An aerial photograph of a river delta, likely the Sacramento-San Joaquin River Delta. The image shows a complex network of waterways, levees, and agricultural fields. The water is a dark, muddy brown color, while the surrounding land is a mix of green and brown, indicating different types of vegetation and soil. The text is overlaid on the image in a bold, yellow font for the title and white font for the quote and author information.

# The Delta: the Hub of Water and Conflict

Mark Twain was right:

“Whiskey is for drinking and water is for fighting.”

Michael Machado  
Delta Protection Commission  
March 2011

# A Quick Summary of California Water

200 +/- maf

Precipitation Annually

75 maf

Unimpaired Runoff

83 maf

Gross Use Unimpaired + grd  
Water Mining, Reclamation,  
Reuse and Colorado River

# Interconnected Water System

61 maf/yr

62% ag

16% Urban

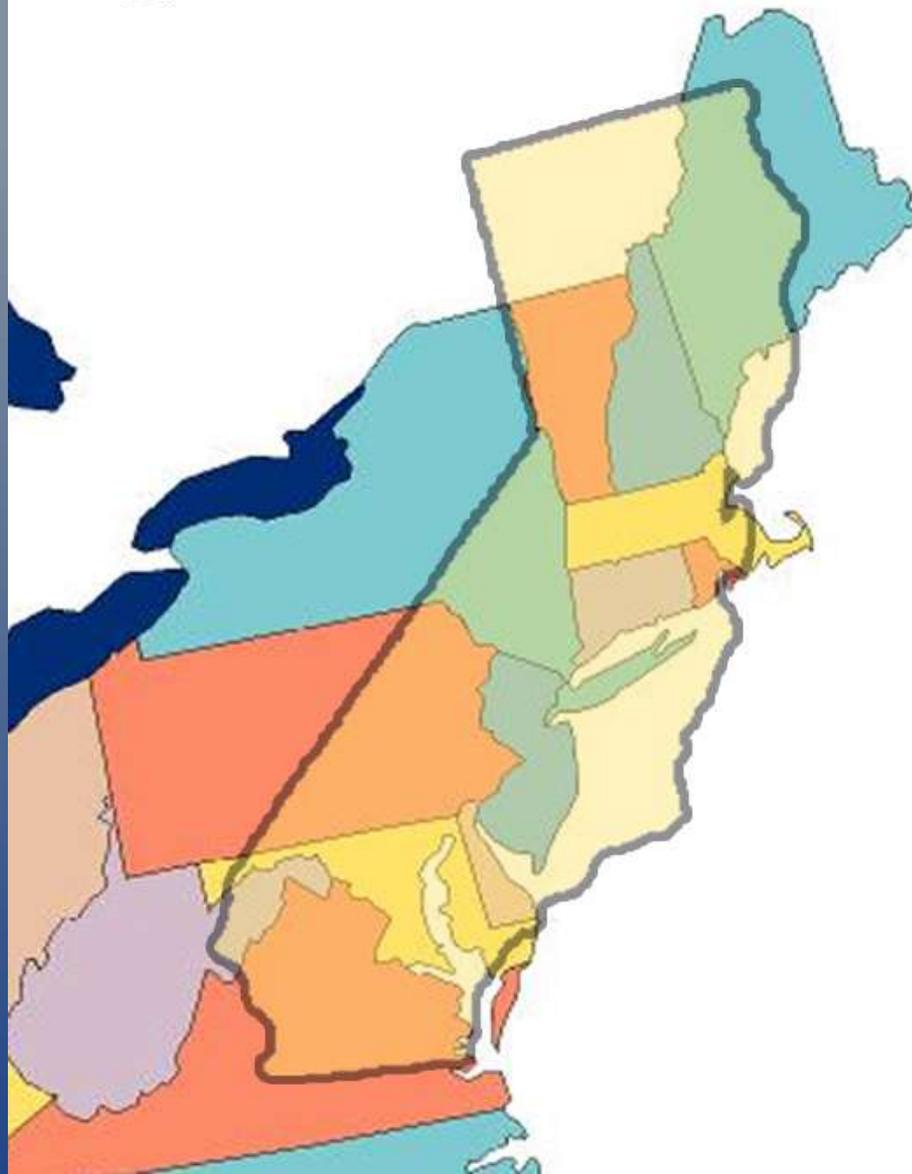
22% Environment

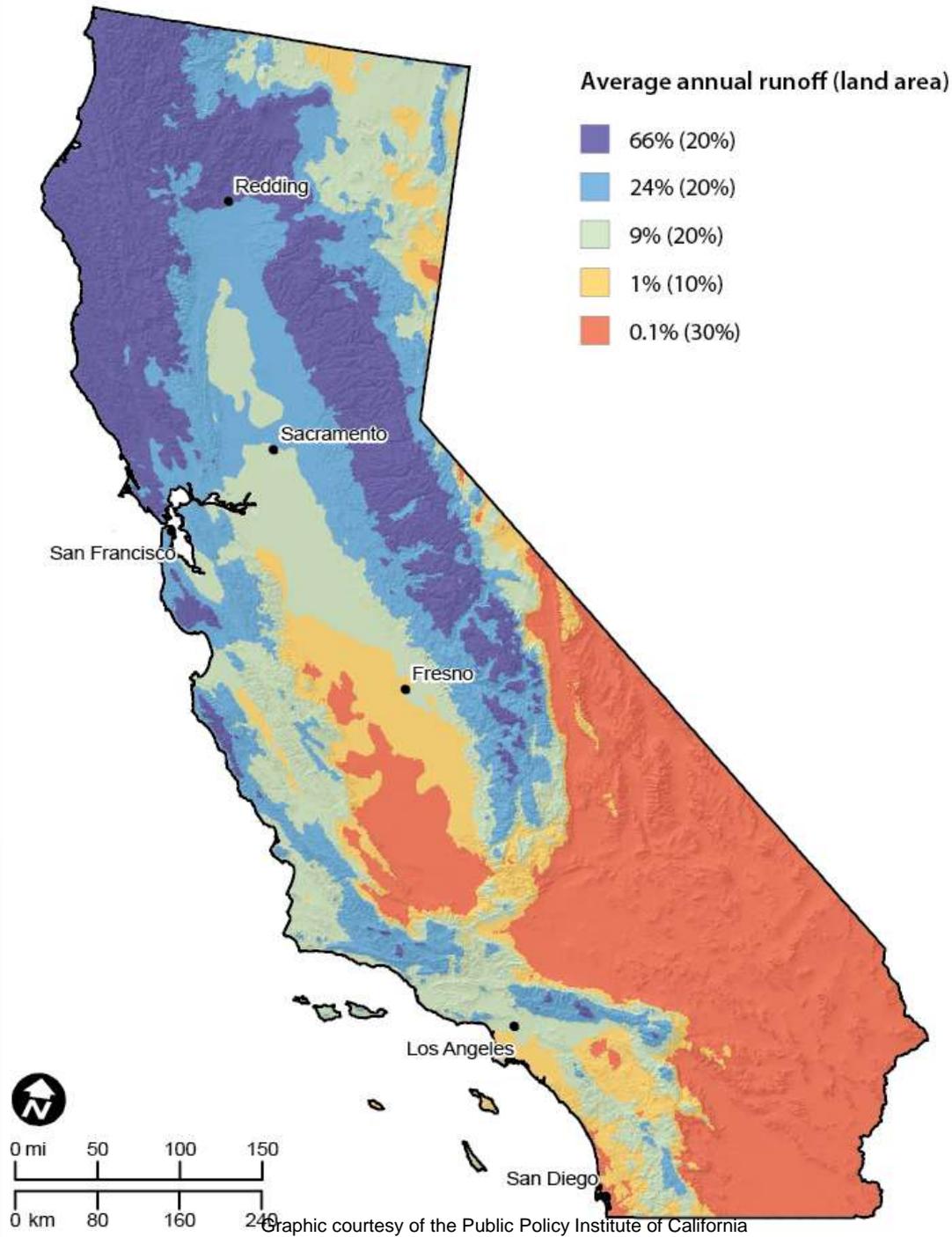
## Water = \$

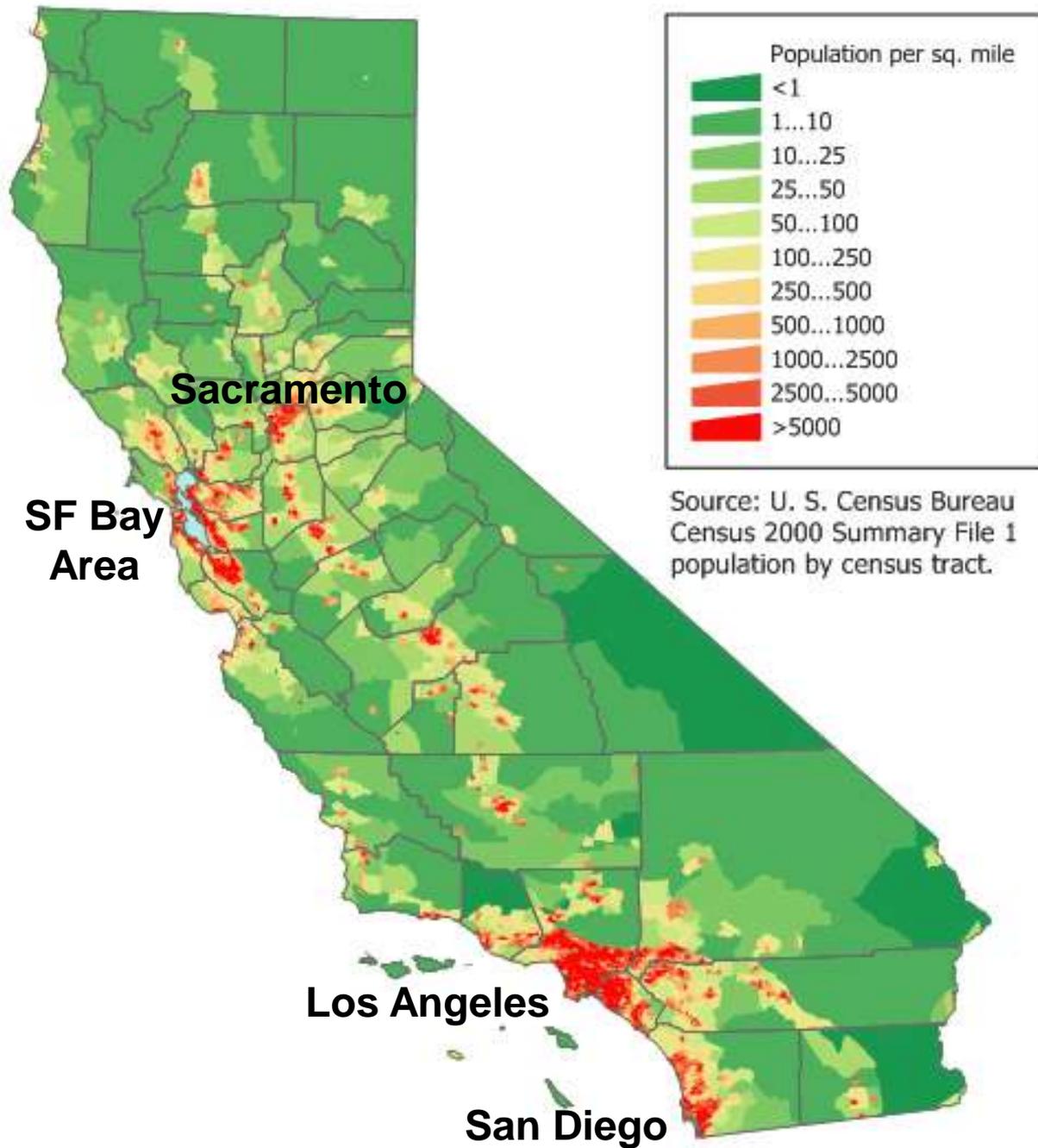
Irrigated Pasture	\$ 47/ac ft
Cotton	\$ 551/ac ft
Fruits & Nuts	\$ 1,500/ac ft
Truck Farming	\$ 5,363/ac ft



**More than 8 East Coast States  
could fit into 1 California!**







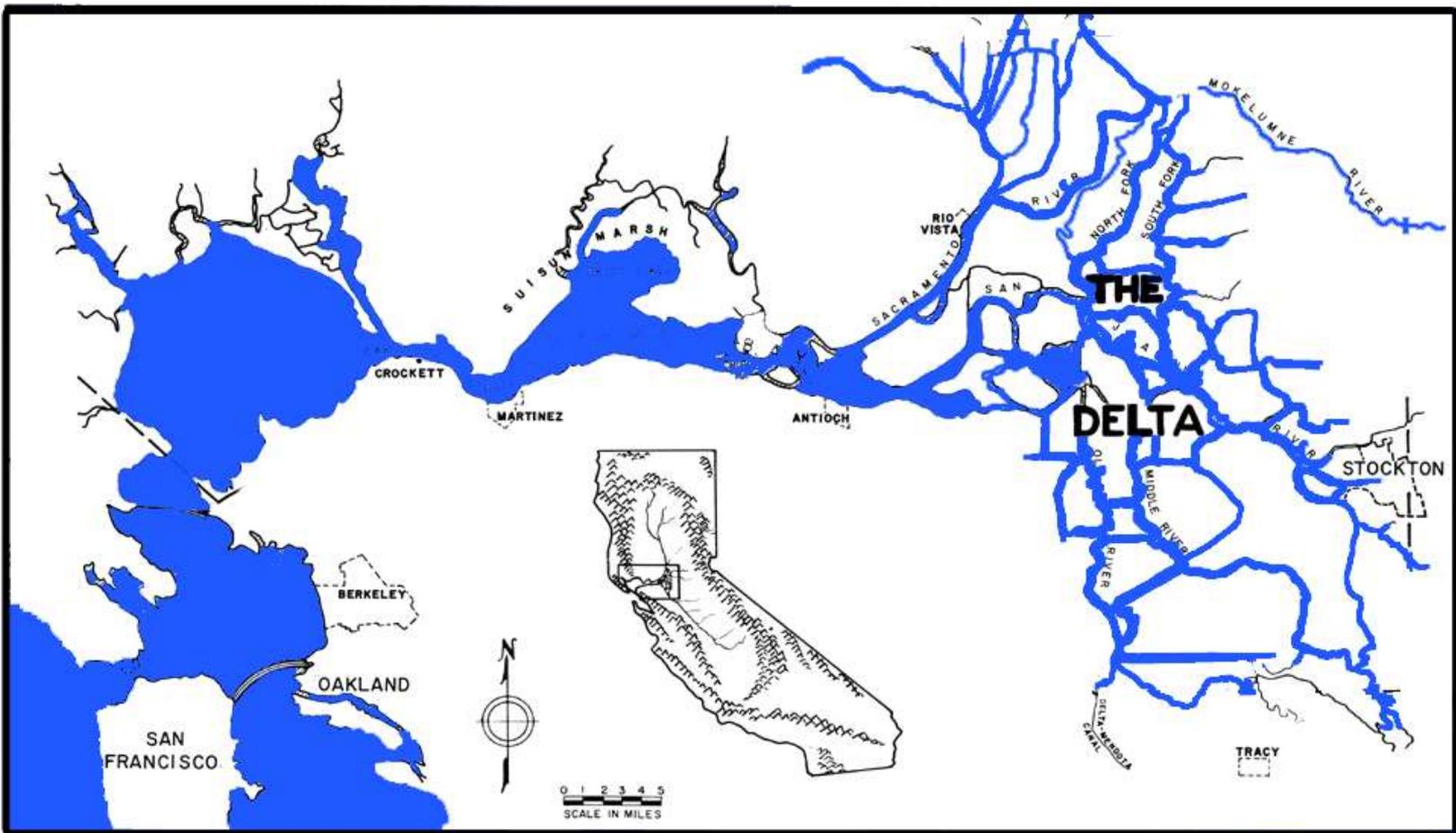
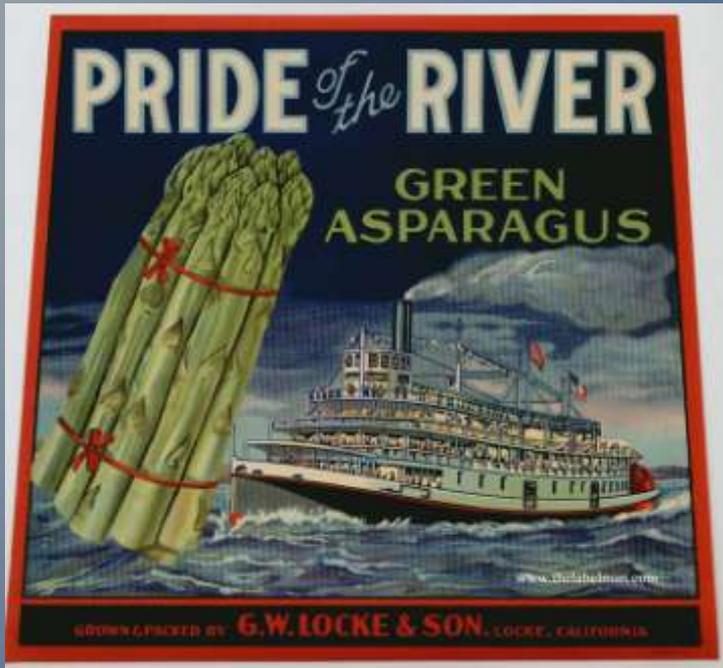


FIGURE 1. Map of the Sacramento-San Joaquin Estuary.

