

5/12/2012

Maps from Introduction of California Water

Slightly dated
information, but
wonderful illustrations
and maps
(with some supplemental
info)

Compiled by Yung-Hsin Sun

California with Many Regional Climate



Map 2 Landform provinces in California.
(Redrawn from Schoenherr 1992.)

Greatly Varying Precipitation

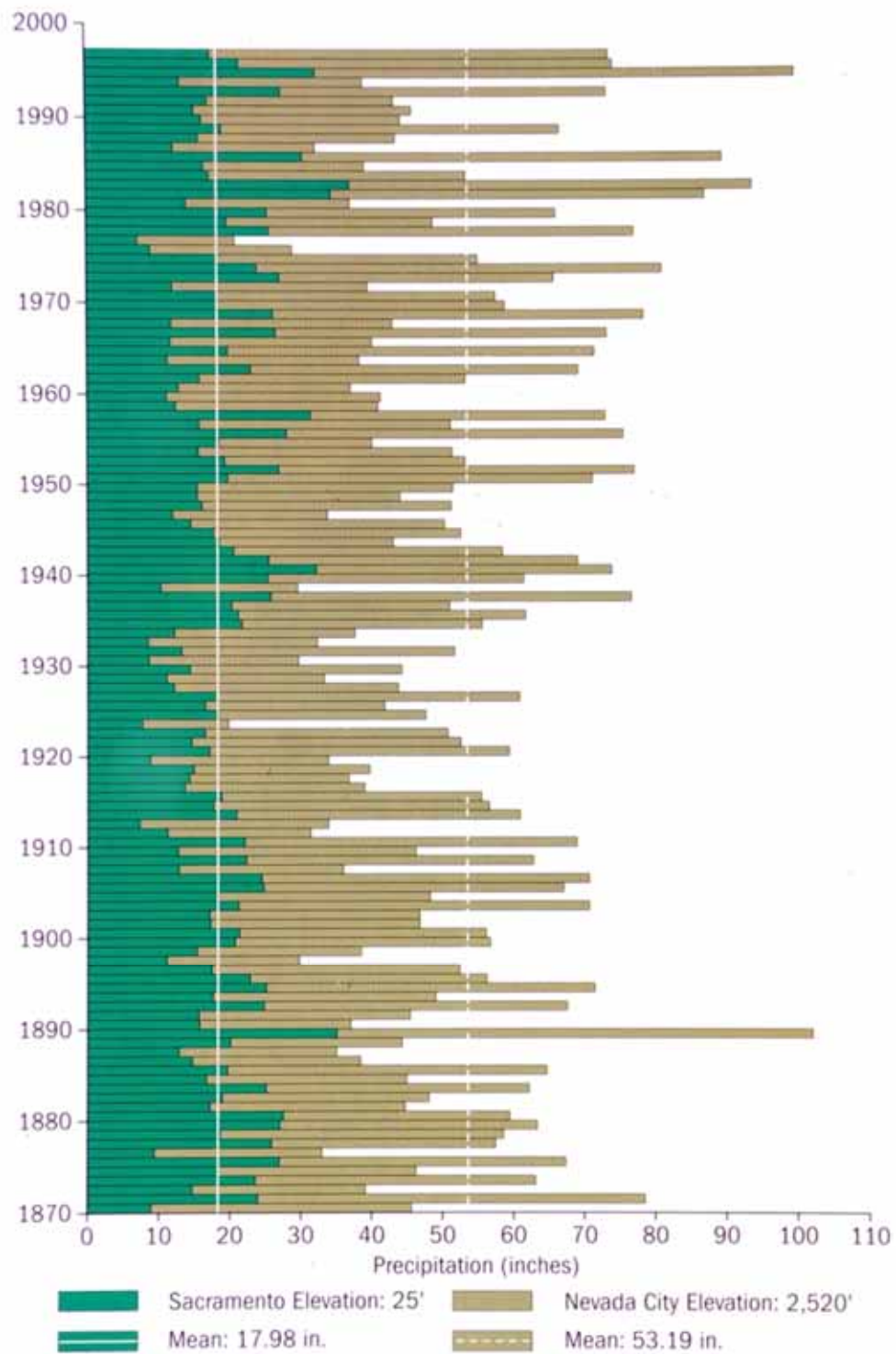


Fig. 5. Annual precipitation variability in the Central Valley watershed, 1870 to 1997. (Redrawn from Bay Institute of San Francisco 1998.)

