

# Riverside Arroyo Watershed Policy Study



## APPENDICES 7.9-7.10, Extracted Pages

Appendix 7.9 Santa Ana River Watershed Native Plant Table ..... A-38  
Appendix 7.10 Santa Ana River Watershed Invasive Plant Table ..... A-51

*Full Document Submitted to:*  
**County of Riverside Board of Supervisors &  
Riverside City Council**

*Prepared By:*  
**County/City Arroyo-Watershed Committee (CCAC)**

**November 15, 2006**

## APPENDIX 7.9

---

### SANTA ANA RIVER WATERSHED NATIVE PLANT TABLE

#### 7.9.1 CONTEXT OF THE NATIVE PLANT TABLES

The following tables and diagram were prepared by EARTHWORKS Restoration, Inc. in collaboration with the Riverside-Corona Resource Conservation District and the County/City Arroyo-Watershed Committee as materials for a workshop entitled “Water Quality Basins and Bioswales for the Inland Empire Region: Requirements, Design, Native Plants, and Implementation” offered through University of California Riverside Extension on October 10, 2005.

The table of native plant species provided for the workshop, "Plants Native to the Inland Empire Region Appropriate for Bioswales, Basins, and Water Quality Wetland Facilities" is a work in progress and will eventually include more detailed information. We plan to add research results and information important to making informed decisions about species and population sources used for wetland projects, including protective upland buffers in the local region.

Please note that the National List of Vascular Plant Species that Occur in Wetlands: 1996 National Summary: Indicator by Region and Subregion may still be under review. For this reason, the tables that we prepared for this workshop used the following reference:

Reed, P.B., Jr. 1988. National list of plant species that occur in wetlands: California (region 0). U.S. Fish and Wildlife Service, U.S. Fish Wildl. Serv. Biol. Rep. 88(26.10).

In addition to the table of native plant species, we provide a table of species that are not native to the area and which have proved to be invasive in riparian areas and riparian buffers (Appendix 7.10).

Table 7.9.1 is to be used in conjunction with the watercourse cross-sectional diagram that shows different moisture regimes (hydrozones) (Figure 7.9.1) utilized by native plant species. The Wetland Indicator Status of each species is listed in the table along with the hydrozones that each species inhabits in the Inland Empire Region. For example, plants that occur at the edge of streams in shallow water are in hydrozone 1 and are “OBL”, obligate wetland species. Plants associated with upland areas and dry slopes above watercourses are in zone 6 and are “UPL”, upland species.

---

Margot Griswold, Rick Riefner, Ileene Anderson, (EARTHWORKS Restoration, Inc.)  
Arlee Montalvo (Riverside-Corona Resource Conservation District)

## 7.9.2 WETLAND PLANT INDICATOR CATEGORIES

### Code

#### Wetland Indicator Status

#### Explanation

**Examples of Native Plants for Region 0, California ( Data were for entire state of California. Assignment to categories FACU, FAC, and FACW may shift upwards for some species if only Inland Empire is considered. )**

### OBL

#### Obligate Wetland

Occurs almost always (estimated probability 99%) under natural conditions in wetlands.

*Typha latifolia, Urtica dioica ssp. holosericea, Salix gooddingii*

### FACW

#### Facultative Wetland

Usually occurs in wetlands (estimated probability 67% – 99%), but occasionally found in non-wetlands.

*Baccharis salicifolia, Artemisia douglasiana*

### FAC

#### Facultative

Equally likely to occur in wetlands or non-wetlands (estimated probability 34% – 66%).

*Ambrosia psilostachya, Isocoma menziesii var. vernonioides*

### FACU

#### Facultative Upland

Usually occurs in non-wetlands (estimated probability 67% – 99%), but occasionally found on wetlands (estimated probability 1% – 33%).