# Farmland Categories

Data Source: Farmland Mapping and Monitoring Program, 2004









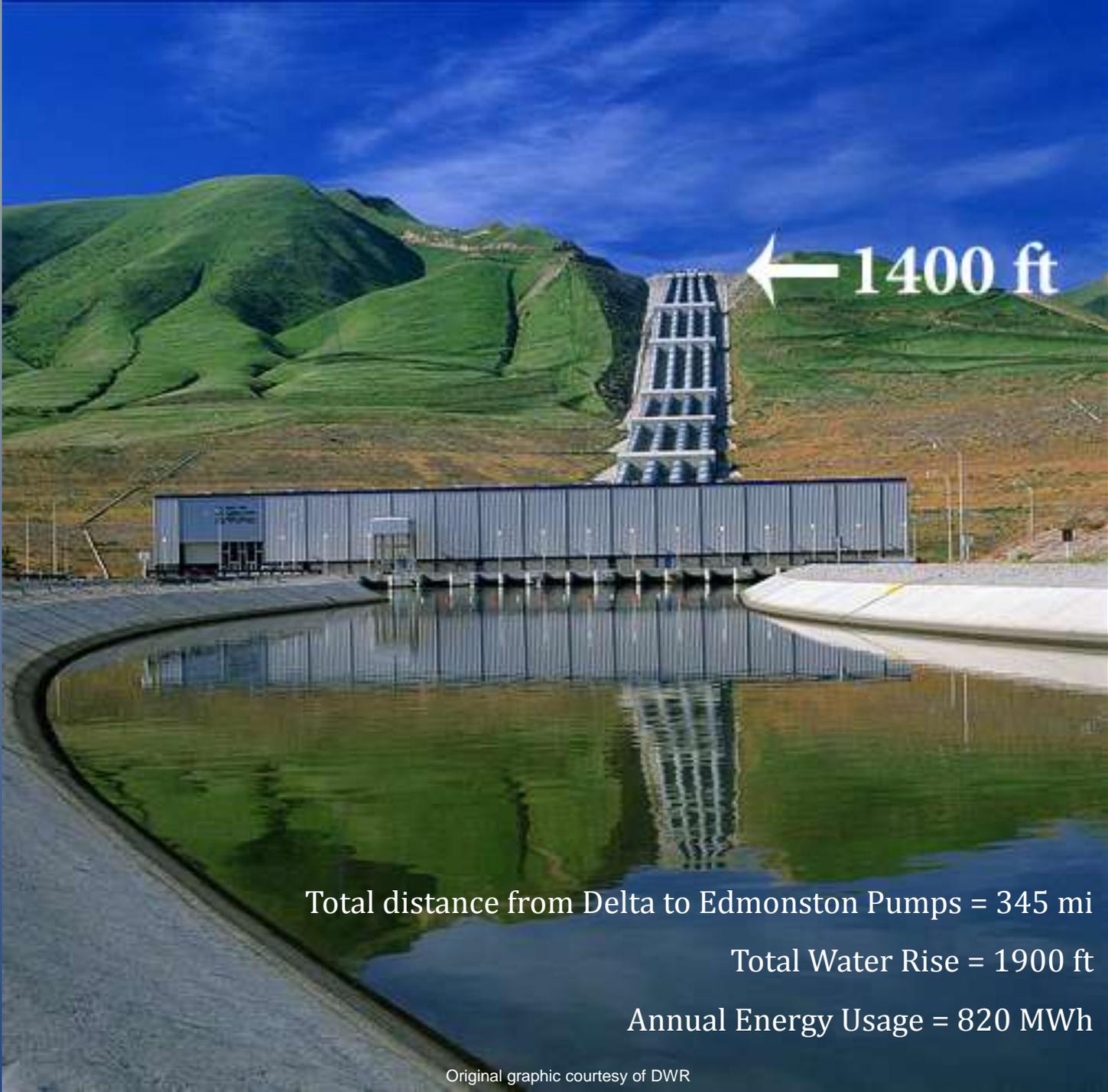






**Central Valley Project**  
**7 million acre-feet storage/year**  
**for 3 million acres of farmland**  
**and 2 million Californians**

**State Water Project**  
**3.5 million acre-feet storage/year**  
**600,000 acres of farmland**  
**20 million Californians**  
**70% to urban users**  
**30% to agriculture**



Total distance from Delta to Edmonston Pumps = 345 mi

Total Water Rise = 1900 ft

Annual Energy Usage = 820 MWh

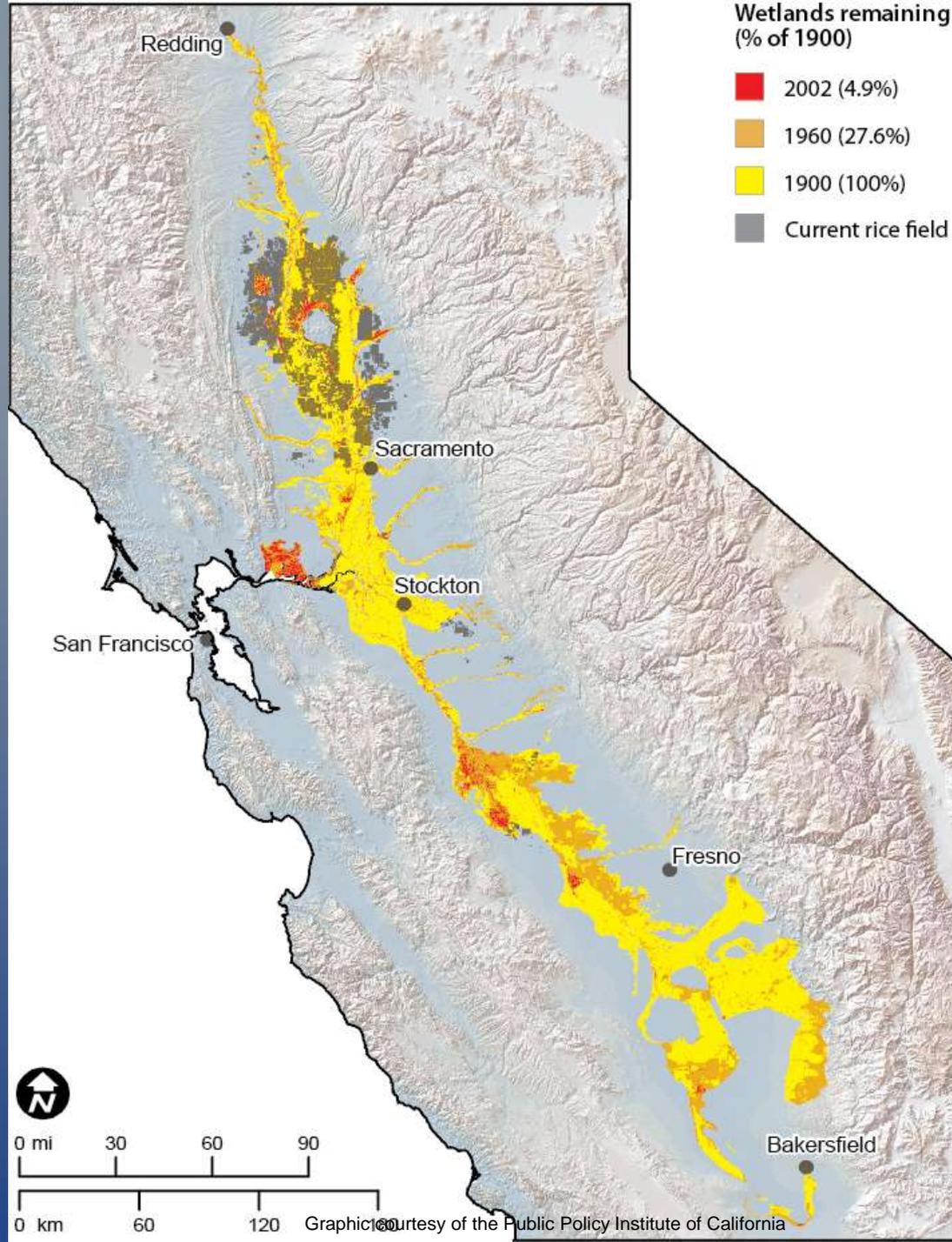
# The Bay-Delta Watershed and Major Water Projects

