

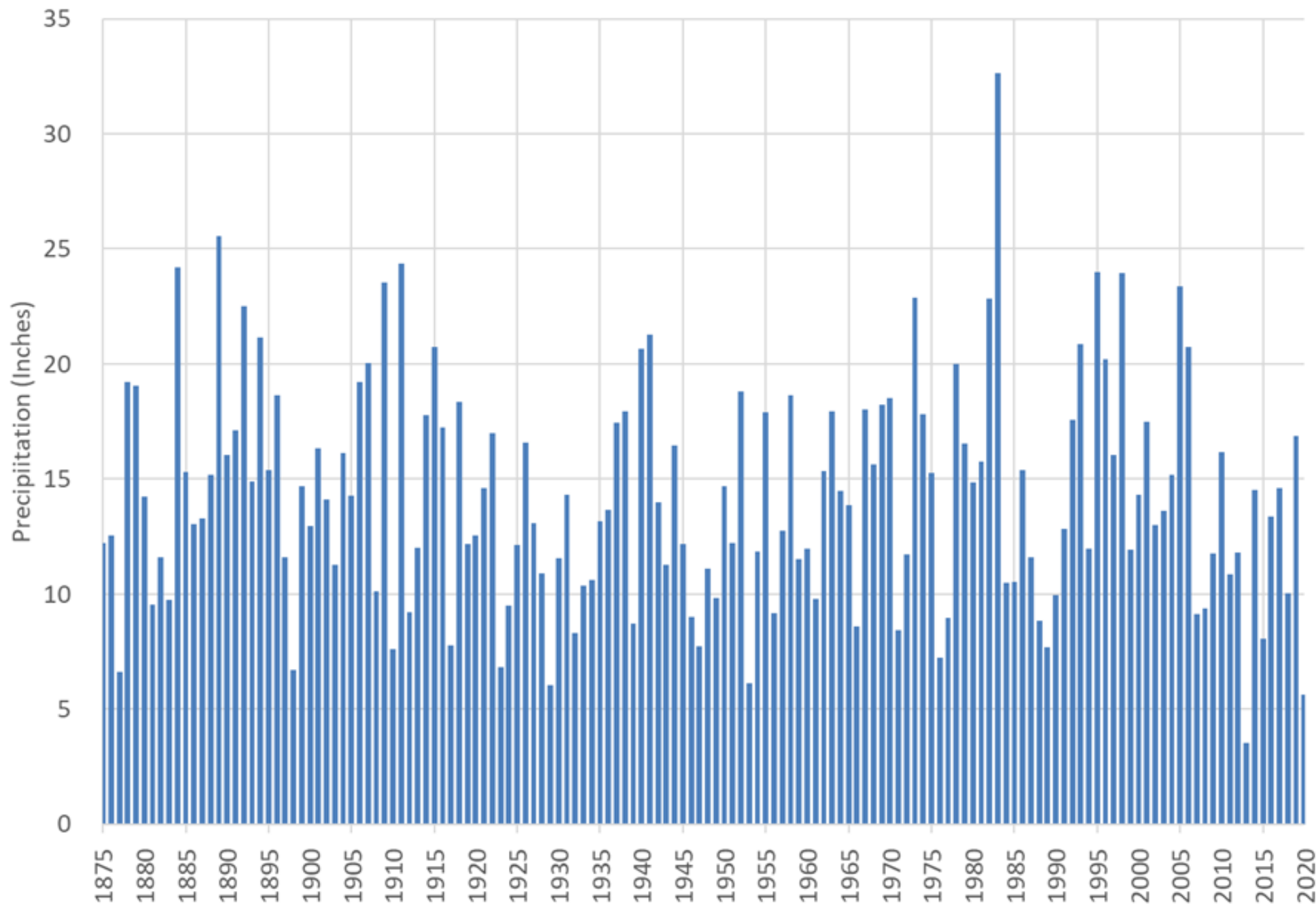
# Water Supply in the West

National Waterways Conference  
Annual Meeting - September 2021

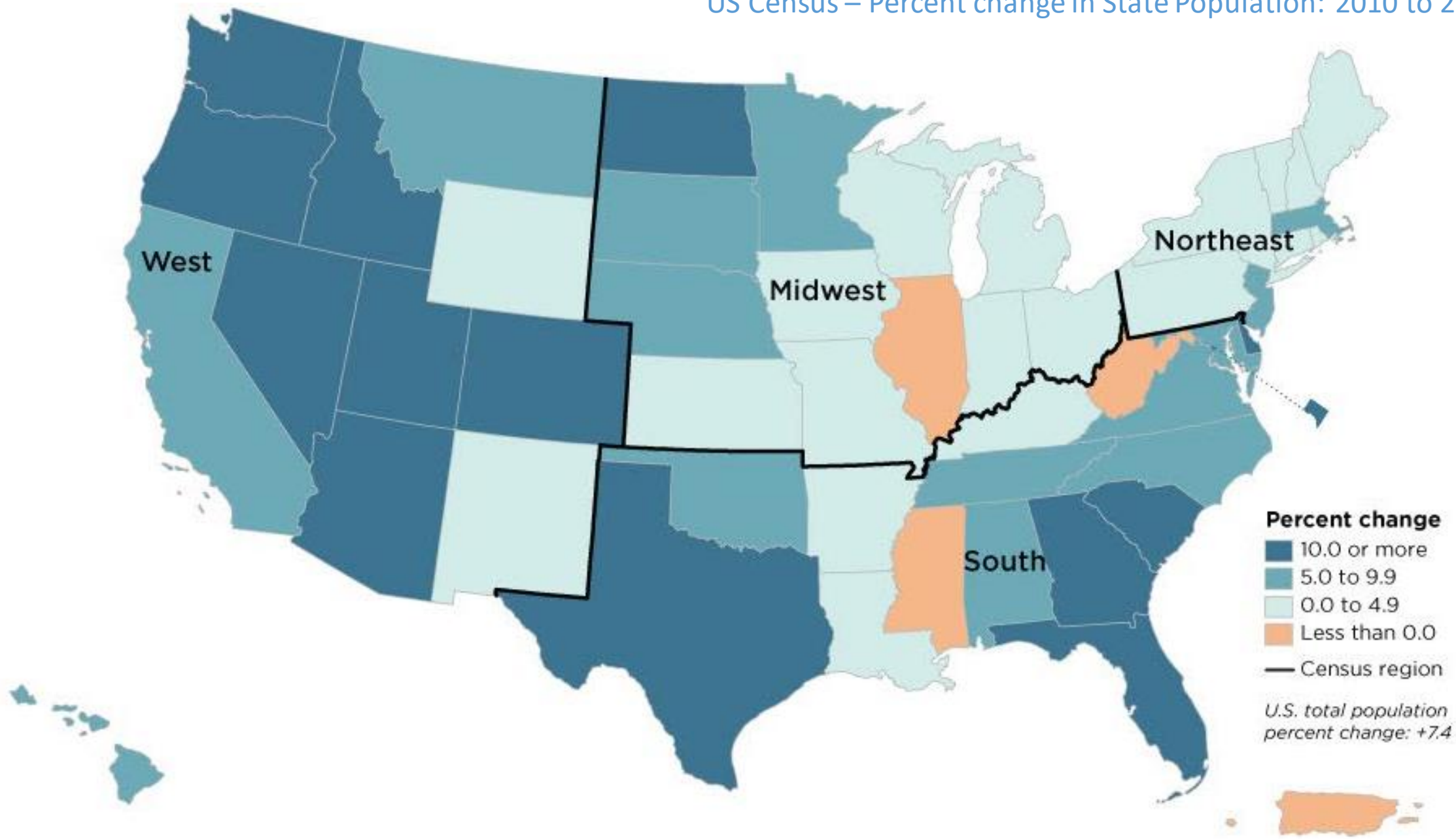


Dorothea Lange / Library of Congress

Historical Yearly Precipitation at City of San José



# US Census – Percent change in State Population: 2010 to 2020



# Need for Federal Assistance

## USACE and USBR

(Because just one would be too easy)

# US Bureau of Reclamation

Reclamation Act of 1902

“Reclaim arid lands for agriculture”

Expanded for multiple purposes

# US Bureau of Reclamation

17 Western States

491 Dams

8000+ Miles of canal

53 Hydroelectric power plants

\$1.66B FY2020

1 in every 5 farmer in the west

# US Bureau of Reclamation



- ▲ Regional office
- ★ Denver office



# US Bureau of Reclamation

Hoover Dam

California Central Valley Project

Glen Canon Dam

Grand Coulee Dam

Columbia River Basin Project

# US Bureau of Reclamation

Traditional Reclamation projects

WIIN Act Section 4007

WaterSMART

Title XVI Water Recycling/Reuse

# California Water Right

## Riparian & Appropriative

(Because just one would be too easy)

