Appendix F

Preliminary Delineation of Wetlands and Other Waters of the United States for the Hollister 115 kV Power Line Reconductoring Project

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Preliminary Delineation of Wetlands and Other Waters of the United States for the Hollister 115 kV Power Line Reconductoring Project

Prepared for:

Pacific Gas and Electric Company
Land Rights and Resource Management
487 West Shaw Avenue
Fresno, CA 93704
Contact: Andy Smith
(559) 263-5237

Prepared by:

ICF Jones & Stokes
630 K Street, Suite 400
Sacramento, CA 95814
Contact: John E. Forsythe
(916) 737-3000

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Acronyms and Abbreviations

Corps	U.S. Army Corps of Engineers
CWA	federal Clean Water Act
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
GPS	global positioning system
HUC	Hydrologic Unit Code
OBL	obligate
OHWM	ordinary high-water mark
PG&E	Pacific Gas and Electric Company
redox	redoximorphic
TNW	traditional navigable water
UPL	obligate upland

Summary

This report presents the results of a delineation of wetlands and other waters conducted for Pacific Gas and Electric Company's (PG&E's) Hollister 115kV Power Line Reconductoring Project in Monterey and San Benito Counties, California. The delineation was conducted to assist PG&E (the project applicant) in identifying the type and extent of wetlands and other waters potentially subject to U.S. Army Corps of Engineers (Corps) regulation under Section 404 of the federal Clean Water Act (CWA) in the proposed project area (delineation area). The delineation area encompasses approximately 410 acres and includes all areas that would be disturbed, such as tower replacement sites, staging areas, pull sites, and culvert improvement areas. The delineation area contains 6.9131 acres of wetlands and other waters, consisting of riverine wetlands, an emergent wetland, seasonal wetlands, a detention basin wetland, an intermittent drainage, and ephemeral drainages (Table 1).

All jurisdictional boundaries and determinations presented in this report are preliminary, and are subject to verification by the Corps San Francisco District.

Introduction

This report presents the results of a delineation of wetlands and other waters of the United States conducted in the delineation area for PG&E's Hollister 115kV Power Line Reconductoring Project in Monterey and San Benito Counties. The delineation was conducted to assist PG&E (the project proponent) in identifying the type and extent of wetlands and other waters subject to Corps regulation under CWA Section 404. All jurisdictional boundaries and determinations presented in this report are preliminary, and are subject to verification by the Corps San Francisco District.

Site Description and Access

The proposed project is located on an approximately 20-mile stretch of PG&E's 115kV power line between the cities of Hollister and San Juan Bautista in San Benito County, California and extends into a rural area of northern Monterey County, California (Figure 1). The delineation area is located on both the San Juan Bautista and Hollister U.S. Geological Survey 7.5-minute quadrangles. Elevations in the delineation area range from 140 to 580 feet above mean sea level, with topography ranging from relatively level in the agricultural and grassland areas to rolling slopes in the southern portion of the delineation area in Monterey County. Land use in the delineation area consists of a mixture of agricultural areas, low-density residential development, and large tracts of privately owned grazing land. PG&E is proposing to replace power line poles

and towers. The delineation area includes the area necessary to remove old poles and towers, install new poles and towers, and improve access for construction.

The existing power line is located within the PG&E right-of-way that crosses numerous privately owned parcels. Therefore, site access to the delineation area must be coordinated through PG&E.

Table 1. Summary of Wetlands and Other Waters in the Delineation Area

Feature Type	Preliminary Jurisdictional Status[a]	Acreage in the Delineation Area
Riverine wetland	Wetland	2.7753
Emergent wetland	Wetland	0.4062
Seasonal wetland	Wetland	3.1630
Detention basin wetland	Wetland	0.2468
Subtotal wetlands		***6.5913***
Intermittent drainage[b]	Other water of the United States	0.0604
Ephemeral drainage[c]	Other water of the United States	0.2614
Subtotal other waters of the United States		***0.3218***
Total waters of the United States		**6.9131**

[a] Preliminary jurisdictional status pending verification by the U.S. Army Corps of Engineers San Francisco District.

[b] An intermittent drainage has flowing water during certain times of the year, when groundwater provides water for streamflow. During dry periods, intermittent drainages may not have flowing water. Runoff from rainfall is a supplemental source of water for streamflow. (Federal Register, Vol. 67, No. 10/Tuesday, January 15, 2002.)

[c] An ephemeral drainage has flowing water only during (and for a short duration following) precipitation events in a typical year. Ephemeral drainages are located above the water table year-round. Groundwater is not a source of water for the drainage. Runoff from rainfall is the primary source of water for drainage flow. (Federal Register, Vol. 67, No. 10/Tuesday, January 15, 2002.)

Precipitation and Growing Season

The National Weather Service cooperative weather station closest to the project study boundary is located in Hollister, California at an elevation of 280 feet above mean sea level. Data from the Hollister cooperative weather station are

presented here as a reasonable approximation of precipitation trends and growing season duration in the project study boundary.