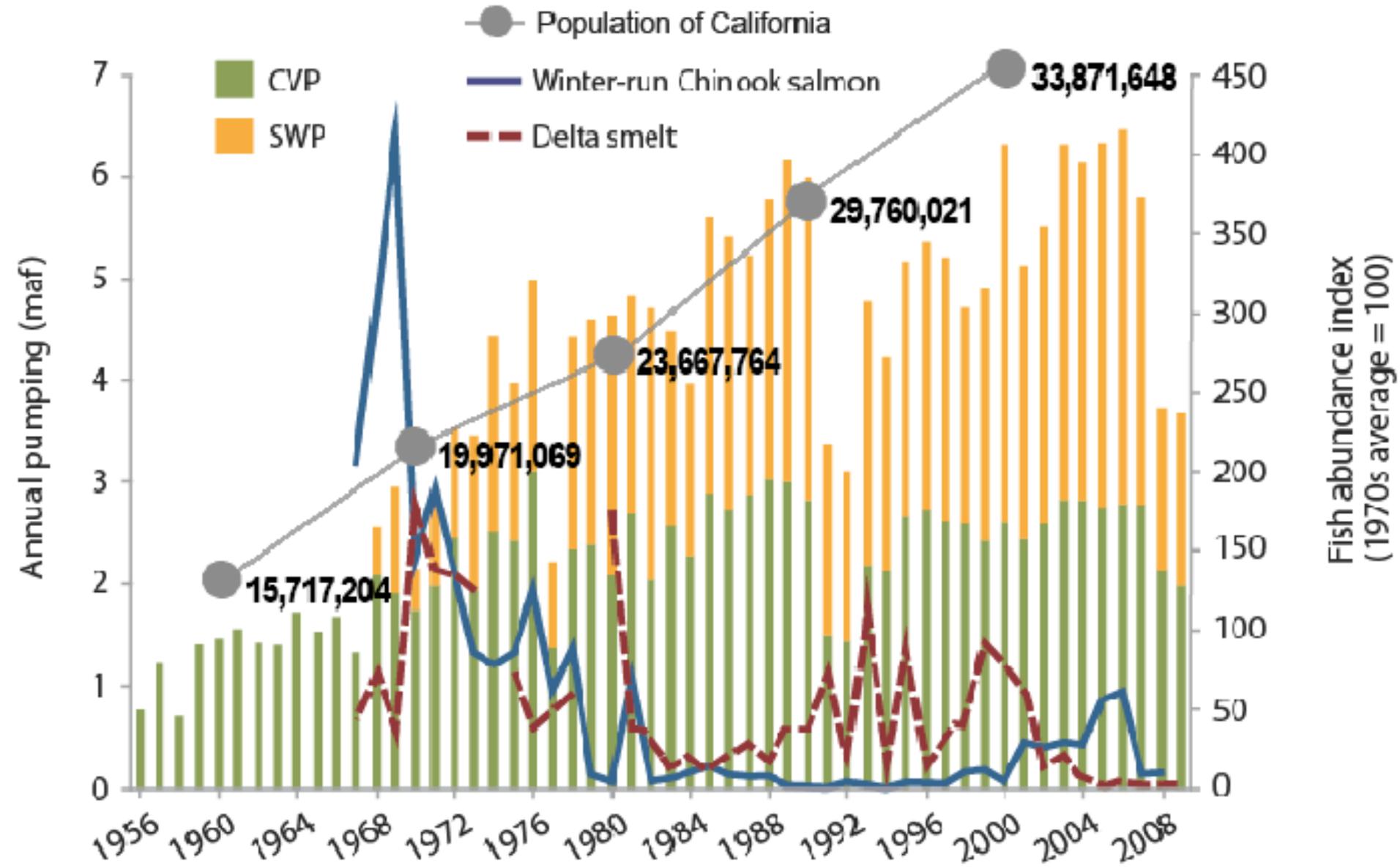


California's water system might have been  
invented by Soviet bureaucrat on an LSD trip.

Peter Passell,  
*New York Times*, 1991







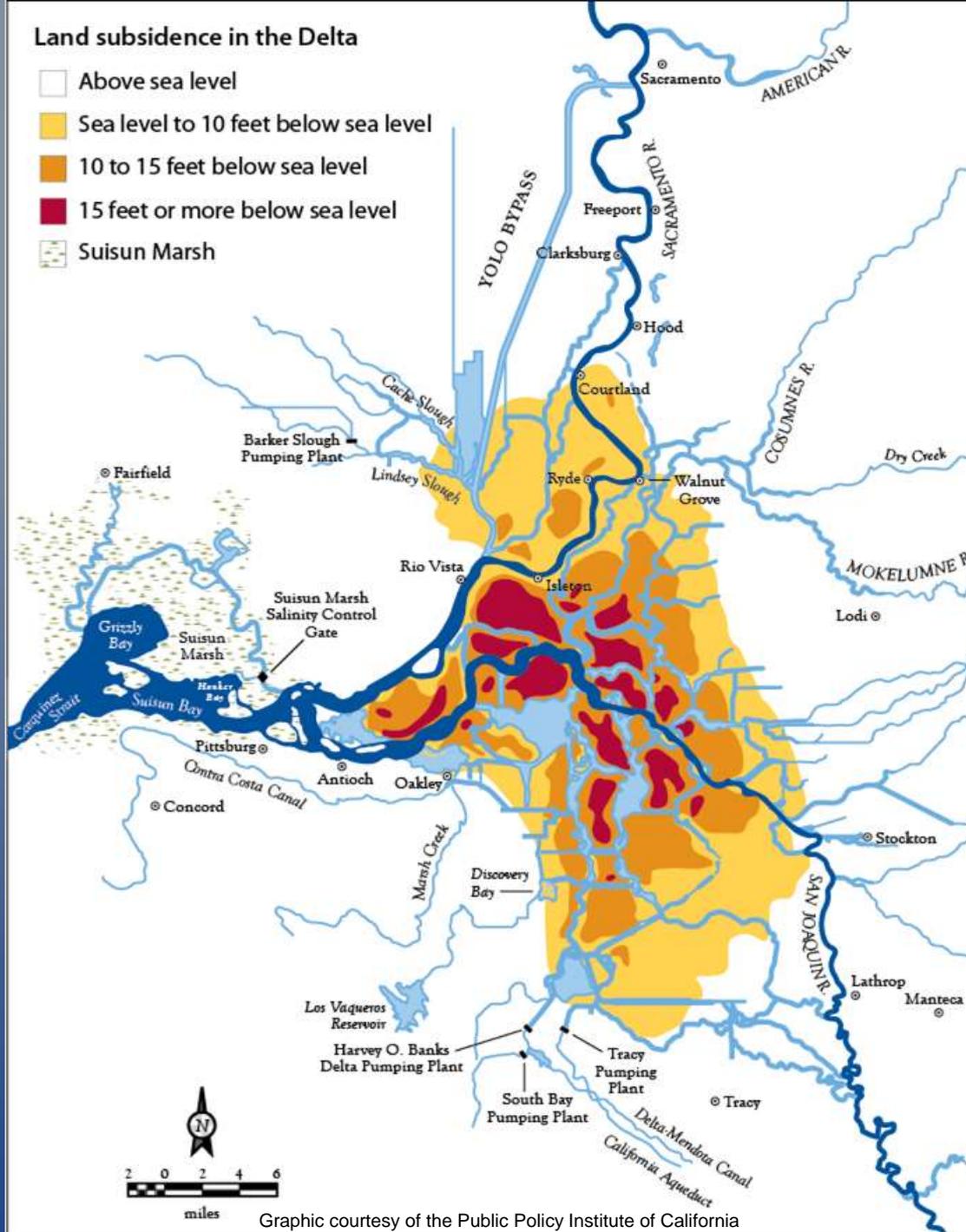
# Delta Smelt: The Canary in the Channel





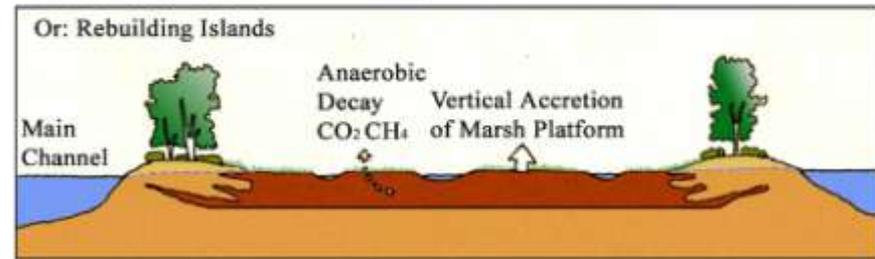
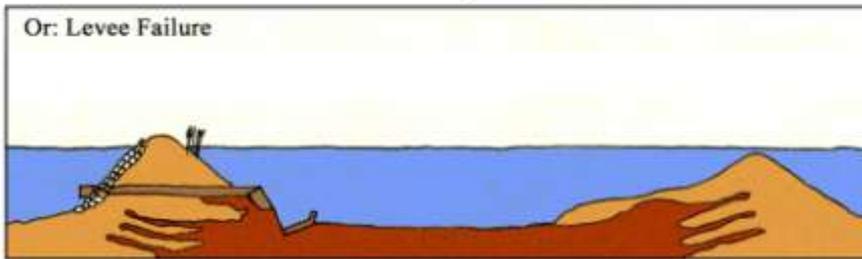
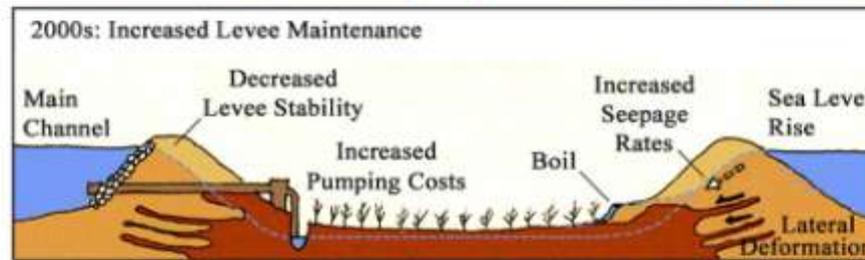
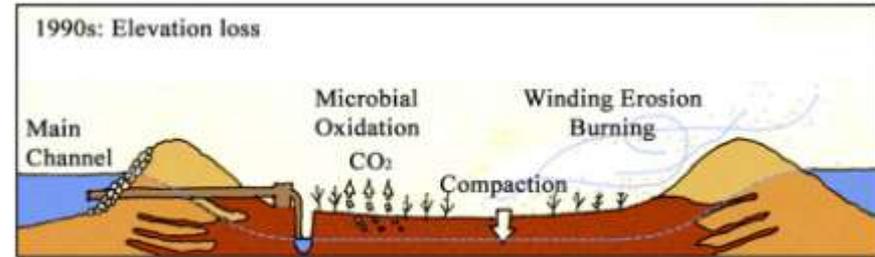
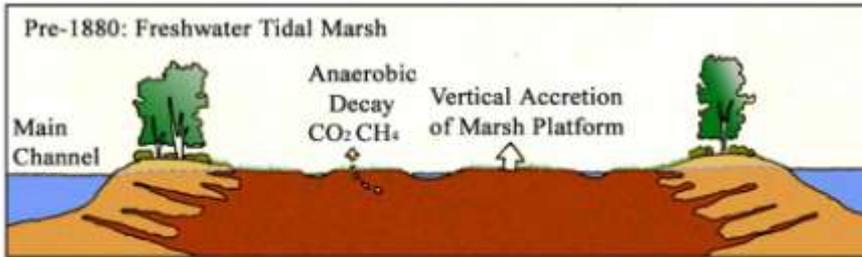
## Land subsidence in the Delta

