rdd 8/20/02

Preliminary Wetlands Delineation Report
Lower Cache Creek CCRMP Area

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August 15, 2002

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1.0 INTRODUCTION

1.1 PURPOSE

This report describes the boundaries of wetlands and/or "other waters of the United States" that occur within the active channel of the Cache Creek Resource Management Plan (CCRMP) Area, under jurisdiction of the U.S. Army Corps of Engineers (ACOE) under Section 404 of the Clean Water Act. The information presented in this report provides responses to the data required by the ACOE Sacramento District's *Minimum Standards for Acceptance of Preliminary Wetland Delineations* (November 30, 2001), including a detailed description of the existing vegetation communities within the Lower Cache Creek Planning Area. Appendix 3 is a reference guide, indicating where specific data can be found in the report, in direct response to the Corps Minimum Standards.

1.2 PROJECT AREA DESCRIPTION

The CCRMP Area is situated in the western Sacramento Valley (Figure 1) and is approximately 14.5 miles long, extending from the Capay Dam to a levied area near the Town of Yolo at Interstate 5. The CCRMP Area comprises approximately 2,324 acres under mostly private ownership, and is primarily bordered by agricultural and pasturelands. Other adjacent land uses include off-channel mining operations, scattered residences, a golf course, the Cache Creek Nature Preserve (CCNP), and both maintained and undeveloped roadways. The majority of the project is situated in valley flatlands, with only the western-most portion of the project (near Capay Dam) occurring in an area where the rolling hills of the coastal range transition into the Sacramento Valley.

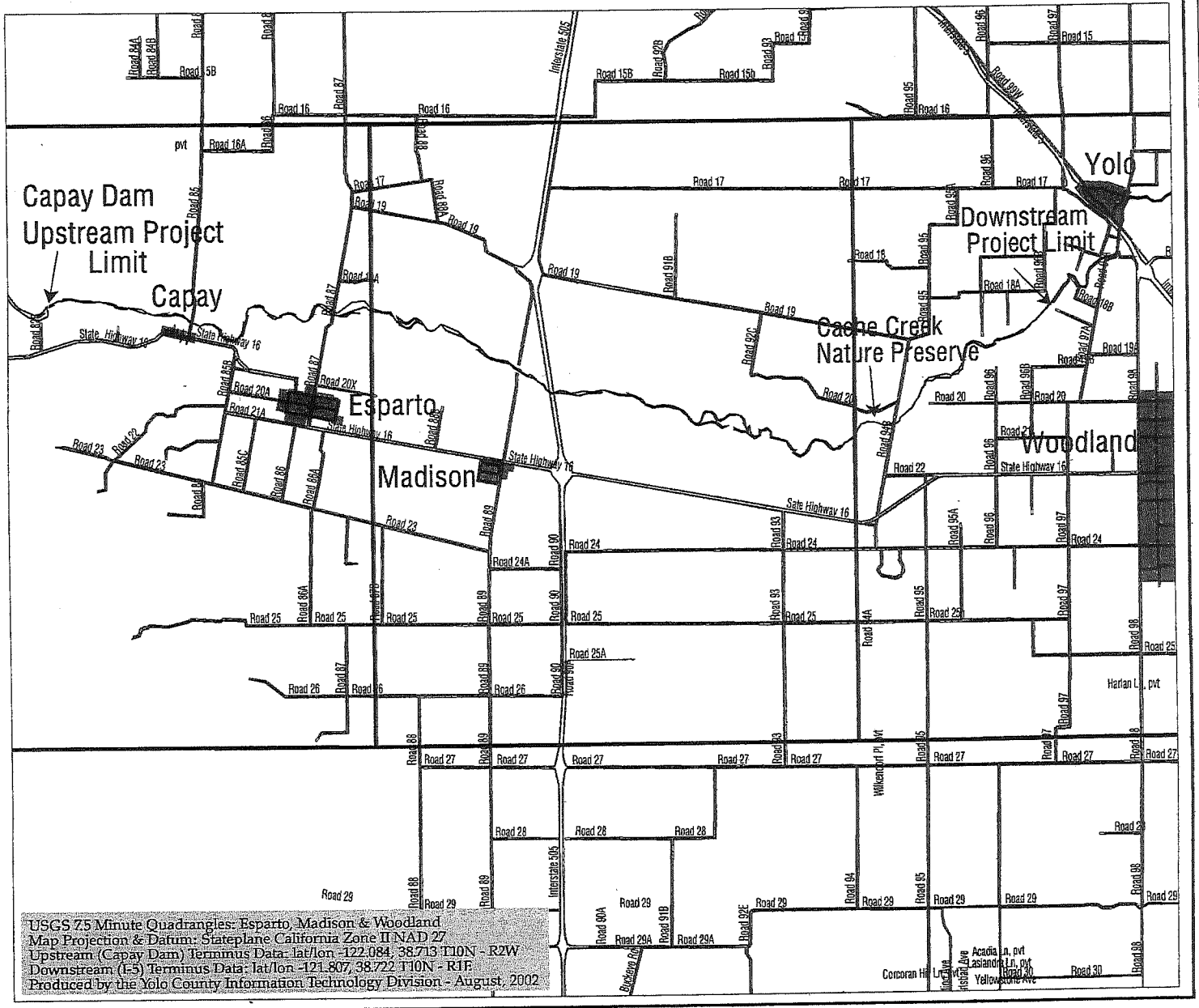
Within the CCRMP Area, Cache Creek is a semi-perennial watercourse that maintains perennial flows in some locations (hydrological gaining areas) and only seasonal (ephemeral) flows in other portions. The existing hydrology is highly modified by water diversions, ground water pumping, and agricultural returns that result in a highly variable flow regime, particularly during the summer agricultural peak period. The Planning Area supports a variety of habitat types that can be generally characterized as a mosaic of riparian scrub, riparian woodland, oak savannah, and California annual grasslands.

Figure 1, Project Vicinity Map

Cache Creek

Major Roads

Parcels &Roads



N W E S

Scale in Miles

0 1 2

1 : 130 000

2.0 METHODOLGY

The U.S. Army Corps of Engineers jurisdictional boundaries within the CCRMP Area were delineated through evaluation and use of existing resources (i.e., wetland inventory maps, aerial photography, topographic overlays, hydrological data, and GIS mapping) and standard field methodologies (i.e., paired data set analyses). Preliminary evaluation of the existing hydrology within the CCRMP Area and a preliminary site visit with the ACOE project manager (Justin Cutler) indicated that the majority, if not all, of the Corps' jurisdiction within the CCRMP Area would likely occur within the OHWM of Cache Creek, and thus be considered "other waters of the U.S." Therefore, a primary focus of the delineation was to identify the estimated OHWM boundary using available hydrological data and field verification.

2.1 PRE-FIELD STUDIES

Available hydrological data were reviewed and used to evaluate the flow characteristics of lower Cache Creek (e.g., annual high flow events and corresponding surface elevations). These data include:

- Historic and current U.S. Geological Service (USGS) staff-gauge and flow data,
- 1994 ACOE 2-year discharge estimate for Cache Creek (1994 ACOE Reconnaissance Report for Cache Creek), and
- Recent HEC analyses data by the Federal Emergency Management Agency (FEMA).

Evaluation of these data indicates that a two-year flood event is representative of a normal high-water event. The USGS gauging station data for the period of 1903 to 2000 indicates that the median annual maximum discharge for this period was 12,500 cfs, which approximates the 2-year discharge projected by both the 1994 ACOE Reconnaissance Report and the 2002 FEMA data (14,000 cfs and 14,500 cfs, respectively). Based on this information, the recently calculated FEMA two-year flood boundary line (two-year flood boundary at 14,000 cfs) is assumed to be an appropriate estimate of the OHWM, and thus, can be used to define ACOE jurisdictional limits. In addition, the most recent high flows in Cache Creek (January 2, 2002) were similar to a two-year flood event (13,280 cfs on January 2, 2002 vs. 14,000 cfs for two-year event). Existing field indicators are therefore representative of near-normal high-water conditions.

Rectified aerial photo-based GIS maps were developed by Yolo County GIS from recent aerial photographs of the CCRMP Area (Cartwright April 2001). The two year flood boundary line (estimated OHWM), a two-foot interval contour layer, and the location of twelve recently-established permanent transect locations were overlayed onto the aerial photo-based GIS map and used to generate appropriately scaled field maps (1" = 400 feet). The field maps were then used as the basis for field verification of the limits of the OHWM.

2.2 FIELD STUDIES

Botanical field surveys were conducted by R. Douglas Stone (U.C. Berkeley) during April and May 2002, and additional wetland surveys were conducted by Aspen's Tom Scofield (wetland biologist) and Joe Crea (soil scientist) in July, 2002.

Botanical Surveys

For the botanical surveys, each transect was walked along its entire length and existing vegetation described. The detailed description of the existing vegetation communities along Cache Creek, and the distribution of these vegetation types along each transect is presented in Sections 3.2.1 and 3.2.2 (respectively).

Wetland Studies

Wetland field surveys were conducted at each of the twelve transect locations to verify the estimated jurisdictional area boundaries delineated on the GIS field maps. Paired study points (A and B) were established at each of the 12 transects (Appendix 1) to verify the location of the jurisdictional boundaries within the CCRMP Area. At each of the 24 point-count locations, vegetation, hydrology, and soil data were collected to determine whether the location was jurisdictional or non-jurisdictional. Along each transect, the paired set of data points were located such that one point was above (higher in elevation) and outside the limits of the estimated OHWM (Data Point B), and the other (Data Point A) was placed below the OHWM (lower in elevation and within the limits of the OHWM).

Jurisdictional boundaries were described and delineated in accordance with the accepted methods in the *1987 Corps of Engineers Wetlands Delineation Manual* (ACOE, 1987), and all wetland data were collected on Routine Wetland Determination forms (Appendix 1). A detailed description of the methodologies used for describing the project's wetland areas is presented below, and the results of the wetland determination are presented in Section 3.0.

Wetlands Assessment

The current assessment describes the wetlands and "other waters of the United States" (other waters) within the Lower Cache Creek CCRMP Area under the regulatory jurisdiction of the United States Army Corps of Engineers (ACOE).

The discharge of dredged or fill material into other waters is regulated by the ACOE under Section 404 of the Clean Water Act. In addition, Executive Order 11990 of May 24, 1977, establishes a national policy "to avoid to the extent possible the long-and short-term adverse impacts associated with the destruction or modification of wetlands wherever there is a practical alternative."

Other waters are non-tidal, perennial and intermittent watercourses, and tributaries to such watercourses (33 CFR 328.3(a) ACOE Regulatory Program Regulations, *Federal Register* 51(219), Nov. 13, 1986). The limit of ACOE jurisdiction for non-tidal watercourses (without adjacent wetlands) is defined in 33 CFR 329.11 (a)(1) as the "ordinary high water mark" (OHWM). The OHWM is defined as the:

line on the (watercourse banks) established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas.

The bank-to-bank extent of the channel that contains the water-flow during a normal rainfall year generally serves as a good first approximation of the lateral limit of ACOE jurisdiction. The upstream limits of other waters are defined as the point where the OHWM is no longer perceptible.

Wetlands are also other waters, and are "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (ACOE 1987). Wetlands can be permanent or intermittent, and isolated or adjacent to other waters.

2.2.2 DETERMINATION OF JURISDICTIONAL WETLANDS AND OTHER WATERS OF THE UNITED STATES

To be determined a wetland; the following three parameters should be present on a site:

- the majority of the dominant vegetation species are wetland species;
- hydric soils, and
- hydrologic conditions that result in periods of flooding, ponding, or saturation during the growing season.

2.2.2.1 Vegetation

Wetland vegetation consists of plants possessing physiological traits that allow them to grow and persist in soils subject to saturation and anaerobic condition's. Taxonomy used in this report follows the USFWS *National List of Vascular Plants Species that Occur in Wetlands: 1996 National Summary* (USFWS 1996). This list is a draft revision of Reed (1988), with taxonomy consistent with Kartesz (1994).

Plant species are classified according to their probability of occurrence in wetlands (see Table 1 below). A '+' or a '-' symbol can be added to the classification to indicate greater or lesser probability, respectively, of occurrence in a wetland. If the majority of the dominant plant species on a site are classified as OBL, FACW, or FAC, then the site is considered to be dominated by hydrophytic vegetation.

Table 1. Classification of Wetland Associated Plant Species

Plant Species Classification	Abbreviation	Probability of Occurring in Wetland
Obligate	OBL	>99%
Facultative Wetland	FACW	66-99%
Facultative	FAC	33-66%
Facultative Upland	FACU	1-33%
Upland	UPL	<1%

No indicator status (assumed upland species)	NI	Assumed <1%

Source: USFWS 1996

2.2.2.2 Soils

Hydric soils form under conditions of saturation, flooding, or ponding long enough to develop anaerobic conditions in the upper stratum. Hydric soils usually have low chroma values (1 or 2) as defined using the Munsell Soil Color Charts (Munsell Color 1975) and often contain redoximorphic features such as mottles and concretions. In areas where soil surveys have been completed, soils at the project site can be compared to the national list of hydric soils (United States Department of Agriculture, 1985).

2.2.2.3 Hydrology

Wetlands, by definition, are seasonally inundated or saturated at or near (within 12 inches) the soil surface. To be classified as a wetland, a site should have at least one primary indicator or two secondary indicators of wetland hydrology. Primary indicators of wetland hydrology include soil saturation, flooding, ponding, watermarks, drainage patterns, and sediment deposits. Secondary indicators include oxidized live-root channels, water-stained leaves, local soil survey data or other recorded hydrologic data.

3.0 RESULTS

3.1 WETLAND ASSESSMENT

The paired (A and B) point-count data, collected at each transect, indicate that the two-year flood boundary represents an accurate estimation of the OHWM, and therefore defines the jurisdictional boundaries within the CCRMP Area (Appendix 2). Of the 12 data points established within the estimated OHWM boundary (Data Points 1A – 12A), 11 of these are considered wetland points. Data point 3A was the only study location within the two-year flood boundary that did not meet the three-parameter criteria, since the vegetation at this point was dominated by upland indicator plant species. The estimated OHWM at this location, however, is considered accurate, based on field indicators that place the point within the OHWM. Each of the remaining transects yielded vegetation, hydrology, and soil data characteristic of wetlands. All data points adjacent to, but outside the estimated OHWM, did not exhibit wetland characteristics, and are therefore considered to be non-jurisdictional, upland locations.

The current study determined that the ACOE jurisdictional boundaries within the CCRMP Area occur within the two-year flood boundary, and are therefore considered "other waters". A total of 1,344 acres of "other waters" was delineated within this Planning Area (Appendix 2), with no additional adjacent wetlands delineated in the active channel of Cache Creek within the CCRMP Area. A detailed discussion of the data point results is presented below.

3.1.1 VEGETATION

In general, wetland vegetation within the CCRMP Area occurs within the bank-to-bank extent of Cache Creek. The dominant wetland vegetation included species such as mulefat/seep willow (*Baccharis salicifolia*), arroyo willow (*Salix lasiolepis*), giant reed (*Arundo donax*), and cocklebur (*Xanthium strumarium*). These and other wetland species were generally observed within the confines of the two-year flood boundary/OHWM, although wetland plant indicator species (e.g., red willow and arroyo willow) were observed in locations outside this boundary (outside the bank-to-bank extent of the creek). The soil and hydrology data observed in these out-of-channel locations, however, did not support a jurisdictional determination.

Table 2 shows the dominant plant species and their indicator status for each of the 12 wetland study points established in the study area. A list of all the plant species observed and their wetland status (if applicable) is presented in Appendix 3.

Table 2. Dominant Plant Species Observed at Each Wetland Study Point Location

Species name	Indicator Status	1		2		3		4		5		6		7		8		9		10		11		12	
		A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Arundo donax	FACW	X		X													X			X		X			
Avena fatua	NI				X	X	X				X								X	X	X		X		X
Baccharis salicifolia	FACW															X	X	X		X				X	
Bromus diandrus	NI				X		X		X				X		X				X		X	X	X		X
Bromus hordaceus	FACU				X	X	X																X		
Carex senta	OBL							X				X													
Carex praegracilis	FACW-																								
Centaurea solstitalis	NI			X	X	X				X	X		X		X				X			X	X		
Cirsium vulgare	FACU			X							X						X					X	X	X	X
Elymus glaucus	FACU																							X	
Heterotheca orgona	NI				X	X	X														X				
Hirschfeldia incana	NI								X			X	X		X		X				X		X		
Hordeum murinum ssp. Murinum	NI								X	X															
Lactuca serriola	FAC																					X			
Lepedium latifolium	FACW	X							X	X		X										X	X	X	X
Lolium multiflorum	FAC																								
Melilotus indica	FACU											X		X											
Polypogon monspeliensis	FACW+											X		X						X					
Populus fremontii	FACW	X																X						X	
Prunus dulcis	NI																								X
Quercus lobata	FAC																								X
Rumex crispus	FACW-	X								X								X		X		X			
Salix exigua	OBL	X						X										X							
Salix gooddingii	OBL							X								X									
Salix laevigata	FACW+	X												X		X	X	X							
Salix lasiolepis	FACW																								
Salsola tragus	FACU												X												
Sissymbrium altissimum	FACU														X										
Stachys stricta	OBL															X									
Tamarix parviflora	FAC			X				X				X	X				X			X				X	
Typha angustifolia	FACW	X																							
Typha latifolia	OBL													X											
Veronica anagallis-aquatica	OBL																								
Vulpia myorus	FACU						X		X																
Xanthium strumarium	FAC+							X	X			X		X											

See Table 1 for description of indicator status codes for dominant plant species (USFWS 1996).

3.1.2 HYDROLOGY

The hydrologic/hydraulic features of the Lower Cache Creek CCRMP Area are influenced by past in-channel mining operations, current off-channel mining operations, and artificial structures such as rock groins, haul roads, and levee systems. Natural features, such as invasive plant species, also contribute to the hydrologic/hydraulic regime. Certain portions of the study area contain dominant clayey-loam soils that were deposited in ponded depressions and behind eddies during flow events.

