



United States Department of the Interior

FISH AND WILDLIFE SERVICE

LLOYD 500 BUILDING, SUITE 1692

500 N.E. MULTNOMAH STREET

PORTLAND, OREGON 97232



(503) 231-6154 FTS:429-6154

NATIONAL WETLAND INVENTORY

NOTES TO USERS

SAN JAOQUIN VALLEY, CALIFORNIA

1:100,000 SCALE MAPS COVERED

Oakdale (San Jose NE)

Merced (San Jose SE)

San Jose (San Jose SW)

Mendota (Santa Cruz NE)

Coalinga (Santa Cruz SE)

NATIONAL WETLAND INVENTORY

NOTES TO USERS

San Joaquin Valley

1. PURPOSE

The purpose of Notes to Users is to provide general information regarding the production of National Wetlands Inventory (NWI) maps and wetlands found within a relatively similar geographic area. Notes to Users are not intended to include descriptions of all wetlands found in the area nor provide complete plant species information.

2. AREA COVERED

The area covered is defined by the Oakdale, Merced, San Jose, Mendota, and Coalinga U.S.G.S. intermediate scale maps (see attached index maps). According to Bailey's ecoregions, the area is in the Humid Temperate Domain, Mediterranean Division, California Grasslands Province.

The San Joaquin Valley is a flat alluvial plain between the Sierra Nevada and the coast Ranges. Elevations range from sea level to 500 feet (150 m.). This area has broad, nearly level valleys bordered by sloping alluvial fans, slightly dissected terraces and the lower foothills of the surrounding uplands.

The precipitation of this climate is characterized by winter rainfall; the maximum amount falls in December, January, and February. Except near the coast, summers are hot and the winters mild--often foggy with little or no snow. Annual rainfall ranges from approximately 6 inches (150 mm.) in the upper San Joaquin Valley to nearly 30 inches (750 mm.) along the coast. Potential evaporation during the warmest months is often much greater than the precipitation. Low rainfall and small streamflow result in water scarcity in many parts of the area.

Evidence indicates that the San Joaquin Valley of California was once dominated by natural grasses that the plow, fire, and grazing have eliminated except as relief stands. These stands suggest that the dominants were bunch grasses, which produced grasslands similar in appearance to mixed prairie. Apparently, needlegrass was the principal species except near the coast. Today, introduced annual grasses, such as various species of avens, brome, fescue, and barley, occupy most of the remaining grassland areas.

The soils of this region are mostly Entisols and Alfisols. The Entisols usually are at the lower elevations and the Alfisols at slightly higher elevations, away from the valley floor. A small area of Aridisols occurs in the more arid southern portions of the San Joaquin Valley.

3. MAP PREPARATION

Wetland classification for the NWI maps is in accordance with "Classification of Wetlands and Deep-Water Habitats of the United States (An Operational Draft)," Cowardin, et al, 1977.^{1/} Wetland classification and delineations were produced by air photointerpretation of high level aerial photography. The following photography was used.

<u>MAP</u>	<u>SCALE</u>	<u>FILM</u>	<u>DATE</u>
Oakdale	1:120,000	Color Infrared	7/72, 4/73, 7/76
Merced	1:120,000	Color Infrared	7/77, 4/77
San Jose	1:120,000	Color Infrared	2/79, 7/76, 4/73, 2/77
	1:130,000	Color Infrared	11/73, 6/76
Mendota	1:130,000	Color Infrared	11/73, 11/79
Coalinga	1:130,000	Color Infrared	11/73
	1:80,000	Black and White	4/73

Limited field reconnaissance was conducted during January of 1979 and 1982.

Stereoscopically reviewed aerial photographs had wetland boundaries and labels delineated on the photographs. Delineations were enlarged to a scale of 1:24,000 using a zoom-transfer scope and fitted to USGS 7 1/2 minute topographic maps. The 1:100,000 scale wetland maps were prepared from the 7 1/2 minute series. Large scale NWI wetland maps (1:24,000 scale) are available for the USGS 7 1/2 minute topographic sheets indicated on the attached index map.

