PCR

N

175 0 175 Feet

Source: Google Earth, 2006; PCR Services Corporation, 2007.

Figure 3
Site D
Plant Communities

setigerus), jimson weed (*Datura* sp.), and pigweed (*Amaranthus* sp.). A total of 20.4 acres of disturbed/ruderal were mapped within the study area.

2.1.3 Eucalyptus Stand/Disturbed (N/A)

Within the study area, eucalyptus stand/disturbed is dominated by eucalyptus (*Eucalyptus* sp.). Areas surrounding the eucalyptus are disturbed, having been recently disked, and support sparse vegetation composed of non-native weedy species. A total of 3.6 acres of eucalyptus stand/disturbed were mapped within the study area.

2.1.4 Mule Fat Scrub (63.510.00)

Mule fat scrub typically occurs along intermittent stream channels and is characterized by tall, herbaceous riparian scrub dominated by mule fat (*Baccharis salicifolia*). Additional dominants typically include willow (*Salix* sp.) and giant stinging nettle (*Urtica holosericea*). Within the study area, this community is dominated by mule fat. Additional species include cattail (*Typha* sp.), curly dock (*Rumex crispus*), toyon (*Heteromeles arbutifolia*), poison oak (*Toxicodendron diversilobum*), and sweet fennel (*Foeniculum vulgare*). A total of 2.8 acres of mule fat scrub were mapped within the study area.

2.1.5 Ruderal/Goldenbush Scrub (N/A)

Ruderal/goldenbush scrub was predominantly ruderal, dominated by brome grasses, with a local concentration of coastal goldenbush (*Isocoma menziesii*). Additional species include pigweed, milk thistle (*Silybum marianum*), morning glory (*Calystegia macrostegia*), and coyote brush (*Baccharis pilularis*). A total of 0.9 acre of ruderal/goldenbush scrub was mapped within the study area.

2.1.6 Southern Willow Scrub (61.208.00)

Southern willow scrub is a riparian community that requires repeated flooding. This community is typically dominated by willow, with associated species including Fremont's cottonwood (*Populus fremontii*) and western sycamore (*Platanus racemosa*). Within the study area, this community is dominated by arroyo willow (*Salix lasiolepis*) and black willow (*Salix nigra*). Additional species include mule fat. A total of 0.3 acre of southern willow scrub was mapped within the study area.

2.1.7 California Walnut Woodland (72.100.01)

California walnut woodland typically occurs on north-facing slopes and along riparian corridors. This community is dominated by southern California black walnut (*Juglans californica* var. *californica*). Additional species include poison oak and coyote brush. A total of 1.5 acres of California walnut woodland were mapped within the study area. In addition, **California walnut woodland/disturbed** also occurs within the study area. Within this community, areas surrounding the walnut trees are disturbed and support sparse vegetation composed of non-native weedy species. A total of 0.6 acre of California walnut woodland/disturbed was mapped within the study area.

2.2 Potentially Jurisdictional Features

The study area supports one unnamed drainage system, which is comprised of the main drainage referred to in this report as Drainage A and two associated tributaries identified as Drainage A1 and Drainage A2. Drainage A originates at the southeastern property boundary, and flows through the southern section of the study area in a westerly direction, eventually exiting the study area along the western property boundary, where it flows into Brea Creek Flood Control Channel. Drainage A appears to be a natural, unlined feature throughout much of its on-site extent. The drainage is culverted underneath an existing dirt road and becomes a graded earthen channel within its southwestern/western reach.

Drainage A1 also originates along the southeastern study area boundary, flowing in a southwesterly direction where it eventually flows into Drainage A. Drainage A1 is an unlined feature, although a substantial portion of the channel appears to have been ditched. The southern willow scrub surrounding Drainage A supports a narrow wetland area that was created by the damming of debris. Although dry during the delineation, evidence of standing water was observed. Both Drainage A and A1 show evidence of intermittent hydrology and both most likely receive irrigation runoff from the residential development occupying the top of the ridgeline along the southeastern study area boundary.

Drainage A2 is a small drainage feature that appears to have been created as an excavated farm ditch. This tributary is located in the south-central portion of the study area flowing into Drainage A after a short distance. This small feature is surrounded by agricultural fields and exhibits ephemeral hydrology.

3.0 SUMMARY OF REGULATIONS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The ACOE Regulatory Program regulates activities pursuant to Section 404 of the Federal Clean Water Act (CWA), the CDFG regulates activities under the California Fish and Game Code Section 1600-1616, and the RWQCB regulates activities under the Porter-Cologne Water Quality Control Act and Section 401 of the CWA.

