

B

USER NOTES FOR SALTON SEA REGION  
SANTA ANA NE (32 quads) SALTON SEA NW (1 quad)  
SANTA ANA SE (2 quads) SALTON SEA SW (32 quads)  
EL CENTRO NW (24 quads)

NATIONAL WETLAND INVENTORY MAPS

A. INTRODUCTION

The U.S. Fish & Wildlife Service's National Wetlands Inventory is producing maps showing the location and classification of wetlands and deepwater habitats of the United States. The Classification of Wetlands and Deepwater Habitats of the United States by Cowardin et al. is the classification system used to define and classify wetlands. Photo interpretation conventions, hydric soils lists and wetland plant lists are also available to enhance the use and application of the classification system.

B. PURPOSE

The purpose of the notes to users is threefold: (1) to provide localized information regarding the production of NWI maps, including specific imagery and interpretation discussion; (2) to provide a descriptive crosswalk from wetland codes on the map to common names and representative plant species, and (3) to explain local geography, climate, and wetland communities.

C. STUDY AREA

Geography:

The Salton Trough is located in southern California. This study area is composed of five different maps; Santa Ana NE, SE, Salton Sea NW, SW and El Centro NW (see index map). This area is situated within two ecoregion provinces; the American Desert Province and the California Chaparral Province (Bailey 1980).

The California Chaparral Province (no sections) borders the entire valley on the southwest side, from Santa Ana NE to El Centro NW. This province is characterized by the Coast Mountain Range which have steep unstable slopes, sharp crests and narrow valleys. The San Jacinto, Santa Rosa and Vallecito mountains comprise the eastern edge of this range. Immediately north of the valley are the San Bernardino Mountains. Elevations may extend from 300-11,000 feet above sea level.

The valley north of the Salton Sea is the Coachella Valley and south of the lake the Imperial Valley. The

entire basin is located entirely within the American Desert Province, Creosote Bush-Bur Sage Section. Elevations range from 300 above sea level to 230 feet below sea level (Salton Sea). This province is described as isolated mountains and buttes, although this area is primarily gently undulating plains. The Salton Sea, like the valley, is also oriented in a northwest-southeast direction. This lake covers approximately 350 square miles. The trough receives runoff from the surrounding mountains and rivers within the basin.

Northeast of the valley, this ecoregion has another section (directly north of the lake). This section, the Creosote Bush Section, is within the same province (American Desert) and maintains the same basic physical and biological characteristics. This area includes the Little San Bernardino Mountains, Pinto Basin, and Eagle Mountains which are part of the Chocolate Mountain Range. The Joshua Tree National Monument is also located in this section. Elevations within this section range from 300-5,000 feet above sea level.

The Creosote Bush-Bur Sage Section exhibits a physical change from plain to mountains. The Chocolate Mountains continue in their northwest-southwest direction parallel to the valley. Elevations here also range from 300-5,000 feet above sea level. On the southwest slopes of the mountain (beginning at Tortuga Siding) is an area of sand dunes and sand hills located between the valley and mountains which extend into Mexico.

The Coachella Valley and Imperial Valley are both criss-crossed by numerous irrigation canals. These canals receive their water from the American Canal flowing from the Colorado River and the Coachella Canal from the American Canal. The New and Alamo Rivers flow north into the Salton Sea while the Whitewater River flows south into the lake.

#### Climate:

The climate is typified by arid-hot summers and mild winters. The annual range of the temperature is moderate with an average annual temperature of 73°F in the Imperial Valley. The average annual temperature in the mountainous area is approximately 65°F. Rainfall is very sporadic with most of it falling in the summer months. Orographic precipitation makes up most of the rain in the mountains. Both temperature and precipitation values change with elevation. The most pronounced effect is on the east and north slopes of the San Jacinto mountains. There,

precipitation totals decrease and temperature increases with decreased elevation.