The Project Officer for production of the wetland maps was Dennis Peters, Regional Wetlands Coordinator, U. S. Fish and Wildlife Service, Region 1, Lloyd 500 Building, 500 NE Multnomah Street, Portland, Oregon 97232, telephone (503) 231-6154. Aerial photo interpretation was completed by Area Information Systems (AIS), Crestline, California. Maps were prepared by Martel Laboratories, Inc., and the NWI National Team in St. Petersburg, Florida.

^{1/} The classification system was published in 1979: Cowardin, Lewis M., Virginia Carter, Francis C. Golet, and Edward T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States, Fish and Wildlife Service, U. S. Department of the Interior, Washington, DC, December 1979.

4. USER CAUTION

The map documents were prepared primarily by stereoscopic analysis of high altitude aerial photographs. Wetlands were identified on the photographs based on vegetation, visible hydrology, and geography. The aerial photographs typically reflected conditions during the specific year and season when they were taken. In addition, there is a margin of error inherent in the use of aerial photographs. Thus a detailed on-the-ground and historical analysis of a single site may result in revision of the wetland boundaries established through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be included in the map document.

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define limits of proprietary jurisdiction of any federal, state, or local government or to establish the geographical scope of regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specific agency regulatory programs and proprietary jurisdictions that may affect such activities.

5. WETLAND COMMUNITIES

Wetlands within the subject area fall within the Lacustrine, Riverine, and Palustrine system. Deepwater habitats are areas that are permanently flooded (except during periods of extreme drought) and are characterized by open water on the aerial photography. These habitats are present in the Lacustrine system (L1OW), Riverine system (R2OW, R3OW) and Palustrine system.

Natural or artificial basins greater than 20 acres are in the Lacustrine system. The Lacustrine system on the NWI maps includes the classes lacustrine open water (L1OW, L2OW), aquatic bed (L2AB), and flats (L2FL). The open water areas are covered by water whereas the flats are exposed at some time during the growing season. Common lacustrine aquatic bed (L2AB) species include duck weed (Lemna spp.), pond weed (Potamogeton spp.), and water lily (Nymphaea spp.). Basins less than 20 acres are identified as palustrine, with classes as described above; i.e., palustrine open water (POW), palustrine aquatic bed (PAB), and palustrine flat (PFL).

The Riverine system includes the classes open water (OW), flats (FL), and streambeds (SB). Open water and flats are restricted to the Riverine lower (R2) and upper (R3) perennial subsystems. While the flats are not covered by a perennial flow, they are

associated with the reach of the river that contains permanent water and are included in the perennial subsystems. Streams which do not flow year round are classified as Riverine Intermittent Streambeds (R4SB). Some riverine systems have their banks lined with trees or shrubs. In cases where streamside palustrine scrub/shrub or palustrine forested wetlands cannot be separately delineated from the riverine system, the wetlands are mapped as linear palustrine wetland features (PSS or PFO).

Unvegetated irrigation canals are considered artificial Riverine systems and classified as lower perennial (R2OWKZ) or intermittent (R4SBKY) using collateral U. S. G. S. topographic maps.

The great majority of San Joaquin Valley wetlands are in the Palustrine system represented by the classes emergent (EM), flat (FL), scrub/shrub (SS), and forest (FO).

Palustrine emergent wetlands (PEM) are characterized by numerous and various species; some of the most common being bulrush (Scirpus spp.), sedges (Carex spp.), horsetails (Equisetum spp.), rushes (Juncus spp.), spike rushes (Eleocharis spp.), cattail (Typha spp.), dock (Rumex spp.), smartweeds (Polygonum spp.) reed grass (Calamagrostis spp.), nutgrass (Cyperus spp.), manna grass (Glyceria spp.), and bentgrass (Agrostis spp.). Vernal pool wetlands (PEMW) are a wetland type essentially unique to California. These wetlands contain certain species of Juncus, Scirpus, and Carex as well as some species found only in vernal wetlands. Such species include eryngium (Eryngium spp.), downingia (Downingia spp.), blennosperma (Blennosperma nanum), skunk weed (Navarreta spp.), meadow foam (Limnanthes douglasii), brodiaea (Brodiaea spp.), and hairgrass (Deschampsia danthonoides).