The hydrological sources for Lower Cache Creek, between transects 1 – 12, include overland surface flow (precipitation runoff and agricultural irrigation return flows) and areas gaining water via groundwater baseflow. The headwaters of Cache Creek (upstream of the project area) contain steep gradients that contribute to active erosion and the downstream sediment loading. The reach between transects 1 and 3 is constricted by the Capay Hills and Adams Canal to the north and farmland road systems and invasive vegetation to the south. The reach between transects 3 and 6 is primarily a braided system that is indicative of a wide stream channel and low gradient. As one progresses downstream (transects 6-10), the watercourse continues to represent braiding; however, becomes narrower than the upstream reaches due to mining and agricultural activities as well as levee systems. The watercourse then becomes constricted as it approaches transects 11 and 12 near the I-5 corridor. The constriction is primarily related to levees and invasive vegetation.

Table 3 summarizes the hydrologic indicators at each of the 12 wetland data points. In all cases, the presence of primary hydrologic indicators was used to determine if wetland hydrology is present at the site. All data points placed within the OHWM (Data Points 1A – 12A) exhibit positive primary hydrologic indicators, and these areas are all determined to be jurisdictional.

Table 3. Summary of Hydrologic Conditions at Each Study Point Location

Data point	Depth to surface water or saturated soil	Primary indicators	Hydrologic conditions? (Yes/No)
1A	Surface saturation	Wetted, water marks, sediment deposits, drainage patterns	Yes
1B	None observed	None (on grouted rip-rap slope)	No
2A	None observed	Water marks, drift lines, sediment deposits	Yes
2B	None observed	None	No
3A	None observed	Drift lines and sediment deposits	Yes
3B	None observed	None (edge of old gravel mine road)	No
4A	6 inches (receives summer ag. run-off water)	Saturated in upper 12 inches, water marks, sediment deposits, drainage patterns	Yes
4B	None observed	None observed (up-slope of 4A)	No
5A	None observed	Water marks, drift lines, sediment deposits	Yes
5B	None observed	None observed	No
6A	None observed	Wetted, water marks, sediment deposits, drainage patterns (receives summer ag. run-off water)	Yes
6B	None observed	None observed	No
7A	None observed	Drift lines and sediment deposits	Yes
7B	None observed	None observed	No
8A	None observed	Water marks, drift lines, sediment deposits	Yes
8B	None observed	None observed	No
9A	None observed	Water marks, drift lines, sediment deposits	Yes
9B	None observed	None observed	No
10A	None observed	Water marks, drift lines, sediment deposits	Yes
10B	None observed	None observed	No
11A	None observed	Water marks	Yes
11B	None observed	None observed	No
12A	None observed	Water marks and drift lines	Yes
12B	None observed	None observed	No

3.1.3 SOILS

The soil series that occur within and bordering the transect boundaries include the following: Riverwash (Rh), Soboba (Sn), Loamy Alluvial Land (Lm), and the Yolo (Ya). According to the Yolo County Soil Survey, the Riverwash (Rh) series is considered an alluvial soil that consists of sands and gravelly river deposits, and is usually associated with the Soboba (Sn) soil types. The Soboba (Sn) soil series is indicative of loamy sands stratified with gravels and is present on alluvial fans. The Loamy Alluvial Land (Lm) soil series consists of mixed soils that include sands and silt loams found in the upper horizon. The Yolo (Ya) soil series is also found on alluvial fans and consists of silt loams and silty clay loams.

Many of the survey areas contain a higher percentage of clays. Organic matter and surrounding hydrological features (eddies, artificial structures, past mining activities) appear to be the reason for the high clay content. The following is a breakdown of the respective soil types sampled at each transect location. The YC designations are the surveyed transect end monuments that occur on the transect terminus's (Appendix 2).

1. Transect 1 consists of the Rh soil series and is closely bordered by the Sn soil. The sample points at YC-05 are comprised of the Rh soil type and can be located on map # 35 of the Yolo County Soil Survey. Please note that locations for both soil series referenced from the Yolo County soil survey are currently covered by grouted rip-rap. The Soil Survey reference map for these soils is map # 35 in the Yolo County Soil Survey.

2. Transect 2 (YC-05/06) consists of the Rh and Sn soil series. The Soil Survey reference maps for these soils are map #'s 35 and 43 in the Yolo County Soil Survey. The sample points at YC-05 are comprised of the Rh soil type and can be located on map # 35 of the Yolo County Soil Survey.

3. Transect 3 (YC-07/08) consists of the Rh, Sn, and Lm soil series. The Soil Survey reference map for these soils is map # 36 in the Yolo County Soil Survey. The "A" sample point at YC-07 is comprised of the Sn soil type and the "B" sample point is comprised of the Rh soil type. Both soil series can be located on map # 36 of the Yolo County Soil Survey.

4. Transect 4 (YC-09/10) consists of the Rh, Sn, Lm, and Ya soil series. The Soil Survey reference maps for these soils are maps are #'s 36 and 44 in the Yolo County Soil Survey. The "A" sample point at YC-09 is comprised of the Lm soil type and the "B" sample point is comprised of the Ya soil type. Both soil series can be located on map # 36 of the Yolo County Soil Survey.

5. Transect 5 (YC-11/12) consists of the Rh, Sn, and Ya soil series. The Soil Survey reference map for these soils is map are # 44 in the Yolo County Soil Survey. The sample points at YC-11 are comprised of the Sn soil type and can be located on map # 44 of the Yolo County Soil Survey.

6. Transect 6 (YC-15/16) consists of the Rh and Sn soil series. The Soil Survey reference map for these soils is map # 44 in the Yolo County Soil Survey. The sample points at YC-16 are comprised of the Sn soil type and can be located on map # 44 of the Yolo County Soil Survey.

7. Transect 7 (YC-13/14) consists of the Rh and Lm soil series. The Soil Survey reference map for these soils is map # 44 in the Yolo County Soil Survey. The sample points at YC-14 are comprised of the Rh soil type and can be located on map # 44 of the Yolo County Soil Survey.

8. Transect 8 (YC-17/18) consists of the Rh and Lm soil series. The Soil Survey reference map for these soils is map # 45 in the Yolo County Soil Survey. The sample points at YC-17 are comprised of the Lm soil type and can be located on map # 45 of the Yolo County Soil Survey.

9. Transect 9 (YC-19/20) consists of the Rh, Sn, Lm, and Ya soil series. The Soil Survey reference map for these soils is map # 45 in the Yolo County Soil Survey. The "A" sample point at YC-19 is comprised of the Sn soil type and the "B" sample point is comprised of the Lm soil type. Both soils series can be located on map # 45 of the Yolo County Soil Survey.

10. Transect 10 (YC-21/22) consists of the Rh, Sn, Lm, and Ya soil series. The Soil Survey reference map for these soils is map # 45 in the Yolo County Soil Survey. The "A" sample point at YC-22 is comprised of the Rh soil type and the "B" sample point is comprised of the Sn soil type. Both soils series can be located on map # 45 of the Yolo County Soil Survey.

11. Transect 11 (YC-23/24) consists of the Rh soil series. The Soil Survey reference map for this jurisdictional area is map # 38 in the Yolo County Soil Survey. The sample points at the YC-24 "A" and the "B" points are comprised of the Rh soil type and can be located on map can be located on map # 38 of the Yolo County Soil Survey.

12. Transect 12 (YC-25/26) consists of the Rh soil series. The Soil Survey reference map for this soil is map # 38 in the Yolo County Soil Survey. The sample points at the YC-26 are comprised of the Rh soil type and can be located on map can be located on map # 38 of the Yolo County Soil Survey.

The soils observed at all of the wetland (A) point sample locations generally lack organic matter content and soil horizon development, but stay saturated at, or near, the surface long enough to support the existing wetland vegetation. Table 4 summarizes the soils at the 12 data points in the project area.

Table 4. Summary of Soil Data at Each Study Point Location

Data point	Sample depth	Matrix color	Texture	Hydric indicators/Comments	Hydric soil? (Y/N)
1A	0-1" (A horizon) 2-5" (B horizon)	2.5Y 3/2 None	Fine-sandy-silt loam. Med.-coarse sand.	Soils occur over the top of a concrete pad associated with Capay Dam.	Y
1B	N/A	N/A	N/A	This point occurs on a slope that has grouted 36" boulders for erosion control.	N
2A	18" (A horizon)	N/A	Sand	In-channel sand bar	Y (alluvial-streambed material)
2B	0-8" (A horizon)	N/A	Gravel-rock-clay.	On slope of old mining road-man-made road base material.	N
3A	0-8" (A horizon)	10YR 4/3	Compacted clay and silt loam with embedded gravels.	Compacted man-made soils.	N (this point, however, occurs within the OHWM)
3B	N/A	N/A	N/A	Old mining road-man-made road base material.	N
4A	0-14" (A horizon)	10YR 3/2	Clayed loam.	Sulfidic odor, low chroma.	Y (streambed material
4B	0-10" (A horizon)	10YR 4/3	Sandy-clay loam with embedded gravels.	On graded slope-man-made soils from past mining practices.	N
5A	0-4" (A horizon) 4-12" (B horizon)	2.5 Y 4/3 None	Silty-clay. Gravel alluvium.	Alluvial soils with silty, top-layer deposition.	Y (streambed material
5B	N/A	N/A	Fill material.	On graded slope-man-made soils from past disturbances.	N
6A	0-2" (A horizon) 2-5" (B horizon) 5-8" (C horizon) 8-14" (D horizon) 14-16" (E horizon)	10YR 4/3 10YR 3/2 10YR 4/2 10YR 3/4 N/A	Silty loam. Clay layer. Sandy-clay loam. Fine sandy loam. Coarse sandy loam.	Soils are regularly wetted by agricultural runoff.	Y
6B	0-6" (A horizon) 612" (B horizon)	10YR 4/3 N/A	Fine-med. sandy loam. Coarse-sandy alluvium.	Alluvial soils.	Y (streambed material)
7A	0-10" (A horizon)	N/A	Rock-gravel-sand.	Alluvial soils.	Y (streambed material
7B	0-15" (A horizon)	2.5 Y 3/2	Fill/graded material.	Homogeneous man-made fill-type soils.	N
8A	0-2" (A horizon) 2-5" (B horizon) 5-17" (C horizon)	10YR 4/2 10YR 4/3 10YR 4/2	Sandy-clay loam. Fine-med. sandy loam. Sandy-clay loam.	Low chroma in surface horizon.	Y (streambed material
8B	0-16" (A horizon)	10YR 4/3	Fine sandy-clay loam.	No hydric indicators.	N
9A	0-20" (A horizon)	10YR 4/2	Silty-clayed loam.	Low chroma.	Y (streambed material
9B	0-18" (A horizon)	2.5Y 4/4	Fine sandy loam.	No hydric indicators.	N
10A	0-18" (A horizon)	10YR 4/2	Silty-clay loam.	Low chroma and some reduction evidence (rusting)	Y (streambed material
10B	0-5" (A horizon) 5-12" (B horizon)	10YR 4/2 10YR 4/2	Silty-clay loam. Clay w/coarse sands and gravels.	Low chroma man-made soils from past mining practices.	N
11A	0-14" (A horizon)	10YR 4/2	Clayed-loam	Low chroma.	Y (streambed material
11B	0-14" (A horizon)	10YR 4/3	Clayed-loam with gravels.	No hydric indicators.	N
12A	0-18" (A horizon)	10YR 4/3	Silty-sandy-clayed loam.	Alluvial/depositional soils	Y (streambed material
12B	0-18" (A horizon)	10YR 4/3	Silty -clayed loam.	Homogeneous levee-fill material.	N

3.2 BOTANICAL RESOURCES

Several plant communities occur within the Lower Cache Creek CCRMP Area, including upland communities such as California annual grassland, valley oak woodland, and ruderal, and wetland community types such as riparian scrub, riparian woodland, and freshwater marsh. Descriptions and distributions of these plant communities are presented below (3.2.1). Additionally, detailed descriptions of the vegetation observed along each survey transect is presented in Section 3.2.2.

3.2.1 VEGETATION COMMUNITIES

Riparian Scrub - Sparse Phase

This is the most extensive plant community in the study area, especially in the reach upstream of Interstate 505, where the low floodplain is approximately 200 to 600 meters wide and the substrates are cobble-dominated. The stands generally consist of two introduced, naturalized shrub species -- Tamarisk (*Tamarix parviflora*) and giant reed (*Arundo donax*), along with two native shrubs -- mule fat (*Baccharis salicifolia*) and narrow-leaved willow (*Salix exigua*). The aspect of the community is of widely scattered shrubs or, more frequently, of very narrow, widely spaced stands ("stringers") with the long axis oriented parallel to the direction of stream-flow. In the latter case, the composition of the stands is frequently enhanced by the presence of saplings or small trees of three native riparian forest species -- Fremont's cottonwood (*Populus fremontii*), red willow (*Salix laevigata*), and black willow (*Salix gooddingii*). The herbaceous layer is generally poorly developed to virtually absent, but on moister sites with fine-textured soils one occasionally finds cocklebur (*Xanthium strumarium*) and broad-leaved pepperwort (*Lepidium latifolium*) - the former a weedy native and the latter introduced and naturalized. Also occurring infrequently are small inclusions of annual grassland dominated by two non-natives -- rat-tail fescue (*Vulpia myuros*) and red brome (*Bromus rubens*)—particularly on relatively dry sites with sandy soils. In the vicinity of transect nos. 10 (Garcia) and 11 (Craig - Hungry Hollow Granite) there is an unusual kind of scrub vegetation dominated by the native subshrub, Oregon golden-aster (*Heterotheca oregona*), that is regarded as a variant of riparian scrub (sparse phase) occupying particularly dry sites on low floodplains.

The sparse phase of riparian scrub is most frequently encountered on low floodplains and on low-flow channel margins. More rarely it is found on high floodplains or in man-made depressions. It is apparently an early successional community that is maintained by frequent disturbance (i.e., floods).

Riparian Scrub - Dense Phase (Thicket)

The riparian thicket community is also of widespread and frequent occurrence in the study area, although it is certainly less extensive than the sparse phase of riparian scrub. It is more-or-less analogous to the Palustrine Scrub-Shrub Wetland habitat of Cowardin et al. (1979). Species composition is similar to that observed in the sparse phase, the most important species being two non-native shrubs -- Tamarisk (*Tamarix parviflora*) and giant reed (*Arundo donax*), along with two natives -- mule fat (*Baccharis salicifolia*) and narrow-leaved willow (*Salix exigua*). Also found in many of the stands are small to moderately sized trees of up to four native riparian forest species -- Fremont's cottonwood (*Populus fremontii*), black willow (*Salix gooddingii*), red willow (*Salix laevigata*), and California black walnut (*Juglans hindsii*). An herbaceous component is lacking or at least poorly developed.

The riparian thicket is most commonly encountered on low-flow channel margins, less frequently on low floodplains, secondary channel margins, margins of low floodplains (slope bases), hummocky

floodplains, lower slopes, high floodplains, lower slopes, or in man-made depressions. It is found only rarely on middle to upper slopes. Like the sparse phase of riparian scrub, the riparian thicket is evidently an early successional community maintained by frequent disturbance (flooding).

Riparian Forest

Well-developed riparian forest is of limited extent in the study area. Along the study transects it was found only at T1 - Dewey (south of the stream), T3 - Teichert #1 (north), T4 - Cache Creek Nature Preserve (north and south), T5 - Collette Moore (north and south), T6 - Hays (north), T7 - Solano Concrete (south), and T8 - SOS (south). It is more-or-less analogous to the Palustrine Forested Wetland habitat of Cowardin et al. (1979). Dominant trees include three native species -- Fremont's cottonwood (*Populus fremontii*), red willow (*Salix laevigata*), and black willow (*Salix gooddingii*) - which are also a common element in the riparian scrub communities described earlier. In the forest understory, the herbaceous layer is generally poorly developed, but there may be a shrub layer consisting most often of two non-native species -- Tamarisk (*Tamarix parviflora*) and giant reed (*Arundo donax*) - along with two natives -- mule fat (*Baccharis salicifolia*) and narrow-leaved willow (*Salix exigua*).

In terms of physiographic position, riparian forest stands were most frequently found on lower and upper slopes and on high floodplains, less often on margins of low floodplains.

Valley Oak Woodland

This community is also of limited extent in the study area, being found along the study transects only at T1 - Dewey (north and south of the stream), T2 - Oliver (south), T8 - SOS (south), T9 - Teichert #2 (north), amdT13 - Capay Dam (south). Dominant trees include two native species -- valley oak (*Quercus lobata*) and California black walnut (*Juglans hindsii*) - the latter occurring more frequently and even in some stands where valley oak itself is absent. However, the name valley oak woodland is retained in order to maintain consistency with terminology used by earlier authors. Other trees found only rarely in this community include a native riparian species -- Fremont's cottonwood (*Populus fremontii*) - and an escape from nearby orchards - almond (*Prunus dulcis*).

The aspect of the community is open woodland - in this case with introduced, naturalized annual grasses and forbs in the understory - or, more commonly, moderately dense woodland with a shrubby understory. In the latter case, the most frequently encountered shrubs include two native species - blue elderberry (*Sambucus mexicana*) and poison-oak (*Toxicodendron diversilobum*).

Within the study area, the physiographic position of valley oak woodland stands is limited to upper slopes and terraces. As such it is typically found outside of the areas delineated as jurisdictional wetlands.

Annual Grassland

This is an extensive and widely distributed plant community within the study area, especially at higher elevations, well-removed from the active floodplain. The most important grasses are all introduced,

naturalized species -- ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), wild oat (*Avena fatua*), rat-tail fescue (*Vulpia myuros*), and wild barley (*Hordeum murinum*). Introduced, naturalized forbs are another conspicuous component of this community, with the most frequently encountered species being Italian thistle (*Carduus pycnocephalus*), Mediterranean hoary-mustard (*Hirschfeldia incana*), broad-leaved pepperwort (*Lepidium latifolium*), milk thistle (*Silybum marianum*), winter vetch (*Vicia benghalensis*), and cut-leaved filaree (*Erodium cicutarium*). Widely scattered shrubs and trees -- representing elements of the riparian scrub and riparian forest communities described earlier – are also encountered in some annual grassland stands.