The length of the growing season at the Hollister weather station (in most years) is 320 days, typically extending from early February to mid-December (Western Regional Climate Center 2008). Average annual precipitation is 13.11 inches, with most falling as rain between November and April (Western Regional Climate Center 2008).

Vegetation

Six upland (i.e., non-wetland) vegetation communities were identified in the delineation area: annual grassland, coastal scrub, coastal oak woodland, eucalyptus, irrigated row and field crop, and valley foothill riparian. Wetland vegetation communities were present in the seasonal wetlands, riverine wetlands, and emergent wetland; these are discussed below under "Results."

Soils

The soil map units in the delineation area are shown in Appendix A, Exhibit A; their characteristics are summarized in Table 2 (USDA 2008a, 2008b).

Hydrology

The delineation area does not contain any traditional navigable waters (TNWs) but is located within the watersheds of the Pajaro River (Hydrologic Unit Code [HUC] 18060002) and Alisal-Elkhorn Sloughs (HUC 18060011) (U.S. Environmental Protection Agency 2008). The southern end of the delineation area drains unnamed tributaries to Gabilan Creek, which flows approximately 9 river miles (8 air miles) into an unnamed water way in Salinas (tributary to Tembladero Slough) that runs roughly parallel to Alisal Slough. This unnamed water way flows approximately 8 river miles (7 air miles) into Trembladero Slough, just south of Castroville. Trembladero Slough flows for approximately 3.5 river miles (3 air miles) until it enters the Old Salinas River. The Old Salinas River flows approximately 2.5 (river and air) miles to the confluence of Moro Cojo and Elkhorn Sloughs. This confluence is adjacent to the Pacific Ocean, at Moss Landing and is the closest TNW to the project area. The central and eastern portions of the project area in San Benito County contain several seasonal and ephemeral unnamed tributaries of the San Benito River as well as the San Benito River, proper. The San Benito River flows approximately 3 river miles (2 air miles) from the project area into the Pajaro River, which travels approximately 20 river miles (14 air miles) until it enters the Pacific Ocean north of Moss Landing. The watershed divide between the San Benito River and Alisal Slough is approximately in the area of the Monterey/San Benito County line.

Table 2. Soil Map Units in the Delineation Area

Soil Map Unit Number	Soil Map Unit Name	Dominant Soil Textures	Restrictive Layers	Depth to Restrictive Layer (inches)	Drainage Class	Hydric Criteria[a]
AkD	Arnold loamy sand, 9–15% slopes	Loamy fine sand	Bedrock	48	Well drained	–
AhF	Arnold loamy sand, 15–30% slopes	Loamy fine sand	Bedrock	48	Well drained	–
AnC2	Antioch loam, 5–9% slopes, eroded	Clay	None	>80	Moderately well drained	–
Cf	Clear Lake clay	Clay	None	>80	Poorly drained	2B3, 4
Ch	Clear Lake clay	Clay	None	>80	Poorly drained	2B3
CmD	Climara clay, 9–15% slopes	Clay	Bedrock	24-60	Well drained	–
CvC	Cotati loam, 2–9 %slopes	Loam	None	>80	Moderately well drained	–
CvD2	Cotati loam, 9–15% slopes, eroded	Loam	None	>80	Moderately well drained	–
CvE2	Cotati loam, 15–30% slopes, eroded	Loam	None	>80	Moderately well drained	–
CwC	Cropley clay, 2–9% slopes	Clay	None	>80	Well drained	2B3
DaA	Danville sandy clay loam, 0–2% slopes	Sandy clay loam	None	>80	Well drained	–
DaC	Danville sandy clay loam, 2–9% slopes	Sandy clay loam	None	>80	Well drained	–
DaE2	Diablo clay, 15–30% slopes, eroded	Clay	None	>80	Well drained	–
GhF	Gloria sandy loam, 15–30% slopes	Sandy loam	Duripan	23	Well drained	–
LdF	Landslides	Variable	NA	NA	NA	–
LvE	Los Gatos clay loam, 15–30% slopes	Clay loam	Bedrock	20-60	Well drained	–
LvF2	Los Gatos clay loam, 30–50% slopes, eroded	Clay loam	Bedrock	20-60	Well drained	–
MaE	McCoy clay loam, 15–30% slopes	Clay loam	Bedrock	27	Well drained	–
MaF	McCoy clay loam, 30–50% slopes	Clay loam	Bedrock	27	Well drained	–
MaG	McCoy clay loam, 50–75% slopes	Clay loam	Bedrock	27	Well drained	–
MeA	Metz sandy loam, 0–2% slopes	Sandy loam	None	>80	Somewhat excessively drained	4
MnG	Mine pits and dumps	Variable	NA	NA	NA	–

