

# DEVELOPING MANAGEMENT PLANS FOR CALIFORNIA RIPARIAN SYSTEMS <sup>1</sup>

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## Project Scope and Methods

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Twelve riparian systems in California between the Sacramento-San Joaquin Delta and the upper Sacramento (near Chico) were studied to develop operation and management plans to restore and enhance riparian habitat (Figure 1). Each of the study areas had recently been acquired by the California Department of Fish and Game (DFG) and were designated as Ecological Reserves or Wildlife Management Areas due to their significance as rare and endangered species habitat.

The study involved field inventories of plants and animals on each of the sites, examination of current and historic aerial photographs, and mapping of wetland habitats. In addition, site specific information such as soil maps, parcel maps, and other cultural features was collected. This information was collated into a set of maps and tables for each of the sites. In conjunction with DFG personnel, target species were selected for the area management goals. For each target species, life history and habitat requirements were determined as well as any description of current population status, if known, within the study sites. Based on the habitat requirements, a set of area management objectives was established which would best serve the needs of those species.

Each of the sites is affected by human activities. Sherman and Decker Islands have been used as dredge spoil disposal sites. Only a portion of Decker Island is owned by the state and grazing has extended over much of the island. Webb Tract Berms have suffered severe erosion due to boat wakes, dredging activities, and flooding such that of the 285 acres purchased by the State in the 1970's, only 80 acres remain. Woodbridge is surrounded by agricultural lands and must manage its water supply to reduce saturation of surrounding agricultural fields. Riparian areas along both the Feather and the Sacramento Rivers are surrounded by orchards and in some cases the orchards extend into the riparian forest.

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## Habitat Needs and Management Objectives

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The target species for each of the sites is given in Table 1. Most of these species are either state or federally-listed rare or endangered species or are considered species of special concern. Almost all the sites supported six or more of these species, only the Woodbridge site was managed exclusively for the sandhill cranes. Based on the habitat requirements for each of the target species groups, the surrounding land use constraints, and fiscally feasible activities, area management objectives were established for each complex. Some of the key objectives are summarized below.