*Leymus condensatus, Sambucus mexicanus*

### UPL

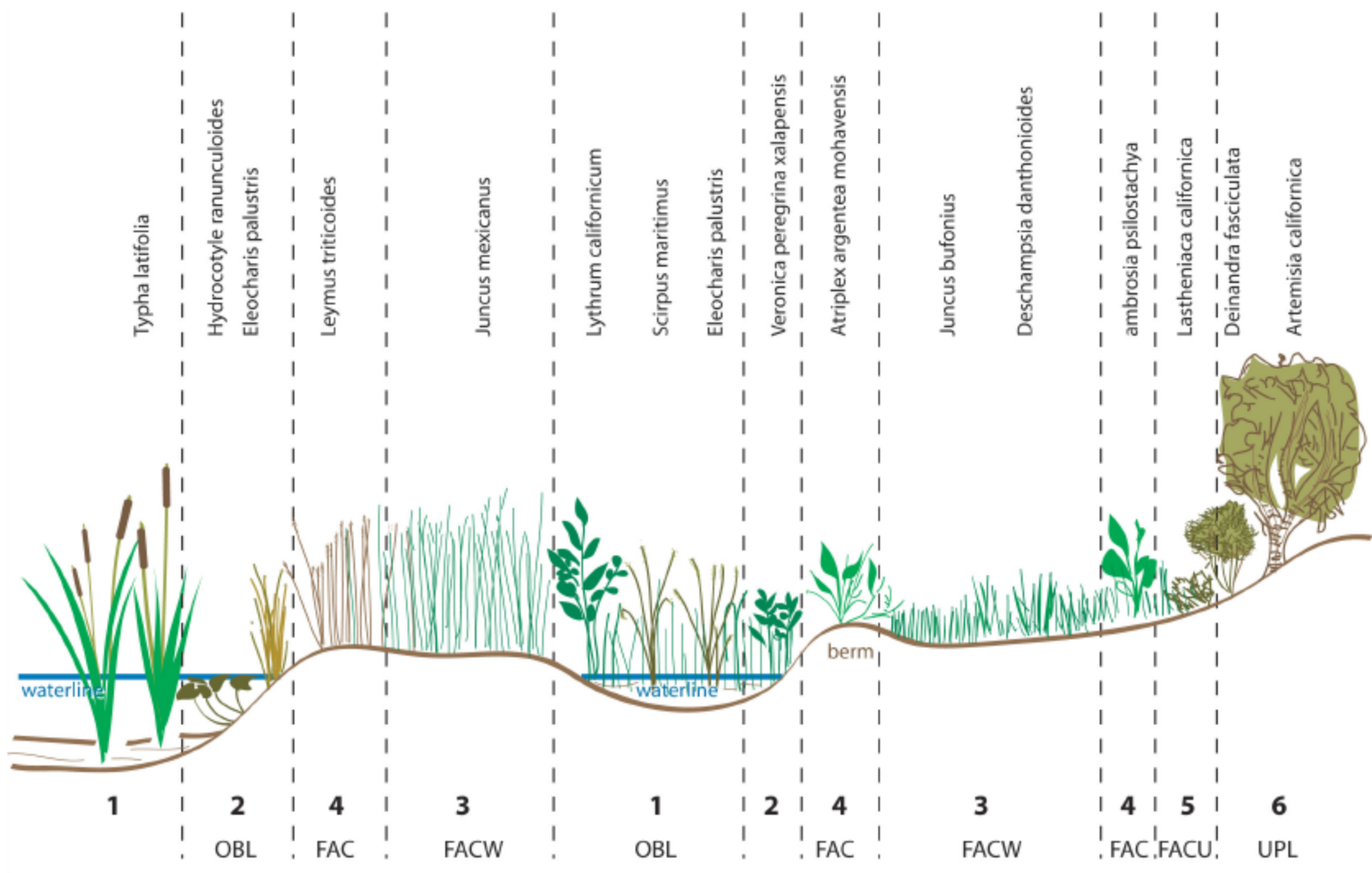
#### Obligate Upland

May occur in wetlands in another region, but occurs almost always (estimated probability 99%) under natural conditions in non-wetlands in the region specified. If a species does not occur in wetlands in any region, it is not on the National List.

*Eriogonum fasciculatum, Salvia apiana*

National Indicators reflect the range of estimated probabilities (expressed as a frequency of occurrence) of a species occurring in wetlands versus non-wetlands across the entire distribution of the species. A frequency, for example, of 67%-99% (Facultative Wetland) means that 67%-99% of sample plots containing the species randomly selected across the range of the species would be wetland. Regional Indicators express the estimated probability (likelihood) of a species occurring in wetlands versus non-wetlands in the region.

The wetland indicator categories should not be equated to degrees of wetness. Many obligate wetland species occur in permanently or semi-permanently flooded wetlands, but a number of obligates also occur in and some are restricted to wetlands which are only temporarily or seasonally flooded. The facultative upland species include a diverse collection of plants, which range from weedy species adapted to exist in a number of environmentally stressful or disturbed sites (including wetlands), to species in which a portion of the gene pool (an ecotype) always occurs in wetlands. Both the weedy and ecotype representatives of the facultative upland category occur in seasonally and semi-permanently flooded wetlands.



**Figure 7.9-1, Cross-sectional Diagram of a Watercourse and Associated Wetlands.** The numbers represent different hydrozones. See Table 7.9.1 for a list of species for the Inland Empire Region associated with each hydrozone. The abbreviations OBL, FAC, FACW, FACU, and UPL are the Wetland Plant Indicator Status as described in section 7.9.2.

**Table 7.9.1. Plants Native to the Inland Empire Region Appropriate for Restoration, Bioswales, Basins, and Water Quality Wetland Facilities**