Table 2. Continued

Soil Map Unit Number	Soil Map Unit Name	Dominant Soil Textures	Restrictive Layers	Depth to Restrictive Layer (inches)	Drainage Class	Hydric Criteria[a]
NaE	Nacimiento silty clay loam, 15–30% slopes	Silty clay loam	Bedrock	31	Well drained	–
NaF	Nacimiento silty clay loam, 30–50% slopes	Silty clay loam	Bedrock	31	Well drained	–
Pe	Pacheco silty clay	Silty Clay	None	>80	Somewhat poorly drained	–
PnD	Placentia sandy loam, 9–15% slopes	Sandy loam	None	>80	Well drained	–
PnE	Placentia sandy loam, 15–30% slopes	Sandy loam	None	>80	Well drained	–
Rc	Rock outcrop-Xerothorent association	Variable	Bedrock	4-8	NA	–
RsD2	Rincon silty clay loam, 9–15% slopes, eroded	Silty clay loam	None	>80	Well drained	–
Rw	Riverwash	Sand	NA	NA	NA	–
SbA	Salinas clay loam, 0–2% slopes	Clay loam	None	>80	Well drained	2B3, 4
SbE2	San Benito clay loam, 15–30% slopes, eroded	Clay loam	Bedrock	40-60	Well drained	–
Sc	Sandy alluvial land	Loamy sand	None	>80	Somewhat excessively drained	4
SdG	San Benito clay loam, 50–75% slopes	Clay loam	Bedrock	55	Well drained	–
SIE2	Soper gravelly loam, 15–30% slopes, eroded	Gravelly loam	Bedrock	30-48	Well drained	–
SmD	Soper sandy loam, 9–15% slopes	Fine sandy loam	Bedrock	30-48	Well drained	–
SmE2	Soper sandy loam, 15–30% slopes, eroded	Fine sandy loam	Bedrock	30-48	Well drained	–
SmF2	Soper sandy loam, 30–50% slopes, eroded	Fine sandy loam	Bedrock	30-48	Well drained	–
SnA	Sorrento silt loam, 0–2% slopes	Silt loam	Bedrock	>80	Well drained	–
SnC	Sorrento silt loam, 2–9% slopes	Silt loam	Bedrock	>80	Well drained	–

Table 2. Continued

Soil Map Unit Number	Soil Map Unit Name	Dominant Soil Textures	Restrictive Layers	Depth to Restrictive Layer (inches)	Drainage Class	Hydric Criteria[a]
SrC	Sorrento silty clay loam, 2–9% slopes	Silty clay loam	None	>80	Well drained	4
SsE2	Sween rocky clay loam, 15–30% slopes, eroded	Clay loam	Bedrock	20-50	Well drained	–
SsF2	Sween rocky clay loam, 30–50% slopes, eroded	Clay loam	Bedrock	20-50	Well drained	–
TeF	Terrace escarpments	Variable	NA	NA	NA	–
VaE	Vista coarse sandy loam, 15–30% slopes	Coarse sandy loam	Bedrock	23	Well drained	–
VaG	Vista coarse sandy loam, 30–50% slopes	Coarse sandy loam	Bedrock	23	Well drained	–
W	Water	NA	NA	NA	NA	–

[a] Explanation of hydric criteria codes:

2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:

   A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or

   B. are poorly drained or very poorly drained and have either:

      1.) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or

      2.) a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or

      3.) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.

3. Soils frequently ponded for long or very long duration during the growing season.

4. Soils frequently flooded for long or very long duration during the growing season.

Source: USDA 2008a.

Methods

An ICF Jones & Stokes botanist/wetland ecologist and soil scientist conducted fieldwork for the delineation on June 26–27 and June 30–July 2, 2008. Wetlands and wetland boundaries were identified using the routine on-site determination method described in the 1987 *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987; pp. 53–69) and

supplemented by the *Interim Regional Supplement to the Corps of Engineers 1987 Manual: Arid West Region* (U.S. Army Corps of Engineers 2006).

The boundaries of non-wetland waters (e.g., drainages) within the project study boundary at each location were identified by locating the ordinary high-water mark (OHWM) based on recent guidance issued by the Corps (U.S. Army Corps of Engineers 2005).

The location of wetland boundaries and other pertinent features within the delineation area were recorded using a resource-grade global positioning system (GPS) unit typically accurate to less than 1 horizontal meter, aerial photograph interpretation, and topographic map interpretation. GPS data were downloaded and corrected in the office using the nearest available base-station data and combined with aerial photo and topo-interpreted boundary data to generate a delineation map for the delineation area. All plants observed during the delineation were identified to species whenever feasible and assigned a wetland indicator status according to Reed (1988).