One of the greatest limiting factors in these wetland habitats is the amount of evapotranspiration. In the Imperial Valley floor the rate is as high as six feet (72 inches) per year. This magnified with an average of 2.8 inches of precipitation per year over the last 54 years.

#### Vegetation:

Upland vegetation within the California Chaparral Province is diverse with forest on north facing, wetter slopes, while the chaparral (shrubs) dominates the drier areas. The upland vegetation in the American Desert Province is primarily cacti and thorny shrubs, although other shrubs and plants are in evidence.

Wetland plants are found in a variety of situations: Lacustrine, Palustrine and Riverine. Seeps, irrigation canals, and springs add to an area of little precipitation (3 inches/year). Species such as phragmites, cattail, willow, and salt cedar are a few of the dominate types. Forested wetland while infrequent are dominated by cottonwood and/or willow.

#### Soils:

Soil surveys from Imperial and Riverside counties are used to describe basic soil associations throughout the Salton Trough. Imperial County is located within the El Centro NW, Salton Sea SW maps. The Riverside County Coachella Valley Area Soil Survey is located in the Santa Ana NE, SE, and Salton Sea NW, SW maps.

The first Imperial County group of associations consist of soils ranging from gravelly sand to silty clay. The soils are highly stratified with finer or coarser textured material and containing varying amounts of gravel, stones, and cobbles. The six associations in this group make up about 66 percent of the survey area.

Imperial soils are well drained and moderately well drained. They generally have a surface layer of silty clay about 17 inches thick and an underlying area of clay that extends to a depth of more than 60 inches. These soils are moderately to strongly saline. The water table fluctuates between 1 to 5 feet in about 25 percent of the total acreage of the Imperial soils. Some of these same soils may be found in Riverside County.

Fluvaquents, nearly level, poorly drained soils of undifferentiated texture in the lacustrine basin are typically saline soils along the edge of the Salton Sea. The Riverside County Coachella Valley Area Soil Survey is located in the Santa Ana NE, SE, and Salton Sea NW, SW maps.

There are two principal groups of soils in the Coachella Valley: 1) Excessively drained to well drained, nearly level to very steep soils on alluvial fans, terraces, and mountains rimming the Coachella Valley. 2) Those soils which are associated with lacustrine basins (Imperial Soils).

The first group of associations consist of sands to silty clays formed in the coarse to fine textured alluvium. The soils are highly stratified with finer or coarser textured material and containing varying amount of gravel, stones, and cobbles. The five associations in this group make up about 66 percent of Riverside County in the Coachella Valley.

Carsitas are excessively drained. The water table is between 2 and 4 feet in about 15 percent of the Carsitas soil associations.

TABLE 1: NWI CLASSIFICATION FOR SALTON SEA REGION, CALIFORNIA

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION/SUBSTRATE
R2UB (F,G,H)	Riverine, lower perennial, unconsolidated bottom	Open water, River, Stream	Unvegetated mud, sand gravel
R3UB (F,G,H)	Riverine, upper perennial, unconsolidated bottom	Open water, River, Mountain Stream	Unvegetated mud, sand gravel
R4SB (J,A,C,F)	Riverine, intermittent, stream bed	Washes, Intermittent Stream	Unvegetated mud, sand gravel
L1UB (F,G,H)	Lacustrine, limnetic unconsolidated bottom	Open water, Lake	Unvegetated mud, sand, gravel
L2US (A,C)	Lacustrine, littoral unconsolidated shore	Lake bed, Lake Shore	Unvegetated mud, sand, gravel
PUB (F,G,H)	Palustrine unconsolidated bottom	Pond bottom, Open water	Unvegetated mud, sand gravel
PUS (J,A,C)	Palustrine unconsolidated shore	Pond shore, Pond bed	Unvegetated mud, sand gravel
PEM (J,A,C,F)	Palustrine emergent	Marsh, Wet Meadow	Cattail ( <u>Typha</u> sp.) Giant cane ( <u>Phragmites</u> sp.) Wire grass ( <u>Juncus balticus</u> ) Bullrush ( <u>Scirpus acutus</u> ) <u>Distichlis</u> sp. <u>Juncus</u> sp. <u>Rumex</u> sp. <u>Scirpus</u> sp. <u>Suaeda</u> sp.