Widely Varying Precipitation

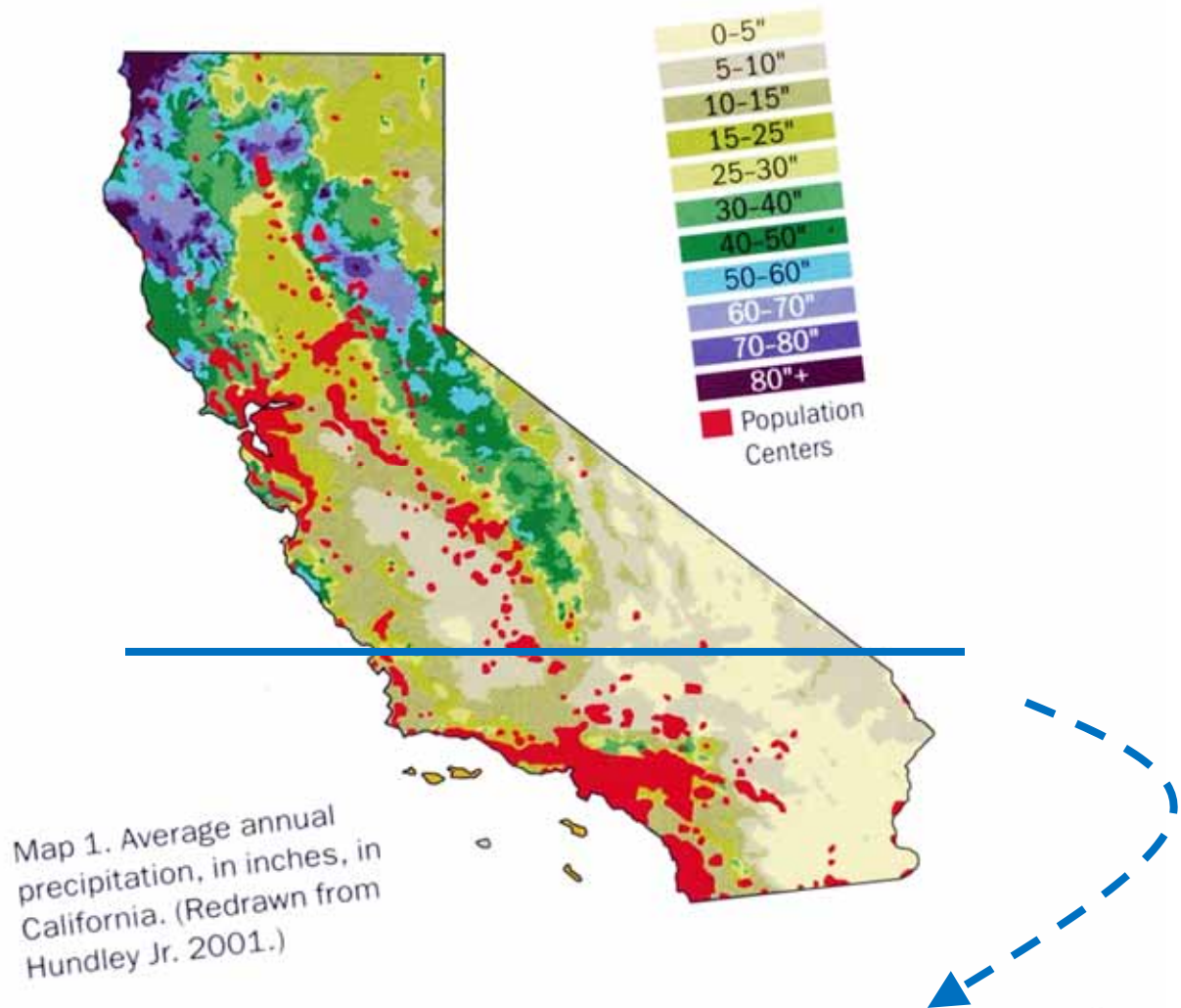
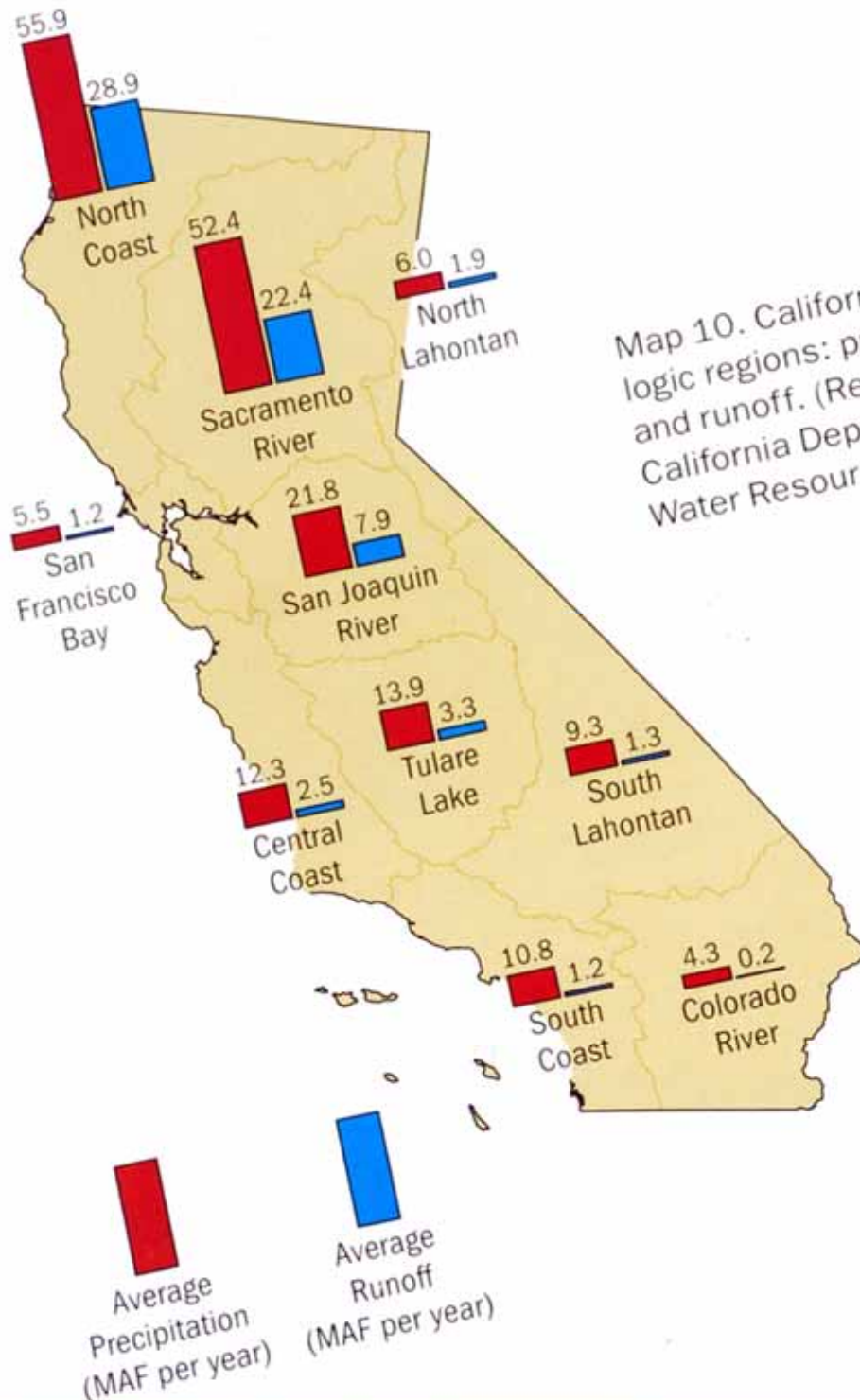
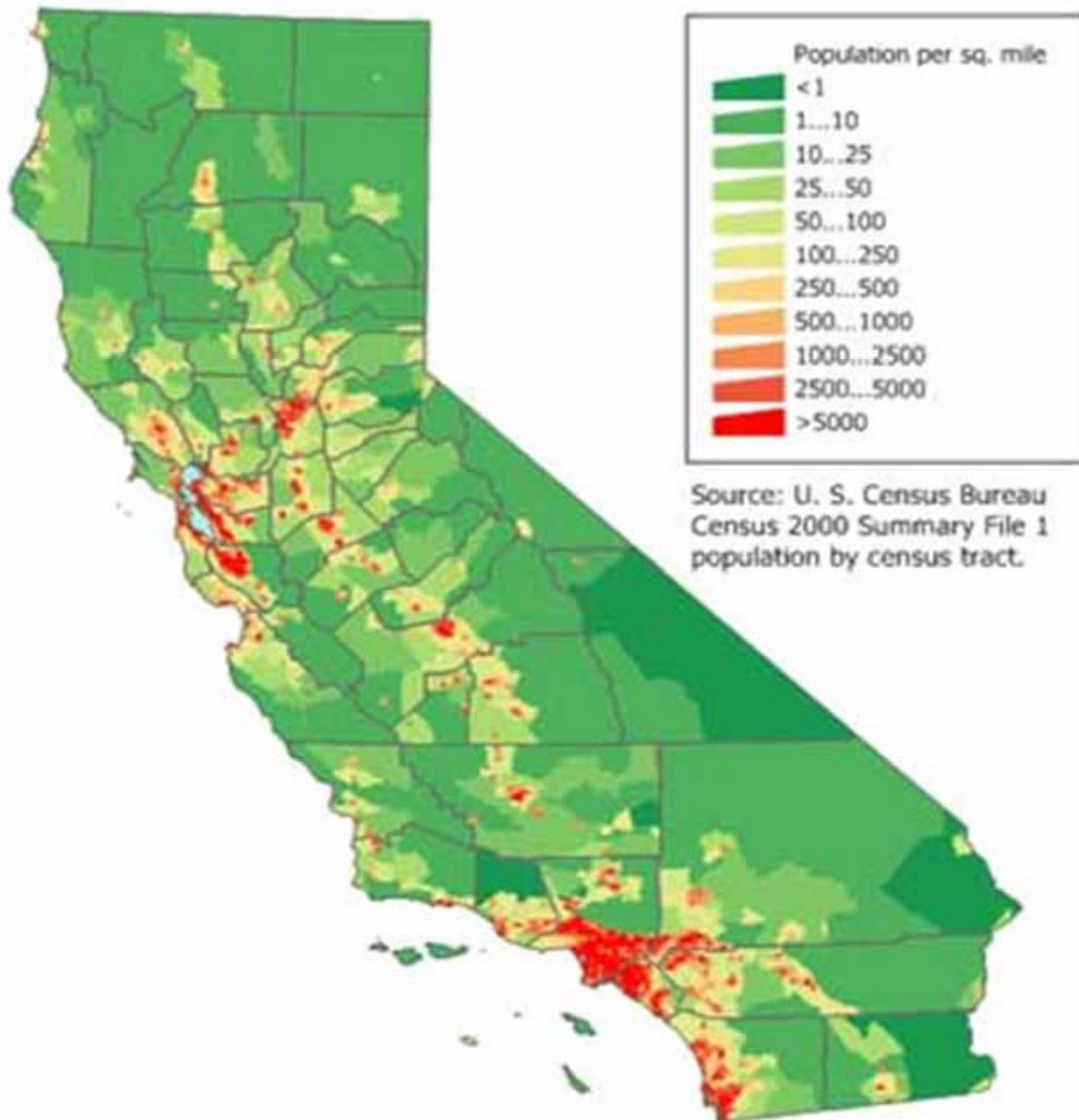