Results

A total of 6.9131 acres of wetlands and other waters, consisting of riverine wetlands (2.7753 acres), an emergent wetland (0.4062 acre), seasonal wetlands (3.1630 acres), a detention basin (0.2468 acre), an intermittent drainage (0.0604 acres), and ephemeral drainages (0.2614 acres) were identified in the delineation area (Table 3). All of these features except the detention basin were interpreted to be within the scope of Corps jurisdiction under CWA Section 404. Maps showing the type and distribution of the wetlands and other waters potentially subject to Corps jurisdiction under Section 404 CWA are provided in Appendix A. Descriptions of the wetlands and other waters are provided below, along with the rationale used to determine boundaries and status. The wetland data sheets are provided in Appendix B. Representative photographs of the wetlands and other waters in the delineation area are provided in Appendix C. A comprehensive list of all plants observed within the project study boundary is provided in Appendix D, along with the scientific name and the wetland indicator status of each species (Reed 1988) (see Appendix D for definitions of plant indicator status categories used below). Scientific names follow the *Jepson Manual* (Hickman 1993). Where relevant, synonyms of scientific names are also provided.

All jurisdictional boundaries and determinations presented in this report are preliminary and are subject to verification by the Corps San Francisco District.

Table 3. Wetlands and Other Waters in the Delineation Area

Feature Number	Exhibit Number [a]	Feature Type	Area (acres)	Jurisdictional Status [b]
ED-1	A-14	Ephemeral drainage	0.0196	Other water
ED-2	A-14	Ephemeral drainage	0.0057	Other water
ED-3	A-13	Ephemeral drainage	0.0084	Other water
ED-4	A-13	Ephemeral drainage	0.0142	Other water
ED-5	A-13	Ephemeral drainage	0.0223	Other water
ED-6	A-13	Ephemeral drainage	0.0113	Other water
ED-7	A-12	Ephemeral drainage	0.0156	Other water
ED-8	A-12	Ephemeral drainage	0.0266	Other water
SW-26	A-11	Seasonal wetland	0.2491	Wetland
ED-10	A-11	Ephemeral drainage	0.0356	Other water
RW-9 (San Benito River)	A-10	Riverine wetland	2.2566	Wetland
DB-11	A-9	Detention basin	0.2468	Wetland
RW-12	A-9	Riverine wetland	0.0334	Wetland
RW-13	A-8	Riverine wetland	0.0438	Wetland
ED-14	A-8	Ephemeral drainage	0.0037	Other water
SW-15	A-8	Seasonal wetland	2.5133	Wetland
ED-16	A-8	Ephemeral drainage	0.0431	Other water
SW-17	A-8	Seasonal wetland	0.4006	Wetland
RW-21	A-4	Riverine wetland	0.1871	Wetland
EW-22	A-4	Emergent wetland	0.4062	Wetland
RW-23	A-4	Riverine wetland	0.1475	Wetland
ED-24	A-4	Ephemeral drainage	0.0553	Other water
ID-25	A-4	Intermittent drainage	0.0604	Other water
RW-18	A-3	Riverine wetland	0.0241	Wetland
RW-19	A-3	Riverine wetland	0.0824	Wetland
RW-20	A-3	Riverine wetland	0.0004	Wetland

[a] All exhibits are provided in Appendix A.

[b] Preliminary jurisdictional status pending verification by the U.S. Army Corps of Engineers San Francisco District.

Wetlands

Riverine Wetlands

Eight riverine wetlands (RW 9, RW 12–13, RW 18–21, and RW 23) were identified in the delineation area; they consisted of completely vegetated segments of channels that possessed positive indicators for all three wetland parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology) as

indicated on representative wetland data sheets in Appendix B (data sheets DP 1 and DP 5). Adjacent areas lacked positive indicators of one or more of the three wetland parameters (Appendix B, data sheets DP 2 and DP 6). Representative plant species observed in riverine wetlands were narrow-leaved cattail (*Typha angustifolia*) (OBL [obligate]), red willow (*Salix laevigata*) ($\geq$FAC[1] [facultative]), perennial pepperweed (*Lepidium latifolium*) (FACW [facultative wetland]), arroyo willow (*Salix lasiolepis*) (FACW), and California blackberry (*Rubus ursinus* [*R. vitifolius*]) (FACW). Indicators of hydric soils that were observed in riverine wetlands were the presence of a depleted soil matrix or a redoximorphic (redox) dark surface. Indicators of wetland hydrology observed in riverine wetlands in the delineation area were the presence of water-stained leaves, sediment and drift deposits, and surface water.

Emergent Wetland

A single 0.4062-acre emergent wetland (EW 22) occurs in the delineation area and was dominated by erect, rooted herbaceous hydrophytic species, including broad-leaved cattail (*Typha latifolia*) (OBL), common tule (*Scirpus acutus*) (OBL), and American tule (*Scirpus americanus*) (OBL). Other species observed in the emergent wetland were iris-leaved rush (*Juncus xiphioides*) (OBL) and soft rush (*Juncus effusus*) (OBL).