NWI CODE	NWI DESCRIPTION	COMMON DESCRIPTION	CHARACTERISTIC VEGETATION/SUBSTRATE
PSS (J,A,C,F)	Palustrine scrub shrub	Shrub wetland	Willow ( <u>Salix</u> sp.) Salt cedar ( <u>Tamarix</u> sp.) Arrow weed ( <u>Pluchea sericea</u> ) <u>Baccharis</u> sp. <u>Atriplex</u> sp.
PFO (A,C,F)	Palustrine, forested broad leaves deciduous	Forested wetland	Willow ( <u>Salix</u> spp.) Cottonwood ( <u>Populus fremonti</u> ) Sycamore ( <u>Plantanus recemosa</u> )

## Water Regime Description

- (A) Temporarily Flooded - Surface water present for brief periods during growing season, but water table usually lies well below soil surface. Plants that grow both in uplands and wetlands are characteristic of this water regime.
- (B) Saturated - The substrate is saturated to surface for extended periods during the growing season, but surface water is seldom present.
- (C) Seasonally Flooded - Surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is very variable, extending from saturated to a water table well below the ground surface.
- (F) Semipermanently Flooded - Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land's surface.
- (G) Intermittently Exposed - Surface water is present throughout the year except in years of extreme drought.
- (H) Permanently Flooded - Water covers land surface throughout the year in all years.
- (K) Artificially Flooded - The amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams.
- (U) Unknown - The water regime is not known.

## F. MAP PREPARATION

The wetland classification that appears on the National Wetlands Inventory (NWI) Base Maps (Figure 1) are in accordance with Cowardin et. al. (1977). The delineations were produced through stereoscopic interpretation of 1:58,000 scale color infrared photography. The photography was taken during August of 1984, July 1985 and August 1985.

Field checks of areas found within the study area photography were made prior to the actual delineation of wetlands. Field check sites were selected to clarify varying signatures found on the photography. These photographic signatures were then identified in the field using vegetation types and soil types, as well as additional input from field personnel.

Collateral data included USGS topographic maps, SCS soil surveys, vegetation, and ecoregional information.

The user of the map is cautioned that, due to the limitation of mapping primarily through aerial photointerpretation, a small percentage of wetlands may have gone unidentified. Since the photography was taken during a particular time and season, there may be discrepancies between the map and current field conditions. Changes in landscape which occurred after the photography was taken would result in such discrepancies.

Aerial photo interpretation and drafting were completed by Martel Laboratories, Inc., St. Petersburg, Florida.

G. SPECIAL MAPPING PROBLEMS

None.

H. MAP ACQUISITION

To discuss any questions concerning these maps or to place a map order, please contact:

Regional Wetland Coordinator (ARD-E)  
U.S. Fish and Wildlife Service - Region I  
Lloyd 500 Bldg., Suite 1650  
500 NE Multnomah St.  
Portland, OR

To order maps only, contact:

National Cartographic Information Center  
U.S. Geological Survey  
507 National Survey  
Reston, VA 22092

Maps are identified by the name of the corresponding USGS 1:24,000 scale topographic quadrangle name. Topographic map indices are available from the U.S. Geological Survey.

LITERATURE CITED

Bailey, Robert G.; 1980. Description of the Ecoregions of the United States; United States Department of Agriculture Miscellaneous Publications.