- Above sea level
- Sea level to 10 feet below sea level
- 10 to 15 feet below sea level
- 15 feet or more below sea level
- Suisun Marsh



Graphic courtesy of the Public Policy Institute of California

Delta Island Subsidence



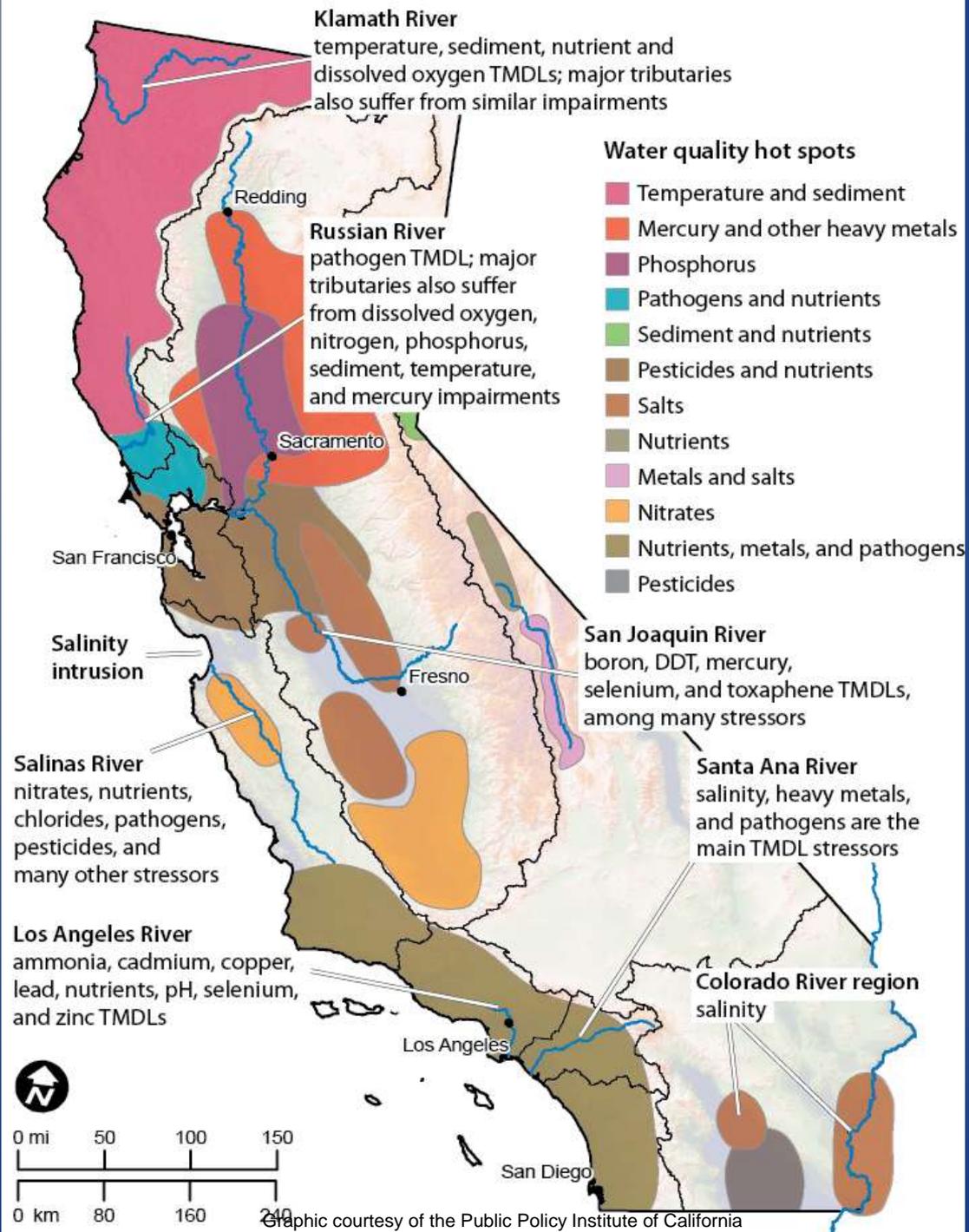


**PROTECT YOUR HEALTH:** DON'T EAT THE FISH CAUGHT HERE  
**¡AVISO! PROTEJA SALUD.** NO COMER, LOS PESCADOS DE ESTE LUGAR!  
**CIAM RAKSA LOH De BO** TA DWAQ KA TVIIQ GI MAH  
**TIV THAY KEY NOJ QAB HAUS HUV** TSIS TXHOB NOJ COV NTSES NUV THEEJ TSAM NO.  
**NEN BAO VE SUC KHOE:** ĐỪNG ĂN CÁ BÁT ĐƯỢC Ở ĐÂY  
**ការពារសុខភាពអ្នក** ហាមមិនឱ្យបរិភោគត្រីដែលចាប់នៅទីនេះ  
**ປ້ອງរក្សាសុខភាពខ្លួន** ហាមទៀបរំពេចប្រីរំពង