Fig.1. Influence of topography on precipitation; a southwest-northeast cross section of California. (Redrawn from Durrenberger 1968.)

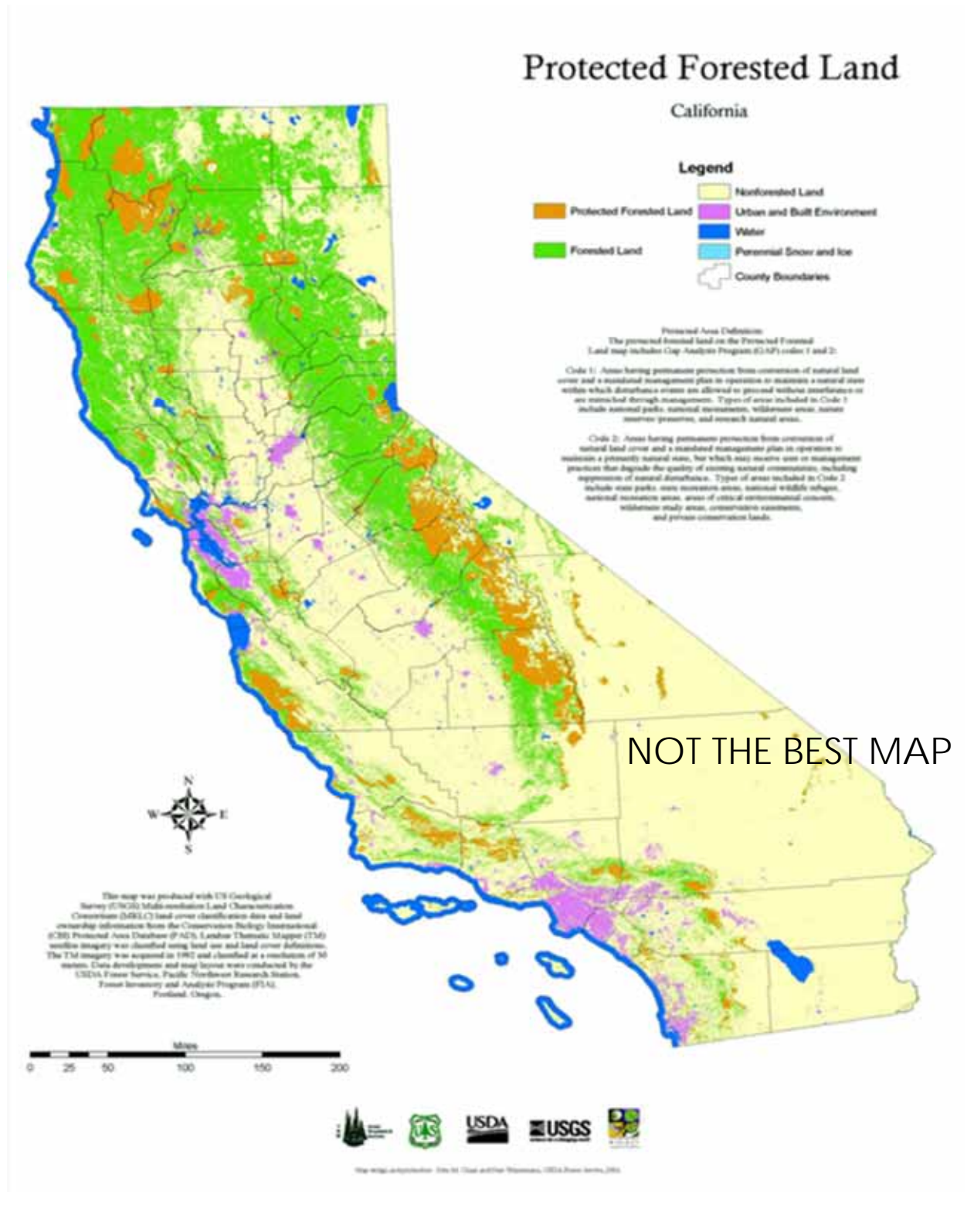
More than 75% of Precipitation in Northern California