Along the study transects, a native perennial grass species -- blue wild-rye (*Elymus glaucus*) – was co-dominant in annual grass stands at T1 – Dewey (north of the stream) and T2 – Oliver (north), but these are not extensive stands and are probably best regarded as an unusual variant of the annual grassland community.

Annual grassland was found most frequently on upper slopes and terraces, less so on levee tops, high floodplains, lower slopes, and in man-made depressions. It was rarely encountered along high-flow channels or on sections of low floodplains protected from flooding by man-made structures (e.g. rip-rap or earthen berms).

Other Plant Communities

Two other plant communities either defy categorization or are of such limited extent in the study area that they would be difficult to map. They are briefly described below.

Freshwater Marsh. This community is locally found on channel margins and mid-channel bars, particularly along slow-moving stream sections and secondary channels. Freshwater marsh was also observed within in-channel depressions in old gravel mining locations, and in locations that received periodic run-off from adjacent agricultural lands. Dominants include species such as cat-tail (*Typha* spp.), tule (*Scirpus acutus* var. *occidentalis*), prairie bulrush (*Scirpus maritimus*), three-square (*Scirpus pungens*), swamp sedge (*Carex senta*), beard grass (*Polypogon monspeliensis*), and Italian ryegrass (*lollium multiflorum*).

Ruderal. The species composition and physiographic position of the ruderal community is similar to the annual grassland, except that annual grasses are absent or at least not very important. Along the study transects, an example can be found at T3 – Teichert #1 (south of the stream) where the high floodplain is completely dominated by broad-leaved pepperwort (*Lepidium latifolium*) along with scattered riparian and upland shrubs such as Tamarisk (*Tamarix parviflora*), giant reed (*Arundo donax*), coyote brush (*Baccharis pilularis*), yerba santa (*Eriodictyon californicum*), and quail brush (*Atriplex lentiformis*). The adjacent upper slope has a different kind of ruderal vegetation dominated by sweet-clover (*Melilotus indica*), red brome (*Bromus rubens*), and broad-leaved pepperwort. At T7 – Solano Concrete (south), the steep slope above the floodplain is dominated by Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), yellow star-thistle (*Centaurea solstitialis*), and Mediterranean hoary-mustard (*Hirschfeldia incana*).

3.2.2 VEGETATION DESCRIPTIONS BY TRANSECT

Transect 1 (Survey Points YC-01 and YC-02) - Near Capay Dam

Below survey point YC-01 (located at the edge of the gravel levee road), the north slope above the stream channel is moderately steep. Between the transect line and the dam, this slope is gunnited and more-or-less barren of vegetation. East of the transect line, the north slope is covered by a riparian thicket of mixed native and non-native woody plants including tree tobacco (*Nicotiana glauca*), Tamarisk (*Tamarix*), giant reed (*Arundo donax*), almond (*Prunus dulcis*), California black walnut (*Juglans hindsii*), immature valley oak (*Quercus lobata*), and California buckeye (*Aesculus californica*). Conspicuous understory plants included poison-oak (*Toxicodendron diversilobum*), ravenna grass (*Saccharum ravennae*), and [tufted perennial grass]. Found near the toe of this slope were narrow-leaved willow (*Salix exigua*) and immature red willow (*S. laevigata*).

The banks on both sides of the low-flow channel are composed of heavy silt deposits and are largely devoid of any vegetation.

South of the low-flow channel there is a rather high floodplain of loose, sandy soil, supporting a thicket of immature Fremont's cottonwood (*Populus fremontii*), Tamarisk, giant reed, narrow-leaved willow, arroyo willow, and mule fat (*Baccharis salicifolia*). Annual grasses, especially ripgut brome (*Bromus diandrus*), occupy the understory, except further toward the dam where the aspect is more meadowy and the spaces between the shrubs are covered by horsetail (*Equisetum*), white sweet-clover (*Melilotus alba*), goldenrod (*Euthamia occidentalis*), dogbane (*Apocynum*), and loosestrife (*Lythrum*). Nearest to the dam there is no understory vegetation owing to a thick accumulation of flood-deposited woody debris.

Adjacent to the ponded area just below the dam face there is a small stand of freshwater marsh vegetation dominated in places by cat-tail (*Typha angustifolia*), sedge (*Carex*), three-square (*Scirpus*), and horsetail.

The south slope between the transect line and the dam is also gunnited and more-or-less unvegetated, but downstream from the transect line are found some fairly large trees of California black walnut with dense Tamarisk and giant reed in the understory.

Overall, transect 1 is located very near the Capay Dam and may not be all that representative of vegetation conditions in the reach from the dam downstream to Capay Bridge (Road 85), which Chainey (1992) described as "including mature stands of cottonwood forest and valley oak woodland."

Transect 2 (Survey Points YC-05 and YC06) - Hungry Hollow/Granite

On either side of the poorly defined low-flow channel is a cobble-dominated, hummocky, low floodplain totaling about 600 meters wide. The vegetation on this floodplain is sparse and generally consists of widely scattered individuals of non-native Tamarisk (*Tamarix*) and giant reed (*Arundo donax*). Especially on the south side of the stream there is a moderately dense cover of the native subshrub *Heterotheca oregona*. Denser patches of annual grass vegetation dominated by annual fescue

(*Vulpia myuros*) are found here and there, and a robust native herb, blazing star (*Mentzelia laevicaulis*), is locally common north of the stream. This sparse Tamarisk scrub extends north (with gradually increasing elevation relative to the low-flow channel) to survey point YC-05.

Along the margins of the low-flow channel, the soils are sandier and support dense stringers of sapling Fremont's cottonwood (*Populus fremontii*) and black willow (*Salix gooddingii*) along with mule fat (*Baccharis salicifolia*), narrow-leaved willow (*S. exigua*), and Tamarisk. These woody riparian stands probably became established after the last major flooding event and would not be expected to survive another flood or during drought periods.

Survey point YC-06 is at the edge of the valley flat south of the low floodplain. The slope from this point down to the floodplain is moderately steep and dominated by annual grasses (*Hordeum leporinum*, *Bromus diandrus*) and ruderals such as mustard (*Hirschfeldia incana*), winter vetch (*Vicia*), and yellow star-thistle (*Centaurea solstitialis*).

Transect 3 (Survey Points YC-07 and YC08) - Garcia

The low-flow channel here is poorly defined, and on either side of it there is a low floodplain totaling more than 300 meters wide. The floodplain vegetation is generally sparse, the most frequent plant throughout the area being the native subshrub *Heterotheca oregona*. South of the channel, the floodplain is more-or-less level and cobble-dominated, with denser patches of annual grass vegetation

(*Vulpia myuros*, *Bromus madritensis* ssp. *rubens*) on lenses of sandy soil and scattered dead shrubs of non-native Tamarisk (*Tamarix*) -- these presumably killed by herbicide spraying. The floodplain north of the channel has silty soil and is more hummocky with *Heterotheca* joined by sparse Tamarisk, giant reed (*Arundo donax*), mule fat (*Baccharis salicifolia*), and immature red willow (*Salix laevigata*) and Fremont's cottonwood (*Populus fremontii*). An annual grass component, similar in composition to that described above, becomes more abundant with gradually increasing elevation north of the channel.

Small, scattered stringers of woody riparian vegetation are found along the margins of the low-flow channel, consisting of mule fat along with saplings of Tamarisk and cottonwood. These probably became established after the last major flooding event and would not be expected to survive another flood or during drought periods.

A levee road marks the northern end of the floodplain, beyond which is found a man-made, cobble-dominated depression with *Heterotheca* quite abundant, also red brome. Continuing north, another cobbly levee road is followed by yet another man-made depression, the prevailing vegetation here an annual grassland (dominated by *Vulpia myuros* and *Bromus hordeaceus*) but with some patches of *Lepidium latifolium* and a small copse of Tamarisk and young cottonwood.

The slope to the valley flat and survey point YC-07 is gradual and covered by annual grassland dominated by ripgut brome (*Bromus diandrus*), wild oat (*Avena fatua*), and fiddleneck (*Amsinckia*).

Survey point YC-08 is at the edge of the valley flat south of the low floodplain. The slope below this point is moderately steep and dominated by annual grasses (*Bromus diandrus*, *Avena fatua*). Also

occurring on the slope are two moderately-sized Fremont's cottonwoods. From this slope a series of four earthen berms extends north toward the floodplain for a distance of about 60 meters. The vegetation on the silty soil in between the berms is annual grassland dominated by *Bromus hordeaceus*, *Vulpia myuros*, and *Hirschfeldia incana*. Also scattered at the base of the slope (in between the berms) are elderberry (*Sambucus*), giant reed, narrow-leaved willow (*Salix exigua*), and dead Tamarisk, plus abundant ruderals like yellow star-thistle (*Centaurea solstitialis*).

Transect 4 (Survey Points YC-09 and YC10) - Teichert 2

On either side of the poorly defined low-flow channel is a gravel-dominated, low floodplain up to 200 meters wide. The vegetation on this floodplain is generally sparse, consisting mostly of small Tamarisk shrubs (*Tamarix*) and mule fat (*Baccharis salicifolia*) along with some giant reed (*Arundo donax*), narrow-leaved willow (*Salix exigua*), and isolated, immature Fremont's cottonwood (*Populus fremontii*). West of the transect line and south of the channel, there is an area of dense vegetation (clearly visible on the aerial photo) consisting of a mixed stand of Tamarisk, giant reed, and narrow-leaved willow along with some taller trees of black willow (*S. gooddingii*) and California black walnut (*Juglans hindsii*). Further south, along a moist, high-flow channel, occurs a thicket of small Tamarisk, narrow-leaved willow, and mule fat with herbaceous associates cocklebur (*Xanthium strumarium*) and white sweet-clover (*Melilotus alba*).

The main low-flow channel is cobble-armored on its banks and supports some small, young stringers of mule fat and Tamarisk. These probably became established after the last major flooding event and would not be expected to survive another flood or during drought periods. In addition, slowly moving surface water was observed in two secondary channels along the extreme northern and southern edges of the floodplain. Thickets of Tamarisk, giant reed, and mule fat occupy the margins of these channels along with some small, emergent stands of cat-tail (*Typha*).

The northern edge of the active floodplain is bounded by a levee, with vegetation consisting of a narrow band covered by the annual grasses *Bromus hordeaceus* and *Vulpia myuros* along with the ruderals Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), and mustard (*Hirschfeldia incana*). Further north, the bed of a man-made depression is dominated by cocklebur with its margins supporting a thicket of Tamarisk, mule fat, narrow-leaved willow, and immature black willow. Above this depression, the slope to the valley flat at survey point YC-09 is moderate and covered by annual fescue *Vulpia myuros* with widely scattered shrubs of yerba santa (*Eriodictyon californicum*). Vegetation at the edge of the valley flat (vicinity of survey point YC-09) is a moderately dense *Atriplex ?lentiformis* scrub augmented by yerba santa, Tamarisk, and (especially to the west of the transect line) elderberry (*Sambucus*), giant reed, and California black walnut. The spaces between the shrubs are occupied by annual grasses and ruderals like Italian thistle, yellow star-thistle, and milk thistle.

On the southern edge of the active floodplain, the steep slope supports a narrow band of dense vegetation including Tamarisk, narrow-leaved willow, elderberry, and California black walnut. Situated on the adjacent terrace is an abandoned road bed (formerly used in the Syar aggregate mining operation) now covered by ruderals, such as mustard and yellow star-thistle. Above this terrace, the

moderate slope to the valley flat is dominated by ripgut brome (*Bromus diandrus*), wild oat (*Avena fatua*), and winter vetch (*Vicia*).

Transect 5 (Survey Points YC-11 and YC12) - SOS

The floodplain in this area is up to 200 meters wide and composed of cobbles (north of the low-flow channel) or a mixture of gravel and silt (south). The vegetation cover is generally sparse, consisting of stringers of sapling Fremont's cottonwood (*Populus fremontii*) occupying the northern edge of the floodplain and both sides of the low-flow channel. These small cottonwood stands probably became established after the last major flooding event and would not be expected to survive another flood or during drought periods. Associated woody plants include mule fat (*Baccharis salicifolia*), narrow-leaved willow (*Salix exigua*), and sapling red willow (*Salix laevigata*). Notably, neither Tamarisk (*Tamarix*) nor giant reed (*Arundo donax*) is very abundant. Small, emergent stands of cat-tail (*Typha*) are found along the margins of the low-flow channel (especially on its north side).

At the southern edge of the floodplain is a more extensive, mixed stand of mature Fremont's cottonwood, red willow, and black willow (*Salix gooddingii*). Narrow-leaved willow and mule fat are found in the understory, along with the non-natives giant reed, tree tobacco (*Nicotiana glauca*), Himalaya berry (*Rubus procerus*), and some Tamarisk. This dense riparian stand continues up the steep, southern slope above the floodplain, except that dominance at the higher elevations clearly shifts to California black walnut (*Juglans hindsii*) and elderberry (*Sambucus*).

The edge of the valley flat near survey point YC-12 is covered by annual grasses (*Bromus diandrus*, *B. hordeaceus*) along with cut-leaved filaree (*Erodium cicutarium*). Similar vegetation, consisting mostly of *B. diandrus*, Italian thistle (*Carduus pycnocephalus*), and mustard (*Hirschfeldia incana*), occupies the upper part of the adjoining slope (above the aforementioned riparian stand).

Survey point YC-11 is at the edge of the valley flat north of the floodplain. The slope below this point is moderately steep and dominated by *Bromus hordeaceus* and *B. diandrus* along with Italian thistle and mustard. From this slope, a series of three berms (each composed of concrete rip-rap) extends south toward the floodplain for a distance of about 50 meters. The vegetation on the silty soil in between the berms is a mixture of rabbit's-foot grass (*Polypogon*) and prickly sow-thistle (*Sonchus asper*), with patches of *Lepidium latifolium* and scattered saplings of Tamarisk. Cocklebur (*Xanthium strumarium*) and cottonwood saplings are locally abundant.

Transect 6 (Survey Points YC-15 and YC16) - Solano

The floodplain in this area is about 180 meters wide, sparsely vegetated, and composed of cobbles (south of the low-flow channel) or a mixture of cobbles and silt (north). Scattered large shrubs of Tamarisk (*Tamarix*) are found north of the low-flow channel along with some tree tobacco (*Nicotiana glauca*) and yerba santa (*Eriodictyon californicum*). Tamarisk also forms a dense thicket at the northern edge of the floodplain (base of slope to survey point YC-16), here joined by mule fat (*Baccharis salicifolia*), narrow-leaved willow (*Salix exigua*), and a few young trees of Fremont's cottonwood (*Populus fremontii*) and California black walnut (*Juglans hindsii*). Near the southern edge

of the floodplain, a line of concrete rip-rap has been placed parallel to the direction of stream flow. A moderately dense stringer of mule fat and sapling cottonwood occurs just below the rip-rap line, while above it the floodplain vegetation is annual grassland dominated by soft chess (*Bromus hordeaceus*), annual fescue (*Vulpia myuros*), Italian thistle (*Carduus pycnocephalus*), and cut-leaved filaree (*Erodium cicutarium*).

Dense stringers of young Fremont's cottonwood are found along the low-flow channel. On the north side of the stream, the trees are mixed with some large clumps of Tamarisk and giant reed (*Arundo donax*). Associated woody plants on the south side of the stream include black willow (*Salix gooddingii*), red willow (*S. laevigata*), narrow-leaved willow, mule fat, and Tamarisk. Small, emergent stands of cat-tail (*Typha*) are found along the margins of the low-flow channel (especially on its south side).

Some larger trees of Fremont's cottonwood, black willow, and red willow occupy the southern edge of the floodplain, at the base of the slope to survey point YC-15. The tree cover is sparse in the vicinity of the transect line but becomes denser and more extensive further to the west (near the bridge crossing on Interstate 505). Associated shrubs include narrow-leaved willow and mule fat along with the non-natives tree tobacco, giant reed, and Tamarisk.

Survey point YC-15 is at the edge of a gravel levee road south of the floodplain. The moderately steep slope below this point is dominated by ruderal vegetation including Italian thistle, milk thistle (*Silybum marianum*), yellow star-thistle (*Centaurea solstitialis*), and mustard (*Hirschfeldia incana*).

North of the floodplain, similar vegetation consisting of ripgut (*Bromus diandrus*), mustard, Italian thistle, and milk thistle occupies the edge of the valley flat near survey point YC-16 and the adjoining steep slope. Also found widely scattered at the top of the slope are California black walnut, valley oak (*Quercus lobata*), and elderberry (*Sambucus*).

Transect 7 (Survey Points YC-13 and YC14) - Hayes

The low floodplain in this area is about 60 meters wide and composed of sand, coarse gravel, and small cobbles. The low-flow channel is well-defined and occupies the southern edge of the floodplain. The vegetation cover is generally sparse, consisting of a dense stringer of mule fat (*Baccharis salicifolia*) nearer to the stream and another stringer of sapling Fremont's cottonwood (*Populus fremontii*) further to the north. Notably, neither Tamarisk (*Tamarix*) nor giant reed (*Arundo donax*) is very abundant here.

As at transect 5 (Collette Moore), the stream is slow-moving with much algae in the water and patches of the emergent aquatic herb, *Jussiaea repens*. Some Tamarisk and mule fat is found on the immediate margins of the low-flow channel, along with small patches of the robust herbs *Lepidium latifolium* and cocklebur (*Xanthium strumarium*).

North of the floodplain, the lower portion of the slope leading up to survey point YC-13 supports a more-or-less dense and continuous stand of Fremont's cottonwood, red willow (*Salix laevigata*), and black willow (*S. gooddingii*). These are small to moderately sized trees with Tamarisk, giant reed, and

mule fat occupying the understory. The top of the slope is ruderal annual grassland dominated by ripgut (*Bromus diandrus*), wild oat (*Avena fatua*), and Italian thistle (*Carduus pycnocephalus*).

The slope forming the southern edge of the floodplain is quite steep, and, particularly in that portion to the west of the transect, the base of the slope is occupied by a dense willow thicket. Large shrubs of narrow-leaved willow make up most of this stand along with small to moderately sized trees of red willow and black willow. Some mule fat, Tamarisk, and giant reed are also present here, but cottonwoods are conspicuously absent.

