssp. <i>parryi</i>	Pappose tarplant	23	None	None	G4T2	S2.2	1B.2	BLM_S-Sensitive			X	X		Coastal prairie Marsh and swamp Meadow and seep Valley and foothill grassland
<i>Cordylanthus maritimus</i> ssp. <i>palustris</i>	Point reyes bird's-beak	61	None	None	G4?T2	S2.2	1B.2	BLM_S-Sensitive				X		Marsh and swamp Salt marsh Wetland
<i>Cryptantha crinita</i>	Silky cryptantha	46	None	None	G1	S1.1	1B.2	BLM_S-Sensitive USFS_S-Sensitive			X			Cismontane woodland Lower montane coniferous forest Riparian forest Riparian woodland Valley and foothill grassland
<i>Delphinium recurvatum</i>	Recurved larkspur		None	None	G2	S2.2	1B.2				X			Chenopod scrub Cismontane woodland Valley and foothill grassland/ alkaline
<i>Dirca occidentalis</i>	Western leatherwood	46	None	None	G2G3	S2S3	1B.2					X		Broadleaved upland forest Chaparral Cismontane woodland Closed-cone coniferous forest North coast coniferous forest Riparian forest Riparian woodland
<i>Epilobium oregonum</i>	Oregon fireweed	40	None	None	G2	S2.2	1B.2	BLM_S-Sensitive USFS_S Sensitive	X	X				Bog and fen Lower montane coniferous forest Meadow and seep Ultramafic Upper montane coniferous forest Wetland
<i>Eryngium pinnatisectum</i>	Tuolumne button-celery	20	None	None	G3	S3.2	1B.2						X	Cismontane woodland Lower montane coniferous forest Vernal pool Wetland
<i>Fritillaria liliacea</i>	Fragrant fritillary	*	None	None	G2	S2.2	1B.2					X		Cismontane woodland Coastal prairie Coastal scrub Valley and foothill grassland/ often serpentinite
<i>Gentiana setigera</i>	Mendocino gentian	8	None	None	G2	S1	1B.2	BLM_S-Sensitive USFS_S-Sensitive	X					Bog and fen Lower montane coniferous forest Meadow and seep Ultramafic Upper montane coniferous forest Wetland
<i>Hesperolinon breweri</i>	Brewer's western flax		None	None	G2	S2.2	1B.2					X		Coastal prairie Lower montane coniferous forest Meadows and seeps
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	California hibiscus	132	None	None	G4	S2.2	1B.2	NEW			X	X		Freshwater marsh Marsh and swamp Wetland
<i>Juncus leiospermus</i> var. <i>ahartii</i>	Ahart's dwarf rush	10	None	None	G2T1	S1.2	1B.2				X		X	Vernal pool Wetland
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	Delta tule pea	127	None	None	G5T2	S2.2	1B.2					X		Freshwater marsh Marsh and swamp Wetland
<i>Lepidium latipes</i> var. <i>heckardii</i>	Heckard's pepper-grass	11	None	None	G4T1	S1.2	1B.2				X	X		Valley and foothill grassland Vernal pool Wetland
<i>Limnanthes floccosa</i> ssp. <i>bellingiana</i>	Bellinger's meadowfoam	5	None	None	G4T2	S1.1	1B.2	BLM_S-Sensitive USFS_S Sensitive		X				Cismontane woodland Meadow and seep Wetland