Species	Common Name	Wetland Indicator Status, Region 0*	Height	Roots and Plant Habit	Notes on Substrate, Habitat, or Hydrologic Regime	Zone Placement**
<b>Herbaceous Wetland Species</b>						
<i>Ambrosia psilostachya</i>	western ragweed	FAC	to 2'	rhizomatous perennial	dry to moist banks or sandy sediments	4, 5, 6
<i>Anemopsis californica</i>	yerba mansa	OBL	to 1'	rhizomatous perennial with stolens	highly adaptive, alkaline and shade tolerant	2, 3
<i>Artemisia douglasiana</i>	mugwort	FACW	to 2'	rhizomatous perennial	banks and terraces with periodic flooding	3, 4, 5
<i>Aster subulatus</i> var. <i>ligulatus</i>	slender aster	FACW	to 5'	annual	summer-moist or seasonally saturated disturbed sites	2, 3
<i>Atriplex argentea</i> var. <i>mohavensis</i>	Mohave silver-scale	FAC	to 2'	annual	vernal swales and margins of basins on alkaline soils	3, 4, 5
<i>Atriplex serenana</i>	bracted saltscale	FAC	< 2'	annual	vernal swales and margins of basins on alkaline soils	3, 5
<i>Bidens laevis</i>	smooth bur-marigold	OBL	to 6'	annual or perennial	margins of basins in shallow or slow-moving summer water	2
<i>Carex praegracilis</i>	slender or clustered field sedge	OBL	< 2'	perennial from rhizome	moist swales and shallow basins, tolerant of slightly alkaline conditions	2, 3
<i>Cressa truxillensis</i>	alkali weed	FACW	< 1'	annual	vernal swales and seasonally ponded basins that dry by summer, alkaline clayey soils	3, 4, 5
<i>Cyperus eragrostis</i>	tall umbrella-sedge	FACW	< 3'	perennial	highly adaptive and disturbance tolerant	2, 3, 4
<i>Cyperus odoratus</i>	fregant umbrella-sedge	FACW	< 2'	annual	highly adaptive to all moist and ponded conditions	2, 3, 4, 5
<i>Deschampsia danthonioides</i>	annual hairgrass	FACW	< 2'	annual grass	vernal swales and seasonally ponded basins that dry by summer, mostly alkaline soils	3, 4, 5
<i>Distichlis spicata</i>	salt grass	FACW	1 to 1.5'	rhizomatous perennial grass	seasonally saturated clays or vernal moist sandy sites, mostly alkaline conditions	3, 4, 5
<i>Eleocharis montevidensis</i>	slender creeping spikerush	FACW	to 1.5'	perennial with long rhizomes	highly adaptive to all seasonally moist sites	2, 3, 4
<i>Eleocharis palustris</i>	pale spikerush	OBL	to 3'	rhizomatous perennial	adaptive to seasonally saturated or ponded sites to 6" depth (1)	2, 3

Species	Common Name	Wetland Indicator Status, Region 0*	Height	Roots and Plant Habit	Notes on Substrate, Habitat, or Hydrologic Regime	Zone Placement**
<i>Eleocharis parishii</i>	Parish's spikerush	FACW	< 1'	rhizomatous perennial	seasonally moist swales and shallow basins, especially sandy sediments	2, 3, 4
<i>Elymus glaucus</i>	blue wildrye	FACU	< 4.5'	perennial grass	moist to dry banks of swales and basins	4, 5, 6
<i>Epilobium ciliatum</i>	green willow-herb	FACW	to 4'	perennial	highly adaptive to all summer-moist conditions	2, 3, 4
<i>Euthamia occidentalis</i> ( <i>Solidago o.</i> )	western goldenrod	OBL	to 6'	perennial from rhizome	all summer-moist conditions	2, 3, 4
<i>Frankenia salina</i>	alkali heath	FACW	< 2'	suffrutescent perennial	clay or moist alkaline soils	3, 4, 5
<i>Gnaphalium palustre</i>	western marsh cudweed	FACW	< 1'	annual	seasonally moist soils of swales and shallow basins	3, 4, 5
<i>Heliotropium curassavicum</i>	alkali heliotrope	OBL	< 2'	perennial, sometimes from rhizome-like root	moist to summer dry shallow swales, banks, and terraces on sandy to alkaline soils	3, 4, 5
<i>Hordeum depressum</i>	low barley	FACW	< 2'	annual grass	vernal swales and shallow basins on alkaline soils	3, 4
<i>Hordeum intercedens</i>	vernal barley	FAC	< 1.5'	annual grass	vernal swales and shallow basins on alkaline soils Caution-- CNPS List 3-- use increased seed from local source	3, 4, 5
<i>Hydrocotyle ranunculoides</i>	floating marsh pennywort	OBL		perennial, creeping or floating	shallow or slow-moving summer water, especially silty sediments of basins	1, 2
<i>Iva axillaris</i>	poverty weed	FAC	< 2'	annual	vernally moist swales and banks in sandy to alkaline soils	5, 6
<i>Juncus balticus</i>	wire rush	OBL	1.5 to 2'	rhizomatous perennial	seasonally saturated swales and margins of basins	2, 3
<i>Juncus bufonius</i>	toad rush	FACW	< 1'	annual	highly adaptive, all in vernally moist conditions	2, 3, 4, 5
<i>Juncus mexicanus</i>	Mexican rush	FACW	1.5 to 2'	perennial with heavy rhizomes	seasonally moist swales and shallow basins	3, 4, 5
<i>Juncus rugulosus</i>	wrinkled rush	OBL	1 to 2'	perennial, often densely matted	seasonally moist swales and shallow basins	2, 3, 4
<i>Juncus xiphioides</i>	iris-leaved rush	OBL	1.5 to 2'	rhizomatous perennial	seasonally moist swales and shallow basins	2, 3, 4