Ruderal annual grassland covers the upper part of the south slope, around survey point YC-14. At this location, ripgut and Italian thistle are the dominant plants.

Transect 8 (Survey Points YC-17 and YC18) - Collette-Moore

The stream channel in this area occupies a well-defined channel with a low but hummocky floodplain about 120 meters wide on the south side and a higher but narrower floodplain (approx. 30 meters wide) on the north. The lower edge of the northern floodplain (nearest the channel) consists of mostly barren gravel deposits with widely scattered Tamarisk (*Tamarix*) shrubs and some annual grass cover, e.g.,

annual fescue (*Vulpia myuros*). The upper portion (furthest from the channel) supports a fairly mature stand of Fremont's cottonwood (*Populus fremontii*) and red willow (*Salix laevigata*), with an understory of scattered Tamarisk, giant reed (*Arundo donax*), and mule fat (*Baccharis salicifolia*), especially in the openings between denser stands of trees. This riparian forest vegetation continues up the rather steep slope to survey point YC-17, on top of the levee separating the Cache Creek floodplain from the Moore's Dam Wildlife Area.

Substrates on the south floodplain are a mosaic of sand, gravel, and cobble deposits, and riparian vegetation is limited to scattered dense stringers of shrubby Tamarisk, giant reed, mule fat, and narrow-leaved willow (*Salix exigua*) along with young Fremont's cottonwood, red willow, and black willow (*S. gooddingii*). The steep slope to the levee top south of the floodplain (survey point YC-18) supports mature trees of the same species, forming a more-or-less closed forest stand with Fremont's cottonwood predominating.

The stream itself is slow-moving here, with much algae covering the gravels and cobbles on the stream bed and small patches of emergent marsh vegetation - e.g., cat-tail (*Typha*), bulrush (*Scirpus*), and three-square (*Scirpus*) -- occupying the channel margins and a few mid-channel bars along with scattered Tamarisk and giant reed.

Transect 9 (Survey Points YC-19 and YC20) - Nature Conservancy

The low floodplain in the vicinity of the preserve is about 200 meters wide, more-or-less level, and composed of cobbles and sand. The low-flow channel is well-defined and occupies the northern edge of the floodplain, and the aerial photo also shows a distinct high-flow channel along the southern edge. Woody vegetation on the low floodplain is generally sparse and dominated by Tamarisk (*Tamarix*) shrubs along with narrow-leaved willow (*Salix exigua*), mule fat (*Baccharis salicifolia*), giant reed

(*Arundo donax*), and saplings of Fremont's cottonwood (*Populus fremontii*) and black willow (*Salix gooddingii*). Herbaceous cover is also quite limited and consists mainly of cocklebur (*Xanthium strumarium*) and white sweet-clover (*Melilotus alba*).

About halfway across the floodplain, the transect crosses a secondary channel; to the north of this dry channel and west of the transect line, one finds a dense stringer of large Tamarisk and moderately sized black willow and Fremont's cottonwood. Continuing northward, there is a hummocky floodplain area about 40 meters wide, which effectively separates the low-flow channel from the main part of the floodplain to the south. This hummocky floodplain supports much Tamarisk along with scattered young to moderately sized black willow and Fremont's cottonwood. The spaces between the shrubs are densely covered by ruderal herbaceous vegetation including milk thistle (*Silybum marianum*), tocalote (*Centaurea melitensis*), poison hemlock (*Conium maculatum*), mustard (*Hirschfeldia incana*), and bur-chervil (*Anthriscus caucalis*). There are many Tamarisk saplings and some very young clumps of giant reed here as well.

Cocklebur is abundant on the cobbly south side of the low-flow channel along with small saplings of mule fat and Tamarisk. Additional herbaceous associates here are white sweet-clover, Bermuda grass (*Cynodon dactylon*), and *Phyla*. On the north side of the low-flow channel, the soils are fine-textured, and the vegetation cover is mostly herbaceous including *Lotus corniculatus*, rabbit's-foot grass (*Polypogon*), *Lolium*, and Bermuda grass.

Above the extensive low-floodplain area, there are narrower tracts of high floodplain on both sides of the stream. The northern high floodplain is about 35 meters wide and supports a mature riparian forest of Fremont's cottonwood, black willow, and red willow (*S. laevigata*). This is the area where the *Arundo* eradication efforts are occurring. The forest understory is mainly a mixture of annual grasses and patches of Italian thistle (*Carduus pycnocephalus*) along with scattered shrubs of elderberry (*Sambucus mexicana*) and poison-oak (*Toxicodendron diversilobum*). This riparian forest stand continues up the rather steep slope to the edge of the automobile parking area by the Nature Preserve office. However, immediately below survey point YC-19, the same slope is not forested and instead supports non-native grasses (*Avena fatua*, *Vulpia myuros*) and herbs such as cut-leaved filaree (*Erodium cicutarium*) and mustard (*Hirschfeldia incana*). The transition between the herbaceous vegetation on the north side of the low-flow channel and the mature high-floodplain forest is occupied by a narrow, dense thicket of narrow-leaved willow, Tamarisk, mule fat, and arroyo willow, along with saplings of black willow and cottonwood.

The southern high floodplain area is about 25 meters wide, and the portion to the east of the transect line supports a dense stand of mature Fremont's cottonwood with Tamarisk, narrow-leaved willow, and western goldenrod (*Euthamia occidentalis*) in the understory. West of the transect, the high floodplain vegetation is evidently more recently disturbed; instead of riparian forest, one sees young cottonwood trees forming a moderately dense thicket with Tamarisk, mule fat, and narrow-leaved willow. The openings between the shrubs are dominated by annual grasses (*Bromus hordeaceus*, *Vulpia myuros*) and ruderal herbs including Italian thistle, *Lepidium latifolium*, and Indian sweet-clover (*Melilotus indica*).

The steep slope between the southern high floodplain and the valley flat (survey point YC-20) is a ruderal annual grassland dominated by soft chess (*Bromus hordeaceus*), ripgut (*B. diandrus*), and mustard. Especially west of the transect line, an additional vegetation component consists of scattered individuals of the native subshrub *Heterotheca oregona*.

Transect 10 (Survey Points YC-21 and YC22) - Teichert 3

Survey point YC-22 (top of levee north of the stream channel) and its immediate environs are in annual grassland. Dominants include ripgut (*Bromus diandrus*) and wild oat (*Avenua fatua*), with milk thistle (*Silybum marianum*) common in dense patches and scattered small trees of elderberry (*Sambucus mexicana*) and California black walnut (*Juglans hindsii*). The grassland continues down a moderate slope to the edge of a man-made depression.

The vegetation on the bed of this depression interdigitates between annual grassland dominated by soft chess (*Bromus hordeaceus*), dense patches of the non-native herb *Lepidium latifolium*, and riparian thicket consisting of mule fat (*Baccharis salicifolia*), narrow-leaved willow (*Salix exigua*), TTamarisk salt cedar(*Tamarix*), and small trees of black willow (*S. gooddingii*) and Fremont's cottonwood (*Populus fremontii*). Western goldenrod (*Euthamia occidentalis*) and rush (*Juncus effusus*) are abundant in the riparian understory.

Annual grassland also covers a second levee south of the above-described man-made depression and separating it from the main stream channel. Dominants here include ripgut, vetch (*Vicia benghalensis*), and *Lepidium latifolium*.

There is no well-defined floodplain on the north side of the stream, and from the second levee a moderate slope descends to the stream channel. For the most part this slope supports a dense stand of mature riparian trees including black willow, red willow (*S. laevigata*), and Fremont's cottonwood, with giant reed (*Arundo donax*), Tamarisk, and mule fat occupying the understory. In the vicinity of the transect line and continuing upstream, the lower portion of the slope is covered by a moderately dense thicket of Tamarisk and giant reed, with annual grassland (dominated by ripgut, soft chess, and wild oat) in the openings between the shrubs. Also abundant here are star-thistle (*Centaurea*) and milk thistle.

Both the northern and southern edges of the stream channel are occupied by dense thickets of Tamarisk and narrow-leaved willow.

South of the stream channel, the floodplain is completely dominated by *Lepidium latifolium* with scattered shrubs of Tamarisk, giant reed, coyote brush, yerba santa (*Eriodictyon californicum*), and *Atriplex ?lentiformis*. A few young trees of Fremont's cottonwood were also seen here.

Ruderal vegetation characterizes the slope extending from the south floodplain to the adjacent valley flat (survey point YC-21 at the edge of the Teichert plant). The most important plants in this area include sweet-clover (*Melilotus indica*), red brome (*Bromus madritensis* ssp. *rubens*), and *Lepidium latifolium*.

Transect 11 (Survey Points YC-23 and YC24) - Oliver

This transect is slightly upstream from the reach that is confined on both sides by levees. The main stream channel here is well-defined, but there is little or no floodplain. Starting at survey point YC-24 north of the stream, the transect first crosses an area of valley flat approx. 100 meters wide and dominated by annual grasses (*Vulpia myuros*, *Bromus hordeaceus*, *B. mollis*, *B. diandrus*, *Avena fatua*, *Hordeum murinum*) and star-thistle (*Centaurea*).

Annual grassland is very extensive north of the stream; from the above-mentioned valley flat it continues down a short but steep slope and onto a stream terrace (infrequent floodplain?) approx. 50 meters wide, then down another slope to the stream channel. On the slope above the terrace, one also finds scattered Fremont's cottonwood (*Populus fremontii*), valley oak (*Quercus lobata*), and almond (*Prunus*), with dense stands of Italian thistle (*Carduus pycnocephalus*) and milk thistle (*Silybum marianum*) beneath the trees. The terrace vegetation is hard to characterize; it consists mainly of annual grasses with occasional small clumps of giant reed (*Arundo donax*), extensive stands of milk thistle, and smaller patches of the non-native herb *Lepidium latifolium* and a native perennial grass, blue wildrye (*Elymus glaucus*). Also seen were several small, dead trees.

The grassland on the lower north slope is dominated by ripgut, but here again there are small patches of *Lepidium* and scattered small clumps of giant reed. About halfway down this slope there is a very narrow floodplain on which are growing three mature trees of Fremont's cottonwood. At the base of the slope, a dense thicket of Tamarisk (*Tamarix*) occupies the north side of the stream channel.

The south slope above the stream is quite steep, particularly the lower part. The vegetation here is again dominated by ripgut grass. The upper slope to the adjoining valley flat (survey point YC-23) is more gradual and has a dense tree covered of valley oak, California black walnut (*Juglans hindsii*), and Fremont's cottonwood. Abundant understory plants include poison-oak (*Toxicodendron diversilobum*), elderberry (*Sambucus mexicana*), annual grasses (especially ripgut and wild barley), and bur-chervil (*Anthriscus scandicina*). The transition between the upper-slope woodland and lower-slope grassland is marked by some large Tamarisk shrubs and clumps of giant reed.

Transect 12 (Survey Points YC-25 and YC26) – Dewey

The stream in this area is confined on both sides by levees approx. 10 meters high and separated by a horizontal distance of 140 meters or less. The transect line crosses the main stream channel at a nearly 90-degree bend, and there is a well-developed high-flow channel but no floodplain.

Along the transect line and continuing upstream, there is little or no vegetation on the nearly vertical, severely eroded south slope. In the downstream direction, the south slope remains fairly steep and is thickly vegetated by valley oak (*Quercus lobata*) which forms an open woodland with abundant poison-oak (*Toxicodendron diversilobum*) in the understory. At the base of this slope, a conspicuous line of mature Fremont's cottonwood (*Populus fremontii*) is rooted about 1 meter above the current water surface.

In the vicinity of survey point YC-25 (top of slope south of the stream channel, adjacent to the paved levee road), the vegetation is essentially a dense thicket of poison-oak, tree tobacco (*Nicotiana glauca*),

coyote brush (*Baccharis pilularis*), wild grape (*Vitis californica*), California blackberry (*Rubus ursinus*), wild rose (*Rosa californica*), virgin's bower (*Clematis ligusticifolia*), and elderberry (*Sambucus mexicana*).

The north side of the main channel is densely covered by Tamarisk (*Tamarix*) with a few mature trees of Fremont's cottonwood and red willow (*Salix laevigata*). Vegetation on the elevated berm separating the main channel from the high-flow channel is a fairly dense thicket of Tamarisk, narrow-leaved willow (*S. exigua*), mule fat (*Baccharis salicifolia*), and elderberry -- with ripgut grass (*Bromus diandrus*) abundant in the small openings between the shrubs. Ripgut also dominates the dry and very sandy bed of the high-flow channel, but Tamarisk and the native subshrub *Heterotheca oregona* are scattered here as well.

North of the stream one finds a narrow but well-defined terrace about halfway between the high-flow channel and the levee top. Below this terrace, the slope is moderately steep and has a dense cover of annual grasses (ripgut, primarily) along with a few shrubs of narrow-leaved willow and Tamarisk. Dominant grasses on the mid-slope terrace include ripgut and the native perennial, blue wildrye (*Elymus glaucus*), but there is also a sparse shrub and tree cover consisting of Fremont's cottonwood, Tamarisk, mule fat, giant reed (*Arundo donax*), narrow-leaved willow, and tree tobacco. Open valley oak woodland occupies the moderate slope above the terrace, here joined by California black walnut (*Juglans hindsii*), almond (*Prunus*), and coyote brush.

Appendix 1. Routine Wetland Determination Forms

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek (Lower)
Applicant/Owner: Yolo County
Investigator: T. Scofield; T. Creal

Date: 7/12/02
County: Yolo
State: CA

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situations? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: _____
Transect ID: 1
Plot ID: A
YC01 + YC02 — Copy

In Channel - NEAR BASE of Dam

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Rumex crispus	H	FACW-
2. Lepidium lat. folium	H	FACW
3. Populus fremontii	H	FACW
4. Salix lasiandra	S	FACW+
5. Salix exigua	S	OBL
6. Apium denseflorum	S	FACW
7. Typha angustifolia	H	OBL
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: Wetland - dominated BY hydrophytic veg.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- _____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- _____ Other

_____ No Recorded Data Available

Field Observations:
- Depth of Surface Water: surface saturation (in.)
- Depth to Free Water in Pit: 0-5 (in.)
- Depth to Saturated Soil: SURFACE (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- _____ Inundated
- X Saturated in Upper 12 inches
- X Water Marks
- X Drift Lines
- X Sediment Deposits
- _____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- _____ Oxidized Root Channels in Upper 12 in.
- _____ Water-Stained Leaves
- _____ Local Soil Survey Data
- X FAC-Neutral Test
- _____ Other (Explain in Remarks)

Remarks: Within wetted - Back H2O area near base of Dam.

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretio. Structure, etc.
0-1	A	2.5Y 3/2			Fine-Sandy Silt Loam w/ org
1-5					Med- Coarse Sand

Hydric Soil Indicators:

_____ Histosol	_____ Concretions
_____ Histic Epipedon	_____ High Organic Content in Surface Layer in Sandy Soils
_____ Sulfidic Odor	_____ Organic Streaking in Sandy Soils
_____ Aquic Moisture Regime	_____ Listed on Local Hydric Soils List
_____ Reducing Conditions	_____ Listed on National Hydric Soils List
_____ Gleyed or Low-Chrome Colors	_____ Other (Explain in Remarks)

Remarks: Sediment & soil deposits on top of a concrete/rip-rap cemetery Area.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	(Circle)
Wetland Hydrology Present?	(Yes)	No	
Hydric Soils Present?	(Yes)	No	

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek
Applicant/Owner: Yolo County
Investigator: T. Scott Ed + Tom Cruse

Date: 7/12/02
County: Yolo
State: CA

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situations? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: _____
Transect ID: 1
Plot ID: B
YC01 + YC02

Out of channel - Rip - Rap - extension of Capay Dam Structure

Capay Dam

VEGETATION

Dominant Plant Species	Stratum	Indicator
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: Non-vegetated, p-rap

HYDROLOGY

X Recorded Data (Describe in Remarks):
- _____ Stream, Lake, or Tide Gauge
- _____ Aerial Photographs
- _____ Other

_____ No Recorded Data Available

Field Observations:
- Depth of Surface Water: _____ (in.)
- Depth to Free Water in Pit: _____ (in.)
- Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- _____ Inundated
- _____ Saturated in Upper 12 inches
- _____ Water Marks
- _____ Drift Lines
- _____ Sediment Deposits
- _____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- _____ Oxidized Root Channels in Upper 12 in.
- _____ Water-Stained Leaves
- _____ Local Soil Survey Data
- _____ FAC-Neutral Test
- _____ Other (Explain in Remarks)

Remarks: Above normal on rip rap - rip rap from toe of slope to top of slope. The 2-year mark is on the riprap - no hydrology indicators

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chrome Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Gravel ~ 36" Boulders

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek
Applicant/Owner: Yolo County
Investigator: T. Scott, T. Crea

Date: 7/15/02
County: Yolo
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situations? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: _____
Transect ID: 2
Plot ID: A
YC05 & YC06

→ within Ohlum

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Tamarisk parviflora	S	FAC
2. Ammo majus	S	FACW
3. Cirsium vulgare	H	FACU
4. Centaurea solstitialis	H	
5.		
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 2/4 = 50%

Remarks: WETLAND VEG. IS DOMINANT ON THIS MID FLOW SAND BAR. SHRUB LAYER DOMINATES THE HERBACEOUS LAYER IN PERCENT TOTAL COVER.

HYDROLOGY

X Recorded Data (Describe in Remarks):

_____ Stream, Lake, or Tide Gauge
X Aerial Photographs
_____ Other

_____ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (in.)
Depth to Free Water in Pit: N/A (in.)
Depth to Saturated Soil: N/A (in.)

Wetland Hydrology Indicators:

Primary Indicators:

_____ Inundated
_____ Saturated in Upper 12 inches
X Water Marks
X Drift Lines
X Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

_____ Oxidized Root Channels in Upper 12 in.
_____ Water-Stained Leaves
_____ Local Soil Survey Data
X FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: Pit is on gravel bar within the Ohlum.