**APPENDIX 13B-1
Special-Status Plant Species Potentially Occurring in Secondary Study Area Aquatic Habitats**

Scientific Name	Common Name	Occ Count	Federal Listing Status	State Listing Status	Global Rank	State Rank	CNPS List	Other Status	N Coast	Shasta	CValley	Bay-Delta	Folsom	Habitat
<i>Neviusia cliffonii</i>	Shasta snow-wreath	20	None	None	G2	S2.2	1B.2	BLM_S-Sensitive USFS_S-Sensitive		X				Limestone Lower montane coniferous forest Riparian woodland
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	68	None	None	G3	S3.2	1B.2	BLM_S-Sensitive	X	X	X	X	X	Marsh and swamp Wetland
<i>Sidalcea oregana</i> ssp. <i>eximia</i>	Coast sidalcea	16	None	None	G5T1	S1.2	1B.2	BLM_S-Sensitive	X					Lower montane coniferous forest Meadow and seep North coast coniferous forest Wetland
<i>Symphotrichum lentum</i>	Suisun marsh aster	126	None	None	G2	S2	1B.2					X		Brackish marsh Freshwater marsh Marsh and swamp Wetland
<i>Trifolium depauperatum</i> var. <i>hydrophilum</i>	Saline clover	19	None	None	G5T2?	S2.2?	1B.2					X		Marsh and swamp Valley and foothill grassland Vernal pool Wetland
<i>Trifolium jokerstii</i>	Butte county golden clover	9	None	None	G1	S1.2	1B.2	BLM_S-Sensitive			X			Valley and foothill grassland Vernal pool Wetland
<i>Viola primulifolia</i> ssp. <i>occidentalis</i>	Western white bog violet	18	None	None	G5T2	S2.2	1B.2	USFS_S-Sensitive	X					Bog and fen Marsh and swamp Ultramafic Wetland
<i>Atriplex cordulata</i>	Heartscale	*	None	None	G2	S2.2	1B.3				X	X		
<i>Smilax jamesii</i>	English peak greenbriar	86	None	None	G2	S2	1B.3	BLM_S-Sensitive USFS_S-Sensitive	X	X				Broadleaved upland forest Lower montane coniferous forest Marsh and swamp North coast coniferous forest Wetland
<i>Calamagrostis crassiglumis</i>	Thurber's reed grass	11	None	None	G3Q	S1.2	2.1		X					Coastal scrub Freshwater marsh Marsh and swamp Wetland
<i>Carex comosa</i>	Bristly sedge	11	None	None	G5	S2?	2.1			X	X	X		Freshwater marsh Marsh and swamp Wetland
<i>Carex hystericina</i>	Porcupine sedge	2	None	None	G5	S1.1	2.1			X				Freshwater marsh Marsh and swamp Wetland
<i>Cicuta maculata</i> var. <i>bolanderi</i>	Bolander's water-hemlock	14	None	None	G5T3T4	S2	2.1					X		Marsh and swamp Salt marsh Wetland
<i>Imperata brevifolia</i>	California satintail	27	None	None	G2	S2.1	2.1	USFS_S-Sensitive			X			Chaparral Coastal scrub Meadow and seep Mojavean desert scrub Riparian forest Wetland
<i>Limosella subulata</i>	Delta mudwort	42	None	None	G4?Q	S2.1	2.1					X		Brackish marsh Freshwater marsh Marsh and swamp Riparian scrub Wetland
<i>Trichocoronis wrightii</i> var. <i>wrightii</i>	Wright's trichocoronis	9	None	None	G4T3	S1.1	2.1				X			Marsh and swamp Meadow and seep Riparian forest Vernal pool Wetland
<i>Botrychium virginianum</i>	Rattlesnake fern	10	None	None	G5	S1.2	2.2	USFS_S-Sensitive		X				Bog and fen Wetland
<i>Carex lenticularis</i> var. <i>limnophila</i>	Lagoon sedge	4	None	None	G5T5	S1S2.2	2.2		X					Bog and fen Marsh and swamp North coast coniferous forest
<i>Carex leptalea</i>	Bristle-stalked sedge	8	None	None	G5	S2?	2.2		X	X				Bog and fen Freshwater marsh Marsh and swamp Meadow and seep Wetland
<i>Carex lyngbyei</i>	Lyngbye's sedge	26	None	None	G5	S2.2	2.2		X					Marsh and swamp Wetland
<i>Carex praticola</i>	Northern meadow sedge	11	None	None	G5	S2S3	2.2		X					Meadow and seep Wetland