Palustrine scrub shrub (PSS) wetlands are characterized by woody species. Common wetland shrub species include willow (Salix spp.), red alder (Alnus rubra), white alder (A. rhombifolia), redosier dogwood (Cornus occidentalis), baccharus (Baccharus spp.), and elderberry (Sambucus spp.).

Alkali basin wetlands also contain site specific species. Typical Palustrine scrub/shrub alkali basin wetlands (PSSW) consist of such woody plants as shad scale (Atriplex spp.) and greasewood (Sarcobatus spp.) with an understory of salt grass (Distichlis spicata) or pickleweed (Salicornia spp.).

Typical forest (PFO) species are red alder, sycamore (Plantanus racemosa) and cottonwood (Populus fremonti). Some forested wetlands of a temporary nature (PFOW) contain cottonwood, eucalyptus (Eucalyptus spp.), or valley oak (Quercus lobata). The classification of scrub/shrub or forested wetlands is determined by height-forested greater than 6m. and scrub/shrub less than 6m.

Modifiers

The intermediate-scale (1:100,000 NWI maps' legends do not include water regime nor special modifiers. Mapping codes for these modifiers are indicated in parentheses in the discussion that follows.

Hydrologic characteristics are an important aspect of wetlands. The water regime modifiers describe in general terms the duration and timing of surface inundation, as well as groundwater fluctuations.

For the purpose of mapping, water regime modifiers have been lumped into three broad categories. These are:

Intermittently flooded-temporarily flooded (W). The substrate is usually exposed, but surface water is present for variable periods without detectable seasonal periodicity, or surface water is present for brief periods during the growing season.

Saturated/Seasonally-flooded/Semipermanently flooded (Y). The substrate is saturated to the surface for extended periods during the growing season, or surface water is present for extended periods especially early in the growing season but is absent by the end of the season in most years, or surface water persists throughout the growing season in most years.

Intermittently exposed/Permanently flooded (Z). Surface water is present throughout the year except in years of extreme drought, or water covers the land surface throughout the year in all years.

An artificially flooded (K) water regime modifier can be applied with all water regime modifiers. In this case, flooding is under the direct and purposeful control of man. Special modifiers included on these 1:100,000 scale NWI maps, where applicable, are:

Diked/impounded (h). Created or modified by a barrier, dike, or dam which obstructs the inflow or outflow of water.

Excavated (x). Lies within a basin or channel excavated by man.

