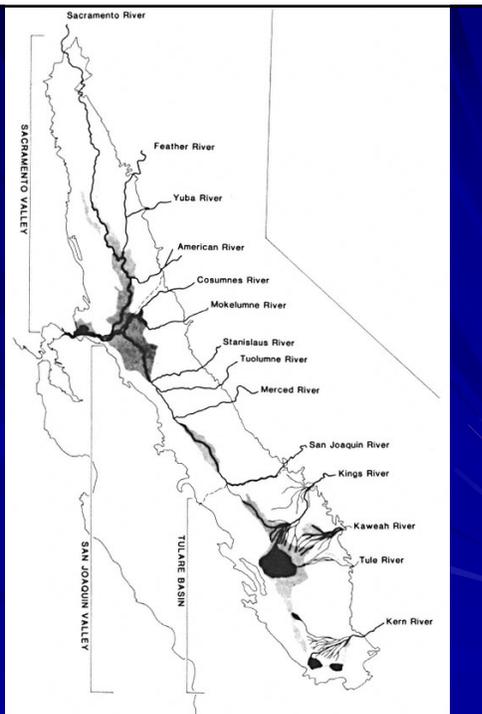


Central Valley Pre-settlement Hydrology



Historical Floods

1862

— The “Great” Flood

- 25% of all taxable real estate destroyed
- 200,000 cattle drowned
- California went bankrupt
- Changed CA's economy from ranching to farming



Sacramento, CA January 1862



Figure 8. Blue areas indicate ARkStorm flooding as projected by models used in the scenario.

1907 and 1909

- Record flow and volumes set
- 300,000 acres flooded in Sac Valley alone
- Levees had been built, but the concept of bypasses and overflow weirs are born



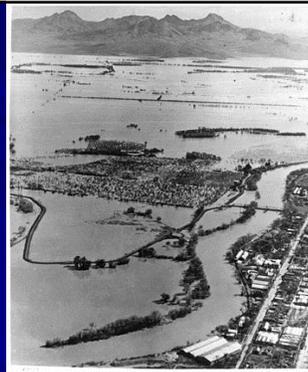
Oroville, CA 1907



Oroshi, CA 1909

1940

- Shasta Dam was under construction and Oroville was still 20+ years away
- Numerous levee breaks along the Sacramento and Feather Rivers, but bypasses and weirs prevented catastrophic flooding



Colusa, CA



Yuba City, CA

Taming of the Waters

Central Valley Project (1933) & State Water Project (1960)

- 41 dams and more than 1,500 miles of canals, ditches, pipelines and tunnels now irrigate and drain 3.75 million Central Valley lands.
- Flood bypasses, overflow weirs and levees also brought flood control.
- As a result, this has nearly eliminated natural hydrology to the valley
- But not eliminated the threat...



1986 and 1997

- Nearly identical in scope and damage (Sacramento Valley sustained most of the damage)
- Dams for flood control and irrigation helped, but could not prevent catastrophic flooding
- Changed management policy of these reservoirs