**APPENDIX 13B-1
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Scientific Name	Common Name	Occ Count	Federal Listing Status	State Listing Status	Global Rank	State Rank	CNPS List	Other Status	N Coast	Shasta	CValley	Bay-Delta	Folsom	Habitat
<i>Carex vulpinoidea</i>	Brown fox sedge		None	None	G5	S2.2	2.2			X	X			Marsh and swamp Riparian Woodland
<i>Coptis laciniata</i>	Oregon goldthread	48	None	None	G4G5	S2.2	2.2		X					Meadow and seep North coast coniferous forest Wetland
<i>Downingia pusilla</i>	Dwarf downingia	117	None	None	G3	S3.1	2.2				X	X		Valley and foothill grassland Vernal pool Wetland
<i>Erythronium revolutum</i>	Coast fawn lily	88	None	None	G4	S3	2.2		X					Bog and fen Broadleaved upland forest North coast coniferous forest Wetland
<i>Lathyrus palustris</i>	Marsh pea	8	None	None	G5	S2S3	2.2		X					Bog and fen Coastal prairie Coastal scrub Lower montane coniferous forest Marsh and swamp North coast coniferous forest Wetland
<i>Montia howellii</i>	Howell's montia	73	None	None	G3G4	S3	2.2	USFS_S-Sensitive	X					Meadow and seep North coast coniferous forest Vernal pool Wetland
<i>Potamogeton epihydrus</i> ssp. <i>nuttallii</i>	Nuttall's ribbon-leaved pondweed	16	None	None	G5T5	S2.2?	2.2			X				Marsh and swamp Wetland
<i>Potamogeton filliformis</i>	Slender-leaved pondweed	21	None	None	G5	S1S2	2.2				X	X		Marsh and swamp Wetland
<i>Potamogeton zosteriformis</i>	Eel-grass pondweed		None	None	G5	S2.2	2.2					X		Marshes and swamps
<i>Rhynchospora alba</i>	White beaked-rush	11	None	None	G5	S2	2.2			X				Bog and fen Marsh and swamp Wetland
<i>Rhynchospora capitellata</i>	Brownish beaked-rush	19	None	None	G5	S2S3	2.2		X					Lower montane coniferous forest Marsh and swamp Meadow and seep Upper montane coniferous forest Wetland
<i>Scutellaria galericulata</i>	Marsh skullcap	28	None	None	G5	S2.2?	2.2					X		Lower montane coniferous forest Marsh and swamp Meadow and seep Wetland
<i>Scutellaria lateriflora</i>	Side-flowering skullcap	3	None	None	G5	S1.2	2.2					X		Marsh and swamp Meadow and seep Wetland
<i>Viola palustris</i>	Alpine marsh violet	10	None	None	G5	S1S2	2.2			X				Bog and fen Coastal scrub Wetland
<i>Carex viridula</i> var. <i>viridula</i>	Green yellow sedge	7	None	None	G5T5	S1.3	2.3		X					Bog and fen Marsh and swamp North coast coniferous forest Wetland
<i>Juncus dudleyi</i>	Dudley's rush	12	None	None	G5	S2.3?	2.3			X				Lower montane coniferous forest Wetland
<i>Potamogeton foliosus</i> var. <i>fibrillosus</i>	Fibrous pondweed	1	None	None	G5T2T4	S1S2	2.3		X					Marsh and swamp Wetland
<i>Wolffia brasiliensis</i>	Brazilian watermeal	4	None	None	G5	S1.3	2.3				X			Marsh and swamp Wetland
<i>Myosurus minimus</i> ssp. <i>apus</i>	Little mouse-tail	*	None	None	G5T2Q	S2.2	3.1				X			Valley and foothill grassland Vernal pools (alkaline)
<i>Polygonum marinense</i>	Marin knotweed	17	None	None	G1Q	S1.1	3.1					X		Brackish marsh Marsh and swamp Salt marsh Wetland