# California Water System

**State (SWP) & Federal (CVP)**

(Because just one would be too easy)

# State Water Project (California)



# California – State Water Project

26M	people
750K acres	farmland
32	storage facilities
700 miles	aqueduct
20	pumping plants
4.2 MAF	capacity
1.8-2.3 MAF	typical deliveries
29	public agencies

# Oroville

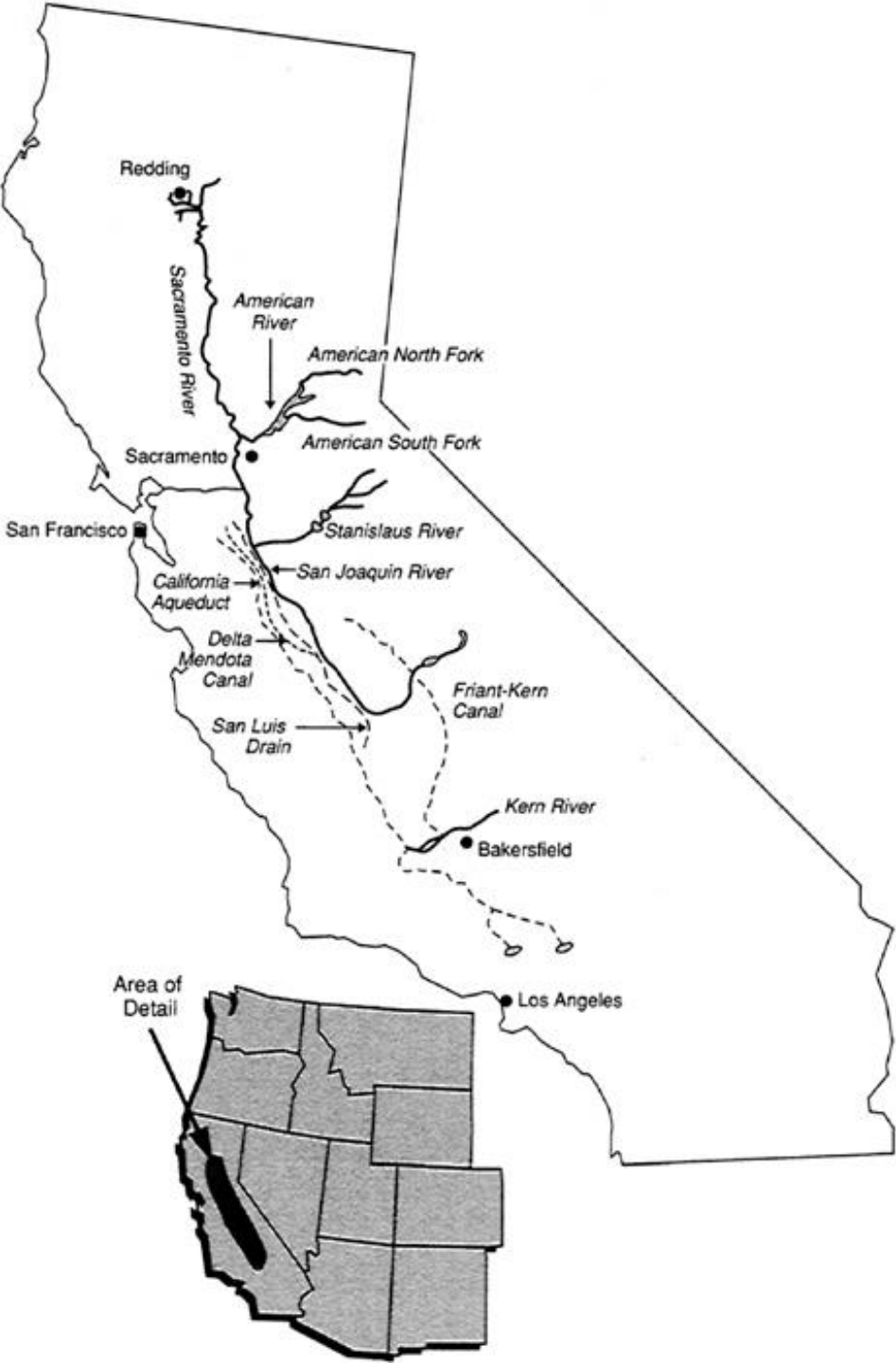


# Oroville





# Central Valley Project (federal)



# Federal – Central Valley Project

5 billion kilowatt hours generated

Water transported 450 miles

Averted \$5 billion in flood damages (since 1950)