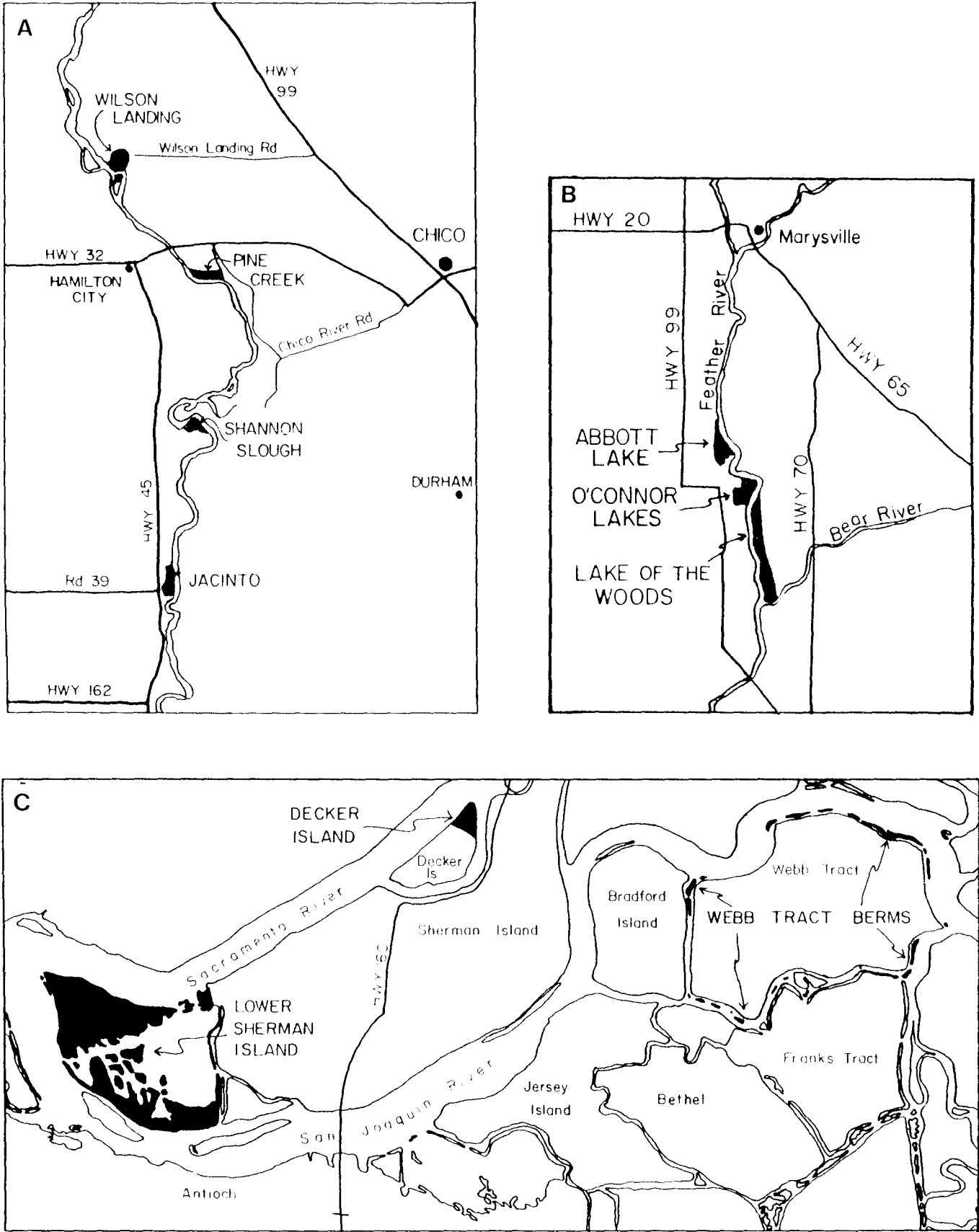
### Delta Island Complex

- Habitat management must strive for a balance between levee maintenance and provision of mudbanks and floodplains for rare plant species.

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**Figure 1** —Location map for ecological reserves and wildlife areas.

## Woodbridge Ecological Reserve

- Expansion of shallow water with low vegetation to support roosting habitat for Sandhill Cranes.
- Provide extended open water habitat for waterfowl nesting.

## Lower Feather River Complex

- Restore water levels within the backwater lakes.
- Restore mixed riparian forest within the floodway.
- Maintain tall snags and eliminate easements for fire-wood cutting.

## Sacramento River Wildlife Areas

- Removal of nuisance species such as fig and salt cedar.
- Planting of valley oak and elderberry.
- Evaluate downstream impacts of streambank erosion control.

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## Costs

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Total management and implementation costs for these project areas range between \$250,000 and \$600,000 over a 5 year period. These expenditures are necessary if these rare habitats are to serve for the diversity of wildlife now restricted by agricultural and urban development in the Central Valley.

Table 1. Target species for management goals for the Sacramento River, Lower Feather River, Woodbridge and Delta Islands Complexes.

COMPLEX	PRIMARY SPECIES	SECONDARY SPECIES
Sacramento River	Valley Oak Forest	California hibiscus
	Valley Elderberry	Bank Swallow
	Longhorn Beetle	Yellow Warbler
	Yellow-billed Cuckoo	Yellow-breasted Chat
	Swainson's Hawk	Purple Martin
	River Otter	Long-eared owl
Lower Feather River	California Hibiscus	Turkey Vulture
	Valley Elderberry	Bank Swallow
	Longhorn Beetle	Tricolored Blackbird
	Giant Garter Snake	Heron Rookery
	Yellow-billed Cuckoo	Ringtail
	Swainson's Hawk	
River Otter		
Woodbridge	Sandhill Cranes (Greater and Lesser)	None
	California hibiscus	
Delta Islands	California Hibiscus	California Black Rail
	Mason's Lilaeopsis	Salt marsh harvest mouse
	Suisun Marsh Aster	Heron rookery
	Delta Smelt	Black-shouldered kite
	Sacramento Splittail	