About 75% of Population in Southern California



Current Land Use



Approximate Use of Water Supply

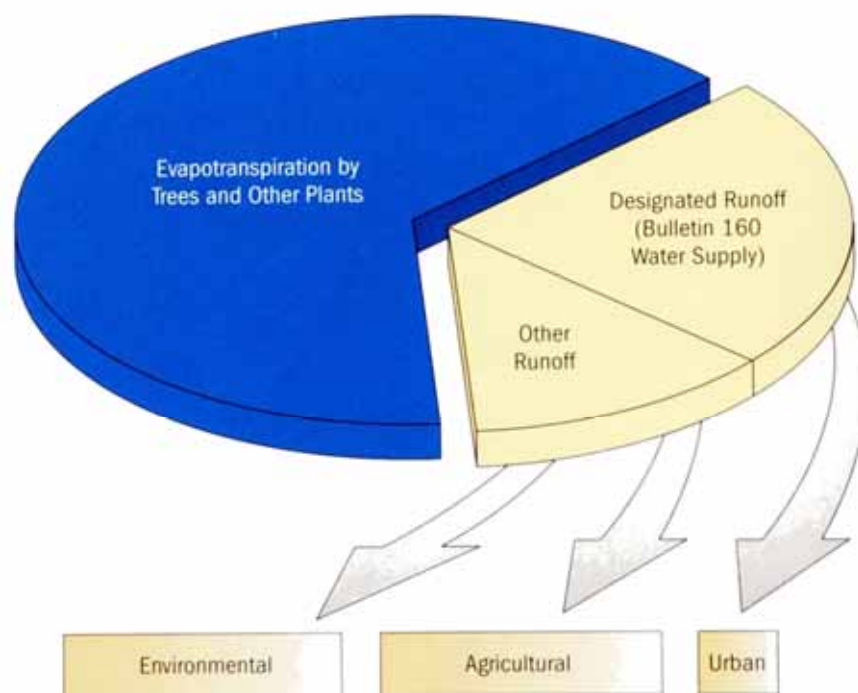
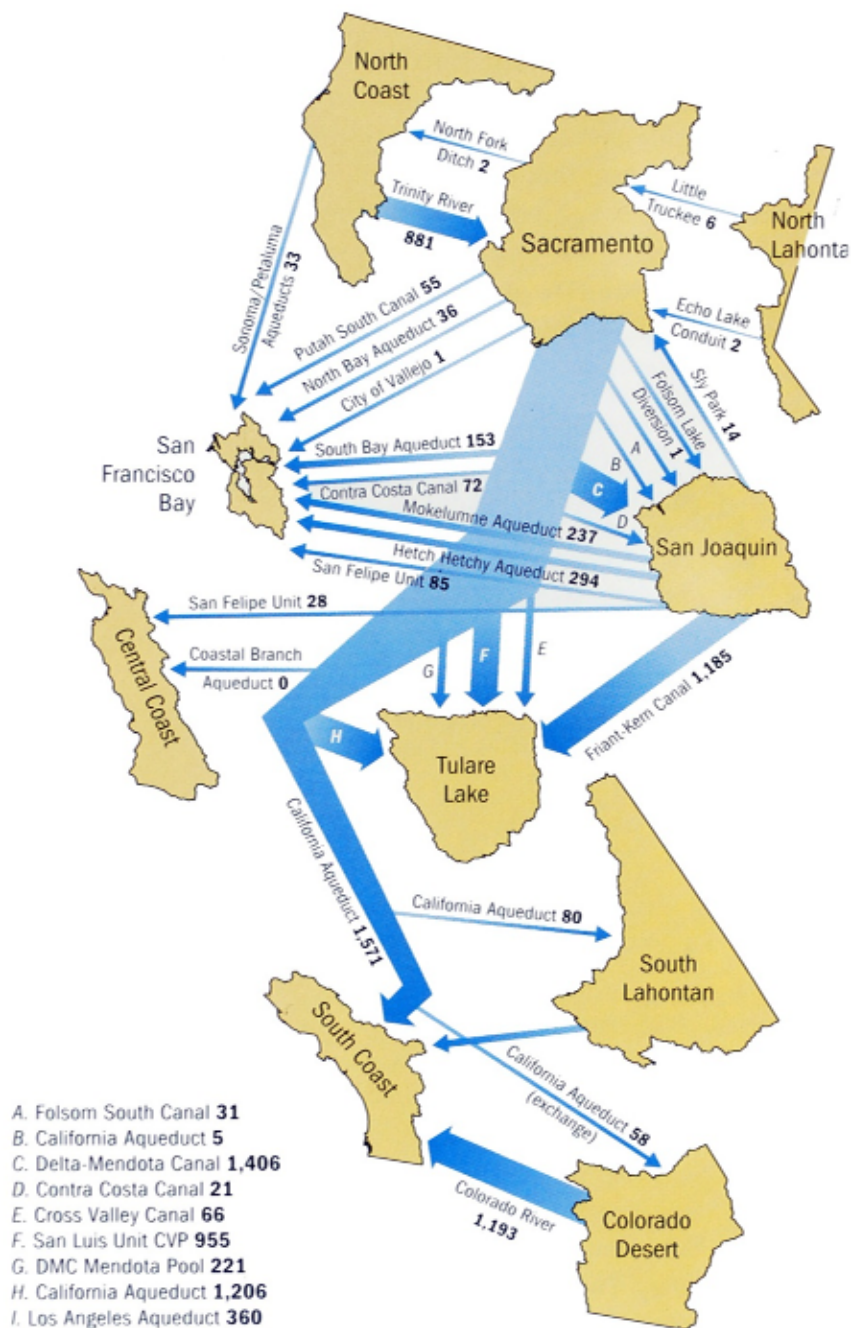


Fig. 6. Disposition of California's average annual precipitation. (Redrawn from California Department of Water Resources 1998.)