The ACOE regulates "discharge of dredged or fill material" into "waters of the U.S.," which includes tidal waters, interstate waters, and all other waters that are part of a tributary system to interstate waters or to navigable "waters of the U.S.," the use, degradation, or destruction of which could affect interstate or foreign commerce or which are tributaries to waters subject to the ebb and flow of the tide (33 C.F.R. 328.3(a)), pursuant to provisions of Section 404 of the CWA. Over the years, the ACOE has adopted several revisions to their regulations in order to more clearly define "waters of the U.S."

The most recent revision occurred on June 5, 2007, when the ACOE and the U.S. Environmental Protection Agency (EPA) issued a series of guidance documents outlining the requirements and procedures, effective immediately, to establish jurisdiction under the CWA and the Rivers and Harbors Act 1899. These documents are intended to be used for all jurisdictional delineations but also provide guidance for the jurisdictional determination of potentially jurisdictional features affected by the following two United States Supreme Court rulings:

1. The *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers*, No. 99-1178 (January 9, 2001) ("SWANCC"), which held that the CWA does not give the Federal government regulatory authority over non-navigable, isolated, intrastate waters. As a result of this decision, some previously regulated isolated depressional areas, such as mudflats, sandflats, wetlands, prairie potholes, wet meadows, playa lakes, natural ponds, and vernal pools which are not hydrologically connected to other intra- or inter-state "waters of the U.S.," are no longer regulated by the ACOE. A jurisdictional determination of these types of isolated features is typically addressed on a case-by-case basis.

2. The consolidated cases *Rapanos v. the United States* and *Carabell v. the United States* 126 U.S. Ct. 2208 (2006) (jointly referred to as "Rapanos"), outlines the conditions and criteria utilized by the ACOE to assess and claim jurisdiction over non-navigable waters. Under this ruling certain adjacent wetlands and "not relatively permanent" non-navigable tributaries are required to have a "significant nexus" to downstream traditional navigable waters to be considered jurisdictional. The "significant nexus" is established through the consideration of a variety of hydrologic, geologic and ecological factors specific to the particular drainage feature in question.

However, these isolated and "not relatively permanent" features may still be regulated by CDFG under California Fish and Game Code Section 1600[1] or the RWQCB under the Porter-Cologne Water Quality Act. A detailed discussion of the CWA Section 404 definitions and permit processing is included in Section 7. In accordance with Section 1600 *et seq*., of the California Fish and Game Code ("Streambed Alteration"), the CDFG regulates activities which "will substantially divert, obstruct, or substantially change the natural flow or bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit."

The ACOE generally takes jurisdiction within rivers and streams to the "ordinary high water mark" (OHWM) determined by erosion, the deposition of vegetation or debris, and changes in vegetation. The ACOE defines jurisdictional wetlands as areas that contain hydrophytic vegetation, hydric soils, and wetland hydrology, in accordance with the procedures established in the ACOE's *Wetland Delineation Manual* (Environmental Laboratory 1987) and subsequent guidance provided in the *Arid West Interim Regional Supplement* (U.S. Army Corps of Engineers 2006). The CDFG takes jurisdiction to the top of bank of the stream, or the limit of the adjacent riparian vegetation when present. The RWQCB regulates "discharging waste, or proposing to discharge waste, within any region that could affect the "water of the state" (Water Code § 13260 (a)), pursuant to provisions of the Porter-Cologne Water Quality Control Act. "Waters of the State" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code § 13050 (e)).

Any development proposal that involves impacting the drainages, streams, or wetlands through filling, stockpiling, conversion to a storm drain, channelization, bank stabilization, road or utility line crossings, or any other modification would require permits from the ACOE, RWQCB, and the CDFG before any development could commence within the study area. Both permanent and temporary impacts are regulated and would trigger the need for these permits. Before the ACOE will issue a CWA Section 404 permit, applicants must receive a CWA Section 401 Water Quality Certification from the RWQCB. If a CWA Section 404 permit is not required for the project, the RWQCB may still require a permit (i.e., Waste Discharge Requirements) under the Porter-Cologne Water Quality Control Act. Processing of the Section 401 and 1602 permits can occur concurrently with the ACOE permit process and can utilize the same information and analysis. Applications to the CDFG and RWQCB must include a complete certified California Environmental Quality Act (CEQA) document. A detailed discussion of the regulatory permitting process is included in Section 7.0 of this report.