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Scientific Name	Common Name	Occ Count	Federal Listing Status	State Listing Status	Global Rank	State Rank	CNPS List	Other Status	N Coast	Shasta	CValley	Bay-Delta	Folsom	Habitat
<i>Lycopodium clavatum</i>	Running-pine	120	None	None	G5	S4.1	4.1		X					Marsh and swamp North coast coniferous forest Wetland
<i>Atriplex coronata</i> var. <i>coronata</i>	Crownscale	*	None	None	G4T3	S3.2	4.2				X	X		Chenopod scrub Valley and foothill grassland Vernal pools
<i>Calandrinia breweri</i>	Brewer's calandrinia	*	None	None	G4	S3.2	4.2			X		X		Chaparral Coastal scrub
<i>Centromadia parryi</i> ssp. <i>rudis</i>	Parry's red tarplant	*	None	None	G4T3	S3.2	4.2				X	X		Valley and foothill grassland Vernal pool, vernal mesic, seeps, sometimes roadsides
<i>Convolvulus simulans</i>	Small-flowered morning-glory	*	None	None	G3	S3.2	4.2					X		Chaparral Valley and foothill grassland/ clay, serpentine seeps Coastal scrub
<i>Fritillaria agrestis</i>	Stinkbells	*	None	None	G3	S3.2	4.2				X	X	X	Chaparral Cismontane woodland Pinyon and juniper woodland Valley and foothill grassland/ clay, sometimes serpentine
<i>Hesperivax caulescens</i>	Hogwallow starfish	*	None	None	G3	S3.2	4.2				X	X		Valley and foothill grassland (mesic, clay) Vernal pools
<i>Iris longipetala</i>	Coast iris	*	None	None	G3	S3.2	4.2		X			X		Chaparral Cismontane woodland Valley and foothill grassland/ usually serpentine
<i>Lasthenia ferrisiae</i>	Ferris' goldfields	*	None	None	G3	S3.2	4.2				X	X		Vernal pool (alkaline, clay)
<i>Navarretia cotulifolia</i>	Cotula navarretia	*	None	None	G3	S3.2	4.2				X	X		Chaparral Cismontane woodland Valley and foothill grassland/ adobe
<i>Perideridia gairdneri</i> ssp. <i>gairdneri</i>	Gairdner's yampah	*	None	None	G5T3	S3.2	4.2					X		Broadleaved upland forest Chaparral Coastal prairie Valley and foothill grassland Vernal pools/ vernal mesic
<i>Psilocarphus brevissimus</i> var. <i>multiflorus</i>	Delta woolly-marbles	*	None	None	G4T3	S3	4.2					X		Vernal pools
<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	*	None	None	G4	S3.2	4.2					X		Cismontane woodland North Coast coniferous forest Valley and foothill grassland Vernal pools/mesic
<i>Eleocharis parvula</i>	Small spikerush	*	None	None	G5	S3.3	4.3		X		X	X		Marshes and swamps
<i>Stellaria obtusa</i>	Obtuse starwort	31	None	None	G5	S3.3	4.3		X	X				Lower montane coniferous forest Riparian woodland Upper montane coniferous forest Wetland

Notes:

Rarefind4 search of 22 Counties with SWP or CVP facilities - part of NODOS Affected Environment - Secondary Study Area. "Likely" species only.

Source: California Department of Fish and Game (DFG). California Natural Diversity Database (CNDDDB). 2010. Data from RareFind 4 retrieved in February to April, 2010.

Search Criteria: Taxonomic Group is (Ferns or Gymnosperms or Monocots or Dicots or Lichens or Bryophytes) and County is (Alameda or Butte or Colusa or Contra Costa or Del Norte or El Dorado or Glenn or Humboldt or Marin or Placer or Sacramento or San Francisco or San Mateo or Santa Clara or Shasta or Solano or Sonoma or Sutter or Tehama or Trinity or Yolo or Yuba) and Elevation is less than or equal to "2700" and Habitat is (Alkali marsh or Aquatic or Brackish marsh or Estuary or Freshwater marsh or Klamath/North coast flowing waters or Klamath/North coast standing waters or Marine bay or Marsh and swamp or Mud shore/flats or Riparian forest or Riparian scrub or Riparian woodland or Sacramento/San Joaquin flowing waters or Sacramento/San Joaquin standing waters or Salt marsh or Swamp or Wetland)

Methodology:

* = no occurrence numbers because these species taken from BDCP 2009 rare plant survey list of potentially present species. Some of these species may be too restricted to upland habitats to be affected.

Regrouping "Likely" species: Species outside of Secondary Study Area impact zone (too far upland, away from water projects, or not right geographic area) were sorted and eliminated from this table [using a temporary "Unlikely?" field which was then deleted]

Species were then sorted by federal, then by State status, then CNPS list, and then alphabetized within CNPS list.

Finally, species were given an "x" in Geographical Area column in which they occur, using CNDDDB and CNPS Inventory mapping. Geographical Areas are shown in Figure 13-1; informally designated by chapter author for purposes of discussion.