California Water Flows North to South and East to West



Map 11. Regional water imports and exports, at 1995 level of development (thousands of acre-feet per year). (Redrawn from California Department of Water Resources 1998.)

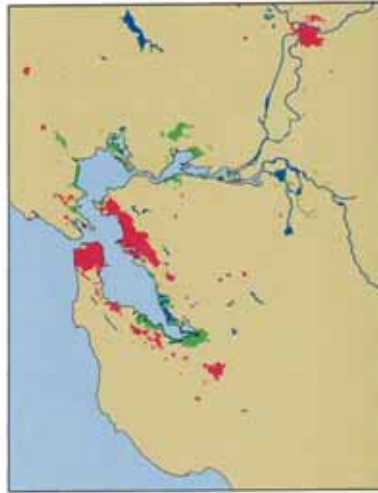
Historical Changes in Bay-Delta Wetlands



1850

Urban Extent
Tidal Wetlands

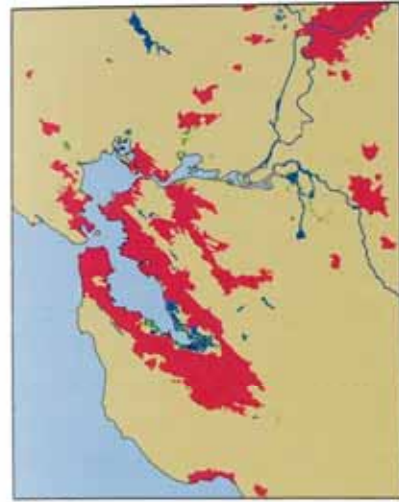
Map 5. San Francisco Bay-Delta wetlands and urbanization, 1850. (Redrawn from U.S. Geological Survey, no date.)



1940

Urban Extent
Tidal Wetlands

Map 6. San Francisco Bay-Delta wetlands and urbanization, 1940. (Redrawn from U.S. Geological Survey, no date.)



1990

Urban Extent
Tidal Wetlands

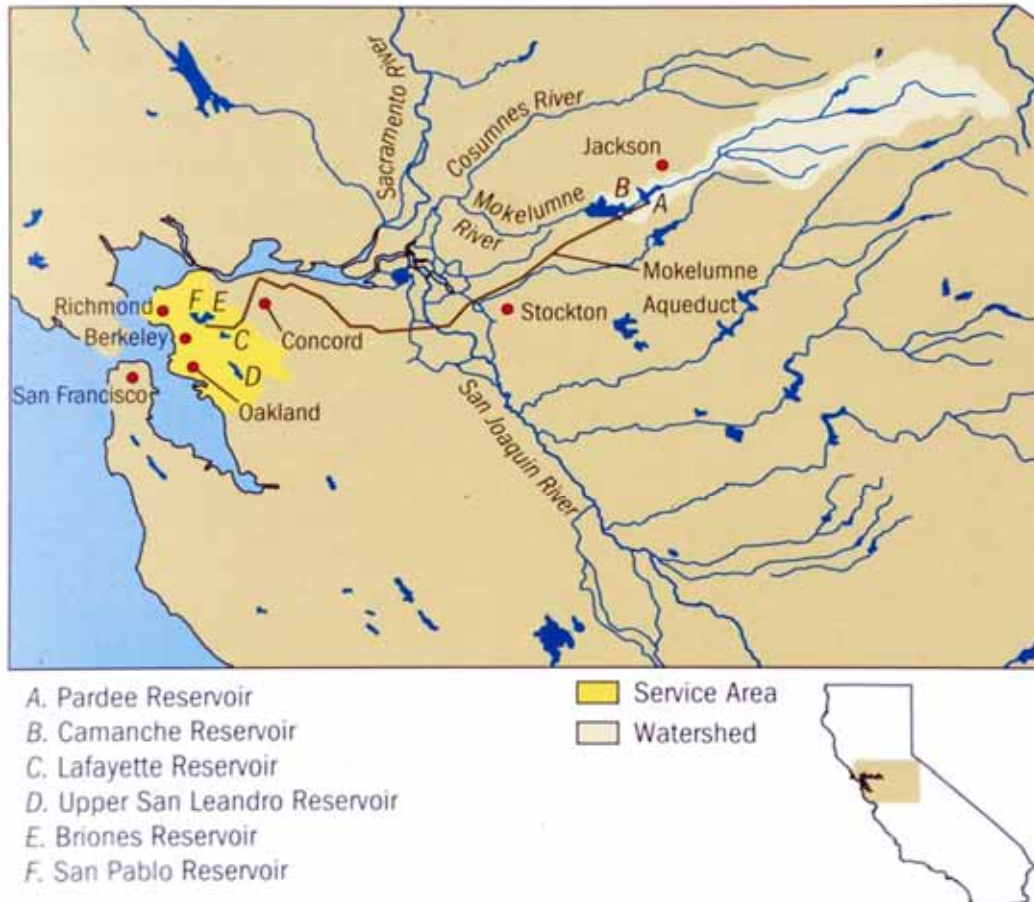
Map 7. San Francisco Bay-Delta wetlands and Urbanization, 1990. (Redrawn from U.S. Geological Survey, no date.)

San Francisco's "Birth Rights" –Hetch Hetchy System

Shaw and Associates, May 15, Hetch Hetchy Aqueduct, facilities, and service areas. (Revised from San Francisco Public Utility Commission, no date.)