# Shasta

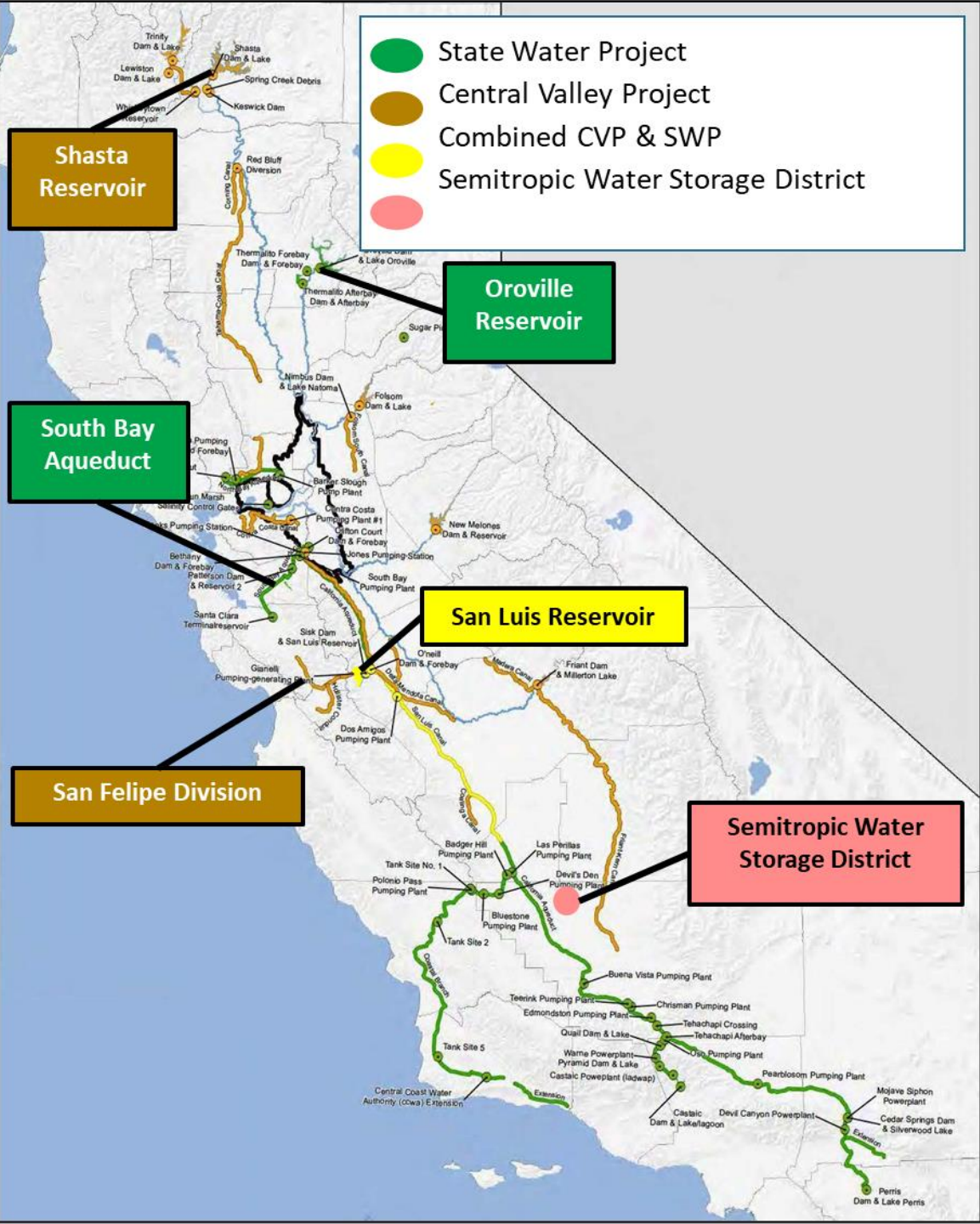


# Shasta



**CENTRAL VALLEY PROJECT AND  
STATE WATER PROJECT CANALS  
SAN JOAQUIN VALLEY, CALIFORNIA**