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
18	A	N/A	N/A	N/A	SAND (w/ G)

Hydric Soil Indicators:

_____ Histosol	_____ Concretions
_____ Histic Epipedon	_____ High Organic Content in Surface Layer in Sandy Soils
_____ Sulfidic Odor	_____ Organic Streaking in Sandy Soils
_____ Aquic Moisture Regime	_____ Listed on Local Hydric Soils List
_____ Reducing Conditions	_____ Listed on National Hydric Soils List
_____ Gleyed or Low-Chrome Colors	_____ Other (Explain in Remarks)

Remarks: SAND BAR" IN-CHANNEL"

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek Applicant/Owner: Yolo County Investigator: T. Scofield; J. Crean	Date: 7/15/02 County: State:
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situations? (Yes) No Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: 2 Plot ID: B YC5 + YC6

Out of OHWM – adjacent to hay bale restoration

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Bromus diandrus	H	–	9.		
2. Avena fatua	H	–	10.		
3. Centaurea solstitialis	H	–	11.		
4. Heterotheca grandiflora	H	–	12.		
5. Bromus hordeaceus	H	FACU-	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: Dominated by upland non-native grasses

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 in.
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Just above OHWM; on benched terrace ~ 2-4" above the height of plot ID A for this point. Old gravel mining road.

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
0-8	A	n/a	n/a	n/a	n/a

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chrome Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Roadside fill material → gravel-rock - man-made soils
Hay Bales

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek
Applicant/Owner: Yolo County
Investigator: L. Scatena, T. Creal

Date: 7/15/02
County: Yolo
State: CA

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situations? (Yes) No
Is the area a potential Problem Area? (Yes) No
(If needed, explain on reverse.)

Community ID: _____
Transect ID: 3
Plot ID: A
YC07 & YC08

→ This area appears to be an old in-channel mining area that is hydrologically connected to the in-channel area of Cache Creek during high flow events.

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Heterotheca grandiflora	S	—
2. Centaurea solstitialis	H	—
3. Avena fatua	H	—
4. Bromus hordeaceus	H	FACU-
5.		
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: This area is within the limits of OHWM but does not exhibit wetland veg. characteristics. The area, however, appears to pond H_2O for a long duration.

HYDROLOGY

✳ Recorded Data (Describe in Remarks):
- _____ Stream, Lake, or Tide Gauge
- ✳ Aerial Photographs
- _____ Other

_____ No Recorded Data Available

Field Observations:
- Depth of Surface Water: 6 (in.)
- Depth to Free Water in Pit: 0 (in.)
- Depth to Saturated Soil: 6 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- _____ Inundated
- _____ Saturated in Upper 12 inches
- _____ Water Marks
- ✳ Drift Lines
- ✳ Sediment Deposits
- _____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- _____ Oxidized Root Channels in Upper 12 in.
- _____ Water-Stained Leaves
- _____ Local Soil Survey Data
- _____ FAC-Neutral Test
- _____ Other (Explain in Remarks)

Remarks: Within man-made (can vary) depression & inside OHWM. Hydrologically connected during high flows.

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
0-8	A	10 YR 4/3	N/A	N/A	compacted clay w/ silt loam w/ gravels

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chrome Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Old Mining operations appear to have compacted these soils which are considered manmade.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks: This point is not considered a wetland point, but does occur within the stream & is therefore juxtaposed "other WOS".

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek Applicant/Owner: Yolo County Investigator: T. Seefeldt, T. Orzel	Date: 7/15/02 County: Yolo State: CA
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situations? (Yes) No Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: 3 Plot ID: 3 YC07 + YC08

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Heterotheca oregona	H	—
2. Vulpia myuros	H	FACU
3. Bromus diandrus	H	—
4. Bromus hordeaceus	H	—
5. Avena fatua	H	—
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: ON SIDE OF OLD MINING ACCESS ROAD - HEAVILY DISTURBED IN PAST.

HYDROLOGY

X Recorded Data (Describe in Remarks):

- ____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ____ Other

____ No Recorded Data Available

Field Observations:

- Depth of Surface Water: 6+ (in.)
- Depth to Free Water in Pit: 0 (in.)
- Depth to Saturated Soil: 6 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

- ____ Inundated
- ____ Saturated in Upper 12 inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

- ____ Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: ON OLD MINING ROAD ABOVE OHWM.

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.

Hydric Soil Indicators:

_____ Histosol	_____ Concretions
_____ Histic Epipedon	_____ High Organic Content in Surface Layer in Sandy Soils
_____ Sulfidic Odor	_____ Organic Streaking in Sandy Soils
_____ Aquic Moisture Regime	_____ Listed on Local Hydric Soils List
_____ Reducing Conditions	_____ Listed on National Hydric Soils List
_____ Gleyed or Low-Chrome Colors	_____ Other (Explain in Remarks)

Remarks: Fill material for road.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	(Circle)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	Yes (No)	

(Circle)

Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek Applicant/Owner: Yolo County Investigator: T. Scofield, J. Crew	Date: 7/15/02 County: Yolo State: CA
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situations? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: Transect ID: 4 Plot ID: A YC09 + YC10

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Salix gooddingii	T	OBL	9.		
2. Salix exigua	S	OBL	10.		
3. Xanthium strumarium	H	FAC+	11.		
4. Carex senta	H	OBL	12.		
5. Tamarisk parviflora	S	FAC	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: within wetted area in old mining pit that is hydrologically connected to the in-channel area of Cache Creek.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- __ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- __ Other

__ No Recorded Data Available

Field Observations:

- Depth of Surface Water: 0 (in.)
- Depth to Free Water in Pit: 0 (in.)
- Depth to Saturated Soil: 6 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- __ Inundated
- X Saturated in Upper 12 inches
- X Water Marks
- X Drift Lines
- X Sediment Deposits
- __ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __ Oxidized Root Channels in Upper 12 in.
- __ Water-Stained Leaves
- __ Local Soil Survey Data
- X FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: Receives Ag. return H_2O — old gravel pit w/ access to the channel. Soils moist — wetted — gravel cracking — extensive ponding

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
0-14	A	10YR 3/2	N/A	N/A	CLAYEY LOAM

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
X	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chrome Colors	____	Other (Explain in Remarks)

Remarks: WETLAND SOILS.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	(Circle)
Wetland Hydrology Present?	(Yes)	No	
Hydric Soils Present?	(Yes)	No	

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek
Applicant/Owner: Yolo County
Investigator: T. Scofield, T. Crea

Date: 7/15/02
County: Yolo
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situations? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: YC09 + YC10
Transect ID: 4
Plot ID: B

WALL (HEADTOE) OF OLD MINING PIT – EDGE OF MINING PIT.

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Xanthium strumarium		FAC
2. Hirschfeldia incana		—
3. Vulpia myuros		—
4. Bromus diandrus		—
5. Leersia oryzoides		FACW
6. Hordeum marinum		—
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 2/6 = 0.33 %

Remarks: Not dominated by hydrophytic veg.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- Other

No Recorded Data Available

Field Observations:
- Depth of Surface Water: 0 (in.)
- Depth to Free Water in Pit: 0 (in.)
- Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- Oxidized Root Channels in Upper 12 in.
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks: On grass banks near the channel. No hydrological indicators

SOILS

Map Unit Name
(Series and Phase) _____

Drainage Class: _____

Taxonomy (Subgroup): _____

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
0-10	A	10YR 4/3	N/A	N/A	gravel w/some [illegible] mix

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chrome Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Soils have been disturbed by past mining practices.

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek
Applicant/Owner: Yolo County
Investigator: T. Scofield, T. Crea

Date: 7/12/02
County: Yolo
State: CA

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situations? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID: 5
Plot ID: A
YC11 + YC12

In-Channel → Between 2 rock groins that extend into channel & levees to north → No banking or shelving along banks

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Lepidium latifolium	H	FACW
2. Rumex crispus	H	FACW-
3. Hordeum Marginatum ssp.	H	-
4. Centaurea solstitialis	H	-
5.		
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 2/4 = 50%

Remarks: Hydrophytic veg. present

HYDROLOGY

X Recorded Data (Describe in Remarks):

- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

- Depth of Surface Water: 0 (in.)
- Depth to Free Water in Pit: 0 (in.)
- Depth to Saturated Soil: 4 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

- ___ Inundated
- ___ Saturated in Upper 12 inches
- X Water Marks
- X Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

- ___ Oxidized Root Channels in Upper 12 in.
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Settling Area between 2 manmade rock groins that has Layered soil cracking indicating ponding for extended period

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
0-4	A	2.5 4/3	0		SILTY-CLAY
4-12	B	N/A	0		gravel ALLUVIUM

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
____	Gleyed or Low-Chrome Colors	X	Other (Explain in Remarks)

Remarks: - Deposited soil between rock grains + build up of silty-clay in top 4"

- Alluvial soils w/ silty deposits

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	(Circle)
Wetland Hydrology Present?	(Yes)	No	
Hydric Soils Present?	(Yes)	No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek
Applicant/Owner: Yolo County
Investigator: T. Seaman, T. Crea

Date: 7/12/02
County: Yolo
State: CA

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situations? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: _____
Transect ID: 5
Plot ID: B
YC11 + YC12

out of channel

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Avena fatua	H	---
2. Centaurea solstitialis	H	---
3. Cirsium vulgare	H	FACU
4.		
5.		
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks: Wetland veg. is confined to in-channel areas below toe-of-levee.
No wetland veg.

HYDROLOGY

X Recorded Data (Describe in Remarks):

_____ Stream, Lake, or Tide Gauge
_____ Aerial Photographs
_____ Other

_____ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:

_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

_____ Oxidized Root Channels in Upper 12 in.
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: High on levee - the estimated OHWM (from GIS map) appears too high on the levee due to the lack of riparian vegetation.
→ move the OHWM

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.

Hydric Soil Indicators:

_____ Histosol	_____ Concretions
_____ Histic Epipedon	_____ High Organic Content in Surface Layer in Sandy Soils
_____ Sulfidic Odor	_____ Organic Streaking in Sandy Soils
_____ Aquic Moisture Regime	_____ Listed on Local Hydric Soils List
_____ Reducing Conditions	_____ Listed on National Hydric Soils List
_____ Gleyed or Low-Chrome Colors	_____ Other (Explain in Remarks)

Remarks: Fill material → silty clay loam w/ interbedded gravels

Manmade soils

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	(Circle)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	Yes (No)	

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek
Applicant/Owner: Yolo County
Investigator: T. Scofield, T. Cross

Date: 7/12/02
County: Yolo
State:

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situations? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID: C
Plot ID: 4
YC15 + YC16

The site is heavily disturbed by off-road traffic & receives summer H2O from agricultural run-off - return culvert flows into this location

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Leptochloa fusca	H	FACW
2. Xanthium strumarium	H	FAC+
3. Polypogon monspeliensis	H	FACW+
4. Carex barbarae	H	OBL
5. Melilotus indicus	H	FACU
6. Hirschfeldia incana	H	—
7. Tamarix parviflora	S	FAC
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/7 = 71%

Remarks: Frequently wetted by agricultural run-off.
WETLAND VEG. present

HYDROLOGY

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- X Other

No Recorded Data Available

Field Observations:
- Depth of Surface Water: 0 (in.)
- Depth to Free Water in Pit: 6 (in.)
- Depth to Saturated Soil: 6 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- X Water Marks
- X Drift Lines
- X Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- Oxidized Root Channels in Upper 12 in.
- Water-Stained Leaves
- Local Soil Survey Data
- X FAC-Neutral Test
- Other (Explain in Remarks)

Remarks: This site has 2 hydrological patterns working 1) it's within the channel of Cache Creek & 2) has Ag. runoff from fields adjacent to the north).

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
0-2	A	10YR 4/3	N/A	N/A	SILTY LOAM
2-5	B	10YR 3/2			CLAY
5-8	C	10YR 4/2			SANDY CLAY LOAM
8-14	D	10YR 3/4			FINE SANDY LOAM
14-16+	E	N/A			COARSE SANDY LOAM

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chrome Colors	____	Other (Explain in Remarks)

Remarks: These soils are regularly wetted by ag. runoff & seasonal high flows

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	(Circle)
Wetland Hydrology Present?	(Yes)	No	
Hydric Soils Present?	(Yes)	No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek Applicant/Owner: _____ Investigator: _____	Date: 7/12/02 County: _____ State: _____
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situations? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: 6 Plot ID: B YC15 & YC16

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Bromus diandrus	H	—	9.		
2. Hirschfeldia incana	H	—	10.		
3. Centaurea solstitialis	H	—	11.		
4. Lepidium perfoliatum	S	FAC	12.		
5. Salsola tragus	H	FACU	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/5 = 20%

Remarks: Not dominated by wetland veg.

HYDROLOGY

X Recorded Data (Describe in Remarks):

_____ Stream, Lake, or Tide Gauge
_____ Aerial Photographs
X Other

_____ No Recorded Data Available

Field Observations:

Depth of Surface Water: n/a (in.)
Depth to Free Water in Pit: n/a (in.)
Depth to Saturated Soil: n/a (in.)

Wetland Hydrology Indicators:

Primary Indicators:

_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

_____ Oxidized Root Channels in Upper 12 in.
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: Within the Cache Creek floodplain not across the channel.

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
0-6	A	10YR 4/3			Fine → medium sandy loam
6-12	B	N/A			Coarse-sandy alluvium

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chrome Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: ALLUVIAL SOILS

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek
Applicant/Owner: Yolo County
Investigator: T. Scott, T. Creal

Date: 7/10/02
County: Yolo
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situations? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID: 7
Plot ID: A
YC13 + YC14

In-channel

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Salix lasiolepis	S	FACW+
2. Polygonum amphibium	H	OBL
3. Xanthium strumarium	H	FAC+
4. Typha latifolia	H	OBL
5. Melilotus indica	H	FACU+
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/5 = 80%

Remarks: Dominance of Hydrophytic Veg.

HYDROLOGY

X Recorded Data (Describe in Remarks):

- ____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- X Other
- ____ No Recorded Data Available

Field Observations:

- Depth of Surface Water: 0 (in.)
- Depth to Free Water in Pit: 0 (in.)
- Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

- ____ Inundated
- ____ Saturated in Upper 12 inches
- ____ Water Marks
- X Drift Lines
- X Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

- ____ Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- X FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: Within Channel

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
0-10	A	N/A	N/A	N/A	Rock + Gravel + SAND

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chrome Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Alluvial - rock-gravel-SAND

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek Applicant/Owner: Yolo County Investigator: T. Scofield, J. Crow	Date: 7/10/02 County: State:
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situations? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: Transect ID: 7 Plot ID: B YC13 + YC14

Out of OHWM

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Hirschfeldia incana	H	—	9.		
2. Centaurea solstitialis	H	—	10.		
3. Bromus diandrus	H	—	11.		
4. Sisymbrium altissimum	H	FACU	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: No hydrophytic veg.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 in.
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: On side of graded creek bank + above the OHWM.

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
		2.5 YR 3/2			SILTY-CLAY LOAM

Hydric Soil Indicators:

_____ Histosol	_____ Concretions
_____ Histic Epipedon	_____ High Organic Content in Surface Layer in Sandy Soils
_____ Sulfidic Odor	_____ Organic Streaking in Sandy Soils
_____ Aquic Moisture Regime	_____ Listed on Local Hydric Soils List
_____ Reducing Conditions	_____ Listed on National Hydric Soils List
_____ Gleyed or Low-Chrome Colors	_____ Other (Explain in Remarks)

Remarks: Homogenous for 1st 15" inches the rock layer
[NON-HYDRIC SOILS - GRADED

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	(No)	(Circle)
Wetland Hydrology Present?	Yes	(No)	
Hydric Soils Present?	Yes	(No)	

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek
Applicant/Owner: Yolo County
Investigator: T. Scott Hill, T. Cross

Date: 7/19/02
County: Yolo
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situations? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: _____
Transect ID: 8
Plot ID: A
YC17 & YC18

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Baccharis salicifolia	S	FACW
2. salix lasiolepis	T	FACW+
3. Salix gooddingii	T	OBL
4. Scirpus strictus	H	OBL
5.		
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: Dominated by mesophytic veg.

HYDROLOGY

X Recorded Data (Describe in Remarks):

_____ Stream, Lake, or Tide Gauge
X Aerial Photographs
_____ Other

_____ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

_____ Inundated
_____ Saturated in Upper 12 inches
X Water Marks
X Drift Lines
X Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

_____ Oxidized Root Channels in Upper 12 in.
_____ Water-Stained Leaves
_____ Local Soil Survey Data
X FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: Just below in-channel bank (bank sample area)

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
0-2	A	10 YR 4/2	N/A	n/a	STRONG-GRAY LOAM
2-5	B	10 YR 4/3	n/a	n/a	FINE-MED. SOMY LOAM
5-17	C	10 YR 4/2	n/a	n/a	SANDY CLAY LOAM

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
____	Reducing Conditions	____	Listed on National Hydric Soils List
X	Gleyed or Low-Chrome Colors	____	Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	(Circle)
Wetland Hydrology Present?	(Yes)	No	
Hydric Soils Present?	(Yes)	No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek Applicant/Owner: Yolo County Investigator: T. Serrano, J. Cook	Date: 7/19/02 County: Yolo State: CA
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situations? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: 8 Plot ID: B YC17 & YC18

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Bacchris salicifolia	S	FACW	9.		
2. Toxicodendron diversilobum	S	FAC	10.		
3. Juncus effusus	S	FACW	11.		
4. Cirsium vulgare	H	—	12.		
5. Salix lasiolepis	T	FACW+	13.		
6. Hydrocotyle ranunculoides	H	—	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/6 = 67%

Remarks: Hydrophytic veg. is dominant

HYDROLOGY

X Recorded Data (Describe in Remarks): _____ Stream, Lake, or Tide Gauge X Aerial Photographs _____ Other _____ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: _____ Inundated _____ Saturated in Upper 12 inches _____ Water Marks _____ Drift Lines _____ Sediment Deposits _____ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): _____ Oxidized Root Channels in Upper 12 in. _____ Water-Stained Leaves _____ Local Soil Survey Data X FAC-Neutral Test _____ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: 0 (in.) Depth to Free Water in Pit: 0 (in.) Depth to Saturated Soil: 0 (in.)	