East Bay Blood Line – Mokelumne Aqueduct



Map 20. Mokelumne Aqueduct/East Bay MUD facilities and service areas. (Redrawn from Montgomery 1999.)

Pre-Settlement Marshlands and Lakes



Manmade Watersheds



Map 12. Major water transport systems. (Adapted from California Department of Water Resources, 1998 and from McClurg 2000b.)

Central Valley Project



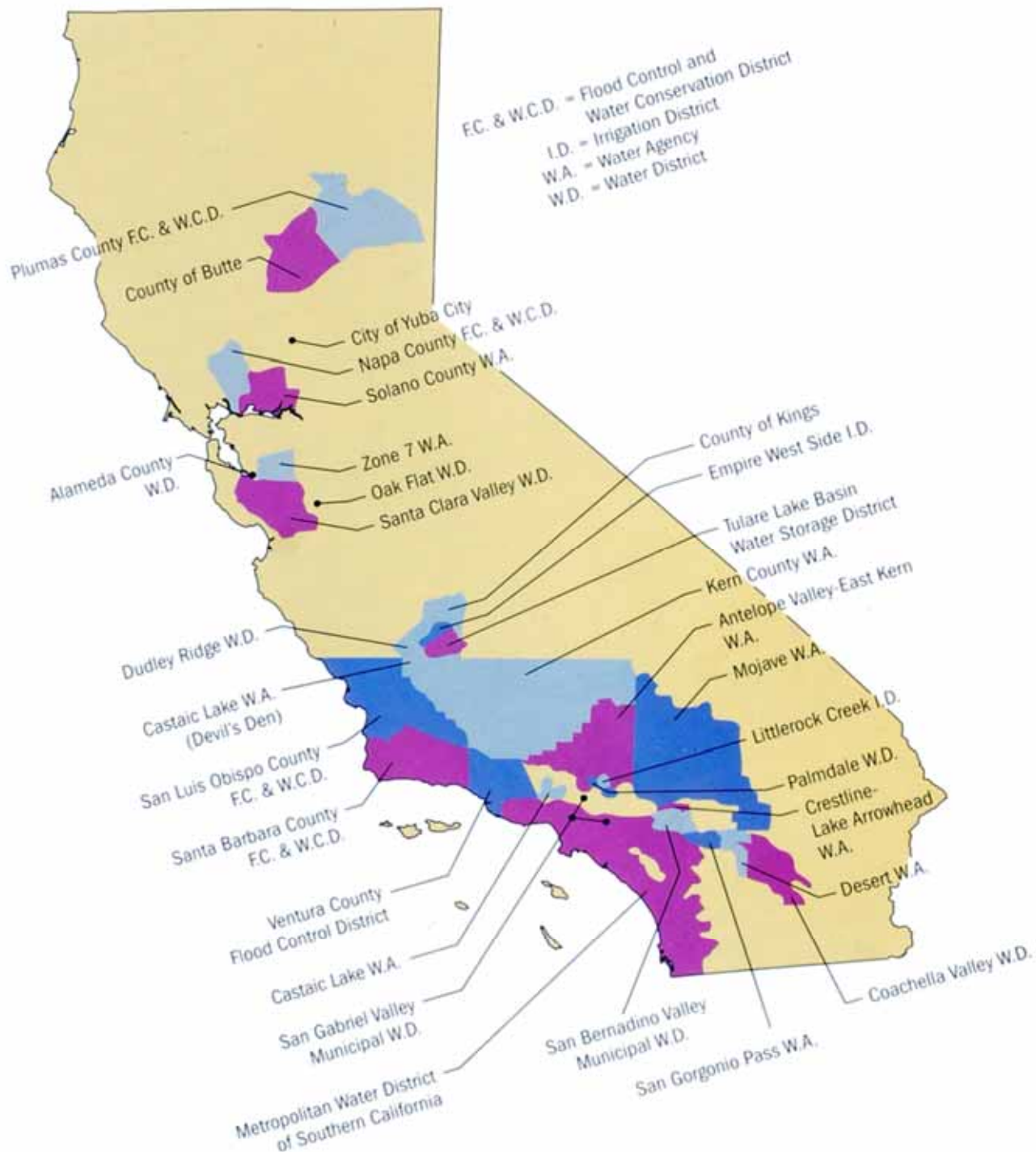
State Water Project

A. = Aqueduct
 P. = Power Plant
 P.G.P. = Pumping Generating Plant
 P.P. = Pumping Plant



Map 13. State Water Project facilities.
 (Picked up from two maps in California
 Department of Water Resources 1998.)

SWP Contractors and Service Areas



Map 14. State Water Project service areas. (Redrawn from Hendley, J., 2012.)

Groundwater as Property Rights (Some Adjudicated)