# Challenges

Drought

Flood

Endangered Species

Instream flows / Environmental flows

Subsidence

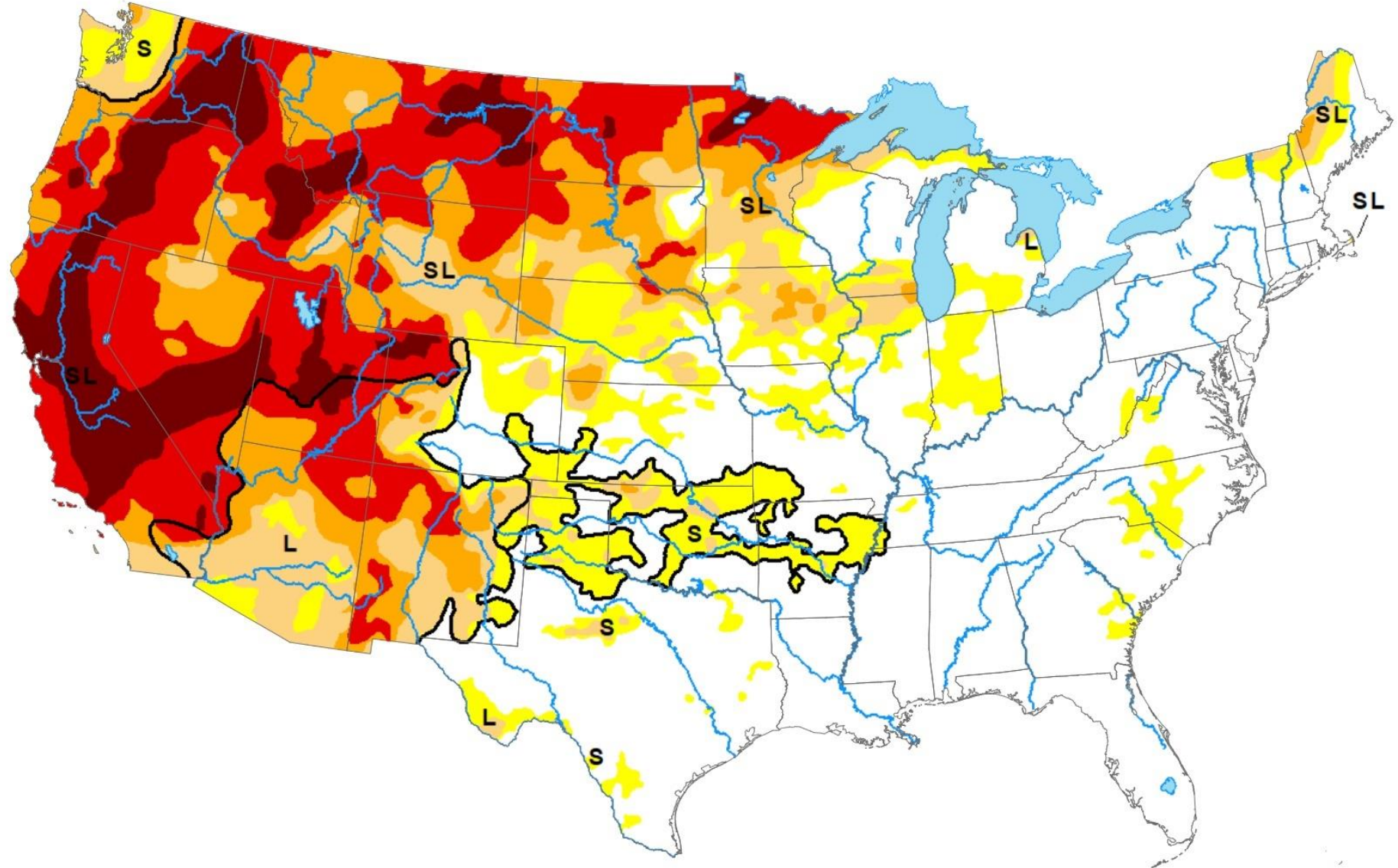
PFAS, Chromium...