Seasonal Wetlands

Three seasonal wetlands (SW 15, SW 17, and SW 26) encompassing a total of 3.1630 acres occur in the delineation area. The seasonal wetlands appear to be inundated only during winter and spring, and exhibited positive indicators for all three wetland parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology) as indicated on representative wetland data sheets in Appendix B (data sheet DP 3). Adjacent areas lacked positive indicators of one or more of the three wetland parameters (Appendix B, data sheet DP 4). Representative plant species observed in the seasonal wetlands were soft rush (OBL), hawkbit (*Leontodon taraxacoides*) (FACU [facultative upland]), narrow-leaved flax (*Linum bienne*) (UPL [obligate upland]), pennyroyal (*Mentha pulegium*) (OBL), and Italian ryegrass (*Lolium multiflorum*) (FAC). Soils in seasonal wetlands were determined to be hydric based on the presence of a redox dark surface. Indicators of wetland hydrology observed in seasonal wetlands in the delineation area were the presence of oxidized rhizospheres along living roots, depressional topography, and wetland drainage patterns.

[1] Although not assigned a status in Reed (1988), this species appears to be at least facultative based on its habitat as described in Hickman (1993): riverbanks, seepage areas, lake shores, canyons, and ditches.

Detention Basin

A 0.2468-acre detention basin (DB 11) is located amid agricultural lands adjacent to San Justo Road and appears to function as a stock pond. The detention basin contained water at the time of the delineation fieldwork, which suggests that the majority of the hydrological input into the basin is artificial. Direct precipitation appears to be only a minor component of the hydrological input.

Other Waters (Non-Wetlands)

Intermittent Drainage

A single 0.0604-acre intermittent drainage (ID 25) is located in the delineation area; it is 7 feet wide at the OHWM that was identified based on the presence of a clear, natural line impressed on the bank; shelving; litter and debris; and scour. The banks of the intermittent drainage support riparian scrub vegetation dominated by arroyo willow (*Salix lasiolepis*) (FACW) and California blackberry. The intermittent drainage is an unnamed tributary to Gabilan Creek with an indirect connection to Old Salinas River, a TNW, via an unnamed tributary to Tembladero Slough that connects to Gabilan Creek.

Ephemeral Drainages

Twelve ephemeral drainages occur in the delineation area (ED 1-8, ED 10, ED 14, ED 16, and ED 24) and encompass a total area of 0.2614 acre. The ephemeral drainage were generally high-gradient, relatively narrow (1–2 feet wide), lacked water at the time of the delineation fieldwork, and appeared to convey hillside runoff only during (and for a short duration following) precipitation events.

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Appendix A
Wetland Delineation Maps

Appendix B
Draft Wetland Delineation Data Forms

Appendix C
Representative Photographs

Appendix D

Common and Scientific Names of Plant Species Observed in the Delineation Area

Table D-1. Common and Scientific Names of Plant Species Observed in the Delineation Area

Scientific Name	Common Name	Wetland Indicator Status[a]
Acaena pinnatifida var. *californica*	Argentinian biddy-biddy	UPL
Achillea millefolium	California white yarrow	FACU
Achyrachaena mollis	Blow-wives	FAC
Adenostoma fasciculatum	Chamise	UPL
Aegilops truncialis	Barbed goatgrass	UPL
Aesculus californica	California buckeye	UPL
Agrostis microphylla	Little-leaf bentgrass	FACW
Agrostis viridis	Bentgrass	UPL
Aira caryophyllea	Silver European hairgrass	UPL
Amaranthus palmeri	Palmer's amaranth	FACU
Ambrosia psilostachya	Western ragweed	FAC
Amsinckia menziesii var. *intermedia*	Common fiddleneck	UPL
Anagallis arvensis	Scarlet pimpernel	FAC
Anaphalis margaritaceae	Pearly everlasting	UPL
Anemopsis californica	Yerba mansa	OBL
Anthemis cotula	Mayweed	FACU
Arbutus menziesii	Pacific madrone	UPL
Arctostaphylos pajaroensis	Pajaro manzanita	UPL
Arctostaphylos tomentosa	Woolly-leaved manzanita	UPL
Artemisia californica	California sagebrush	UPL
Artemisia douglasiana	Mugwort	FACW
Asclepias californica	California milkweed	UPL
Asclepias fascicularis	Narrow-leaved milkweed	FAC
Aster chilensis	California aster	FAC
Avena barbata	Slender wild oat	UPL
Avena fatua	Wild oat	UPL
Avena sativa	Common oat	UPL
Baccharis pilularis	Coyote brush	UPL
Baccharis salicifolia	Mule fat	UPL
Bellardia trixago	Bellardia	UPL
Brachypodium distachyon	False brome	UPL
Brassica nigra	Black mustard	UPL
Brassica rapa	Field mustard	UPL

