

JOB FINAL REPORT

State: California

Project Number: W-54-R-9 Project Title: Nongame Wildlife Investigations

Job Number: IV - 1.3 Job Title: San Francisco Bay Wetland Ownership Mapping

Period Covered: July 1, 1976 - June 30, 1977 Job Type: Survey and Inventory

SUMMARY:

From October 1976 through January 1977 an effort was made to develop ownership maps of marshland wildlife habitats in San Francisco Bay. Using current aerial and satellite infrared photographs of the bay, marshlands were identified and mapped on U.S.G.S., 7.5 minute quadrangle maps. Ownership maps and descriptions filed in federal, state, county, city and other agency offices were reviewed and ownership of wetland areas superimposed on the quad maps.

BACKGROUND:

Wildlife agencies need current information on ownership of marshlands and other wetland habitats of San Francisco Bay and vicinity. Maps delineating this information are needed for resource planning and management efforts, determining critical habitats of endangered species, directing land acquisition and habitat protection efforts, and determining elements of threat to endemic wildlife species and subspecies. Many wildlife survey and inventory studies have been conducted in recent years in the San Francisco Bay area but little information was gathered on land ownership of wildlife habitats.

From October 1976 to January 1977, a preliminary effort was made to compile this ownership information. The study was conducted by Kristine Kappeler, DFG Seasonal Aid, who compiled the ownership information and developed ownership maps showing marshlands of San Francisco Bay.

OBJECTIVES:

The objectives of this study were to: 1) compile current, detailed maps of the San Francisco Bay shorelines, including Petaluma Marsh and Napa Marsh, and 2) delineate on them public and private ownerships of marshlands and other wetland habitats.

PROCEDURES:

Current, detailed maps of the San Francisco Bay shorelines were selected from 7.5 minute topographic quadrangle maps (U. S. Geological Survey, 1968 and 1973 editions; scale 1:24,000). These quadrangle maps were selected as baseline maps because they are universally used by the majority of agencies concerned.

The identification and depiction of present existing tidal marshlands of the San Francisco Bay shorelines were based on infrared aerial photographs (Series

U-2, 1975; U-12, May 1975) filed with U. S. Army Corps of Engineers, Ocean Engineering Division, San Francisco. An enlarger was used to superimpose the film positives onto the individual quadrangles by matching land features, such as highways, stream patterns and shoreline configurations. Identifiable tidal marshlands were traced on the quadrangle maps. Marshlands of Napa Marsh were delineated from satellite photographs (May 1975 series) filed with the Department of Fish and Game, Region 3 office, Yountville.

Delineation of tidal marshlands was based primarily on the distribution of pickleweed (Salicornia sp.) as determined from the aerial and satellite photographs. Pickleweed vegetation was identified by its characteristic coloration on these photographs. However, where salt marsh and freshwater marsh vegetation intergraded, no attempt was made to discriminate between them. Also, there was no attempt in this study to ground-truth the marsh areas depicted.

Ownership of marshlands and other land adjacent to the bay was compiled from parcel maps at county assessor's offices and other agency offices. Ownership was then categorized as city, county, East Bay Regional Park District, federal, future East Bay Regional Park District, private, proposed National Wildlife Refuge, state, multiple (an aggregate of ownerships too intermingled for accurate separation, or of too small significance to be delineated with precision), undeclared or disputed (not recognized by county assessors or where the fluctuation of the mean high water may determine ownership jurisdiction). Ownership categories were then mapped with the marshland delineations.

FINDINGS:

Marshlands bordering San Francisco Bay and ownership of these marshlands and other bayshore areas were delineated on 19 U.S.G.S., 7.5 minute quadrangle maps. These quadrangle maps are as follows:

No.	Area	No.	Area	No.	Area
1.	Petaluma River	7.	Oakland West	13.	Mountain View
2.	Sears Point	8.	Oakland East	14.	Palo Alto
3.	Cuttings Wharf	9.	San Leandro	15.	San Mateo
4.	Mare Island	10.	Redwood Point	16.	San Quentin
5.	Benicia	11.	Newark	17.	San Rafael
6.	Richmond	12.	Milpitas	18.	Petaluma Point
				19.	Novato

The master set of maps is filed with Nongame Wildlife Investigations, California Department of Fish and Game, Sacramento. Maps were photographically reduced to color transparencies individually mounted on file cards. Sets of transparencies were made available for limited distribution to resource agencies.

ANALYSIS:

The methods used in this study for delineating tidal marshes were not adequate for accurately mapping these marsh communities. However, these procedures were useful for quickly and inexpensively identifying those wetland areas where ownership mapping efforts were to be directed.

The value of ownership information obtained from county tax assessor's records is limited by several factors. For example, each assessor's office differed in its system of designating marsh ownership boundaries with respect to bay shorelines. Also, county assessor's records may not accurately reflect valid title for specific parcels. In many instances, parcels shown on ownership maps as being privately owned are claimed to be state owned by the California State Lands Commission.

RECOMMENDATIONS:

Based on this preliminary study, the Department recommends that:

1. Ownership maps be updated every two years.
2. Ownership information contained on these maps be amended to incorporate ownership of lands and waterways deemed by the State Lands Commission as state-owned.
3. Efforts be intensified to accurately map wetland habitats important to wildlife in San Francisco Bay by aerial photographic methods and field investigations.
4. Habitats critically important to wildlife populations be identified on maps for possible acquisition.
5. Restorable former marshlands or lands within the U. S. Army Corps of Engineers' jurisdiction be delineated on updated maps.
6. Vegetation of existing and former bay wetlands be mapped, as has been done recently for Suisun, Napa and Petaluma marshes.

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