Climate change

Access to water

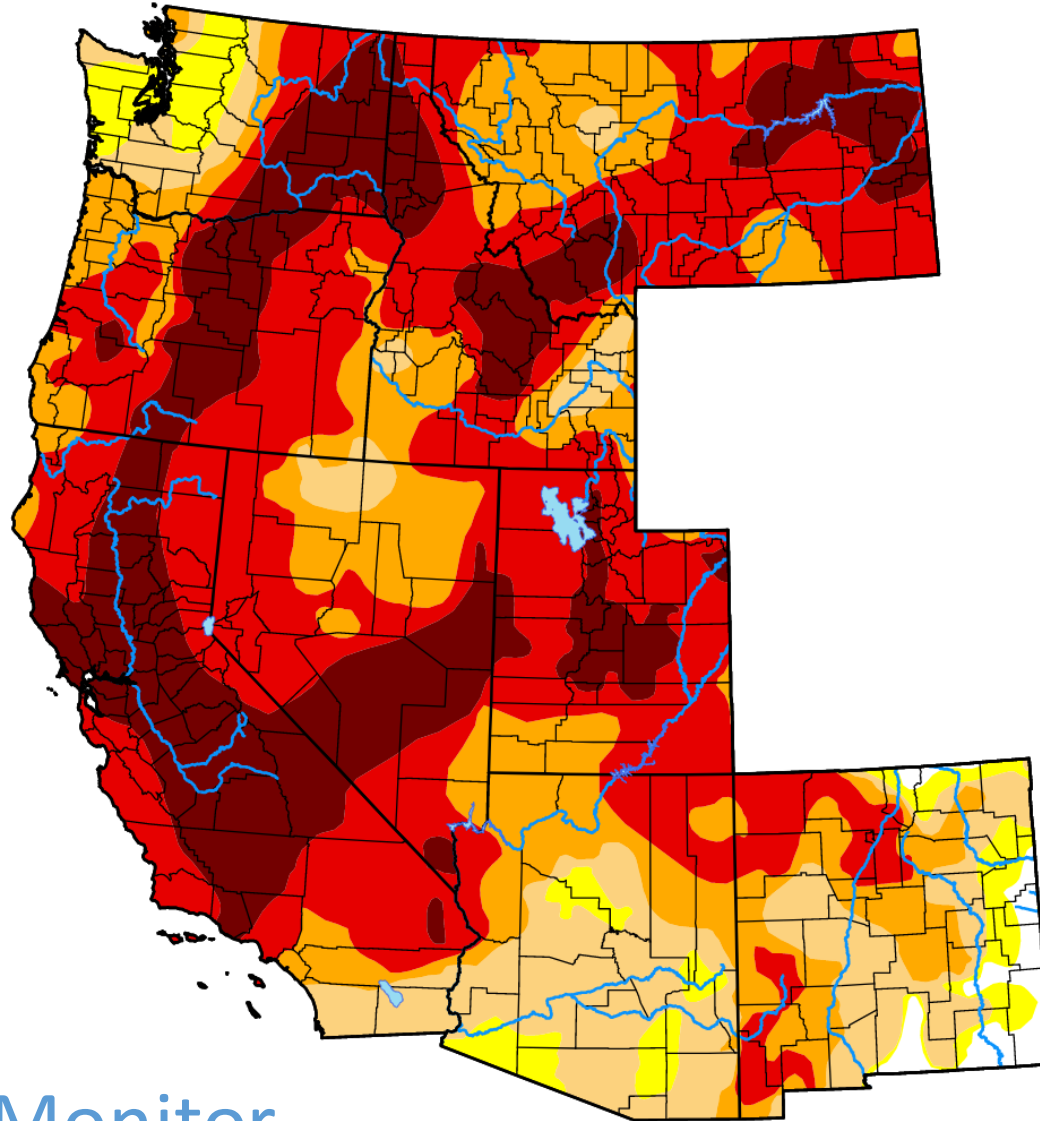
# US Drought Monitor

Data valid: September 14, 2021





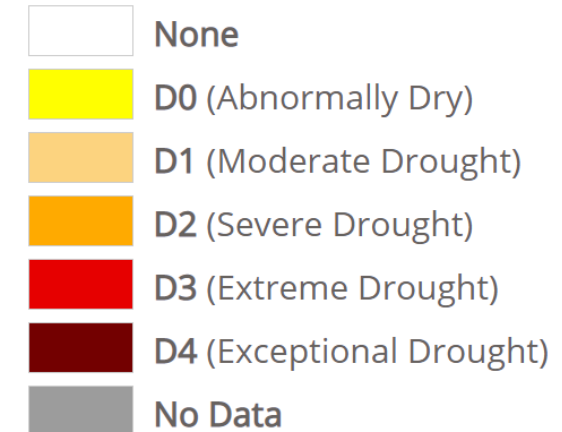
# West



Map released: Thurs. September 16, 2021

Data valid: September 14, 2021 at 8 a.m. EDT