Remarks: Above OHWM - no hydrological indicators - Above Banded area observed for plot A

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
0-16	A	10YR 4/3			Fine Sandy Clay Loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chrome Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek
Applicant/Owner: Yolo County
Investigator: T. Canfield, J. Cecil

Date: 7/6/92
County: Yolo
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situations? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: _____
Transect ID: 9
Plot ID: A
YC19 - YC20

NEAR CCC

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Salix laevigata	T	FACW+
2. Salix exigua	S	OBL
3. Baccharis sarothroides	S	FACW
4. Populus fremontii	T	FACW
5. Rumex crispus	H	FAC(W)-
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100 %

Remarks:

HYDROLOGY

X Recorded Data (Describe in Remarks):

_____ Stream, Lake, or Tide Gauge
X Aerial Photographs
_____ Other

_____ No Recorded Data Available

Field Observations:

Depth of Surface Water: N/A (in.)
Depth to Free Water in Pit: N/A (in.)
Depth to Saturated Soil: N/A (in.)

Wetland Hydrology Indicators:

Primary Indicators:

_____ Inundated
_____ Saturated in Upper 12 inches
X Water Marks
X Drift Lines
X Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

_____ Oxidized Root Channels in Upper 12 in.
_____ Water-Stained Leaves
_____ Local Soil Survey Data
X FAC-Neutral Test
_____ Other (Explain in Remarks)

Remarks: within the Oxbow - Branching + debris lines obvious

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
20"	A	10YR 4/2	N/A		70% / 30% CLAY & SILT - MHP

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chrome Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Oxidized inclusions

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

142' from creek to YC19 to terrace

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek
Applicant/Owner:
Investigator: T. Scofield

Date: 7/10/02
County: Yolo
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situations? Yes (No)
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID:
Transect ID: 9
Plot ID: B
Trans: YC-19 & YC20

NEAR CCC

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Avena fatua	H	-
2. Centaurea solstitialis	H	-
3. Bromus hordeaceus	H	-
4.		
5.		
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: N/O HYDROPHYTIC VEG.

HYDROLOGY

X Recorded Data (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- X Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: N/a (in.)
Depth to Free Water in Pit: N/a (in.)
Depth to Saturated Soil: N/a (in.)

Wetland Hydrology Indicators:

Primary Indicators:

- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

- Oxidized Root Channels in Upper 12 in.
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks: Outside the OHWM for Cache Creek

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations
Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
18"	A	2.5Y 4/4			FINE - SANDY LOAM

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chrome Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: CLAY + SILT MIXED - PREDOMINANT FINE SANDY-LOAM
— POTENTIALLY FILL MATERIAL OF ALLUVIAL DEPOSITION

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	(No)	(Circle)
Wetland Hydrology Present?	Yes	(No)	
Hydric Soils Present?	Yes	(No)	

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek
Applicant/Owner: Yolo County
Investigator: T. Cofrell, T. Crow

Date: 7/19/02
County: Yolo
State: CA

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situations? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: _____
Transect ID: 10
Plot ID: A
YC 21 & YC-22

→ old In-channel mining pit that has revegetated.

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Baccharis salicifolia	S	FACW
2. Rumex crispus	H	FACW-
3. Hydrocotyle umbellata	H	FACW+
4. Juncus effusus	H	—
5. Typha latifolia	S	FAC
6. Arundo donax	S	FACU
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 5/6 = 83%

Remarks: Dominated by Hydrophytic veg.

HYDROLOGY

X Recorded Data (Describe in Remarks):

- _____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- _____ Other

_____ No Recorded Data Available

Field Observations:

- Depth of Surface Water: 0 (in.)
- Depth to Free Water in Pit: 0 (in.)
- Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

- _____ Inundated
- _____ Saturated in Upper 12 inches
- X Water Marks
- X Drift Lines
- X Sediment Deposits
- _____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

- _____ Oxidized Root Channels in Upper 12 in.
- _____ Water-Stained Leaves
- _____ Local Soil Survey Data
- X FAC-Neutral Test
- _____ Other (Explain in Remarks)

Remarks: Within bottom of pit that is hydrologically connected to the in-channel area of Cache Creek.

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
0-18	A	10YR 4/2			SILTY-CLAY L COMM.

Hydric Soil Indicators:

____	Histosol	____	Concretions
____	Histic Epipedon	____	High Organic Content in Surface Layer in Sandy Soils
____	Sulfidic Odor	____	Organic Streaking in Sandy Soils
____	Aquic Moisture Regime	____	Listed on Local Hydric Soils List
X	Reducing Conditions	____	Listed on National Hydric Soils List
____	Gleyed or Low-Chrome Colors	____	Other (Explain in Remarks)

Remarks: Homogeneous Soil

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	(Circle)
Wetland Hydrology Present?	(Yes)	No	
Hydric Soils Present?	(Yes)	No	

(Circle)

Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek	Date: 7/19/02
Applicant/Owner: Yolo County	County: Yolo
Investigator: T. Scofield; T. Cross	State: CA
Do Normal Circumstances exist on the site? Yes **(No)**	Community ID:
Is the site significantly disturbed (Atypical Situations? **(Yes)** No	Transect ID: 10
Is the area a potential Problem Area? Yes **(No)**	Plot ID: R
(If needed, explain on reverse.)	YC21 + YC22

Side of Levee

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Bromus diandrus	H	—	9.		
2. Avena fatua	H	—	10.		
3. Hirschfeldia incana	H	—	11.		
4. Holocarpha virgata	H	—	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks: No hydrophytic veg.

HYDROLOGY

X Recorded Data (Describe in Remarks):

- ____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ____ Other

____ No Recorded Data Available

Field Observations:

Depth of Surface Water: ____ (in.)

Depth to Free Water in Pit: ____ (in.)

Depth to Saturated Soil: ____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:

- ____ Inundated
- ____ Saturated in Upper 12 inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

- ____ Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: → Old mining pit that is hydrologically connected to the in-channel area of Cache Creek.
→ Above outflow of the H_2O that enters pit

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations
Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
0-5	A	10YR 4/2			SILTY-CLAY
5-12	B				CLAY & COARSE SAND & GRAVEL

Hydric Soil Indicators:

_____ Histosol	_____ Concretions
_____ Histic Epipedon	_____ High Organic Content in Surface Layer in Sandy Soils
_____ Sulfidic Odor	_____ Organic Streaking in Sandy Soils
_____ Aquic Moisture Regime	_____ Listed on Local Hydric Soils List
_____ Reducing Conditions	_____ Listed on National Hydric Soils List
_____ Gleyed or Low-Chrome Colors	_____ Other (Explain in Remarks)

Remarks: This soil has not worked for many generations

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	(Circle)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	Yes (No)	

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek
Applicant/Owner: Yolo County
Investigator: T. Scott-Hall, J. Creal

Date: 7/19/02
County: Yolo
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situations? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: _____
Transect ID: U
Plot ID: A
YCZ3 + YCZ4

WITHIN ATTWM

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Avena barbata	S	FACW
2. Rumex crispus	H	FACW-
3. Lepidium latifolium	H	FACW
4. Lactuca serriola	H	FAC
5. Cirsium vulgare	H	FACU
6. Bromus diandrus	H	-
7. Centaurea solstitialis	H	-
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/7 = 57%

Remarks: Dominated by hydrophytic veg.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- _____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- X Other
- _____ No Recorded Data Available

Field Observations:
- Depth of Surface Water: 0 (in.)
- Depth to Free Water in Pit: 0 (in.)
- Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- _____ Inundated
- _____ Saturated in Upper 12 inches
- X Water Marks
- _____ Drift Lines
- _____ Sediment Deposits
- _____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- _____ Oxidized Root Channels in Upper 12 in.
- _____ Water-Stained Leaves
- _____ Local Soil Survey Data
- X FAC-Neutral Test
- _____ Other (Explain in Remarks)

Remarks: Located at the base of the bench/terrace that separates this area of the attwm from the upper terrace (point B)

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations
Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
0-14	A	10YR 4/2			CLAYEY LOAM

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Sulfidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime		Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
X	Gleyed or Low-Chrome Colors		Other (Explain in Remarks)

Remarks: Organics in top portion of A horizon (1cm thick)

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	(Circle)
Wetland Hydrology Present?	(Yes)	No	
Hydric Soils Present?	(Yes)	No	

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek
Applicant/Owner: Yolo County
Investigator: T. Scofield, T. Creal

Date: 7/19/02
County: Yolo
State: CA

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situations? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID: 11
Plot ID: B
YC23 & YC24

OUTSIDE (ABOVE) THE ORHUM
ON SECONDARY FLOOD TERRACE

2 OTHER

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Centaurea solstitialis	H	-
2. Bromus hordeaceus ssp.	H	FACU
3. Bromus diandrus	H	-
4. Avena fatua	H	-
5. Lepidium latifolium	H	FACW
6. Orcuttia viscida	H	FACU
7. Hirschfeldia incana	H	-
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/7 = 14%

Remarks: Not dominated by hydrophytic veg.

HYDROLOGY

X Recorded Data (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- V Other

No Recorded Data Available

Field Observations:

- Depth of Surface Water: 0 (in.)
- Depth to Free Water in Pit: 0 (in.)
- Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

- Oxidized Root Channels in Upper 12 in.
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks: Elevated Floodplain - more A lower Brushy terrace floodplain -

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations
Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
0-14	A	10YR 4/3	N/A	N/A	Clay Loam w/ gravels

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chrome Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Homogeneous horizon - No wet indicators

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No)	(Circle)
Wetland Hydrology Present?	Yes (No)	
Hydric Soils Present?	Yes (No)	

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek
Applicant/Owner: Yolo County
Investigator: T. Scofield, T. Crest

Date: 7/19/02
County:
State:

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situations? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID:
Transect ID: 12
Plot ID: A
YCZ5 & YCZ6

Levee SECTION OF Creek - incised narrow channel / WITHIN OHWM

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cirsium vulgare	H	FACU	9.		
2. Lepidium latifolium	H	FACW	10.		
3. Rumex transitorius	T	FACW	11.		
4. Baccharis salicifolia	S	FACW	12.		
5. Tamarix parvulas	S	FAC	13.		
6. Elymus glaucus	H	FACU	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/7 = 57%

Remarks: WITHIN the OHWM & DOMINATED BY HYDROPHYTIC VEG.

HYDROLOGY

X Recorded Data (Describe in Remarks):

- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- X Other

No Recorded Data Available

Wetland Hydrology Indicators:

Primary Indicators:

- Inundated
- Saturated in Upper 12 inches
- X Water Marks
- X Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

- Oxidized Root Channels in Upper 12 in.
- Water-Stained Leaves
- Local Soil Survey Data
- X FAC-Neutral Test
- Other (Explain in Remarks)

Field Observations:

Depth of Surface Water: N/A (in.)
Depth to Free Water in Pit: N/A (in.)
Depth to Saturated Soil: N/A (in.)

Remarks: within OHWM
↳ Adjacent to high water channel - just below slight break

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
18	A	10 YR 4/3	n/a	n/a	SILTY-SAND-CLAY LOAM

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chrome Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Depositional soils w/ high sand content

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Cache Creek Applicant/Owner: Yolo County Investigator: T. Scofield, T. Creed	Date: 7/19/9? County: Yolo State: CA
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situations? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: ______ Transect ID: 12 Plot ID: B YC25 + YC26 Dewey

THAT IS ON THE ?E OF A man-made levee.

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Quercus lobata		FAC*	9.		
2. Prunus dulcis		–	10.		
3. Bromus diandrus		–	11.		
4. Avena fatua		–	12.		
5. Cirsium vulgare		FACU	13.		
6. Lepidium latifolium		FACW	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 2/6 = 33%

Remarks: Upland exposed area on side of levee – NOT dominated BY HYDROPHYTIC VEG.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- X Other

____ No Recorded Data Available

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Field Observations:

Depth of Surface Water: 0 (in.)

Depth to Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 0 (in.)

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: On bank of levee above two-year flood mark – No hydrological indicators

SOILS

Map Unit Name
(Series and Phase) _____ Drainage Class: _____

Field Observations
Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretic. Structure, etc.
0-18	A	10YR 4/3			Clay - Silty Loam

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chrome Colors
_____ Concretions
_____ High Organic Content in Surface Layer in Sandy Soils
_____ Organic Streaking in Sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Homogenous Loam Alluvial non-hydric Soils

WETLAND DETERMINATION

		(Circle)
Hydrophytic Vegetation Present?	Yes	(No)
Wetland Hydrology Present?	Yes	(No)
Hydric Soils Present?	Yes	(No)

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks:

Appendix 2. Jurisdictional Boundaries Within the Cache Creek Project Area

Jursidictional Boundary Map 1

- "Jurisdictional Area"
- CCRMP Boundary
- 2 Year Flood Boundary Line
- Monitoring Transect
- A - Wetland Data Point
- B - Wetland Data Point

N
W E
S

Scale in Feet

0 500 1000

1 : 4 800
1 inch = 400 feet

Data Sources: Aspen Environmental Group, MBK Engineers, Yolo County
Andregg Inc., Cartwright Aerial Surveys Inc
Produced by the Yolo County Information Technology Division - August, 2002

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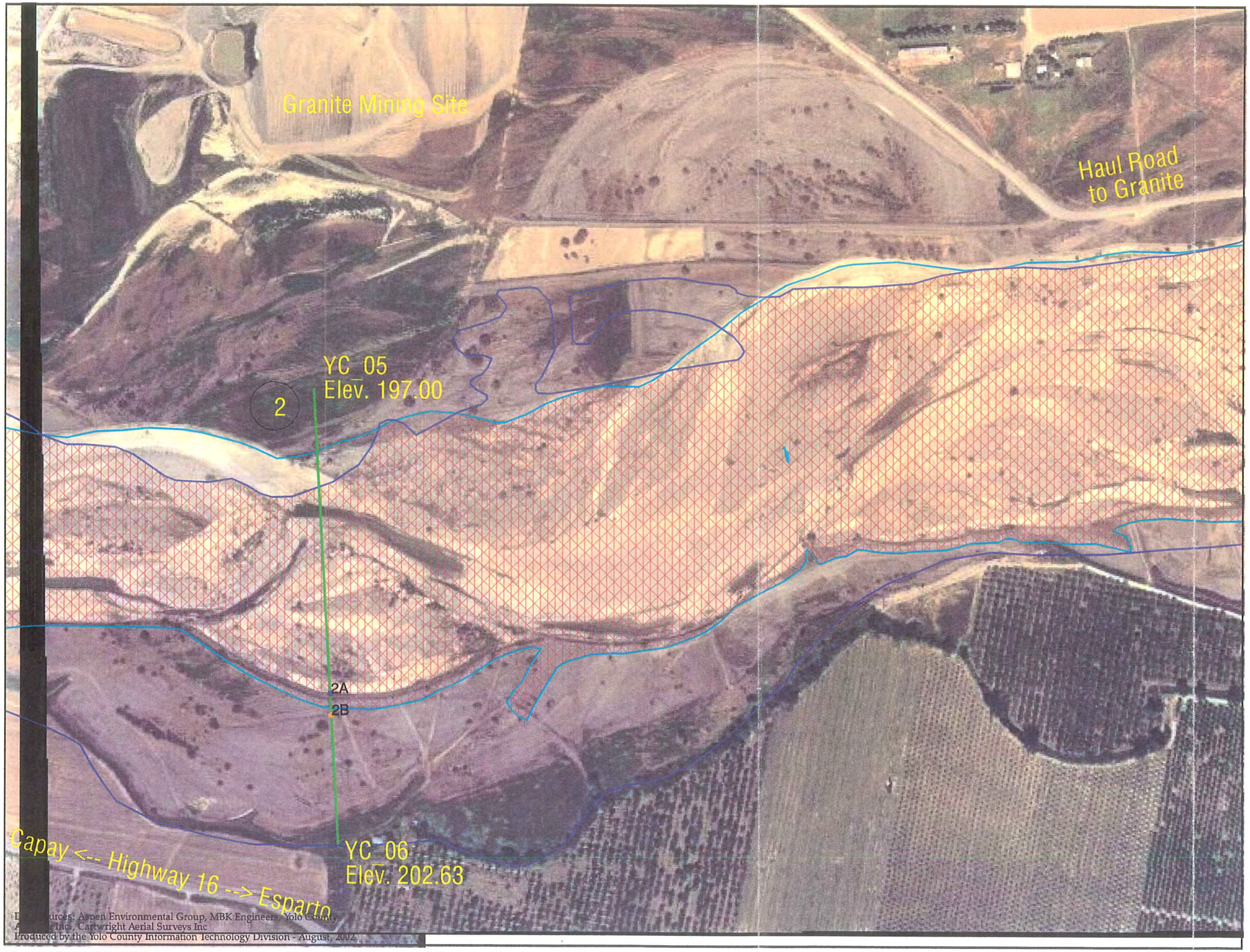
Jursidictional Boundary Map 2



- "Jurisdictional Area"
- CCRMP Boundary
- 2 Year Flood Boundary Line
- Monitoring Transect
- A - Wetland Data Point
- B - Wetland Data Point

N
W E
S

Scale in Feet

0 500 1000

1 : 4 800
1 inch = 400 feet

Data Sources: Aspen Environmental Group, MBK Engineers, Yolo County
Aerials Inc., Cartwright Aerial Surveys Inc
Produced by the Yolo County Information Technology Division - August, 2002