Species	Common Name	Wetland Indicator Status, Region 0*	Height	Roots and Plant Habit	Notes on Substrate, Habitat, or Hydrologic Regime	Zone Placement**
<i>Lasthenia californica</i> ( <i>L. gracilis</i> )	coastal goldfields	FACU	<16"	annual	highly adaptive for all slopes and banks in vernal moist to dry conditions, including alkaline clays	5, 6
<i>Lemna</i> spp.	duckweed	OBL		perennial floating aquatics	swales and basin with slow-moving water in summer	1, 2
<i>Leptochloa uninervia</i>	Mexican spangletop	FACW	1 to 3'	annual grass	requires summer moisture, but tolerates disturbance, pollution, and alkaline conditions; well suited for swales with late-season nuisance flows	2, 3, 4
<i>Leymus condensatus</i> ( <i>Elymus c.</i> )	giant wildrye	FACU	3 to 5'	perennial grass with short rhizomes	vernally moist slopes and banks	3, 4, 5
<i>Leymus triticoides</i> ( <i>Elymus t.</i> )	creeping wildrye	FAC	to 3'	rhizomatous perennial grass	vernally moist slopes, banks, and shallow swales, can be mowed to form turf	3, 4, 5
<i>Ludwigia peploides</i> ssp. <i>peploides</i>	yellow waterweed	OBL	<1'	perennial, matted, creeping or floating	shallow or slow-moving water in summer; tolerant of flood scour and disturbance	1, 2
<i>Lythrum californicum</i>	California loosertrife	OBL	1 to 4'	perennial	all seasonally or summer-moist conditions	2, 3, 4
<i>Malvella leprosa</i>	alkali mallow	FAC	< 2'	annual, decumbent	seasonally moist soils in shallow swales and basins on alkaline soils	3, 5
<i>Mimulus cardinalis</i>	scarlet monkey flower	OBL	to 5'	rhizomatous perennial	seasonally inundated margins of basins or swales	2, 3, 4
<i>Mimulus guttatus</i>	streamside monkey flower	OBL	to 4.5'	herbaceous annual or perennial	highly adaptive and tolerant of flood scour and disturbance in seasonally inundated conditions	2, 3, 4
<i>Muhlenbergia rigens</i>	deergrass	FACW	1.5 - 4.5'	perennial, densely clumped grass	highly adaptive, all seasonally moist banks and terraces	4, 5
<i>Najas marina</i>	holly-leaved water-nymph	OBL	<1.5'	mat-like annual	submerged aquatic for basins with year-round water	1
<i>Oenothera elata</i> ssp. <i>hirsutissima</i>	Hooker's evening primrose	FACW	0.5-8'	biennial or short-lived perennial	highly adaptive, all vernal to summer-moist conditions	3, 4, 5

Species	Common Name	Wetland Indicator Status, Region 0*	Height	Roots and Plant Habit	Notes on Substrate, Habitat, or Hydrologic Regime	Zone Placement**
<i>Paspalum distichum</i>	knot grass	OBL	to 2'	perennial grass from stolons and rhizomes	seasonally moist to summer-wet conditions, can be mowed to form turf	2, 3, 4
<i>Pluchea odorata</i>	marsh flea-bane	OBL	<3'	herbaceous annual or perennial	seasonally moist to summer-wet conditions in alkaline conditions	2, 3
<i>Polygonum hydropiperoides</i>	mild water pepper	OBL	<3'	perennial from extensive system of rhizomes	fluctuating waters of basins and wet swales	2, 3
<i>Rorripa nasturtium-aquaticum</i>	white water-cress	OBL	<2'	perennial, submersed, floating or prostrate on mud	may not be native; margins of basins; shallow or slow-moving water in all conditions	1, 2, 3
<i>Scirpus acutus</i> var. <i>occidentalis</i> ( <i>Schoenoplectus a.</i> )	hard-stem bulrush	OBL	4 to 12'	perennial, long rhizomes; dense clonal growth	standing water in basins up to 3' water depth	1, 2
<i>Scirpus americanus</i> ( <i>Schoenoplectus a.</i> )	Olney's bulrush	OBL	2 -6'	rhizomatous perennial	margins of basins and in wet swales	2, 3
<i>Scirpus californicus</i> ( <i>Schoenoplectus c.</i> )	California bulrush	OBL	6 to 12'	perennial with long rhizomes	in standing water, margins of basins and in wet swales	1, 2, 3
<i>Scirpus maritimus</i> ( <i>Schoenoplectus m.</i> )	alkali bulrush	OBL	2 to 4'	rhizomatous perennial with tubers	up to 6" water depth; margins of basins in shallow water or in wet swales; rapid growth	2, 3
<i>Sporobolus airoides</i>	alkali dropseed	FAC	1 - 3' (veg)	tufted perennial	seasonally moist alkaline soils in swales and on banks	4, 5
<i>Typha domingensis</i>	southern cattail	OBL	4.5 to 12'	rhizomatous perennial	margins of basins and in wet swales	1, 2
<i>Typha latifolia</i>	common cattail	OBL	4.5 to 9'	rhizomatous perennial	up to 12" water depth (1); margins of basins and in wet swales	1, 2
<i>Urtica dioica</i> ssp. <i>holosericea</i>	hoary or stinging nettle	OBL	3 to 10'	rhizomatous perennial	moist places	3, 4, 5
<i>Veronica peregrina</i> ssp. <i>xalapensis</i>	Mexican speedwell	OBL	2" to 2'	annual	seasonally saturated soils, margins of basins with fluctuating water, swales or drying basins	2, 3, 4