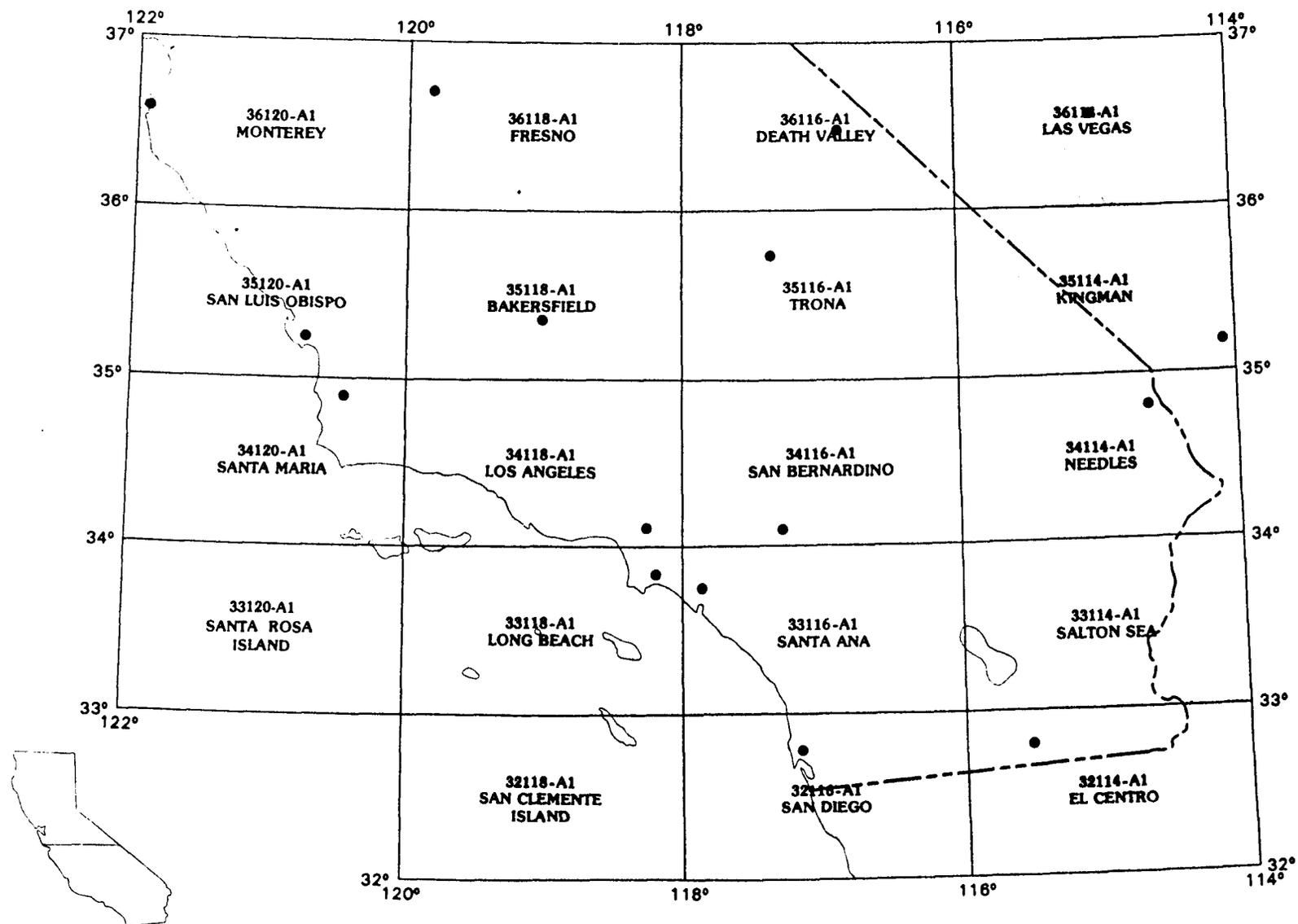
Cowardin, L.M.; V. Carter; F.C. Golet and E.T. LaRue; 1979. Classification of Wetland and Deepwater Habitats of the United States.

Soil Survey of Riverside County, California, Coachella Valley Area; 1977, United States Department of Agriculture, Soil Conservation Service.

Soil Survey of Imperial County, California; 1981, United States Department of Agriculture, Soil Conservation Service.