Table D-1. Continued

Scientific Name	Common Name	Wetland Indicator Status[a]
Briza maxima	Big quaking grass	UPL
Briza minor	Little quaking grass	FACW
Brodiaea elegans	Harvest brodiaea	FACU
Bromus carinatus	California brome	UPL
Bromus diandrus	Ripgut brome	UPL
Bromus hordeaceus [*B. mollis*]	Soft chess	FACU
Bromus madritensis ssp. *rubens*	Red brome	UPL
Bromus tectorum	Cheat grass	UPL
Calochortus albus	White fairy lantern	UPL
Calochortus luteus	Yellow mariposa	UPL
Calochortus venustus	Butterfly mariposa lily	UPL
Calystegia occidentalis	Western morning-glory	UPL
Capsella bursa-pastoris	Shepherd's purse	FAC
Cardaria draba	Hoary cress	UPL
Carduus pycnocephalus	Italian thistle	UPL
Carex alma	Sturdy sedge	FACW
Carex multicaulis	Many-stemmed sedge	UPL
Castilleja exserta ssp. *exserta*	Purple owl's-clover	UPL
Ceanothus dentatus	Dwarf sand-scrub ceanothus	UPL
Centaurea calcitrapa	Purple star-thistle	UPL
Centaurea melitensis	Maltese star-thistle	UPL
Centaurea solstitialis	Yellow star-thistle	UPL
Centaurium davyi	Davy's centaury	FAC
Centaurium muehlenbergii	Muhlenberg's centaury	FAC
Centromadia parryi ssp. *parryi* [*Hemizonia parryi*]	Pappose tarplant	FAC
Cerastium glomeratum	Mouse-ear chickweed	UPL
Chamomilla suaveolens [*Matricaria matricarioides*]	Pineapple weed	FACU
Chenopodium sp.	Goosefoot	N/A
Chlorogalum pomeridianum var. *pomeridianum*	Common soap plant	UPL
Cirsium vulgare	Bull thistle	FACU
Clarkia purpurea	Purple clarkia	UPL
Claytonia perfoliata ssp. *perfoliata*	Miner's lettuce	FAC

Table D-1. Continued

Scientific Name	Common Name	Wetland Indicator Status[a]
Collinsia heterophylla	Chinese houses	UPL
Conium maculatum	Poison hemlock	FACW
Convolvulus arvensis	Bindweed	UPL
Conyza sp.	Horseweed	N/A
Cortaderia sp.	Pampas grass	UPL
Cotula coronopifolia	Brass buttons	FACW
Cressa truxillensis	Alkali weed	FACW
Crypsis schoenoides	Swamp grass	OBL
Cynodon dactylon	Bermuda grass	FAC
Cyperus eragrostis	Tall flatsedge	FACW
Dactylis glomerata	Orchard grass	FACU
Danthonia californica var. *californica*	California oat grass	FACW
Delphinium variegatum	Royal larkspur	UPL
Dipsacus sp.	Teasel	N/A
Distichlis spicata	Saltgrass	FACW
Dudleya cymosa	Rock lettuce	UPL
Ehrharta calycina	Perennial veldtgrass	UPL
Eleocharis acicularis	Needle spike-rush	OBL
Eleocharis macrostachya	Common spike-rush	OBL
Elymus glaucus	Blue wildrye	FACU
Elymus multisetus	Big squirreltail	UPL
Epilobium brachycarpum	Annual fireweed	UPL
Epilobium sp.	Willowherb	N/A
Equisetum sp.	Horsetail fern	N/A
Eremocarpus setigerus	Doveweed	UPL
Ericameria sp.	Goldenbush	N/A
Eriogonum sp.	Buckwheat	N/A
Eriogonum wrightii var. *subscaposum*	Wright's buckwheat	UPL
Eriophyllum confertiflorum	Golden yarrow	UPL
Eriophyllum lanatum	Common woolly sunflower	UPL
Erodium botrys	Long-beaked filaree	UPL
Erodium brachycarpum	Whitestem filaree	UPL

Table D-1. Continued

Scientific Name	Common Name	Wetland Indicator Status[a]
Erodium cicutarium	Redstem filaree	UPL
Eschscholzia californica	California poppy	UPL
Eschscholzia lobbii	Lobb's goldenpoppy*	UPL
Eucalyptus sp.	Eucalyptus	N/A
Festuca idahoensis	Idaho fescue	UPL
Filago californica	California fluffweed	UPL
Filago gallica	Narrow-leaved filago	UPL
Foeniculum vulgare	Fennel	FACU
Frankenia salina [*F. grandifolia*]	Alkali heath	FACW
Galium aparine	Goose grass	FACU
Galium porrigens	Climbing bedstraw	UPL
Galium sp.	Bedstraw	N/A
Gastridium ventricosum	Nit grass	FACU
Geranium dissectum	Cut-leaved geranium	UPL
Geranium molle	Dove's-foot geranium	UPL
Gnaphalium purpureum	Purple everlasting	FACW
Gnaphalium sp.	Everlasting	N/A
Grindelia sp.	Grindelia	N/A
Heliotropium curassavicum	Salt heliotrope	OBL
Heteromeles arbutifolia	Toyon	UPL
Heterotheca grandiflora	Telegraph weed	UPL
Heterotheca sp.	Golden aster	N/A
Hirschfeldia incana	Summer mustard	UPL
Holozonia filipes	Greene's whitecrown	FACU
Hordeum brachyantherum	Meadow barley	FACW
Hordeum depressum	Low barley	NI
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley	FAC
Hordeum murinum ssp. *leporinum* [*H. leporinum*]	Hare barley	NI
Horkelia cuneata ssp. *cuneata*	Coast horkelia	UPL
Hypochaeris glabra	Smooth cat's-ear	UPL
Hypochaeris radiata	Rough cat's-ear	UPL
Iris douglasiana	Douglas iris	UPL