Species	Common Name	Wetland Indicator Status, Region 0*	Height	Roots and Plant Habit	Notes on Substrate, Habitat, or Hydrologic Regime	Zone Placement**
<b>Woody Wetland Species (Including Subshrubs)</b>						
<i>Atriplex lentiformis</i>	big saltbush	FAC	3 to 9'	shrub	extremely hardy; scrub and slopes, banks, and dry washes; on alkaline soils	5, 6
<i>Baccharis emoryi</i>	Emory's baccharis	FACW	to 12'	evergreen shrub	alkaline tolerant	4, 5
<i>Baccharis salicifolia</i>	mule fat	FACW	to 7'	evergreen shrub	highly adaptive, margins of basins with fluctuating water, and all seasonally saturated or ponded conditions	2, 3, 4, 5
<i>Isocoma menziesii</i> var. <i>vernonioides</i>	coastal goldenbush	FAC	1.5 to 2'	suffrutescent perennial	moist to dry slopes, banks, and in open scrub on all soils	5, 6
<i>Platanus racemosa</i>	western sycamore	FACW	30 to 100'	shallow to deep roots, deciduous tree	slopes and banks with periodic flooding	4, 5
<i>Pluchea sericea</i>	desert arrowweed	FACW	3 to 15'	rhizomatous suckering shrub	wet swales and margins of basins in shallow water, alkaline tolerant	3, 4, 5
<i>Populus fremontii</i>	western cottonwood	FACW	50 to 75'	rhizomatous, shallow roots, suckering tree	gravel to sandy soil with periodic flood (12)	3, 4, 5
<i>Rosa californica</i>	California rose	FACW	3 to 9'	shrub, climbing	moist banks of basins, swales and streams	4, 5
<i>Rubus ursinus</i>	California blackberry	FAC		shrub, clambering	moist banks of basins, swales and streams	5
<i>Salix exigua</i>	narrow leaf willow, sand bar, or coyote willow	OBL	3 to 15' (27')	rhizomatous shrub	moist gravel to sandy substrate and tolerant of flood scour	3, 4, 5
<i>Salix gooddingii</i>	black willow	OBL	< 95'	tree	margins of basins with fluctuating water; tolerant of prolonged ponding, and silt-laden soils	2, 3, 4
<i>Salix laevigata</i>	red willow	FACW	< 45'	tree	margins of basins and moist banks, tolerant of sub-alkaline soils	3, 4, 5
<i>Salix lasiolepis</i>	arroyo willow	FACW	12 to 30'	small, multistem tree	highly adaptive, all seasonally moist to shallow ponding conditions, sandy to coarse soils	3, 4, 5
<i>Sambucus mexicana</i>	Mexican elderberry	FACU	6 to 25'	tall shrub	alluvial fans, seasonally moist slopes and upper margins of banks	5

Species	Common Name	Wetland Indicator Status, Region 0*	Height	Roots and Plant Habit	Notes on Substrate, Habitat, or Hydrologic Regime	Zone Placement**
<b>Upland Species for Use on Dry Slopes and Borders</b>						
<i>Artemisia californica</i>	California sagebrush	UPL		shrub	tolerates slightly moist conditions	6
<i>Artemisia dracunculus</i>	terragon	UPL		rhizomatous subshrub	seasonally wet ephemeral washes, scour-prone channels	6
<i>Astragalus pomonensis</i>	Pomona locoweed	UPL		perennial, clumped with ascending stems	tolerates disturbance	6
<i>Brickellia californica</i>	California brickellbush	UPL		many-branched shrub	dry rocky slopes	6
<i>Bothriochloa barbinodis</i>	plumed beardgrass	UPL		clumped perennial grass	stony or rocky soils	6
<i>Camissonia bistorta</i>	California sun cup	UPL		annual	often on sandy soils	6
<i>Centaurium venustum</i>	canchagua	UPL		annual	often ephemeral streams	6
<i>Croton californicus</i>	California croton	UPL		perennial or subshrub	sandy soils and washes	6
<i>Deinandra fasciculata</i> (Hemizonia f.)	fascicled tarplant	UPL		annual	tolerates slightly moist conditions	6
<i>Deinandra kelloggii</i> (Hemizonia k.)	Kellogg's tarplant	UPL		annual	coarse soils	6
<i>Encelia farinosa</i>	brittlebush	UPL		shrub	stony soils and dry south- or west-facing slopes	6
<i>Eriastrum sapphirinum</i>	sapphire wooly-star	UPL		annual		6
<i>Erigeron foliosus</i> var. <i>foliosus</i>	leafy daisy	UPL		perennial with woody roots		6
<i>Eriogonum fasciculatum</i> var. <i>foliolosum</i>	interior California buckwheat	UPL		shrub	all dry slopes with rocky or poor soils	6
<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>	ash-leaved California buckwheat	UPL		shrub	dry, rocky slopes in lower rainfall areas of region	6
<i>Eriophyllum confertiflorum</i>	golden yarrow	UPL		perennial	locally common, especially after fire	6
<i>Epilobium canum</i>	California fuschia	UPL		clumped perennial	all dry slopes	6
<i>Gnaphalium bicolor</i>	bicolored cudweed	UPL		perennial	dry slopes or rocky soils	6
<i>Gnaphalium californicum</i>	California everlasting	UPL		annual or biennial		6
<i>Keckiella antirrhinoides</i>	yellow bush-penstemon	UPL		shrub	in lower rainfall areas, on north-facing slopes	6
<i>Layia platyglossa</i>	tidy tips	UPL		annual	tolerates vernal moist and alkaline soils	6