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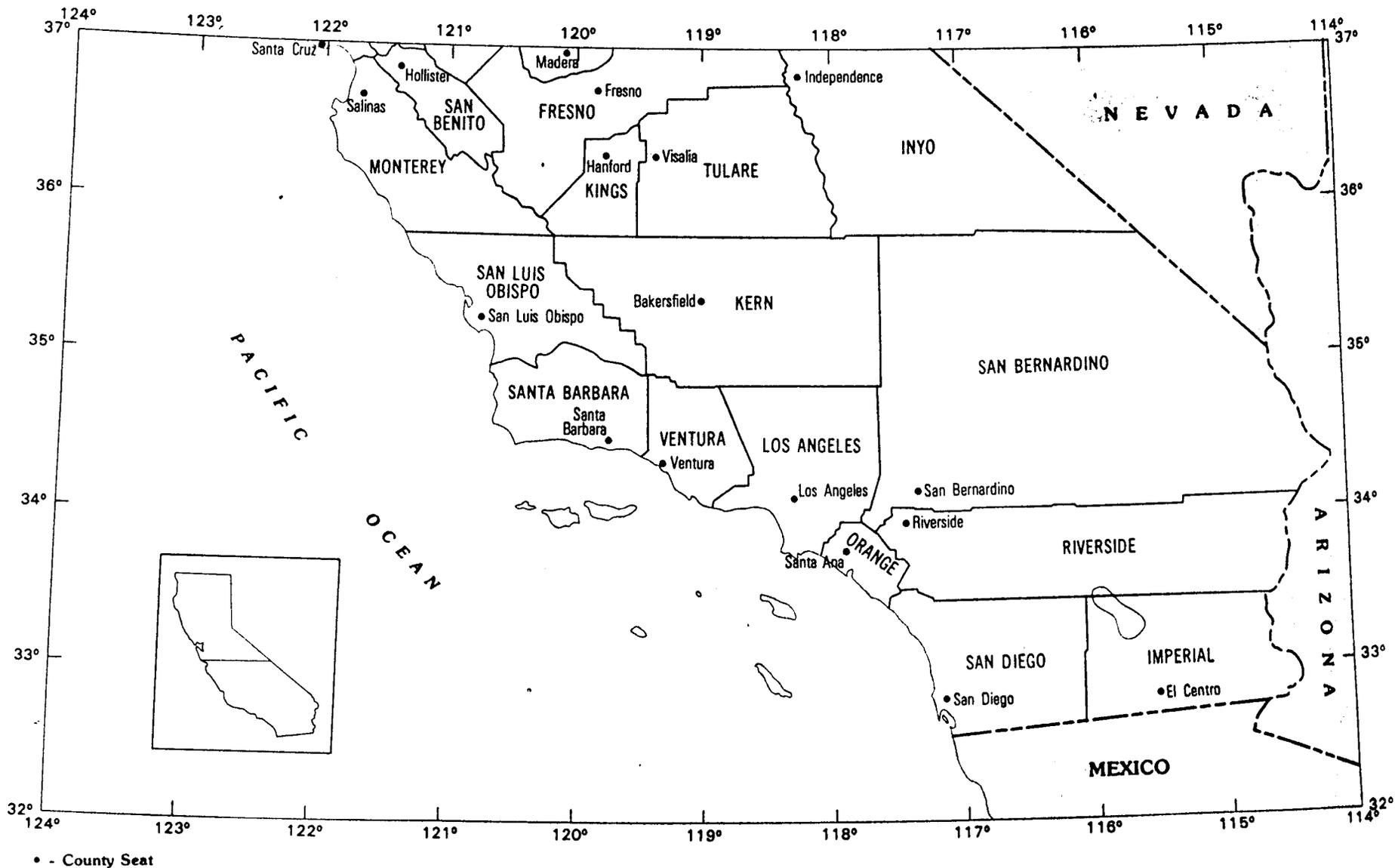
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