[1] *Legislation has recently been introduced in the State Assembly to revise the California Fish and Game Code to specifically regulate isolated waters affected by the SWANCC case.*

4.0 METHODS

Prior to visiting the study area, potential and/or historic drainages and aquatic features were located based on a review of the following: a detailed 1:2,400 scale topographic map (USGS 1964), aerial photographs from the Fairchild Aerial Photograph Collection at Whittier College, and soil survey maps. Additionally, detailed digital orthophoto quarter quadrangle (DOQQ) imagery produced by the USGS National Mapping Division, Western Mapping Center was analyzed. The DOQQ data are digital images derived from aerial photography that have been ortho-rectified with a one-meter ground resolution. The DOQQ data were used with PCR's in-house Geographic Information System (GIS) as an important base layer to identify vegetation communities and drainage features. Drainage features were then "ground-truthed" during field observations to obtain characteristic parameters and detailed descriptions using a combination of standard measurement tools and Global Positioning System (GPS) equipment. The precise location of transects, upstream and downstream extents of each feature, and sample points were collected in the field using a GPS hand-held unit. The Trimble GeoXT system is an advanced geographic data collection tool that integrates satellite differential and wide area augmentation system capabilities to provide submeter (50 cm RMS) positional accuracy on a real-time basis. Following data collection, the digital information was uploaded and incorporated within PCR's project-specific GIS database to calculate jurisdictional acreages.

Following the initial data collection, the entire study area was evaluated and all areas that were identified as being potentially subject to the jurisdiction of the ACOE, RWQCB, and/or the CDFG were field verified and mapped. The potential for "waters of the U.S." and "waters of the State" were investigated based on the absence or presence of an OHWM, or if not clearly visible, as determined by erosion, the deposition of sediment or debris, the establishment of vegetation and changes in the vegetation community. If any of these criteria were met, a series of transects were run to determine the extent of jurisdictional non-wetland "waters of the U.S." Identified non-wetland "waters of the U.S." were traversed within or along the channel, and the OHWM was measured. Where no accessible route led to the channel, the distance to the top of the channel was estimated by visually examining the terrain and density of vegetation. An estimated average OHWM width was then applied based on the last measurable channel width. Where channels diverged to form low, intermediate areas between the channels, the entire area between the outermost edge of each channel was considered within the OHWM. Where the intermediate area was equal to or above the height of the uppermost bank of either channel, the OHWM was recorded individually for each channel. The CDFG jurisdiction was defined to the bank of the stream/channels or to the limit of the adjacent riparian vegetation.

ACOE jurisdictional wetlands were delineated using a routine determination according to the methods outlined in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) based on hydrologic, edaphic features, and the vegetation composition of each

sampling area investigated. In areas where jurisdictional wetlands were suspected, data on vegetation, hydrology, and soils was collected along transects, as described below.

Vegetation

Areal cover of vegetation was estimated along each transect by estimating coverage in two randomly placed circular plots. Tree cover was estimated using 30-foot radius circular plots; sapling, shrub, and forb cover was estimated using 10-foot radius plots. Plant species in each stratum were ranked according to their dominance. Species that contributed to a cumulative total of 50 percent of the total dominant coverage plus any species that comprised at least 20 percent of the total dominant coverage were recorded on the wetland data sheets. The wetland indicator status was assigned to each species using the *National List of Plant Species that Occur in Wetlands: California (Region 0)* (Reed 1988), as shown in Table 1, *Summary of Wetland Indicator Status*, on page 13. If greater than 50 percent of the dominant species from all strata were Obligate, Facultative-wetland, or Facultative species, the criteria for wetland vegetation was considered to have been met.

Hydrology

The presence of wetland hydrology was evaluated at each transect by recording the extent of observed surface flows, depth of inundation, depth to saturated soils, and depth to free water in the soil pits. In addition, indicators of wetland or riverine hydrology were recorded, including water marks, drift lines, rack, debris, and sediment deposits. The lateral extent of the hydrology indicators was used as a guide for locating soil pits for evaluation of hydric soils. In portions of the stream where the flow was divided between multiple channels with intermediate sand bars,

The entire area between the outermost edge of each channel was considered within the OHWM and the wetland hydrology indicator was considered met for the entire area, assuming surface water was present.

Soils

If the criteria for wetland vegetation and hydrology were met, then an excavation of the soils was conducted to determine if the soils were hydric. Soil pits were dug to a depth of 18 inches. In areas of recent deposition of sand or other overburden material, the soil pit was dug to a depth of 18 inches below the depth of the overburden material. At each soil pit the soil texture and color were recorded by comparison with standard plates within a Munsell soil color chart (1994). Any indicators of hydric soils, such as redoximorphic features, buried organic matter, organic streaking, reduced soil conditions, gleyed or low-chroma soils, or sulfidic odor were also recorded.