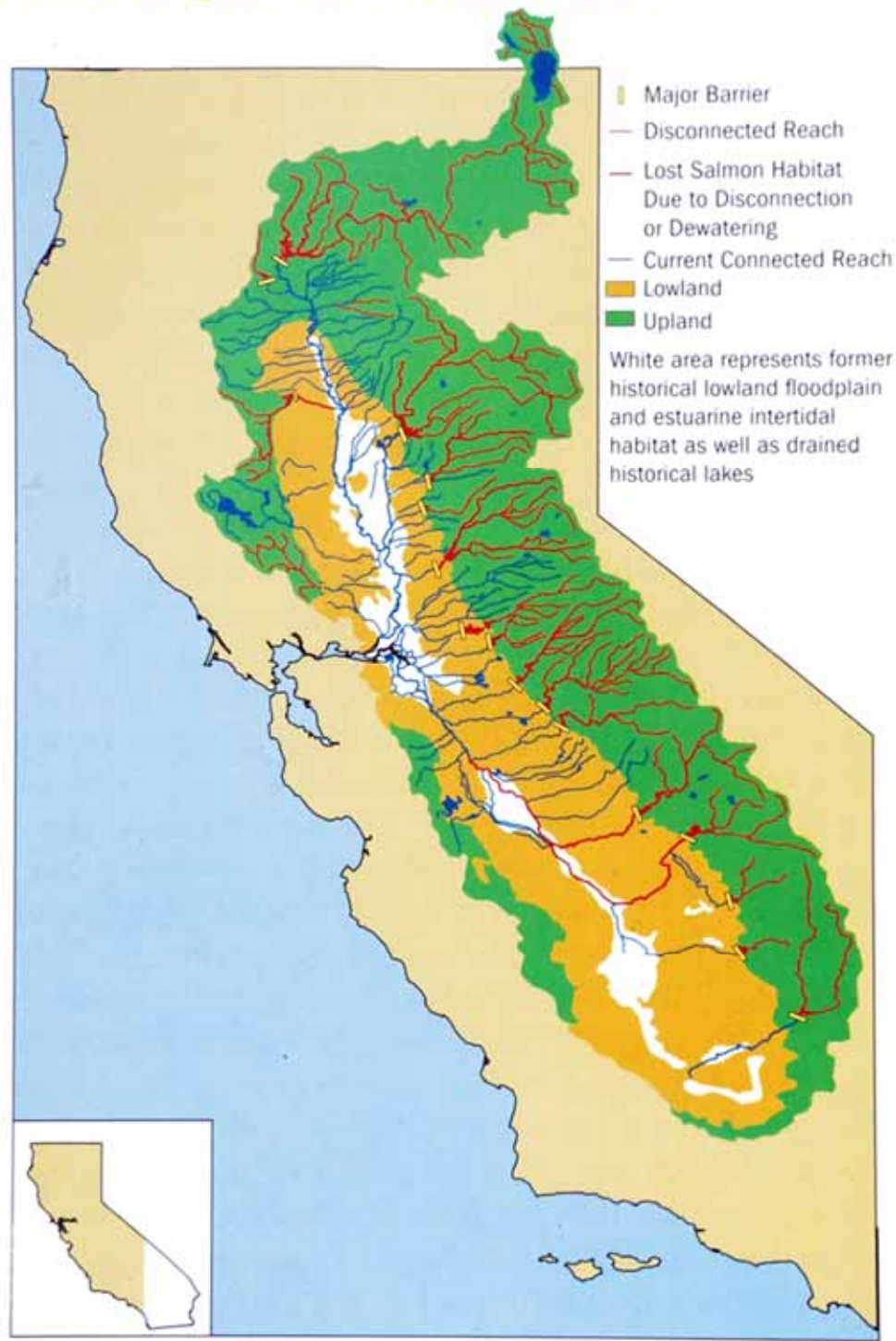
Map 9. California groundwater basins: known total storage capacity in millions of acre-feet (MAF). (Redrawn from Hundley Jr. 2001.)

Land Subsidence Came with Groundwater Use and Exposure



Map 25. Central Valley land subsidence. (Redrawn from Williams, Prudic, and Swain 1969.)

Fish Migration Blocked by Rim Dams and Water Management Practices



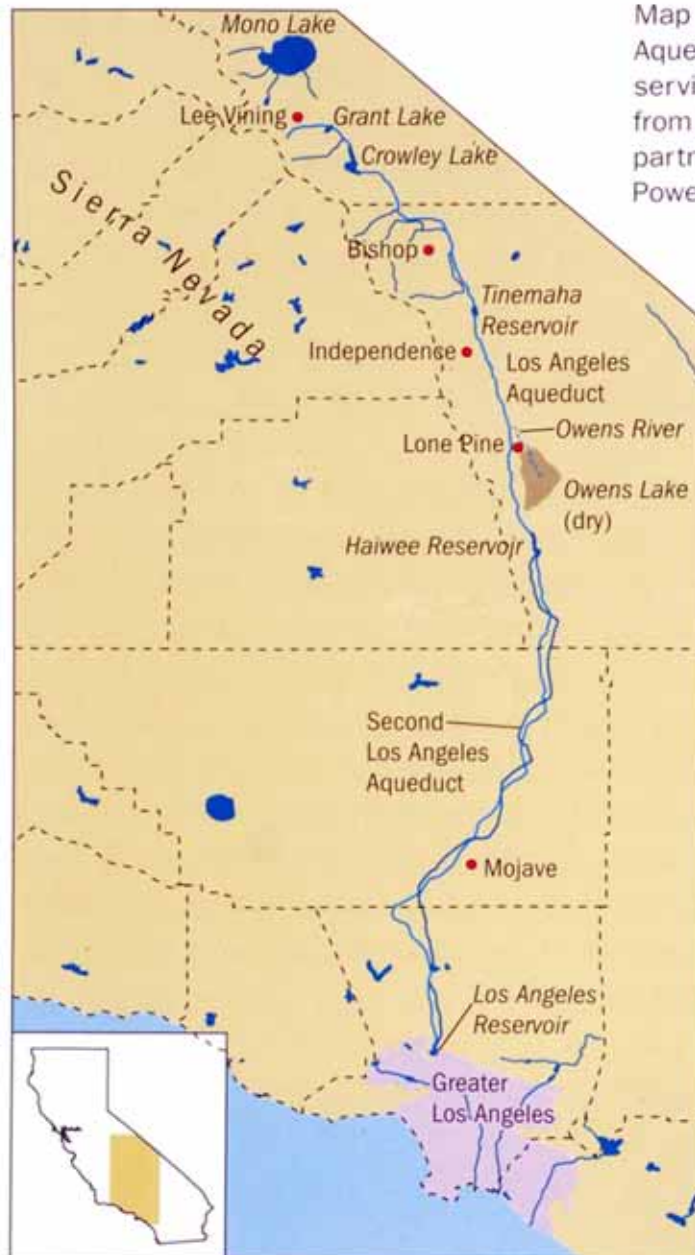
Map 22. Disconnected salmon rivers. (Redrawn from Bay Institute of San Francisco 1998.)