### Intensity

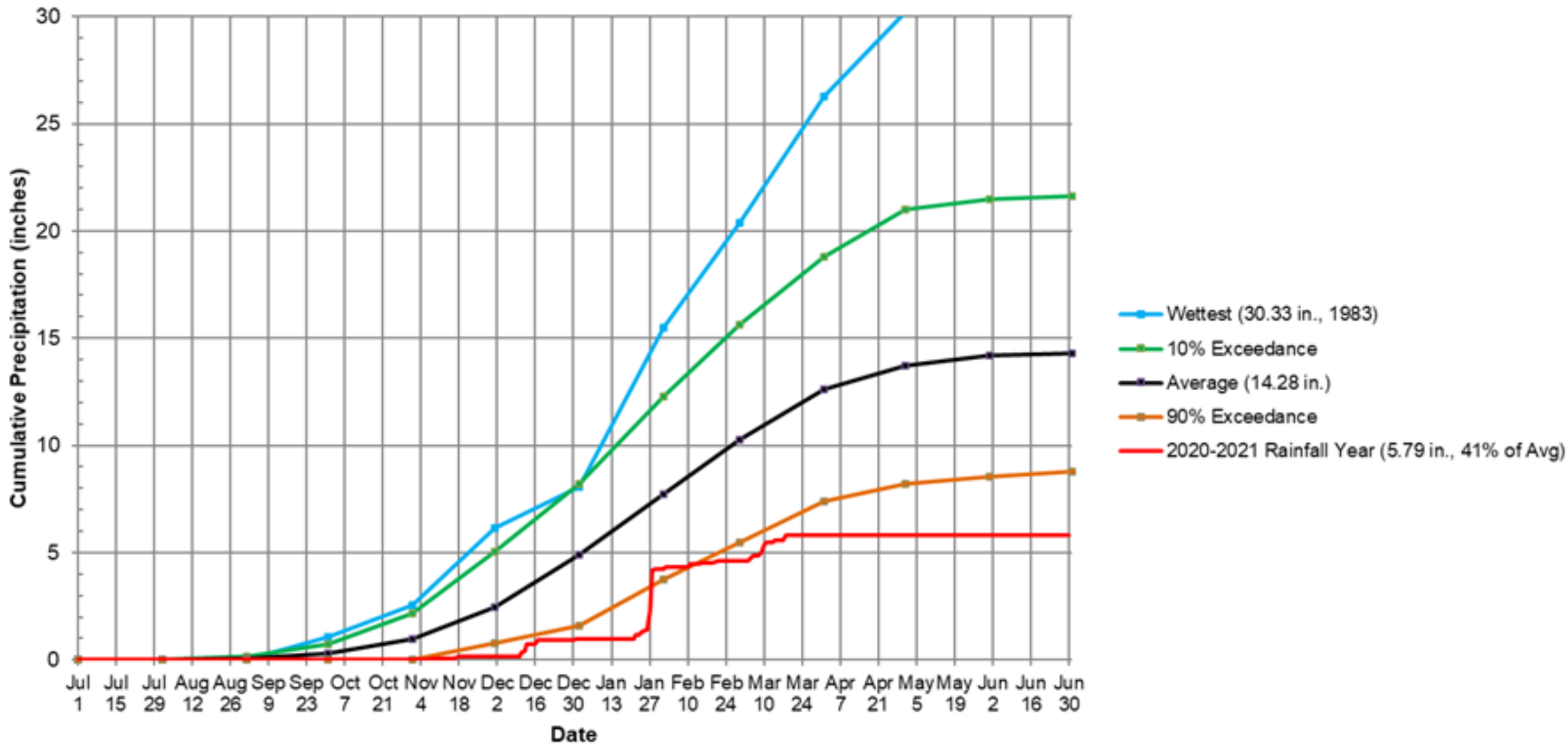


### Authors

United States and Puerto Rico Author(s):  
**Brad Rippey**, U.S. Department of Agriculture

Pacific Islands and Virgin Islands Author(s):  
**Richard Tinker**, NOAA/NWS/NCEP/CPC