January 2017



February 2017



A Changing Landscape



A Changing Landscape

Almonds



Walnuts



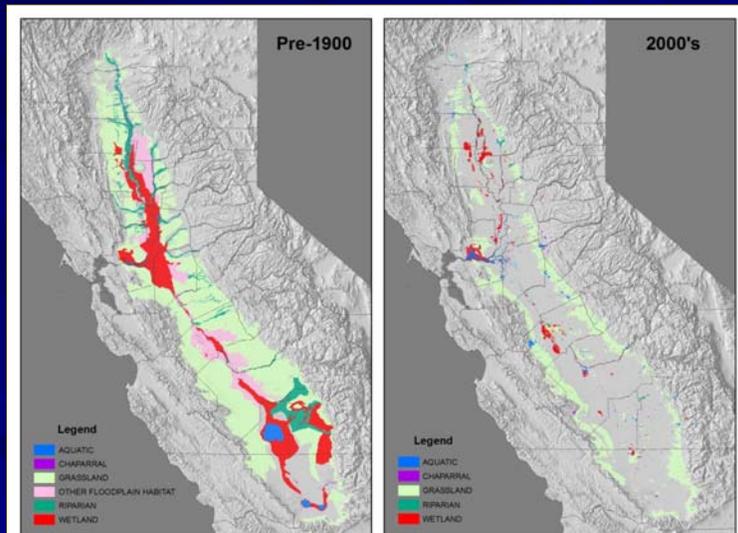
Vineyards



A Changing Landscape

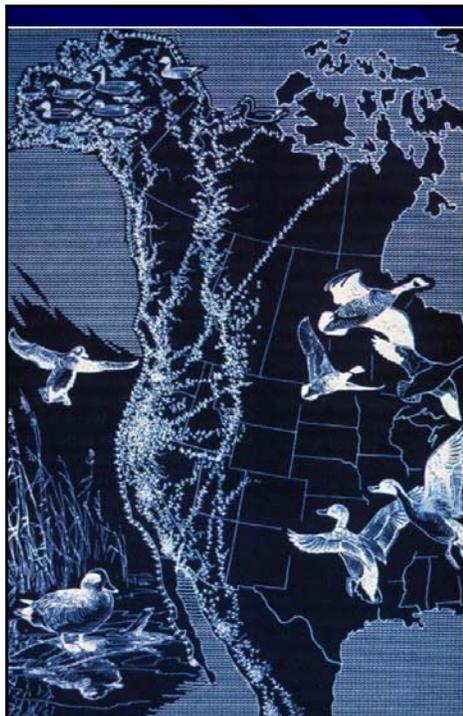
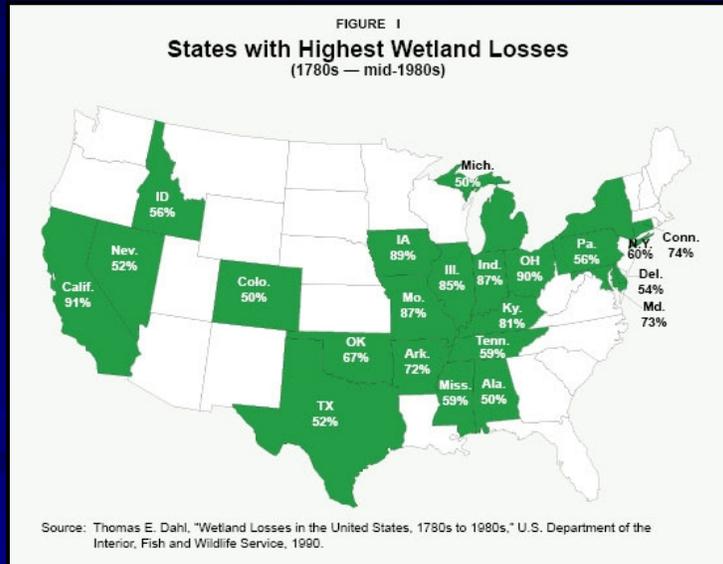


Central Valley Wetland Decline



Data Sources: Central Valley Historic Mapping Project, GIC, Chico State; Modern Wetlands, Ducks Unlimited & Central Valley Joint Venture
Map Design: Ducks Unlimited, Western Regional Office

Wetland Loss – National Perspective



Importance of Central Valley Wetlands

- 60% of Pacific Flyway's waterfowl population
- 20% of all North American migratory waterfowl 60% of all migratory waterfowl in the Pacific Flyway
- 100% of the world's Aleutian Canada Geese
- 100% of the world's Tule White-fronted Geese
- 80% of North America's Ross' Geese and Cackling Canada Geese

What is the Central Valley Joint Venture?

The Joint Venture is a public/private partnership conserving bird habitat in the Central Valley of California for the benefit of migratory and resident birds and other wetland dependent species.