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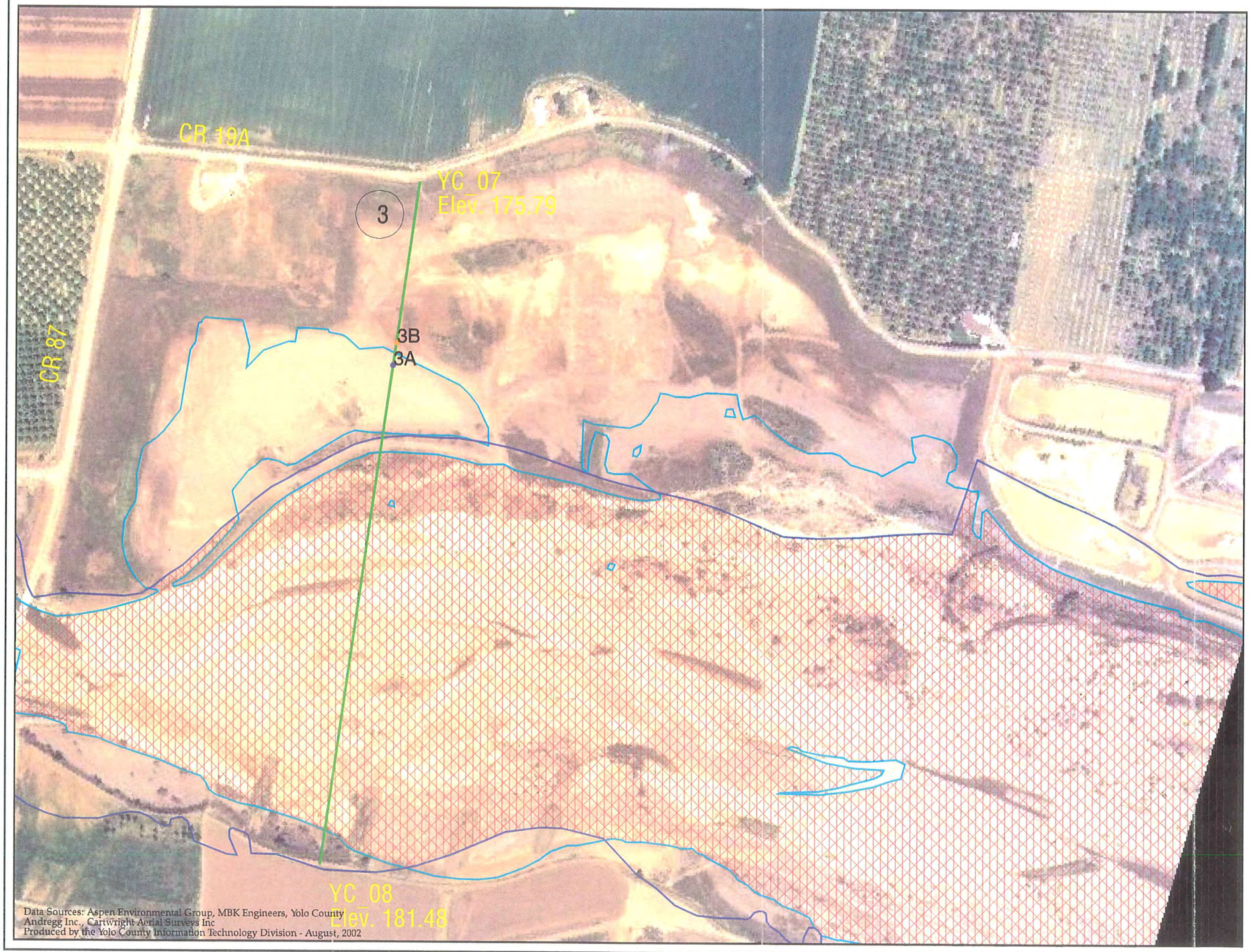
Jursidictional Boundary Map 3



- "Jurisdictional Area"
- CCRMP Boundary
- 2 Year Flood Boundary Line
- Monitoring Transect
- A - Wetland Data Point
- B - Wetland Data Point

N
W
E
S

Scale in Feet

0 500 1000

1 : 4 800
1 inch = 400 feet

Data Sources: Aspen Environmental Group, MBK Engineers, Yolo County
Andregg Inc., Cartwright Aerial Surveys Inc
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Jursidictional Boundary Map 4

Teichert Site

4

YC_09
Elev. 162.35

4B
4A

YC_10
Elev. 161.92

Syar Site ->

- "Jurisdictional Area"
- CCRMP Boundary
- 2 Year Flood Boundary Line
- Monitoring Transect
- A - Wetland Data Point
- B - Wetland Data Point

N
W E
S

Scale in Feet

0 500 1000

1 : 4 800
1 inch = 400 feet

Data Sources: Aspen Environmental Group, MBK Engineers, Yolo County
Andregg Inc., Cartwright Aerial Surveys Inc
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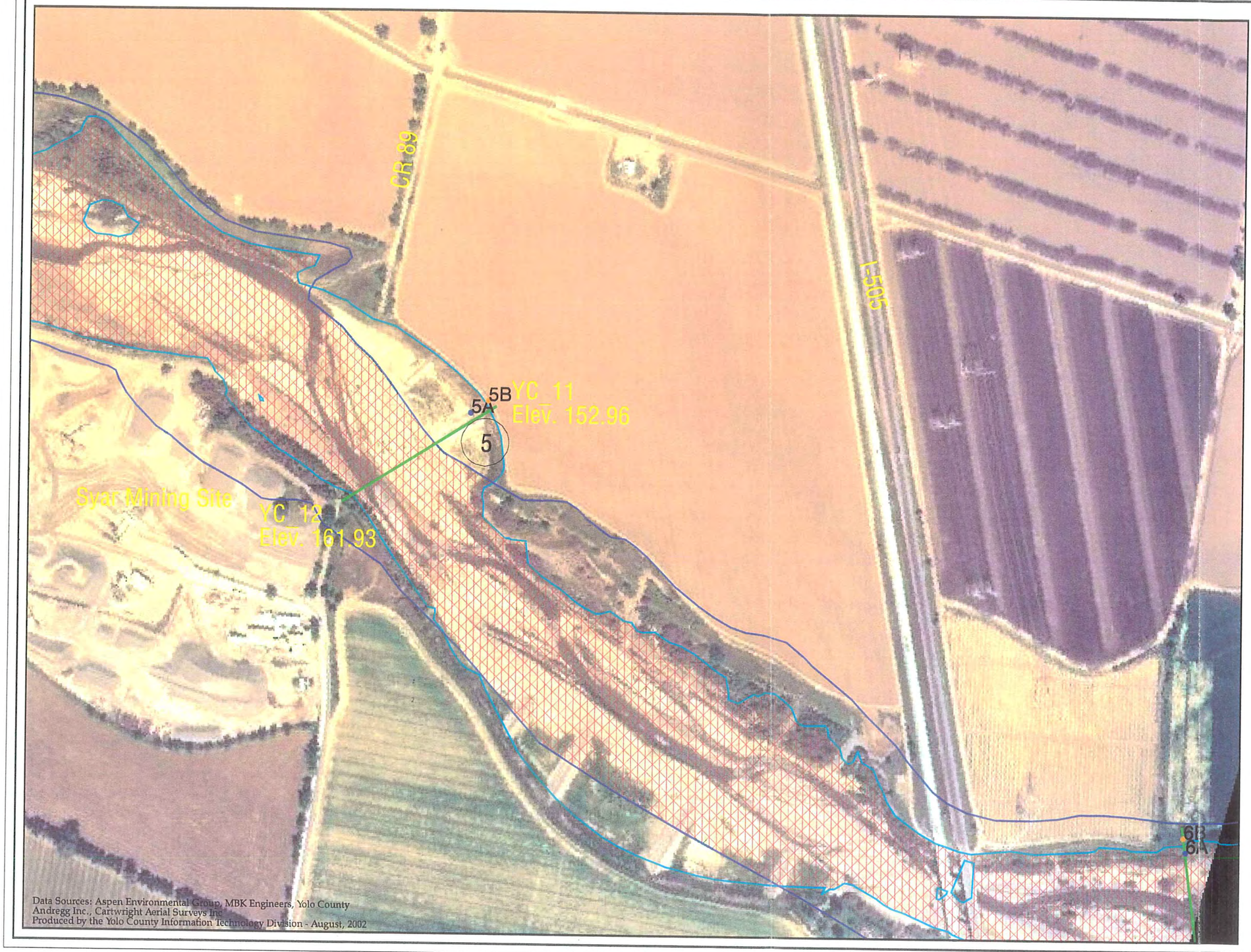
Jursidictional Boundary Map 5



- "Jurisdictional Area"
- CCRMP Boundary
- 2 Year Flood Boundary Line
- Monitoring Transect
- A - Wetland Data Point
- B - Wetland Data Point

N
W E
S

Scale in Feet

0 500 1000

1 : 4 800
1 inch = 400 feet

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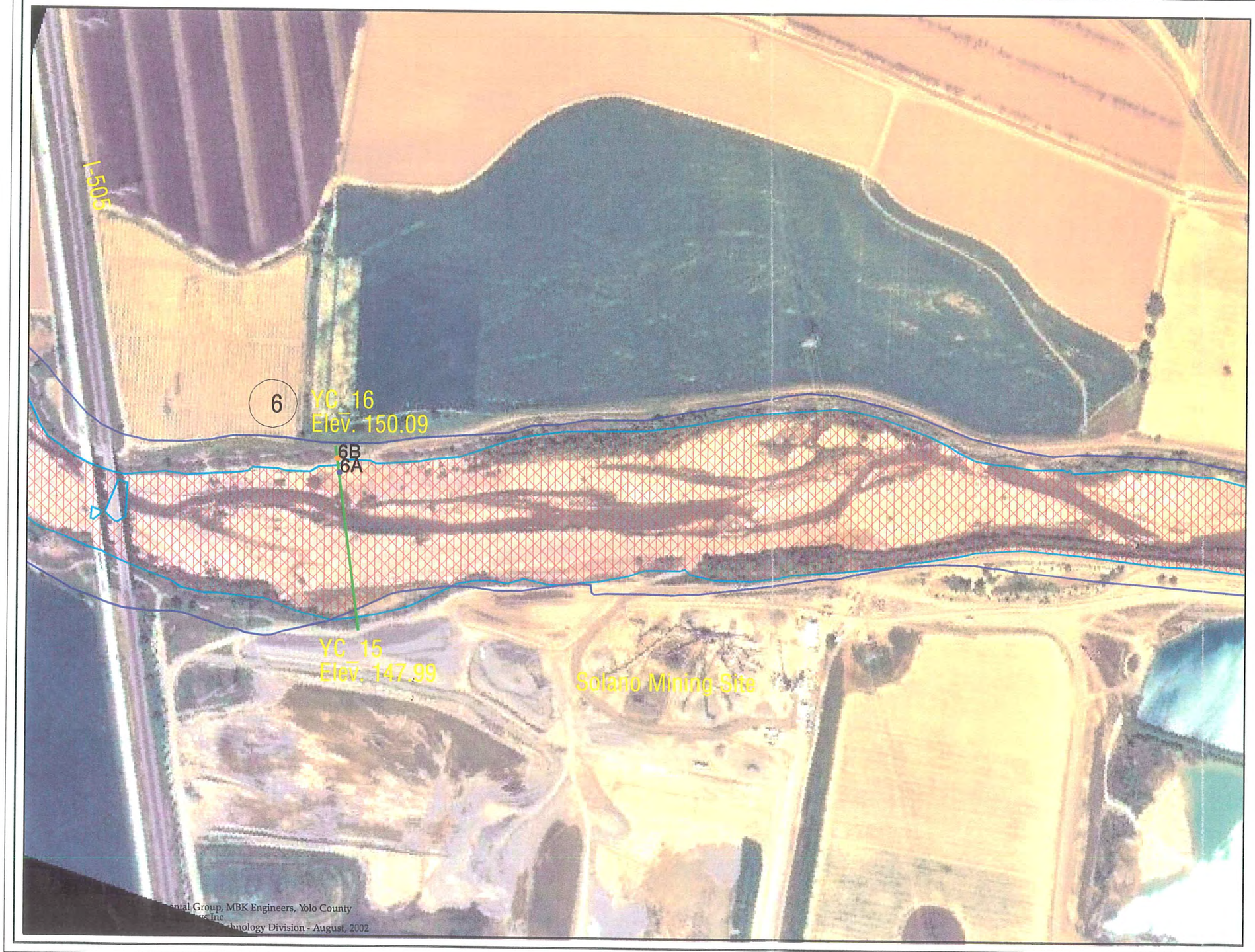
Jursidictional Boundary Map 6



- "Jurisdictional Area"
- CCRMP Boundary
- 2 Year Flood Boundary Line
- Monitoring Transect
- A - Wetland Data Point
- B - Wetland Data Point

N
W E
S

Scale in Feet

0 500 1000

1 : 4 800
1 inch = 400 feet

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Data Sources: Aspen Environmental Group, MBK Engineers, Yolo County
Andregg Inc., Cartwright Aerial Surveys Inc
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Jursidictional Boundary Map 7

- "Jurisdictional Area"
- CCRMP Boundary
- 2 Year Flood Boundary Line
- Monitoring Transect
- A - Wetland Data Point
- B - Wetland Data Point

N
W E
S

Scale in Feet

0 500 1000

1 : 4 800
1 inch = 400 feet

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Jursidictional Boundary Map 8

- "Jurisdictional Area"
- CCRMP Boundary
- 2 Year Flood Boundary Line
- Monitoring Transect
- A - Wetland Data Point
- B - Wetland Data Point

N
W
E
S

Scale in Feet

0 500 1000

1 : 4 800
1 inch = 400 feet

Data Sources: Aspen Environmental Group, MBK Engineers, Yolo County
Andregg Inc., Cartwright Aerial Surveys Inc
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Jursidictional Boundary Map 9

- "Jurisdictional Area"
- CCRMP Boundary
- 2 Year Flood Boundary Line
- Monitoring Transect
- A - Wetland Data Point
- B - Wetland Data Point

N
W E
S

Scale in Feet

0 500 1000

1 : 4 800
1 inch = 400 feet

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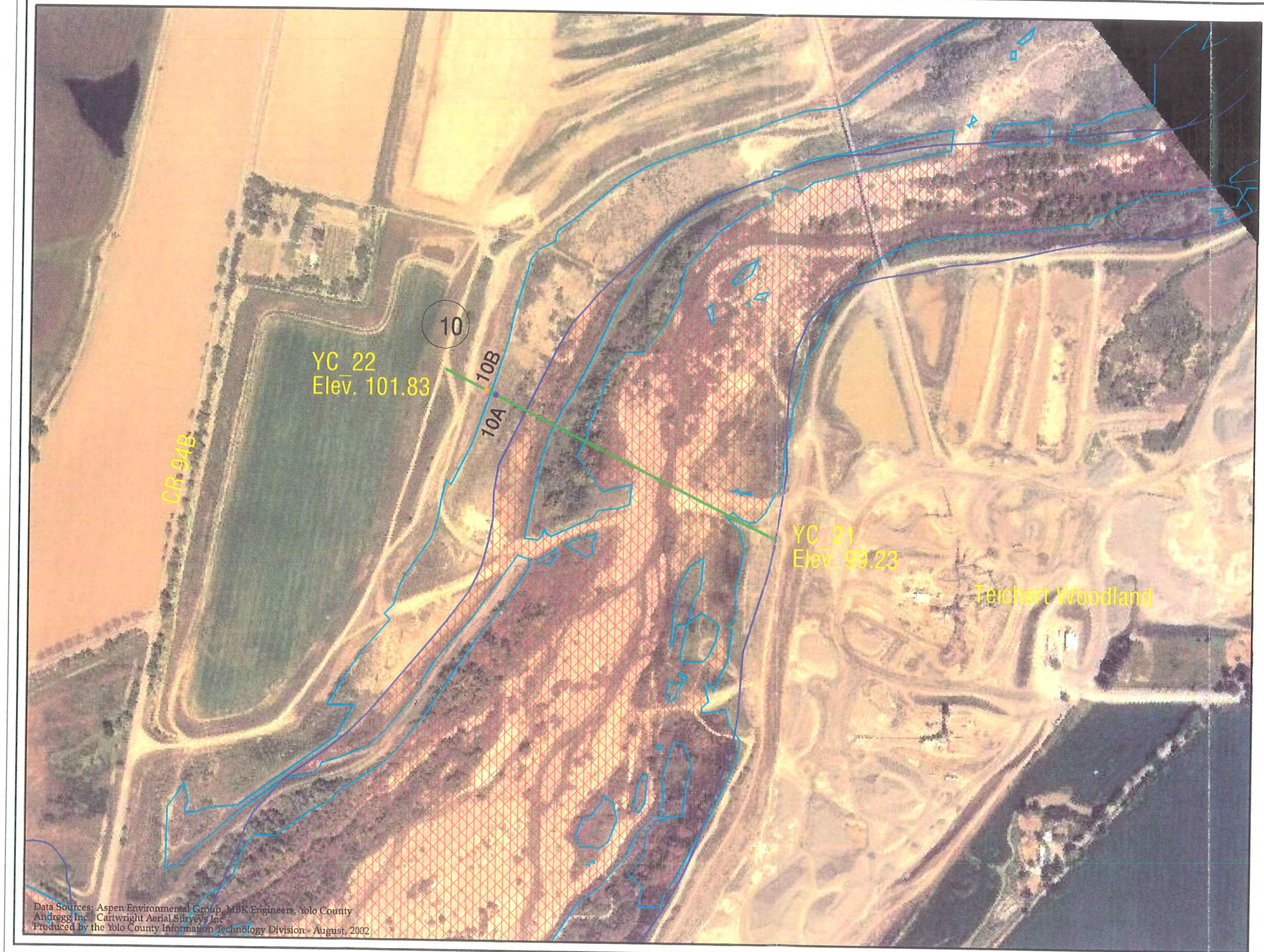

Jursidictional Boundary Map 10

- "Jurisdictional Area"
- CCRMP Boundary
- 2 Year Flood Boundary Line
- Monitoring Transect
- A - Wetland Data Point
- B - Wetland Data Point

N
W E
S

Scale in Feet

0 500 1000

1 : 4 800
1 inch = 400 feet

Data Sources: Aspen Environmental Group, MBK Engineers, Yolo County
Andregg Inc., Cartwright Aerial Surveys Inc.
Produced by the Yolo County Information Technology Division - August, 2002

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Jursidictional Boundary Map 11

Data Sources: Aspen Environmental Group, MBK Engineers, Yolo County
Andregg Inc., Cartwright Aerial Surveys Inc
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- "Jurisdictional Area"
- CCRMP Boundary
- 2 Year Flood Boundary Line
- Monitoring Transect
- A - Wetland Data Point
- B - Wetland Data Point

N
W E
S

Scale in Feet

0 500 1000

1 : 4 800
1 inch = 400 feet

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Jursidictional Boundary Map 12

- "Jurisdictional Area"
- CCRMP Boundary
- 2 Year Flood Boundary Line
- Monitoring Transect
- A - Wetland Data Point
- B - Wetland Data Point

N
W E
S

Scale in Feet

0 500 1000

1 : 4 800
1 inch = 400 feet

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Appendix 3. Responses to the Sacramento District ACOE Minimum Standards for Acceptance of Preliminary Wetlands Delineations

1. A statement that the delineation has been conducted in accordance with the 1987 "Corps of Engineers Wetland Delineation Manual".