Species	Common Name	Wetland Indicator Status, Region 0*	Height	Roots and Plant Habit	Notes on Substrate, Habitat, or Hydrologic Regime	Zone Placement**
<i>Lotus hamatus</i>	fishhook lotus	UPL		annual	highly adaptive	6
<i>Lotus scoparius</i> var. <i>brevialatus</i>	deerweed	UPL		subshrub	highly adaptive	6
<i>Lupinus bicolor</i>	miniature lupine	UPL		annual	highly adaptive	6
<i>Lupinus succulentus</i>	arroyo lupine	UPL		annual	tolerates disturbance	6
<i>Lupinus truncatus</i>	collar lupine	UPL		annual	dry slopes, draws, alluvial fans	6
<i>Melica imperfecta</i>	small-flowered melic grass	UPL		perennial bunch grass	all dry slopes	6
<i>Mimulus aurantiacus</i>	bush monkey flower	UPL		shrub	north-facing slopes	6
<i>Mirabilis laevis</i>	wishbone bush	UPL		perennial	rocky or sandy slopes	6
<i>Monardella lanceolata</i>	mustang mint	UPL		annual	tolerates disturbance	6
<i>Nassella cernua</i> ( <i>Stipa c.</i> )	nodding needlegrass	UPL		perennial bunch grass	open slopes	6
<i>Nassella lepida</i> ( <i>Stipa l.</i> )	foothill needlegrass	UPL		perennial bunch grass	brushy slopes	6
<i>Plantago erecta</i>	California plantain	UPL		annual	tolerates heavy clays	6
<i>Phacelia distans</i>	common phacelia	UPL		annual	clay or rocky soils	6
<i>Rhamnus crocea</i>	spiny redbery	UPL		shrub	dry slopes or rocky soils	6
<i>Salvia apiana</i>	white sage	UPL		shrub	dry slopes or rocky soils	6
<i>Salvia mellifera</i>	black sage	UPL		shrub	coarse to heavy soils	6
<i>Scrophularia californica</i> ssp. <i>floribunda</i>	California figwort	UPL		perennial herb	mostly around boulders	6
<i>Solanum xanti</i>	chaparral nightshade	UPL		shrub	north-facing slopes	6
<i>Tetradymia comosa</i>	cotton-thorn	UPL		shrub	dry slopes, aluvial fans	6
<i>Vulpia microstachys</i> var. <i>pauciflora</i>	Pacific fescue	UPL		annual grass	all slopes	6
<i>Vulpia octoflora</i>	six-weeks fescue	UPL		annual grass	all slopes	6
<b>* Wetland Indicator Status for Region 0, California</b> (after Reed 1988)	OBL = Obligate Wetland FACW = Facultative Wetland (usually on wetlands, probability ~67%-99%) FAC = Facultative (equally likely on wetlands or non-wetlands) FACU = Facultative Upland (occasionally on wetlands, probability ~1%-33%) UPL = Obligate					
<b>** Zone Placement</b> (adapted from Hoag et al. 2001 for Inland Empire using Reed 1988)	1 = perennial water 2 = margins of perennial water or seasonal swales 3 = seasonally inundated; moist areas 4 = seasonally inundated terrace; seasonally dry areas 5 = upper terrace or slope; occassionally inundated 6 = upland slope; rarely inundated					Wet ↓ Dry

## 7.9.1 WETLAND PLANTS SELECTED REFERENCES

- Albright Seed Company. 2004. *Leymus triticoides*, the best plant for your bioswale. In: "Leaf-let" (<http://www.albrightseed.com/index.html>).
- Allen, C. 1990. Artificial wetlands for wastewater treatment. University of California, Santa Barbara, California.
- Ausubel, K. 1992. Cleopatra's bathwater: an informal introduction to the art and science of bioremediation. Arid Lands Newsl., Office of Arid Lands Studies, University of Arizona, Tucson, Ariz. Spring/Summer 1992, 32: 2-4.
- Bays, J. and N. Palmer. 2003. Treatment wetlands remove fecal coliform bacteria from low-flow urban runoff in southern California. Western Chapter, Society of Wetland Scientists, Headwaters to Oceans Conference, UCSB, Santa Barbara.
- Chambers, J. M. and A.J. McComb. 1994. Establishing wetland plants in artificial systems. Water Science and Technology 29: 79-84.
- Chipping, D. 2000. Wetlands Source Book. California Native Plant Society, Sacramento, California.
- De Laney, T.A. 1995. Benefits to downstream flood attenuation and water quality as a result of constructed wetlands in agricultural landscapes. J. Soil-Water Conserv. 50: 620-626.
- DiTomaso, J. and E. Heady. 2003. Aquatic and riparian weeds of the west. University of California Agriculture and Natural Resources Publication 3421, Oakland, California.
- Duncan, C. P. and P.M. Groffman. 1994. Comparing microbial parameters in natural and constructed wetlands. J. Environ. Qual. 23: 298-305.
- Emery, D.E. 1995. Seed propagation of native California plants. The Santa Barbara Botanic Garden, Santa Barbara, California.
- Evans, R., J.W. Gilliam, and J.P. Lilly. 1997. Wetlands and Water Quality. North Carolina Cooperative Extension Service, Publication Number: AG 473-7. Charlotte, North Carolina.
- Ewel, K.C. 1990. Multiple demands on wetlands. BioScience 40(9): 660.
- Faber, P.M. 1996. Common Wetland Plants of Coastal California. Pickleweed Press, Mill Valley, California.
- Faber, P.M. and R. Holland. 1992. Common Riparian Plants of California. Pickleweed Press, Mill Valley, California.
- Feliz, D. 1992. Reclaimed water at San Jacinto Wildlife Area. California Waterfowl, Spring 1992: 28-29.
- Gerheart, R.A. 1992. Use of constructed wetlands to treat domestic wastewater, City of Arcata, California. Water Science and Technology 26: 1625-1637.
- Gilliam, J. W. 1994. Riparian wetlands and water quality. J. Environ. Qual. 23: 896-900.
- Gomez, M. and W. Ferren. 2003. Tracking the efficiency of native plants used at Manzanita Village – UCSB. Western Chapter, Society of Wetland Scientists, Headwaters to Oceans Conference, UCSB, Santa Barbara.