Fish Hatchery as Mitigation Measures



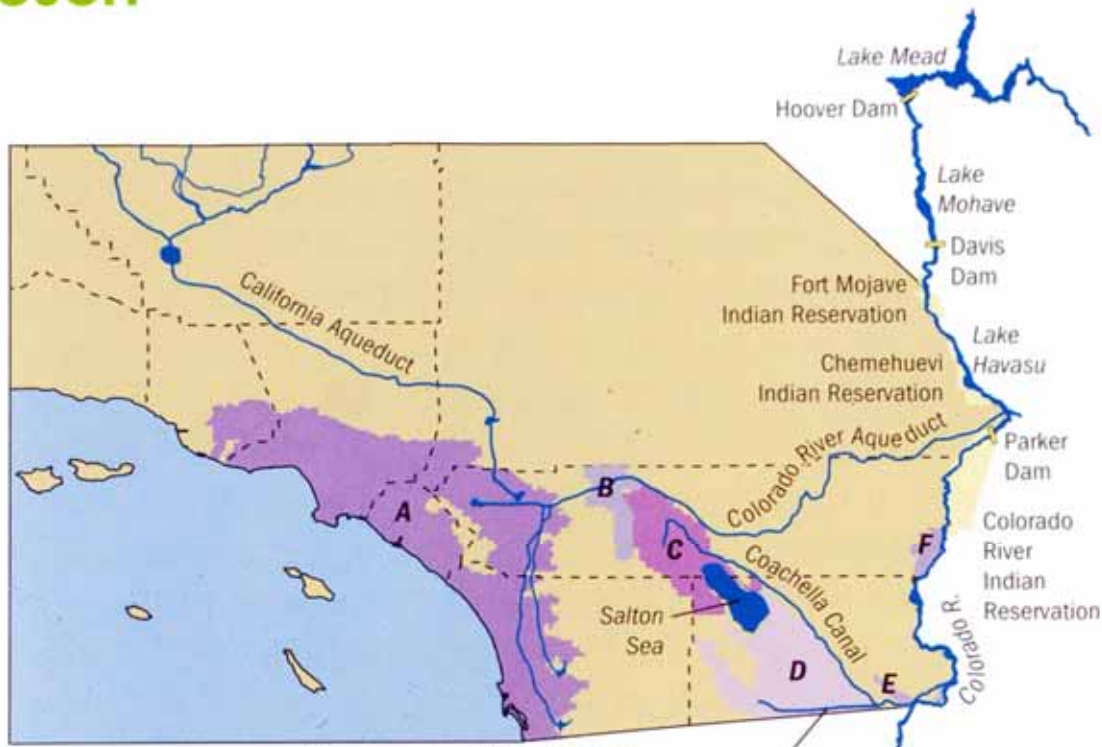
Map 23. California fish hatcheries. (Redrawn from California Department of Fish and Game, no date.)

Mulholland's Dream and China Town



Map 18. Los Angeles Aqueduct facilities and service areas. (Redrawn from Los Angeles Department of Water and Power 1988.)

Tapping Colorado River to Feed Thirsty Desert



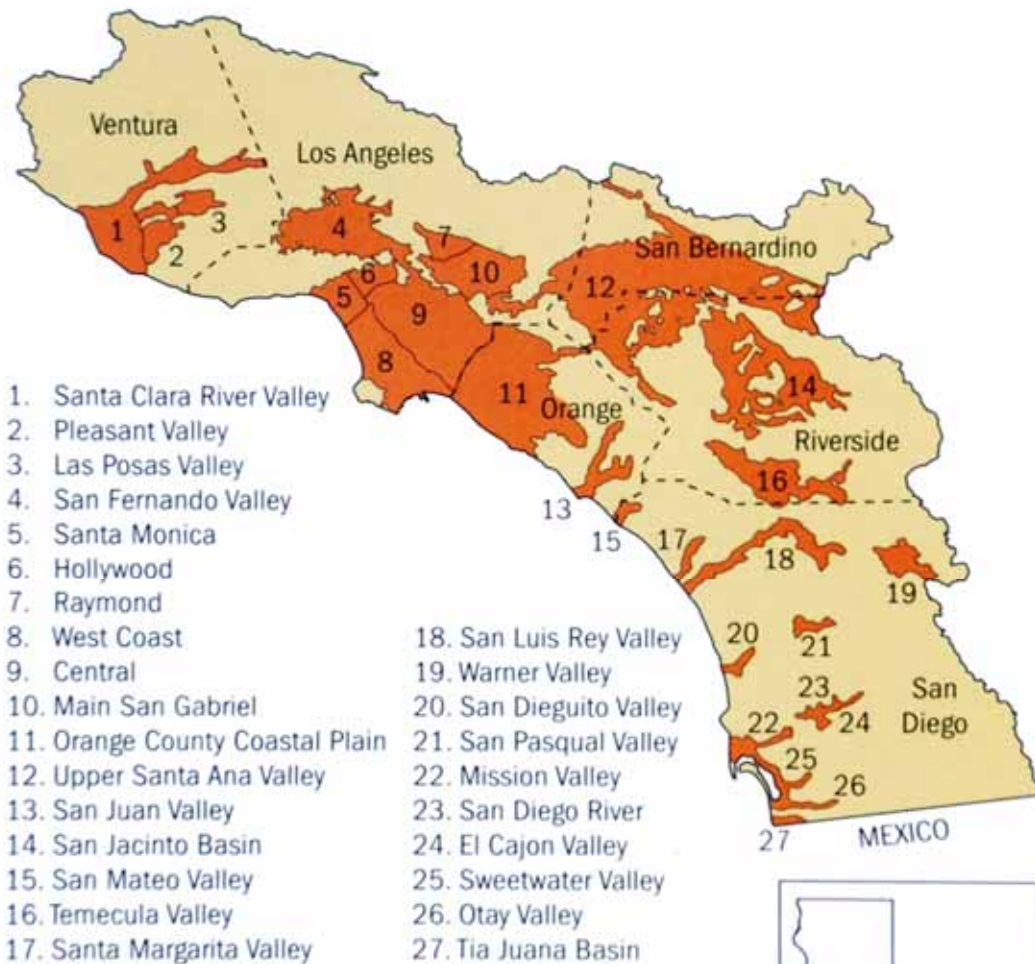
- A. Metropolitan Water District
- B. Desert Water Agency (user by exchange of its SWP water)
- C. Coachella Valley Water District
- D. Imperial Irrigation District
- E. Yuma Project
- F. Palo Verde Irrigation District

Map 17. Colorado River service areas. (Redrawn from Water Education Foundation 1991.)



Map 20. Colorado River watershed and facilities. (Redrawn from Water Education Foundation 1991.)

Groundwater as a Source and Means to Recycling Water



Map 24. South Coast groundwater basins.
(Redrawn from California Department of
Water Resources 1998.)