   See Wetland Studies under Section 2.0 (Methodologies)

2. A narrative describing the wetlands.

   See Section 3.0 (Results)

3. Justification for the wetland boundaries.

   See Section 3.0 (Results)

4. The total acreage of the project.

   The project area (CCRMP Area) is approximately 2,324 acres.

5. Existing field conditions such as a season and flood/drought conditions.

   The United States Geological Survey records for Cache Creek at Yolo show that three large floods have occurred on Cache Creek since (and including) 1995. Two floods, 1995 and 1998, were within 80% of the peak flow rate of the 1958 flood, which was the largest flood on record for the past 98 years. The 1995 and 1998 floods were the fourth and sixth largest on record.

   The largest peak high flow event for Cache Creek in the current year (2002) was 13,280 cfs, recorded on January 2, 2002, at the USGS Cache Creek Yolo Gauging Station (CCY).

6. A discussion of the hydrology source (subsurface or surface, including potential irrigation influence) and drainage gradients.

   See Section 3.1.2.

7. A site location map, preferably outlined on a 7.5-minute USGS guadrangle, along with any other pertinent maps of the site. The map must provide the name of the USGS quadrangle, Section, Township, Range, and UTM or latitude and logtitiude.

   See Figure 1 (Section 1.0). The site occurs on three 7.5-minute USGS quadrangles including Esparto, Woodland and Madison. The coordinates are presented in the footnote of Figure 1.

8. Directions to the Site.

   The 14.5-mile study area can be accessed at several locations between its' upstream boundary at the Capay Dam and its' downstream terminus, where Cache Creek flows under Interstate-5. See Figure 1 (Location Map) and Appendix 2.

9. Contact information for the applicant(s) and property owner(s).

   The permittee is the Yolo County Planning and Public Works Department (contact: Linda Fiack). Property ownership information can be obtained from the Yolo County Planning Department (contact Linda Fiack). Linda Fiack can be contacted at:

   Yolo County Planning & Public Works Department
   292 West Beamer Street
   Woodland, CA 95695
   (530) 666-8019
   (530) 666-8156 [fax]
   Linda.fiack@ccm.yolocounty.org

10. A discussion of plant communities and habitat types present on the site and a list of the scientific name(s), and indicator status of all plants.

    See (1) Section 3.2.1 (Plant Community Descriptions)
    (2) 3.2.2 (Vegetation Descriptions by Transect).
    (3) Table 2 (Dominant Plant Species Observed at Each Wetland Study Point Location) and
    (4) Appendix 3 (List of Plant species observed).

11. Soil descriptions, soil map(s), and a list of hydric soils or soils with hydric inclusions on the site.

    See Section 3.0 (Results) and Table 4 (Soils Observed at Study Point Locations).

12. Any observed and/or documented examples of an interstate or foreign commerce connection (e.g., recreational or other use by interstate or foreign travelers and sale of fish or shellfish in interstate or foreign commerce).

    None observed.

13. A delineation map at an appropriate scale (not to exceed one inch = 400 feet).

    See Appendix 2. Jurisdictional Boundaries Within the Lower Cache Creek CCRMP Area.

Appendix 4. Plant Species Observed within the Lower Cache Creek CCRMP Area

Appendix 4. Plant Species Observed within the Lower Cache Creek CCRMP Area

Family Taxon Common Name Wetland Indicator Status Status
Adoxaceae Sambucus mexicana C. Presl blue elderberry FAC native
Amaranthaceae Amaranthus blitoides S. Watson pigweed FACW native
Amaranthaceae Atriplex lentiformis (Torrey) S. Watson quail brush, big saltbush FAC native
Amaranthaceae Chenopodium album L. lamb's-quarters FAC introduced
Amaranthaceae Chenopodium atrovirens Rydb. goosefoot

native	
Amaranthaceae Chenopodium botrys L. Jerusalem-oak	
	FACU
introduced	
Amaranthaceae Salsola tragus L. Russian-thistle	
	FACU
introduced	
Anacardiaceae Toxicodendron diversilobum (Torrey & Gray) E. Greene poison-oak	
native	
Apiaceae Anthriscus caucalis M. Bieb. bur-chervil	
introduced	
Apiaceae Conium maculatum L. poison hemlock	
	FACW
introduced	
Apiaceae Torilis nodosa (L.) Gaertn. knotted hedge-parsley	
introduced	

Apocynaceae Apocynum cannabinum L. dogbane	FAC
native	
Asteraceae Achyrachaena mollis Schauer blow wives	FAC*
native	
Asteraceae Ambrosia psilostachya DC. western ragweed	FAC
native	
Asteraceae Anthemis cotula L. stinkweed, dog-fennel	FACU
introduced	
Asteraceae Artemisia douglasiana Besser mugwort	FACW
native	
Asteraceae Baccharis pilularis DC. coyote brush	
native	

Asteraceae Baccharis salicifolia (Ruiz Lopez & Pavon) Pers. mule fat	FACW
native	
Asteraceae Bidens frondosa L. stick-tight	FACW
native	
Asteraceae Brickellia californica (Torrey & Gray) A. Gray California brickellbush	FACU
native	
Asteraceae Carduus pycnocephalus L. Italian thistle	
introduced	
Asteraceae Centaurea melitensis L. tocolote	
introduced	
Asteraceae Centaurea solstitialis L. yellow star-thistle	
introduced	
Asteraceae	

Chamomilla suaveolens (Pursh) Rydb.
pineapple weed

FACU

introduced

Asteraceae
Cirsium vulgare (Savi) Ten.
bull thistle

FACU

introduced

Asteraceae
Eriophyllum lanatum (Pursh) Forbes var. achillaeoides (DC.) Jepson
woolly sunflower

native

Asteraceae
Euthamia occidentalis Nutt.
western goldenrod

OBL

native

Family
Taxon
Common Name
Wetland Indicator Status
Status

Asteraceae
Gnaphalium luteo-album L.
cudweed

introduced

Asteraceae

Gnaphalium palustre Nutt. western marsh cudweed	FACW
native	
Asteraceae Helenium bigelovii A. Gray Bigelow's sneezeweed	OBL
native	
Asteraceae Heterotheca grandiflora Nutt. telegraph weed	
native	
Asteraceae Heterotheca oregona (Nutt.) Shinners Oregon golden-aster	
native	
Asteraceae Hypochaeris glabra L. smooth cat's-ear	
introduced	
Asteraceae Senecio vulgaris L. common groundsel, old-man-in-the-spring	UPL, FAC
introduced	
Asteraceae Silybum marianum (L.) Gaertner	

milk thistle introduced	
Asteraceae Sonchus asper (L.) Hill prickly sow-thistle introduced	FAC
Asteraceae Xanthium strumarium L. cocklebur native	FAC+
Betulaceae Alnus rhombifolia Nutt. white alder native	FACW
Boraginaceae Amsinckia menziesii (Lehm.) Nels. & Macbr. var. menziesii fiddleneck native	
Boraginaceae Cryptantha flaccida (Douglas ex Lehm.) E. Greene native	
Boraginaceae Eriodictyon californicum (Hook. & Arn.) Torrey yerba santa	

native

Boraginaceae
Heliotropium curassavicum L.

OBL

native

Boraginaceae
Heliotropium europaeum L.

introduced

Boraginaceae
Pectocarya penicillata (Hook. & Arn.) A. DC.
winged comb-seed

native

Boraginaceae
Plagiobothrys stipitatus (E. Greene) I.M. Johnston var. micranthus (Piper) I.M. Johnston
vernal pool popcorn-flower

OBL

native

Brassicaceae
Hirschfeldia incana (L.) Lagr.-Fossat
Mediterranean hoary-mustard

introduced

Brassicaceae
Lepidium latifolium L.
broad-leaved pepperwort

FACW

introduced		
Brassicaceae Raphanus sativus L. wild radish		
introduced		
Brassicaceae Rorippa nasturtium-aquaticum (L.) Hayek water-cress	OBL	
native		
Brassicaceae		
charlock		
introduced		
Brassicaceae Sisymbrium altissimum L. tumble-mustard	FACU	
introduced		
Caryophyllaceae Petrorhagia dubia (Raf.) Lopez & Romo		
introduced		
Caryophyllaceae Polycarpon tetraphyllum L.		
introduced		

Caryophyllaceae
Silene gallica L.
windmill pink

introduced

Caryophyllaceae
Spergularia bocconei (Scheele) Merino
Boccone's sand-spurry

introduced

Caryophyllaceae
Velezia rigida L.

introduced

Family
Taxon
Common Name
Wetland Indicator Status
Status

Convolvulaceae
Convolvulus arvensis L.
bindweed

introduced

Cucurbitaceae
Marah inermis (Congdon) Dunn
wild-cucumber, manroot

native

Cyperaceae Carex praegracilis W. Boott clustered field sedge native	FACW-
Cyperaceae Carex senta Boott swamp sedge native	OBL
Cyperaceae Cyperus eragrostis Lam. native	FACW
Cyperaceae Eleocharis macrostachya Britton creeping spike-rush native	OBL
Cyperaceae Scirpus acutus Muhl. ex Bigel. var. occidentalis (Torrey) Beetle tule native	OBL
Cyperaceae Scirpus maritimus L. prairie bulrush native	OBL

Cercis occidentalis Torrey ex A. Gray redbud	UPL
native	
Fabaceae Lotus corniculatus L. bird's-foot trefoil	FAC
introduced	
Fabaceae Lotus humistratus E. Greene colchita	
native	
Fabaceae Lotus wrangelianus Fischer & Meyer	
native	
Fabaceae Lupinus succulentus Douglas ex Koch	
native	
Fabaceae Medicago polymorpha L. bur-clover	
introduced	
Fabaceae Melilotus alba Medik.	

white sweet-clover	
	FACU+
introduced	
Fabaceae	
Melilotus indica (L.) All.	
Indian sweet-clover	
	FAC
introduced	
Fabaceae	
Vicia benghalensis L.	
purple vetch	
introduced	
Fagaceae	
Quercus lobata Nee	
valley oak	
	FAC*
native	
Geraniaceae	
Erodium cicutarium (L.) L'Hér ex Aiton	
cut-leaved filaree	
introduced	
Hydrocharitaceae	
Elodea canadensis Michaux	
common water-weed	
	OBL
native	
Hypericaceae	
Hypericum formosum Kunth var. scouleri (Hook.) Coulter	
St. John's wort	

FACW
native
Juglandaceae
Juglans hindsii (Jepson) Jepson ex R.E. Smith
California black walnut
FAC
native
Juncaceae
Juncus bufonius L. var. occidentalis F.J. Herm.
toad rush
FACW+
native
Family
Taxon
Common Name
Wetland Indicator Status
Status
Juncaceae
Juncus effusus L. var. pacificus Fern. & Wieg.
bog rush
OBL
native
Juncaceae
Juncus mexicanus Willd. ex Schultes & Schultes f.
Mexican rush
FACW
native
Juncaceae
Juncus oxymeris Engelm.
pointed rush

native	FACW
Juncaceae Juncus phaeocephalus Engelm. var. paniculatus Engelm. brown-headed rush	
native	FACW
Lamiaceae Lamium amplexicaule L. henbit	
introduced	
Lamiaceae Marrubium vulgare L. horehound	
introduced	FAC
Lamiaceae Mentha cf. arvensis L. field mint	
native	FACW
Lamiaceae Mentha X piperita L. peppermint	
introduced	OBL
Lamiaceae Stachys cf. stricta E. Greene Sonoma hedge-nettle	
	OBL

native

Loasaceae
Mentzelia laevicaulis Torrey & Gray
blazing star

native

Lythraceae
Lythrum californicum Torrey & Gray
California loosestrife

OBL

native

Lythraceae
Lythrum hysoppifolia L.
hyssop loosestrife

FACW

introduced

Onagraceae
Epilobium brachycarpum C. Presl
panicled willow-herb

UPL

native

Onagraceae
Ludwigia peploides (Kunth) Raven
floating water-primrose

OBL

native

Papaveraceae
Eschscholzia californica Cham.
California poppy

native

Poaceae Agrostis viridis Gouan water bentgrass introduced		
Poaceae Aira caryophyllea L. silver hairgrass introduced		FACU
Poaceae Arundo donax L. giant reed introduced		FACW
Poaceae Avena fatua L. wild oat introduced		
Poaceae Bromus diandrus Roth ripgut brome introduced		
Poaceae Bromus hordeaceus L. soft chess introduced		FACU-

Poaceae Bromus rubens L. foxtail brome introduced	FACU?
Poaceae Cynodon dactylon (L.) Pers. Bermuda grass introduced	FAC
Poaceae Distichlis spicata (L.) E. Greene saltgrass native	FACW
Poaceae Elymus glaucus Buckley blue wildrye native	FACU
Poaceae Hordeum marinum Hudson ssp. gussoneanum (Parl.) Thell. Mediterranean barley introduced	FAC
Poaceae Hordeum murinum L. ssp. leporinum (Link) Arcang. foxtail barley introduced	FACU?
Poaceae	

Hordeum murinum L. ssp. murinum
wall barley

introduced

Poaceae
Koeleria phleoides (Villars) Pers.
annual junegrass

introduced

Family
Taxon
Common Name
Wetland Indicator Status
Status

Poaceae
Lolium multiflorum Lam.
Italian rye-grass

FAC*

introduced

Poaceae
Phalaris minor Retz.
little-seeded canary-grass

introduced

Poaceae
Phalaris paradoxa L.
awned canary-grass

introduced

Poaceae

Piptatherum miliaceum L. smilo grass introduced	
Poaceae Poa annua L. annual bluegrass introduced	FACW-
Poaceae Poa secunda J.S. Presl ssp. secunda pine bluegrass native	
Poaceae Polypogon maritimus Willd. Mediterranean beard-grass introduced	OBL
Poaceae Saccharum ravennae (L.) Murray ravenna grass introduced	FAC
Poaceae Triticum aestivum L. wheat introduced	
Poaceae Vulpia myuros (L.) C. Gmelin var. hirsuta (Hackel) Asch. & Graebner	

hairy rat-tail fescue introduced	
Poaceae Vulpia myuros (L.) C. Gmelin var. myuros rat-tail fescue introduced	FACU*
Polygonaceae Polygonum arenastrum Boreau knotweed introduced	
Polygonaceae Polygonum lapathifolium L. willow smartweed native	OBL
Polygonaceae Polygonum persicaria L. lady's thumb introduced	FACW
Polygonaceae Rumex crispus L. curly-leaved dock introduced	FACW-
Polygonaceae Rumex dentatus L. toothed dock	

	OBL*
introduced	
Potamogetonaceae	
Potamogeton crispus L.	
curly-leaved pondweed	
	OBL
introduced	
Primulaceae	
Anagallis arvensis L.	
scarlet pimpernel	
	FAC
introduced	
Ranunculaceae	
Clematis ligusticifolia Nutt. in Torrey & Gray	
virgin's bower	
	FAC
native	
Rosaceae	
Prunus dulcis (Miller) D. Webb	
almond	
introduced	
Rosaceae	
Rosa californica Cham. & Schldl.	
wild rose	
	FAC+
native	
Rosaceae	
Rubus discolor Weihe & Nees	
Himalayan blackberry	
	FACW*

introduced	
Rosaceae Rubus leucodermis Torrey & A. Gray wild raspberry	
native	
Rosaceae Rubus ursinus Cham. & Schldl. California blackberry	FACW*
native	
Rubiaceae Galium aparine L. [G. spurium L.] common bed-straw	FACU
native	
Rubiaceae Galium parisiense L. wall bed-straw	FACU
introduced	
Salicaceae Populus fremontii S. Watson Fremont's cottonwood	FACW
native	
Salicaceae Salix exigua Nutt. narrow-leaved willow	OBL
native	

Salicaceae
Salix gooddingii C. Ball
black willow

OBL

native

Family
Taxon
Common Name
Wetland Indicator Status
Status

Salicaceae
Salix laevigata Bebb
red willow

native

Salicaceae
Salix lasiolepis Benth.
arroyo willow

FACW

native

Sapindaceae
Aesculus californica (Spach) Nutt.
California buckeye

native

Scrophulariaceae
Mimulus cardinalis Douglas ex Benth.
scarlet monkey-flower

OBL

native

Scrophulariaceae Mimulus guttatus DC. common monkey-flower native	OBL
Scrophulariaceae Penstemon heterophyllus Lindley var. purdyi (Keck) McMinn Purdy's foothill penstemon native	
Scrophulariaceae Plantago erecta E. Morris California plantain native	
Scrophulariaceae Plantago lanceolata L. English plaintain introduced	FAC-
Scrophulariaceae Plantago major L. common plantain introduced	FACW-
Scrophulariaceae Verbascum thapsus L. woolly mullein introduced	

Scrophulariaceae Veronica anagallis-aquatica L. water speedwell	
	OBL
introduced	
Scrophulariaceae Veronica peregrina L. ssp. xalapensis (Kunth) Pennell pilgrim's speedwell	
	OBL
native	
Scrophulariaceae Veronica persica Poiret bird's-eye speedwell	
introduced	
Solanaceae Datura wrightii Regel Jimson-weed	
native	
Solanaceae Nicotiana glauca R. Graham tree tobacco	
	FAC
introduced	
Tamaricaceae Tamarix parviflora DC. tamarisk	
	FAC
introduced	
Typhaceae	

Typha sp. cat-tail	
	OBL
native	
Verbenaceae Phyla lanceolata (Michaux) E. Greene	
	FACW
native	
Verbenaceae Phyla nodiflora (L.) E. Greene	
	FACW
native	
Verbenaceae Verbena lasiostachys Link var. scabrida Moldenke	
	FACW
native	
Vitaceae Vitis californica Benth. California wild grape	
	FACW
native	
Zygophyllaceae Tribulus terrestris L. puncture vine	
introduced	