Table D-1. Continued

Scientific Name	Common Name	Wetland Indicator Status[a]
Iva axillaris ssp. *robustior*	Poverty weed	FAC
Juglans californica	California black walnut	FAC
Juglans regia	English walnut	UPL
Juncus bufonius var. *bufonius*	Common toad rush	FACW
Juncus effusus	Soft rush	OBL
Juncus mexicanus	Mexican rush	FACW
Juncus tenuis	Slender rush	FACW
Juncus xiphioides	Iris-leaved rush	OBL
Lactuca saligna	Narrow-leaved wild lettuce	NI
Lactuca serriola	Prickly wild lettuce	FAC
Lamarckia aurea	Goldentop	UPL
Lathyrus vestitus	Pacific pea	UPL
Layia platyglossa	Tidy tips	UPL
Lemna sp.	Duckweed	OBL[b]
Leontodon taraxacoides	Hawkbit	FACU
Lepidium latifolium	Perennial pepperweed	FACW
Lepidium sp.	Annual peppergrass	N/A
Lessingia filaginifolia	Common California aster	UPL
Lessingia sp.	Lessingia	N/A
Leymus triticoides [*Elymus triticoides*]	Alkali ryegrass	FAC
Linanthus ciliatus	Whisker-brush	UPL
Linum bienne	Narrow-leaved flax	UPL
Linum sp.	Flax	N/A
Lolium multiflorum	Italian ryegrass	FAC
Lomatium sp.	Lomatium	N/A
Lotus corniculatus	Bird's-foot trefoil	FAC
Lotus purshianus	Spanish lotus	UPL
Lotus scoparius	Deerweed	UPL
Lupinus albifrons	Silver lupine	UPL
Lupinus bicolor	Miniature lupine	UPL
Lupinus microcarpus	Chick lupine	UPL
Lupinus nanus	Sky lupine	UPL
Lupinus sp.	Lupine	N/A

Table D-1. Continued

Scientific Name	Common Name	Wetland Indicator Status[a]
Lupinus succulentus	Succulent lupine	UPL
Lythrum hyssopifolium	Hyssop loosestrife	FACW
Madia elegans	Common madia	UPL
Madia minima	Dwarf madia	UPL
Malva parviflora	Cheeseweed	UPL
Malvella leprosa	Alkali mallow	FAC
Marah sp.	Manroot	N/A
Marrubium vulgare	White horehound	FAC
Medicago polymorpha	California burclover	UPL
Melica imperfecta	California melic	UPL
Melilotus indica	Sourclover	FAC
Mimulus aurantiacus	Bush monkeyflower	UPL
Mimulus guttatus	Seep-spring monkeyflower	OBL
Monardella villosa	Coyote mint	UPL
Muilla maritima	Muilla	UPL
Nassella lepida	Foothill needlegrass	UPL
Nassella pulchra	Purple needlegrass	UPL
Navarretia atractyloides	Holly-leaf navarretia	UPL
Nicotiana glauca	Tree tobacco	FAC
Oxalis corniculata	Creeping wood sorrel	FACU
Pedicularis densiflora	Indian warrior	UPL
Pentagramma triangularis	Goldback fern	UPL
Perideridia sp.	Yampah	N/A
Phalaris minor	Little-seed canarygrass	UPL
Phyla nodiflora	Common lippia	FACW
Picris echioides	Bristly ox-tongue	FAC
Plagiobothrys canescens	Valley popcorn flower	UPL
Plagiobothrys nothofulvus	Rusty popcorn flower	FAC
Plagiobothrys stipitatus var. *micranthus*	Stalked popcorn flower	OBL
Plantago coronopus	Cut-leaf plantain	FAC
Plantago erecta	California plantain	UPL
Plantago lanceolata	English plantain	FAC
Plantago major	Common plantain	FACW