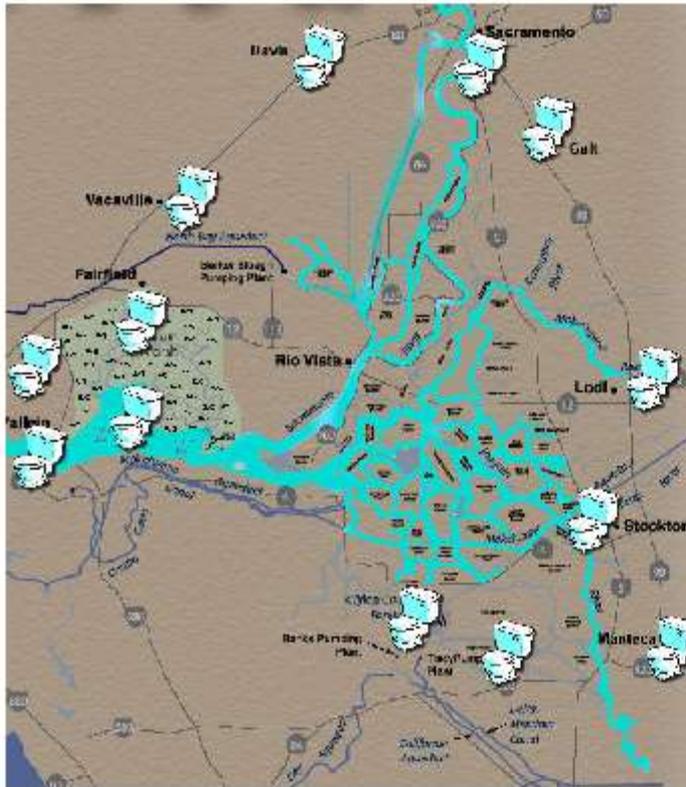


**PUBLIC HEALTH... (209) 468-3822**





# The Great Delta Toilet Bowl

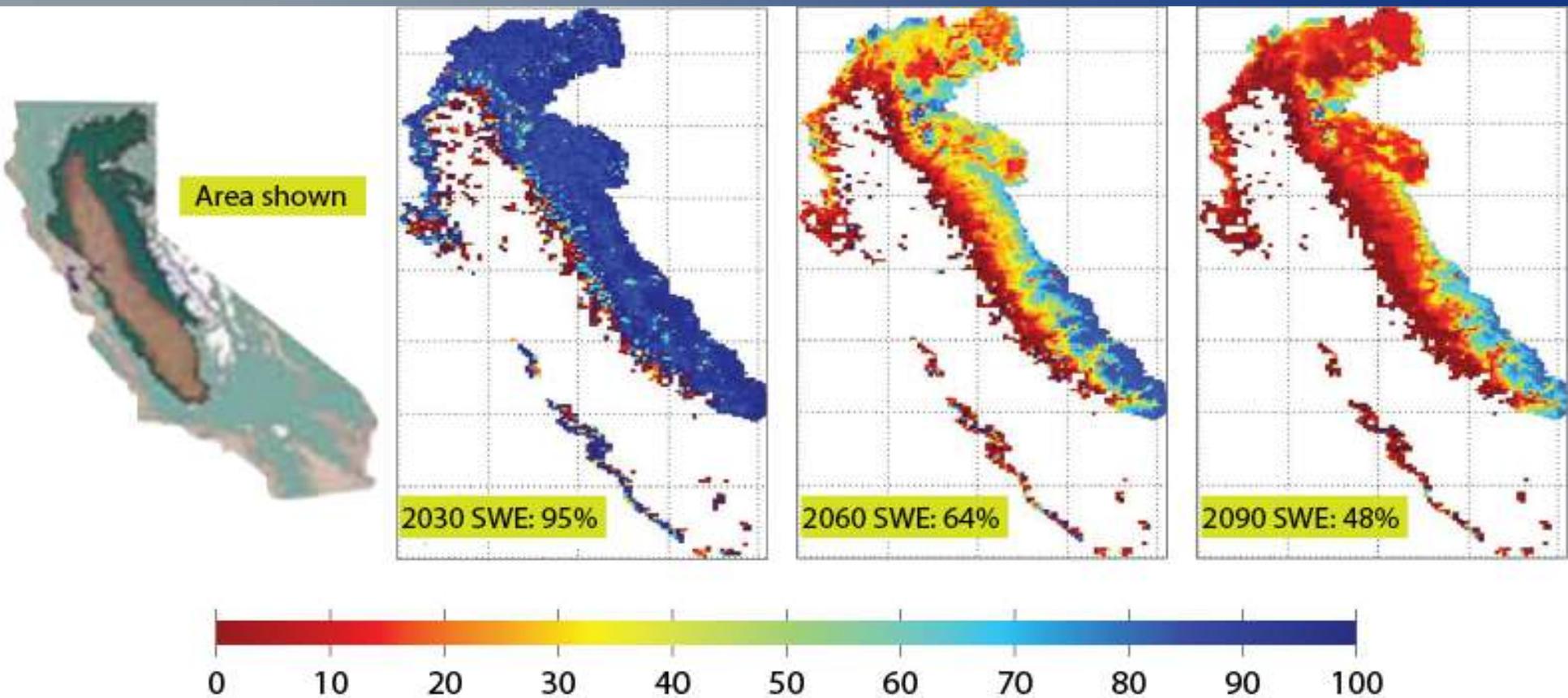


**Major Wastewater Dischargers  
In and Around the Delta**

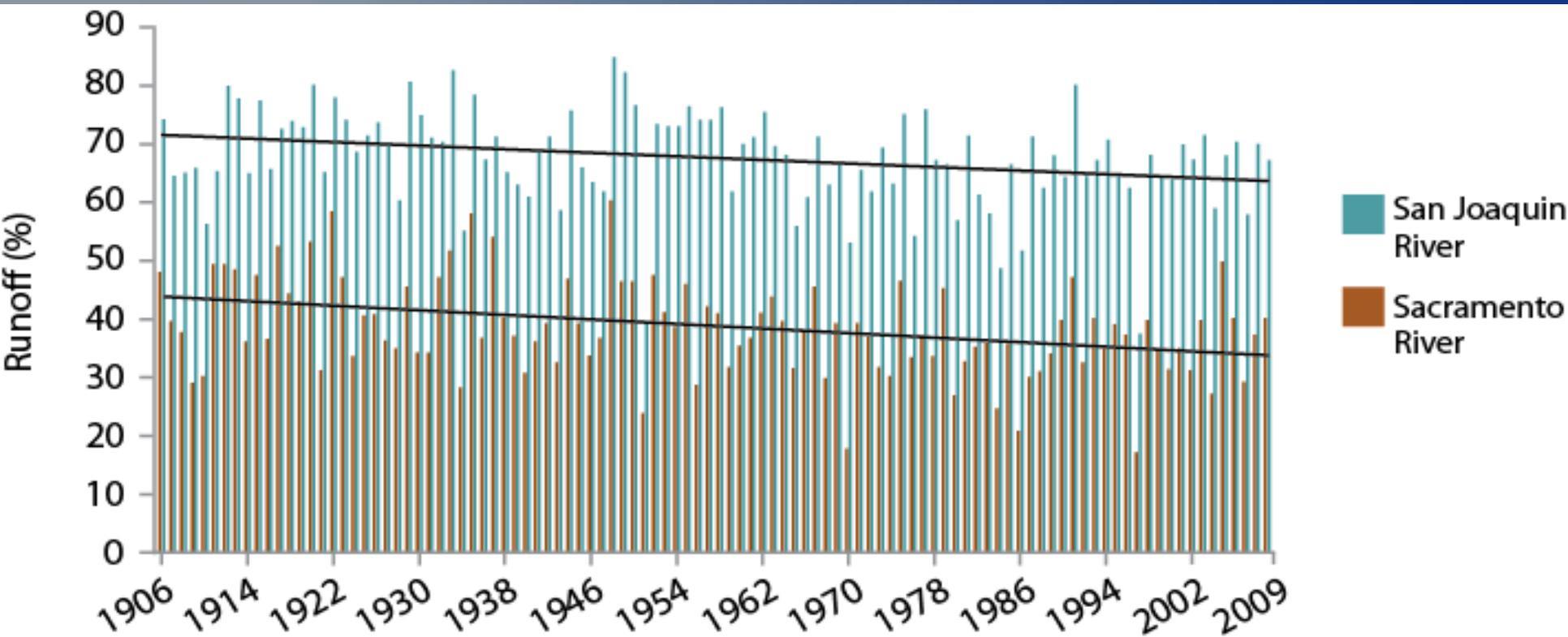
<b>City/ Wastewater Facility</b>	<b>Design Permit Flow: (million gallons/day)</b>
<b>Sacramento</b> Sacramento Regional Wastewater Treatment Plant	<b>181 mgd</b>
<b>Davis</b> Davis Wastewater Treatment Plant	<b>7.5 mgd</b>
<b>Galt</b> City of Galt Wastewater Treatment Plant	<b>3 mgd</b>
<b>Vacaville</b> Easterly Wastewater Treatment Plant	<b>15 mgd</b>
<b>Fairfield</b> FFSD Sub Regional Wastewater Treatment Plant	<b>17.5 mgd</b>
<b>Benicia</b> Benicia Wastewater Treatment Plant	<b>4.5 mgd</b>
<b>Vallejo</b> Vallejo SFCO Wastewater Treatment Plant	<b>15.5 mgd</b>
<b>Martinez</b> Central Contra Costa SD Wastewater Treatment Plant	<b>53.8 mgd</b>
<b>Lodi*</b> White Slough Water Pollution Control Facility	<b>8.5 mgd</b>
<b>Stockton</b> Stockton Regional Wastewater Control Facility	<b>55 mgd</b>
<b>Mountain House*</b> Mountain House Wastewater Treatment Plant	<b>5.4 mgd</b>
<b>Tracy*</b> Tracy Wastewater Treatment Plant	<b>16 mgd</b>
<b>Manteca</b> Manteca Wastewater Quality Control Facility	<b>6.95 mgd</b>
<b>TOTAL 389.65 mgd</b>	