6. SOURCES OF ADDITIONAL INFORMATION

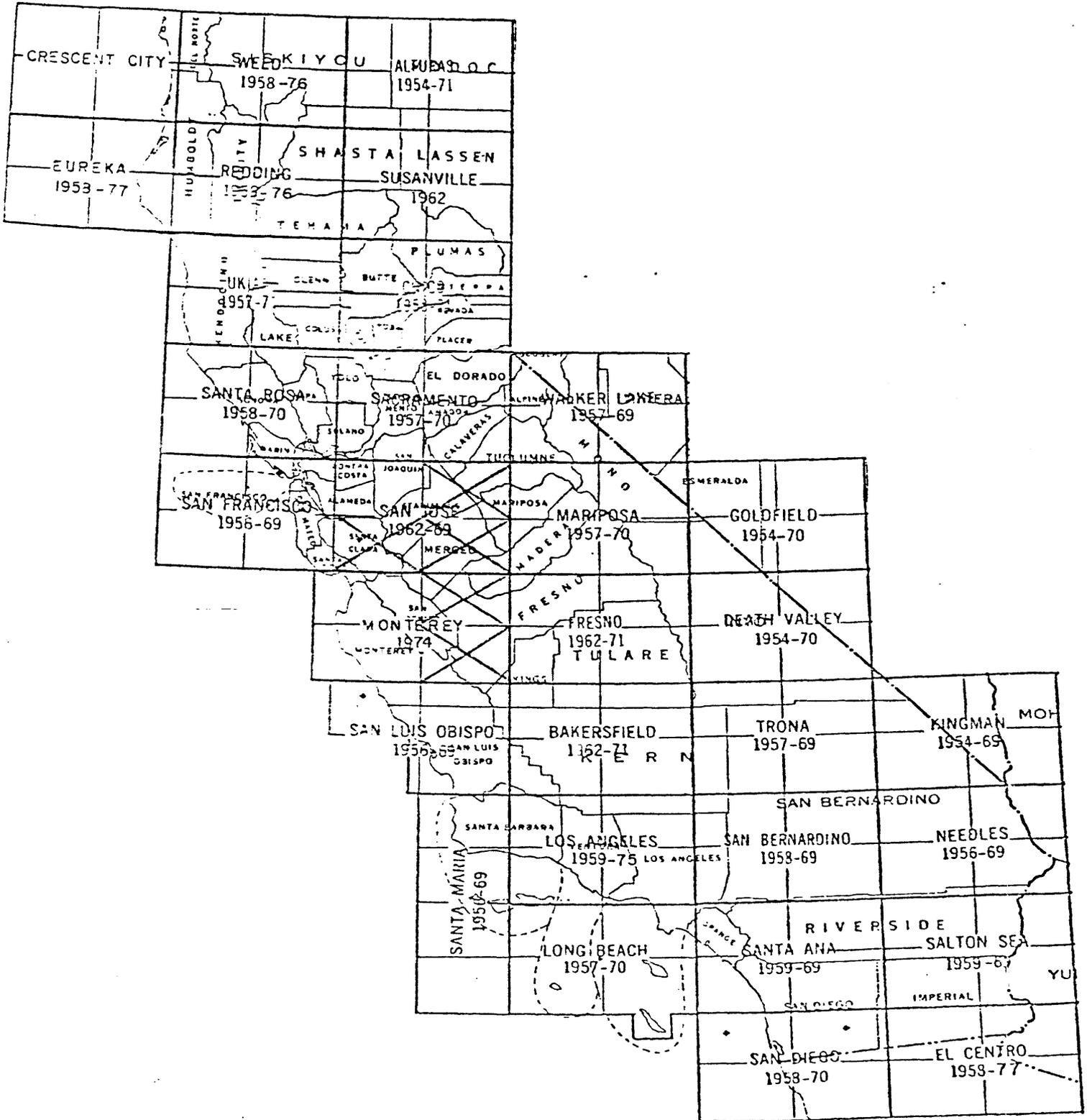
Since the purpose of the Notes to Users is to provide a general overview of a relatively large geographic area, in this case about 8,000 square miles, it is important to be aware of sources of additional information. The following is a list of reports providing information about the area of concern.