Table 1

Summary of Wetland Indicator Status

Category		Probability
Obligate Wetland	(OBL)	Almost always occur in wetlands (estimated probability of >99%)
Facultative Wetland	(FACW)	Usually occur in wetlands (estimated probability of 67 to 99%)
Facultative	(FAC)	Equally likely to occur in wetlands/non-wetlands (estimated probability of 34 to 66%)
Facultative Upland	(FACU)	Usually occur in non-wetlands (estimated probability 67 to 99%)
Obligate Upland	(UPL)	Almost always occur in non-wetlands (estimated probability >99%)
Non-Indicator	(NI)	No indicator status has been assigned

Source: Reed, 1988.

In addition to the delineation, PCR conducted an analysis of all on-site aquatic resources to determine if a "significant nexus" exists between on-site drainage features and downstream jurisdictional resources, referred to as "Traditional Navigable Waters" (TNW) (e.g., the ocean, large perennial "navigable" rivers and lakes), in accordance with recent guidance resulting from the 2006 U.S. Supreme Court Rapanos ruling.

5.0 RESULTS

PCR biologists used the methods described above to determine the presence or absence of ACOE, RWQCB, and/or CDFG jurisdictions within the study area. Jurisdictional features on-site include two intermittent drainages, identified as Drainage A and Drainage A1, and one ephemeral drainage referred to as Drainage A2. Drainage A totals approximately 1,397 linear feet and includes 0.13 acre of ACOE/RWQCB jurisdictional "waters of the U.S./waters of the State," of which 0.01 acre is wetland; and approximately 2.84 acres of CDFG jurisdictional streambed and associated riparian habitat.

Drainage A1 totals approximately 579 linear feet and includes 0.07 acre of ACOE/RWQCB jurisdictional "waters of the U.S./waters of the State," and approximately 1.26 acres of CDFG jurisdictional streambed and associated riparian habitat.

Drainage A2 totals approximately 149 linear feet and includes less than 0.01 acre of ACOE/RWQCB jurisdictional "waters of the U.S./waters of the State". The CDFG jurisdictional acreage for Drainage A2 is included in the 2.84 acres for Drainage A. The various jurisdictional acreages often overlap, i.e., ACOE/RWQCB acreage is typically included in CDFG acreages, and the two are not additive. A map of the locations of these features is presented in Figure 4, *Jurisdictional Features*, on page 15.

The identification of jurisdictional features within the study area was complicated by the fact that historic and ongoing farming practices may have altered the natural vegetation, soils, and hydrology of the area. The farming practices may or may not affect the jurisdictional status of specific areas, depending on their timing and duration. Therefore, to aid in the jurisdictional determination, PCR compiled a site history from literature, the USGS topographic maps, soils map, aerial photographs, and field investigation. Information obtained from each source is described below.

5.1 Topographic Map Review

The USGS 7.5-minute Yorba Linda, California topographic map (USGS 1964) was utilized to identify natural as well as man-made features occurring within the study area and vicinity. Information obtained from the map included contour lines, streets, streams, railroad lines, and vegetation. The Yorba Linda topographic map is based on a 1964 aerial photograph, which was later photo-revised in 1981 from aerial photography (Figure 2, *Vicinity Map*). The study area is mapped as supporting orchards within the entire western portion and undeveloped within the eastern portion. Five buildings and a few unimproved roads occur within the east-central and north-central portions of the study area. Two "blue-line streams" (Drainages A and A1) are displayed as resources present during the original mapping effort (1967). No other aquatic features or significant structural features are identified on the map within the study area's boundaries. Offsite, a "blue-line stream" (Brea Creek) is mapped along the western project boundary and appears to have been re-aligned to the west of the study area as a result of the construction of the Freeway and residential developments.

5.2 Historic Aerial Review

Historical research into the natural drainage patterns and land use of the study area included a review of available historic aerial photographs. Aerial photographs from the Fairchild Aerial Photography Collection dating from 1928 to 1963 were reviewed to analyze the historic drainage distribution and land usage within the vicinity of the study area. Brief descriptions of the study area and drainages as they appear in these photographs are provided below.

August 1928

The August 1928 photograph depicts the study area in agricultural production with row crops occupying the land from the apparent toe of slope along the eastern and southeastern side of the study area and Brea Creek to the west. Brea Creek appears to be a natural, meandering stream corridor. Most of the area is undeveloped with the exception of a single large residence located on/near the study area and a second residence located upstream along Brea Creek, to the northeast. Agricultural crops are visible throughout most of the Creek's floodplain. Brea Canyon Road and Brea Canyon Cutoff Road are both present; however, both appear as dirt roads