\* denotes tertiary treatment

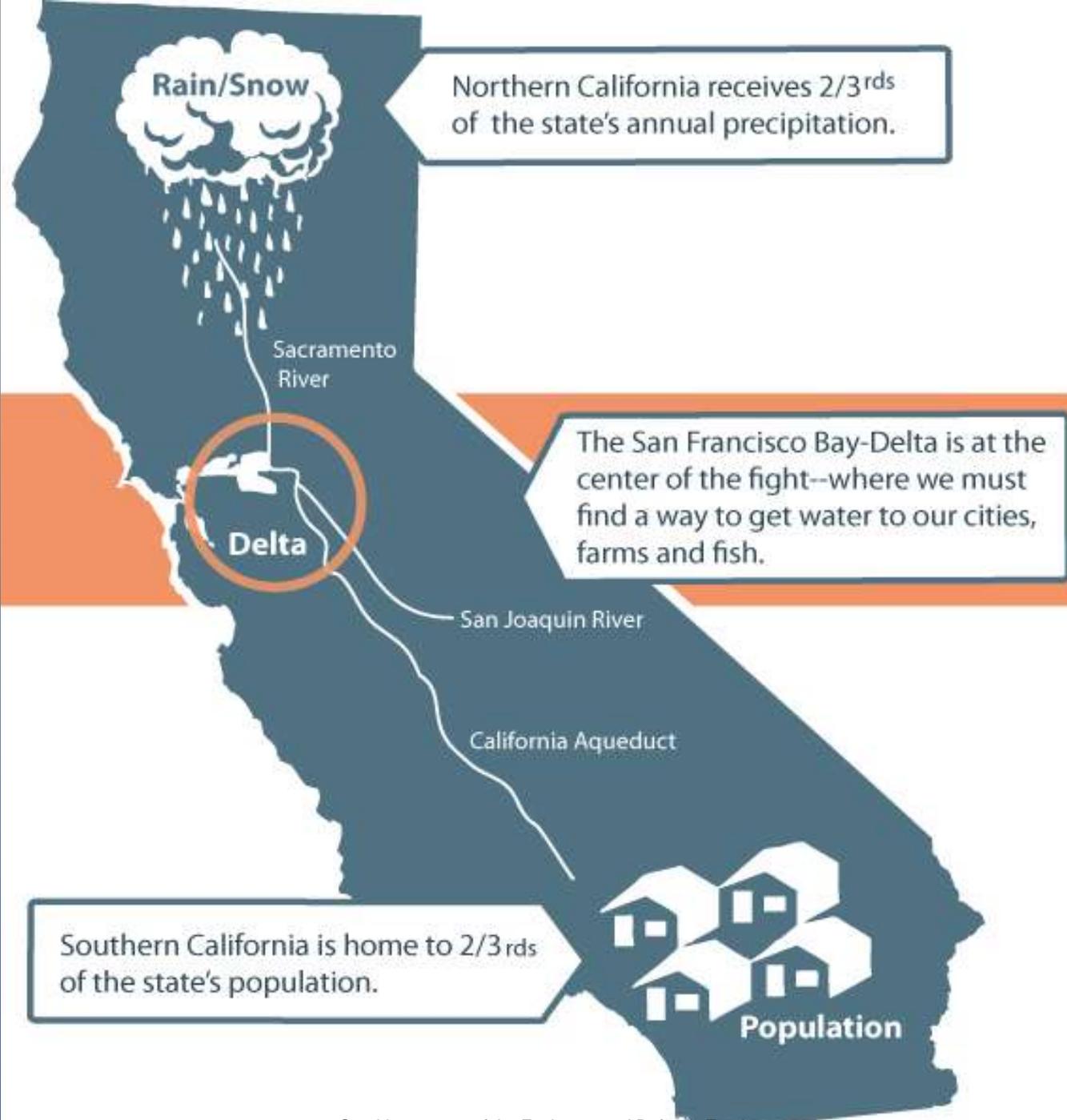




Impact of Temperature Rise on Snowpack



Spring and summer runoff as a share of annual runoff



DRAFT

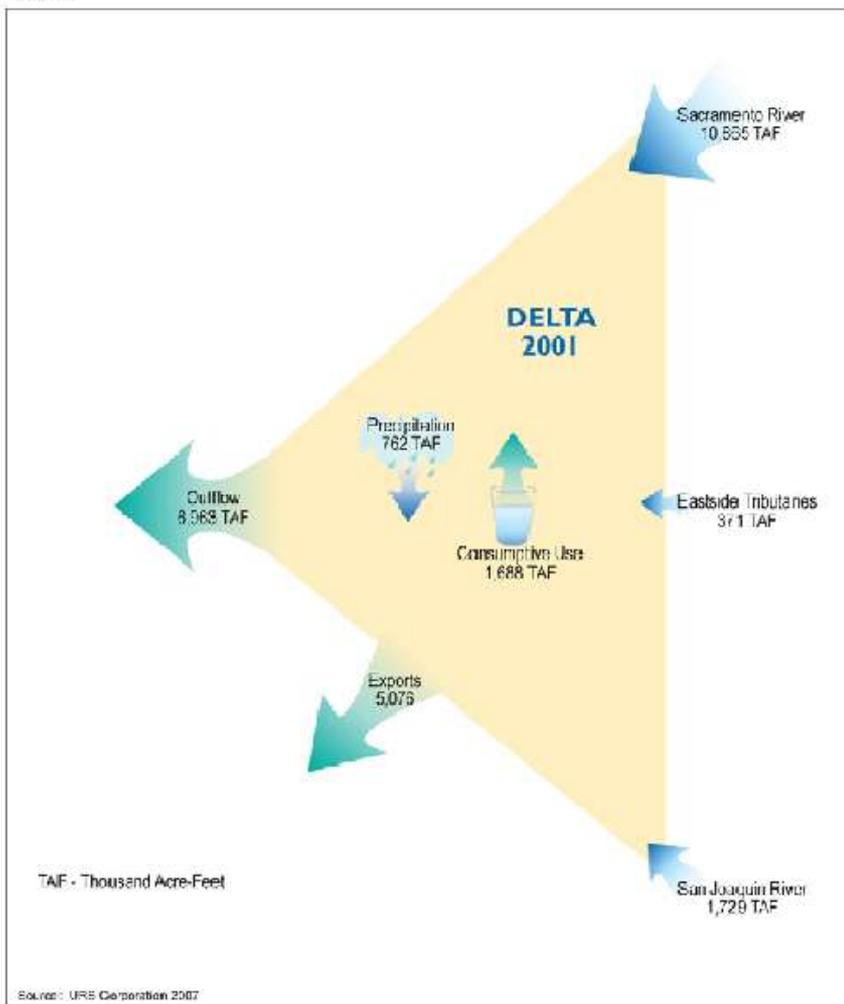


Figure 2-13. Example Delta Water Balance for 2001 Water Year, a Dry Water Year

DRAFT

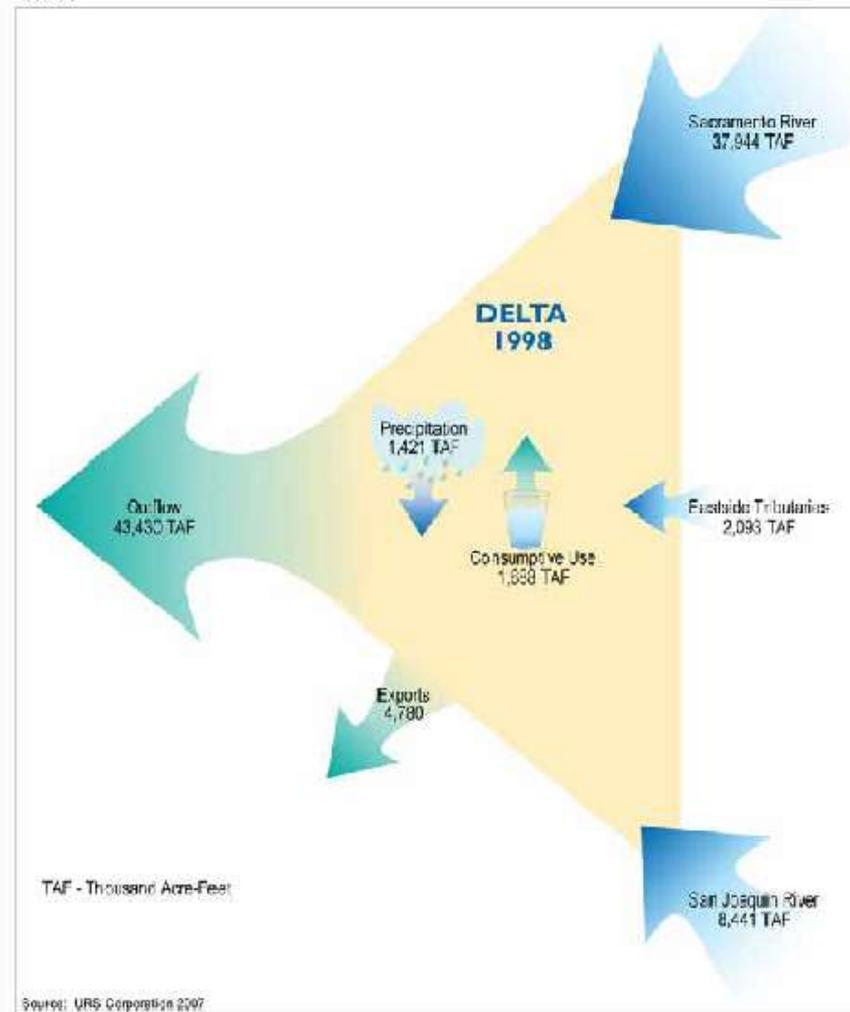
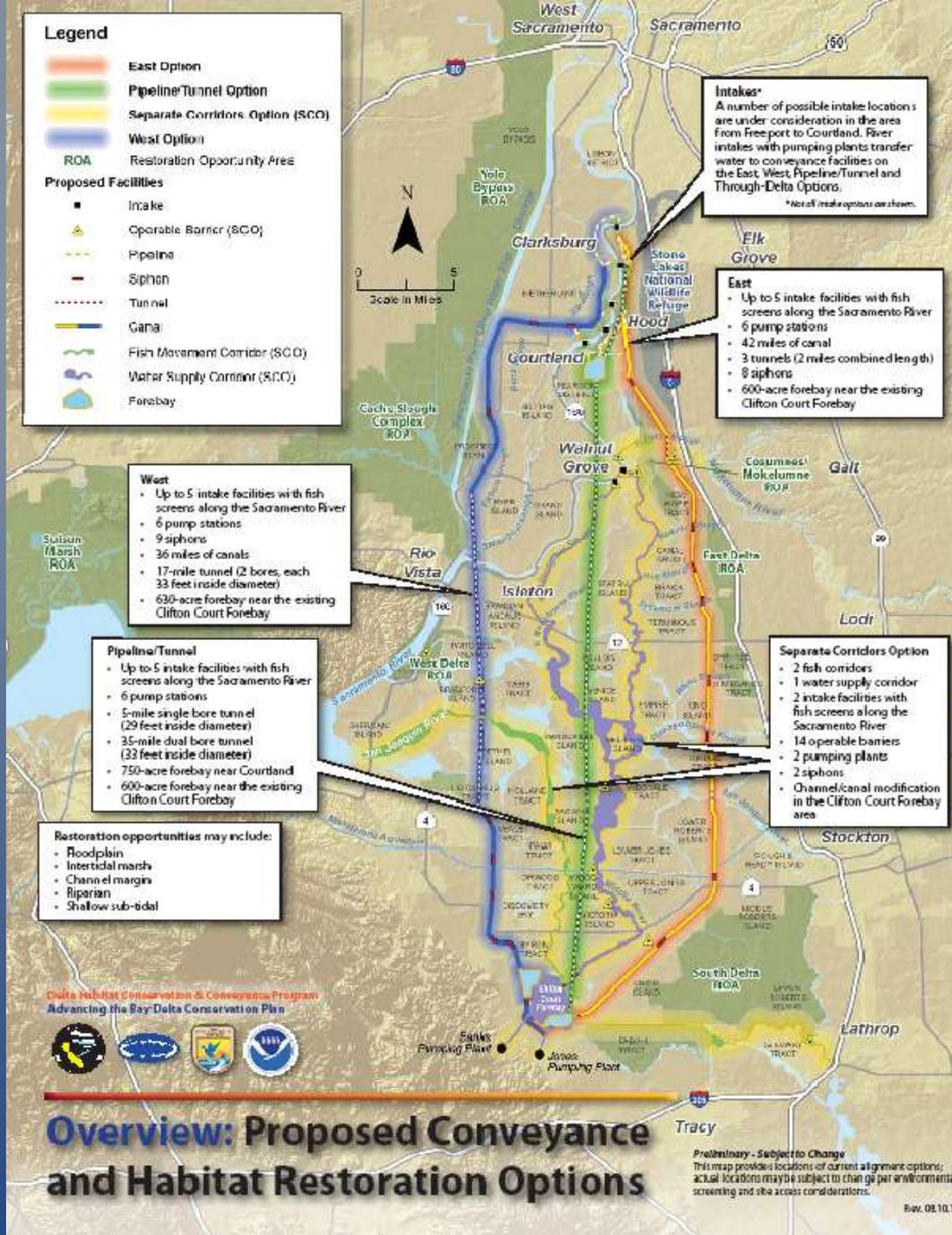
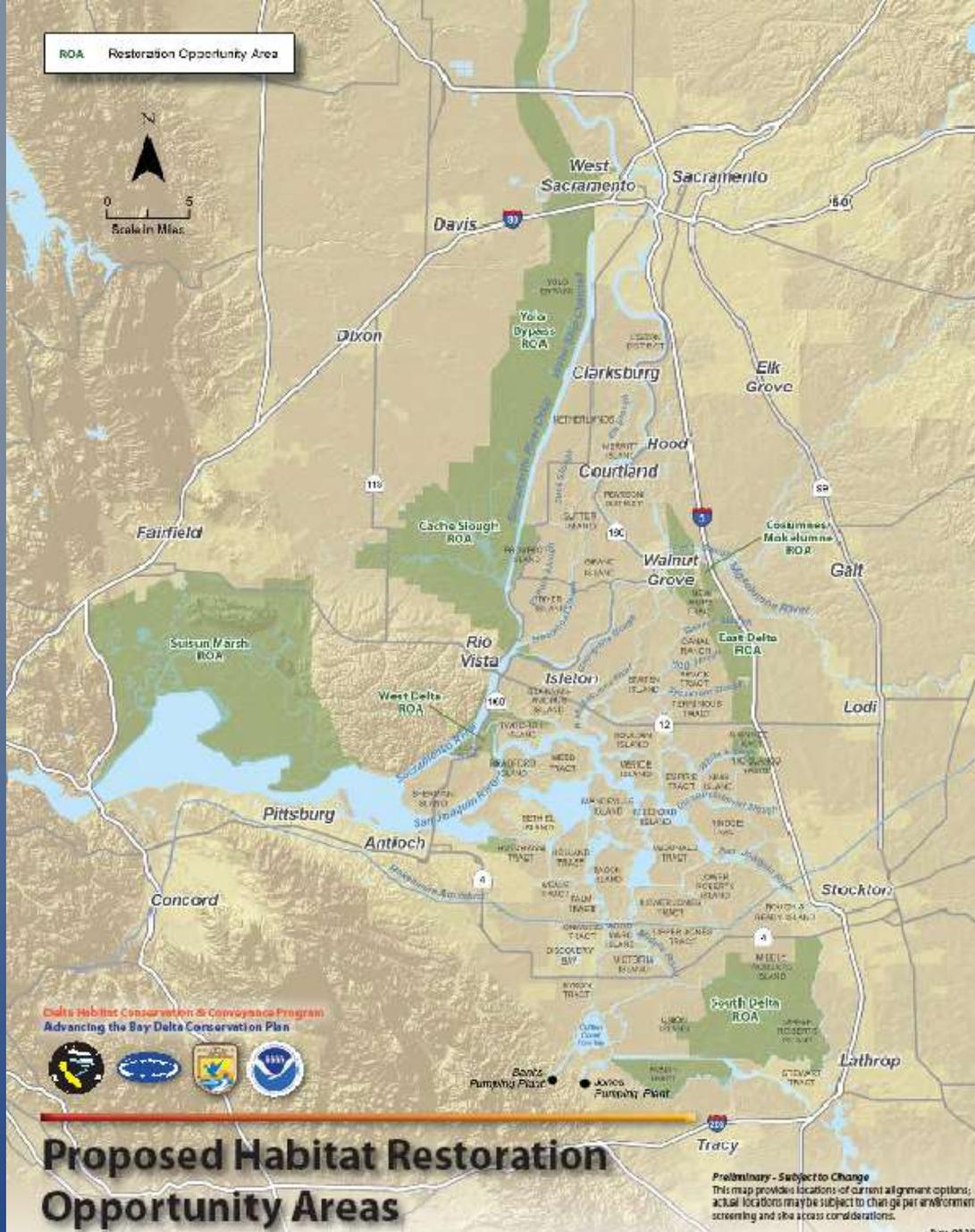