Table D-1. Continued

Scientific Name	Common Name	Wetland Indicator Status[a]
Platanus racemosa	California sycamore	FACW
Poa annua	Annual bluegrass	FACW
Polygala californica	California milkwort	UPL
Polygonum arenastrum [*P. aviculare*]	Common knotweed	FAC
Polypogon interruptus	Ditch beard grass	OBL
Polypogon monspeliensis	Annual beard grass	FACW
Populus fremontii	Fremont's cottonwood	FACW
Prunus sp.	Prunus	N/A
Pteridium aquilinum var. *pubescens*	Bracken	FACU
Quercus agrifolia	Coast live oak	UPL
Quercus lobata	Valley oak	FAC
Ranunculus californicus	California buttercup	FAC
Ranunculus muricatus	Spiny buttercup	FACW
Ranunculus occidentalis	Western buttercup	FACW
Raphanus sativus	Wild radish	UPL
Rhamnus californica	California coffeeberry	UPL
Ribes sp.	Gooseberry	N/A
Rorippa nasturtium-aquaticum [*Nasturtium officinale*]	Water-cress	OBL
Rosa californica	California wild rose	FAC
Rubus ursinus[*R. vitifolius*]	Pacific blackberry	FACW
Rumex acetosella	Sheep sorrel	FAC
Rumex crispus	Curly dock	FACW
Rumex pulcher	Fiddle dock	FAC
Salix exigua	Narrowleaf willow	OBL
Salix laevigata	Red willow	$\geq$FAC[c]
Salix lasiolepis	Arroyo willow	FACW
Salvia mellifera	Black sage	UPL
Sambucus mexicana	Blue elderberry	FAC
Sanicula crassicaulis	Pacific sanicle	UPL
Scirpus acutus	Common tule	OBL
Scirpus americanus	American tule	OBL
Scrophularia californica	California figwort	FAC

Table D-1. Continued

Scientific Name	Common Name	Wetland Indicator Status[a]
Sidalcea malvaeflora	Checker mallow	UPL
Silene gallica	Common catchfly	UPL
Silybum marianum	Milk thistle	UPL
Sisyrinchium bellum	Blue-eyed grass	FAC
Solanum xanti	Chaparral nightshade	UPL
Sonchus asper ssp. *asper*	Prickly sow thistle	UPL
Sonchus oleraceus	Common sow thistle	NI
Spergularia rubra	Purple sand spurry	FAC
Stachys ajugoides var. *rigida*	Rigid hedge nettle	OBL
Stachys bullata	California hedge nettle	UPL
Stachys sp.	Hedge nettle	N/A
Stellaria media	Common chickweed	FACU
Stylocline gnaphaloides	Everlasting nest-straw	UPL
Symphoricarpos mollis	Snowberry	UPL
Taeniatherum caput-medusae	Medusa-head	UPL
Taraxacum officinale	Common dandelion	FACU
Torilis arvensis	Hedge parsley	UPL
Torilis nodosa	Knotted hedge parsley	UPL
Toxicodendron diversilobum	Poison oak	UPL
Tragopogon dubius	Yellow salsify	UPL
Tragopogon porrifolius	Purple salsify	UPL
Tribulus terrestris	Puncture-vine	UPL
Trifolium angustifolium	Narrow-leaved clover	UPL
Trifolium campestre	Hop clover	UPL
Trifolium ciliolatum	Tree clover	UPL
Trifolium dubium	Shamrock	FACU
Trifolium fragiferum	Strawberry clover	NI
Trifolium hirtum	Rose clover	UPL
Trifolium pratense	Red clover	FACU
Trifolium repens	White clover	FACU
Trifolium subterraneum	Subterranean clover	UPL
Trifolium variegatum	White-tipped clover	FACW
Trifolium wormskioldii	Cow clover	FACW
Triteleia hyacinthina	White brodiaea	FACW

Table D-1. Continued

Scientific Name	Common Name	Wetland Indicator Status[a]
Triteleia ixioides	Golden brodiaea	UPL
Triteleia laxa	Ithuriel's spear	UPL
Triticum aestivum	Wheat	UPL
Typha angustifolia	Narrow-leaved cattail	OBL
Typha latifolia	Broad-leaved cattail	OBL
Umbellularia californica	California bay	FAC
Urtica dioica	Nettle	FACW
Verbena lasiostachys	Western verbena	FAC
Veronica americana	American brooklime	OBL
Veronica sp.	Brooklime	N/A
Vicia sativa	Spring vetch	FACU
Vicia villosa	Winter vetch	UPL
Viola pedunculata	Johnny-jump-up	UPL
Vulpia myuros	Rattail fescue	FACU
Wyethia sp.	Mule-ears	N/A
Xanthium spinosum	Spiny cocklebur	FAC
Xanthium strumarium	Cocklebur	FAC
Zannichellia palustris	Horned pondweed	OBL

[a] According to Reed (1988). Plant indicator status categories are defined as follows:

Obligate (OBL): almost always occurs in wetlands (99% probability of occurrence in wetlands).
Facultative wetland (FACW): usually occurs in wetlands (67–99% probability of occurrence in wetlands).
Facultative (FAC): equally likely to occur in wetlands or nonwetlands (34–66% probability of occurrence in wetlands).
Facultative upland (FACU): usually occurs in nonwetlands, but occasionally occurs in wetlands (1–33% probability of occurrence in wetlands).
Obligate upland (UPL): almost never occurs in wetlands (1% probability of occurrence in wetlands).
No indicator (NI): no indicator status assigned because information is lacking.
N/A: Not identified to species and cannot be assigned an indicator status.

[b] All *Lemna* sp. listed in Reed (1988) are obligate wetland plants.

[c] Although not assigned a status in Reed (1988), this species appears to be at least facultative based on its habitat as described in Hickman (1993): riverbanks, seepage areas, lake shores, canyons, and ditches.