- Grey, D. and R. Sotir. 1996. Biotechnical and soil bioengineering slope stabilization- A practical guide for erosion control. John Wiley and Sons, Inc., New York.
- Groves, W., P. Hammer, K. Knutsen, S. Ryan, and R. Schilipf. 1999. Analysis of bioswale efficiency for treating surface runoff. Master of Environmental Science and Management, University of California, Santa Barbara, California.
- Hickman, J.C. (ed.). 1993. The Jepson Manual. University of California Press, Berkeley, California.
- Hoag, J. C., S. K. Wyman, G. Bentrup, L. Holzworth, D. G. Ogle, J. Carleton, F. Berg, and B. Leinard. 2001. Users guide to description, propagation and establishment of wetland plant species and grasses for riparian areas in the intermountain west. TN Plant Materials No. 38. USDA-NRCS, Boise, ID.
- Josselyn, M.N., S.P. Faulkner, and W.H. Patrick. 1990. Relationship between seasonally wet soils and occurrence of wetland plants in California. *Wetlands* 10(1): 7-26.
- Keller, T. 1993. Riparian zone plant ecology and hydrology in Aliso Creek, Chino Hills State Park, southern California. In: *Interface between ecology and land development in California*, J. E. Keeley [ed.], p. 137-141, Southern California Academy of Sciences, Los Angeles, California.
- L.C. Lee & Associates, Inc. 1994. Advanced identification and functional assessment of waters of the United States, including wetlands in the Santa Margarita watershed, California. Prepared for the U.S. Environmental Protection Agency, Region IX.
- Mandel, R. and P.L. Koch. 1992. A Review of literature concerning the establishment and maintenance of constructed wetlands using *Scirpus*, *Sparganium*, and other wetland species. U.S. Dept. of Agriculture, Soil Conservation Service, Washington, DC, 114 p.
- Mason, H.L. 1957. A Flora of the Marshes of California. University of California Press, Berkeley, California.
- Mitsch, W.J. and R.F. Wilson. 1996. Improving the success of wetland creation and restoration with know-how, time, and self-design. *Ecol. Appl.* 6: 77-83.
- Mitsch, W. J., J.K. Cronk, X.Y. Wu, R.W. Nairn, and D.L. Hey. 1995. Phosphorus retention in constructed freshwater riparian marshes. *Ecol. Appl.* 5: 830-845.
- Mitsch, W.J. and J.G. Gosselink. 2000. *Wetlands* [third edition]. John Wiley & Sons, Inc., New York, 920 p.
- Reed, P.B., Jr. 1988. National list of plant species that occur in wetlands: California (region 0). U.S. Fish and Wildlife Service, U.S. Fish Wildl. Serv. Biol. Rep. 88(26.10).
- Reed, S.C. 1991. Constructed wetlands for wastewater treatment. *Biocycle* 32 (1): 44.
- Roberts, F.M., Jr., S. White, A. Sanders, D. Bramlet, and S. Boyd. 2004. *The Vascular Plants of Western Riverside County: An Annotated Checklist*. F.M. Roberts Publications, San Luis Rey, California.
- Sutula, M. and J.W. Day. 1994. *Exploring the Use of Wetlands for Wastewater Treatment: A Guide for Municipalities and Businesses*. Internet Publication (<http://www.lsu.edu/guests/wwwcei/wastewaterguide/I.html>).

- Sutula, M. and E. Stein. 2003. Habitat Value of Natural and Constructed Wetlands Used to Treat Urban Runoff: A Literature Review. Southern California Coastal Water Research Project, Technical Report #388.
- Sutula, M., E. Stein, J. Collins, and A.E. Fetscher. 2004. Development of a Rapid Assessment Method for Wetland Condition in California. Proceedings of the American Water Resources Association Specialty Conference on Riparian Ecosystems and Buffers, Squaw Creek, CA.
- Tiner, R. 1999. Wetland indicators: A guide to wetland identification, delineation, classification, and mapping. Lewis Publishers, Boca Raton, Florida, 392 p.
- Treimer, K.A. 1986. The values of southern California wetlands: A historical perspective. B.A., University of California, Santa Barbara, California.
- U.S. Environmental Protection Agency. 1990. Water quality standards for wetlands. U.S. Environmental Protection Agency, Washington DC, EPA 440/S-90-011.
- U.S. Fish and Wildlife Service. 1997. National list of plant species that occur in wetlands: 1996 national summary. U.S. Fish and Wildlife Service, Ecology Section, National Wetlands Inventory, Washington DC.
- Van Oostrom, A. J. and J.M. Russel. 1994. Denitrification in constructed wastewater wetlands receiving high concentrations of nitrate. *Water Science and Technology* 29:7-14.
- Vymazal, J. 1995. Algae and element cycling in wetlands. Lewis Publishers, Boca Raton, Florida, 689 p.
- Zhu, T. and F.J. Sikora. 1995. Ammonium and nitrate removal in vegetated and unvegetated gravel bed microcosm wetlands. *Water Science and Technology* 32: 219-228.