Figure 2-11. Example Delta Water Balance for 1998 Water Year (Wet Water Year)





ROA Restoration Opportunity Area



Delta Habitats Conservation & Connectivity Program  
Advancing the Bay Delta Conservation Plan

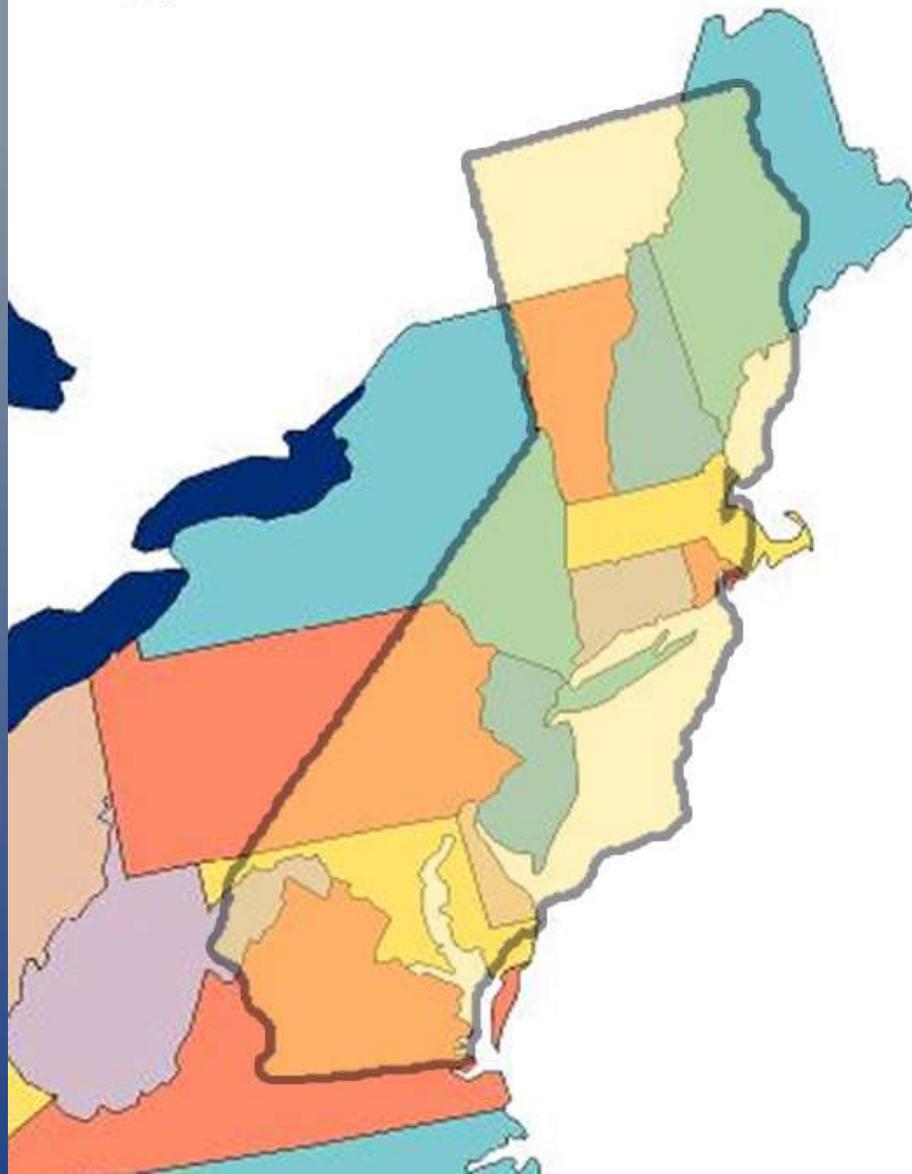


# Proposed Habitat Restoration Opportunity Areas

Preliminary - Subject to Change  
This map provides locations of current alignment options; actual locations may be subject to change per environmental screening and site access considerations.



**More than 8 East Coast States  
could fit into 1 California!**





# Political Clout = Environmental Responsiveness

## **Chesapeake Bay**

Population	9,900,000
US Senators	6
Congressional Reps	19

## **Sacramento – San Joaquin Delta**

Population	37,000,000
US Senators	2
Congressional Reps	
North of SJ Valley	22
South of SJ Valley	31

QUESTIONS?