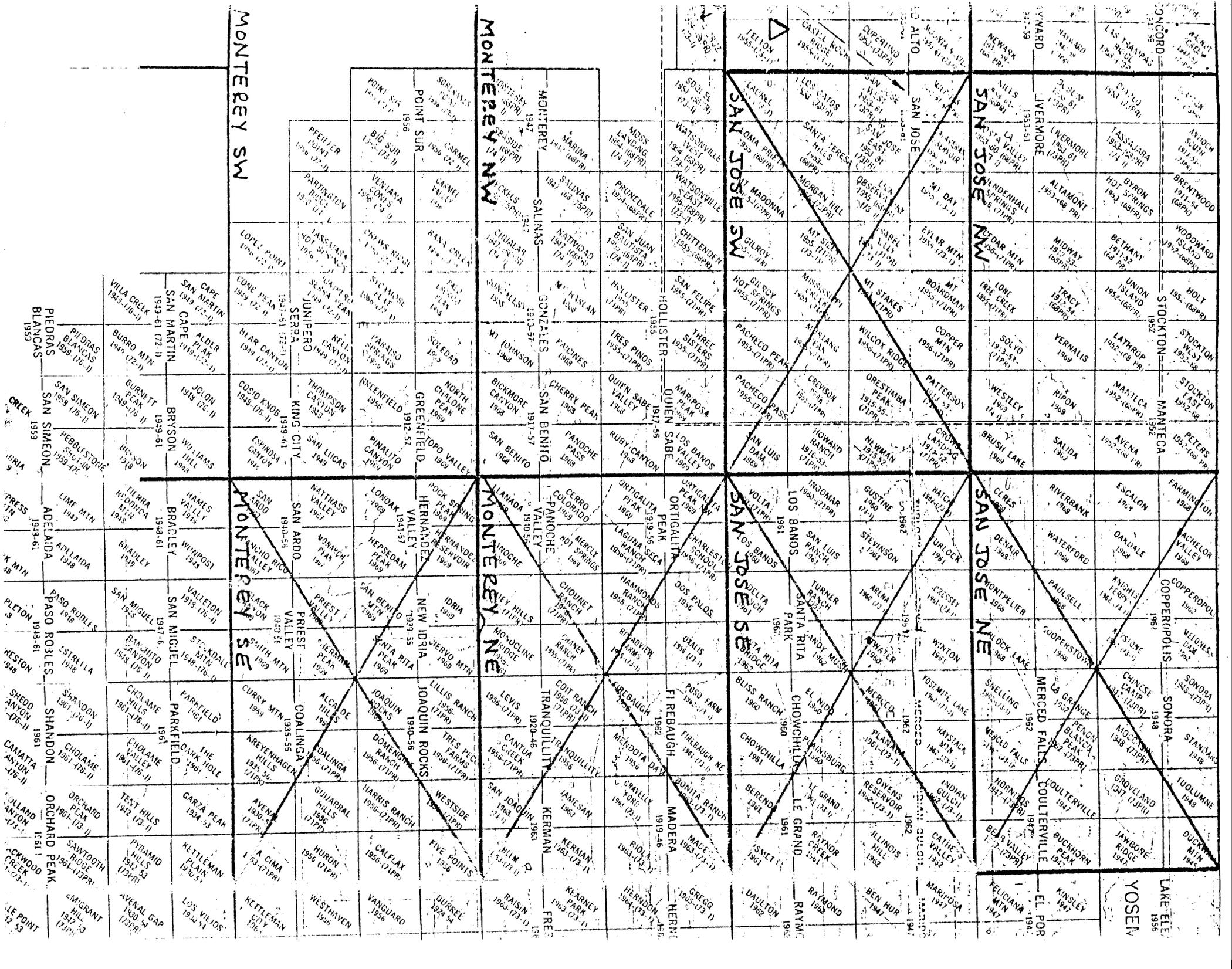
- Bailey, Robert G. 1978. Description of the ecoregions of the United States. U. S. Forest Service, USDA, Ogden, Utah.
- Barbour, M. G. and J. Major (eds). 1977. Terrestrial Vegetation of California. John Wiley and Sons, New York.
- Cowardin, Lewis M., Virginia Carter, Francis C. Golet, and Edward T. LaRoe. 1977. Classification of wetlands and deep-water habitats of the United States (An Operational Draft), U. S. Fish and Wildlife Service, October 1977.
- Mason, H. L. 1969. A Flora of the Marshes of California. University of California Press, Berkeley and Los Angeles.
- Warner, Richard E. (ad). 1982. California Riparian Systems: Proceeding of a Conference on Their Ecology, Conservation and Productive Management. University of California Press.

NATIONAL WETLANDS INVENTORY

Notes to Users

San Joaquin Valley, California





MONTEREY SW

MONTEREY NW

SAN JOSE SW

SAN JOSE NW

MONTEREY SE

MONTEREY NE

SAN JOSE SE

SAN JOSE NE

MONTEREY

MONTEREY

SAN JOSE

SAN JOSE

YOSEN