**APPENDIX 7.10:**

**SANTA ANA RIVER WATERSHED INVASIVE PLANT TABLE**

The species indicated in this table should never be planted in watercourses or their protective setbacks. Certain aggressively naturalizing tree and shrub species should not be planted anywhere near riparian or other wildland areas. Examples of particularly aggressive exotic species on the “Do Not Plant” list within the CCAC project area include the following: trees (tree of heaven, blue gum; Mexican fan palm); grasses (giant reed, red brome, pampas grass, Bermuda grass); shrubs (tamarisk, castor bean, Spanish broom); and herbaceous perennials (perennial pepperweed, sweet fennel, Bermuda buttercup). Commonly planted species are in blue font.

<b>Some Invasive Species of Wetlands and Banks DO NOT PLANT LIST</b>	
<b>Species</b>	<b>Common Name</b>
<i>Ailanthus altissima</i>	tree of heaven
<i>Arctotis</i> spp. (all species & hybrids)	African daisy
<i>Arundo donax</i>	giant reed
<i>Atriplex semibaccata</i>	Australian saltbush
<i>Atriplex suberecta</i>	serrate-leaved saltbush
<i>Avena barbata</i>	slender wild oat
<i>Avena fatua</i>	wild oat
<i>Bassia hyssopifolia</i>	five-hook bassia
<i>Brassica nigra</i>	black mustard
<i>Bromus diandrus</i>	rip-gut brome
<i>Bromus madritensis</i>	red brome
<i>Centaurea melitensis</i>	tacalote
<i>Centranthus ruber</i>	red apple
<i>Chenopodium ambrosioides</i>	epizote
<i>Cirsium vulgare</i>	bull thistle
<i>Carpobrotus chilensis, C. edulis</i>	ice plant
<i>Cortaderia jubata, C. selloana</i>	pampus grass, jubata grass
<i>Cynodon dactylon</i>	Bermuda grass (and hybrids)
<i>Echinochloa crus-galli</i>	barnyard grass
<i>Ehrharta erecta</i>	panic veldtgrass
<i>Ehrharta longiflora</i>	
<i>Eichornia crassipes</i>	water hyacinth
<i>Erodium brachycarpum</i>	short-fruited filaree
<i>Erodium cicutarium</i>	red-stemmed filaree
<i>Erodium moschatum</i>	white-stemmed filaree
<i>Eucalyptus globulus, E. camaldulensis</i>	blue gum, red gum
<i>Festuca rubra</i>	creeping red fescue
<i>Ficus carica</i>	common fig
<i>Foeniculum vulgare</i>	sweet fennel
<i>Fraxinus uhdei</i>	shamel ash

Some Invasive Species of Wetlands and Banks DO NOT PLANT LIST	
Species	Common Name
<a href="#">Gazania spp. (all species &amp; hybrids)</a>	<a href="#">gazania</a>
<a href="#">Genista spp. (all species)</a>	<a href="#">broom</a>
<a href="#">Hirshfeldia incana (Brassica geniculata)</a>	perennial or short pod mustard
<a href="#">Lactuca serriola</a>	prickly lettuce
<a href="#">Lantana camara</a>	common garden lantana
<a href="#">Lepidium latifolium</a>	perennial pepperweed
<a href="#">Limonium perezii</a>	<a href="#">Sea lavender</a>
<a href="#">Lobularia maritima</a>	<a href="#">Sweet-alyssum</a>
<a href="#">Marrubium vulgare</a>	common horehound
<a href="#">Melilotus alba</a>	<a href="#">white sweet-clover</a>
<a href="#">Melilotus indicus</a>	<a href="#">sour clover</a>
<a href="#">Myoporum species</a>	<a href="#">myoporum</a>
<a href="#">Nicotiana glauca</a>	tree tobacco
<a href="#">Oxalis pres-caprae</a>	<a href="#">Bermuda buttercup</a>
<a href="#">Parkinsonia aculeata</a>	<a href="#">Mexican palo verde</a>
<a href="#">Pennisetum setaceum</a>	<a href="#">African or green fountain grass</a>
<a href="#">Polypogon monspeliensis</a>	annual beard grass
<a href="#">Pulicaria paludosa</a>	Spanish sunflower
<a href="#">Raphanus sativus</a>	wild radish
<a href="#">Ricinus comunis</a>	castor bean
<a href="#">Robinia pseudoacacia</a>	<a href="#">black locust</a>
<a href="#">Rumex crispus</a>	curley dock
<a href="#">Salsola tragus</a>	Russian thistle
<a href="#">Salvinia molesta</a>	giant water fern
<a href="#">Schinus molle</a>	<a href="#">Peruvian (Calif.) pepper tree</a>
<a href="#">Schinus terebinthifolius</a>	<a href="#">Brazilian pepper tree</a>
<a href="#">Silibium marianum</a>	milk thistle
<a href="#">Sisymbrium irio</a>	London rocket
<a href="#">Sonchus asper</a>	prickly sow-thistle
<a href="#">Spartium junceum</a>	<a href="#">Spanish broom</a>
<a href="#">Tamarix species</a>	<a href="#">tamarisk, salt cedar</a>
<a href="#">Vinca major</a>	<a href="#">periwinkle</a>
<a href="#">Washingtonia robusta</a>	<a href="#">Mexican fan palm</a>

Other exotic horticultural species known to naturalize and invade watercourses should not be planted by watercourses, including pride of Madeira, pistachio, cotoneaster and others. Avoid planting cultivars that can disperse viable seeds or vegetative reproductive structures into wildlands. Please see updates on invasive species and what not to plant at the following sites:

<http://plants.usda.gov/java/invasiveOne?pubID=CalEPPC>

<http://www.cal-ipc.org/>

<http://www.cal-ipc.org/landscaping/dpp/index.php>