# 6131 - San Jose Index Precipitation Station: 1875 to Present



**APRIL 2017**

**99% CAPACITY**

**AUGUST 2021**

**23% CAPACITY**



**LEXINGTON RESERVOIR**  
**SANTA CLARA COUNTY**



Valley Water

# Stevens Creek Reservoir



# Steven Creek Reservoir 2021



Wrong Time - Wrong Place











# Subsidence

SAN JOAQUIN VALLEY, CA  
**SUBSIDENCE 6.2 ft**  
**1988-2016**  
Benchmark  
H1235

**USGS**  
science for a changing world

-1988-

-2004-

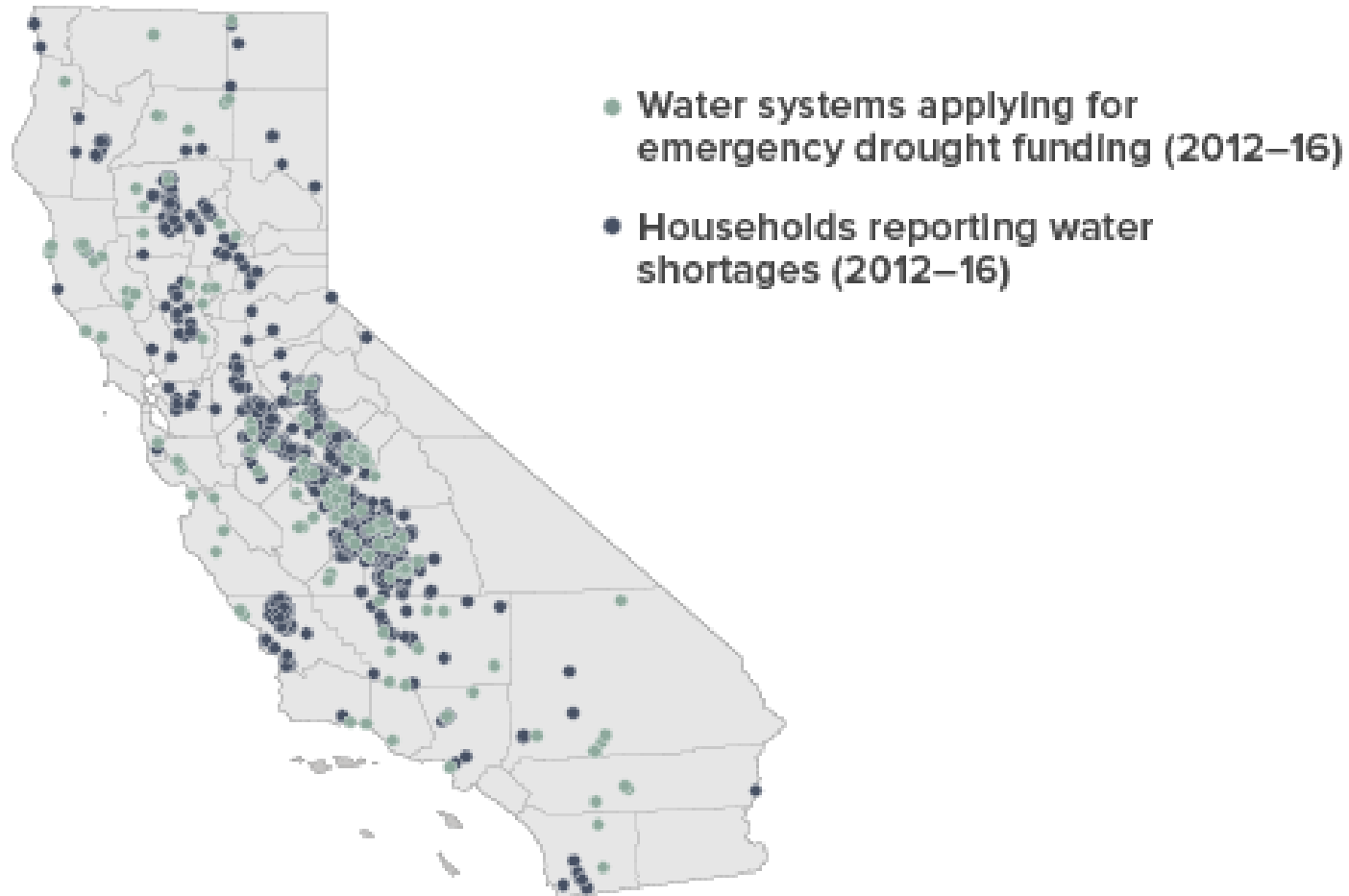
-2008-

-2016-

↑ H 1235

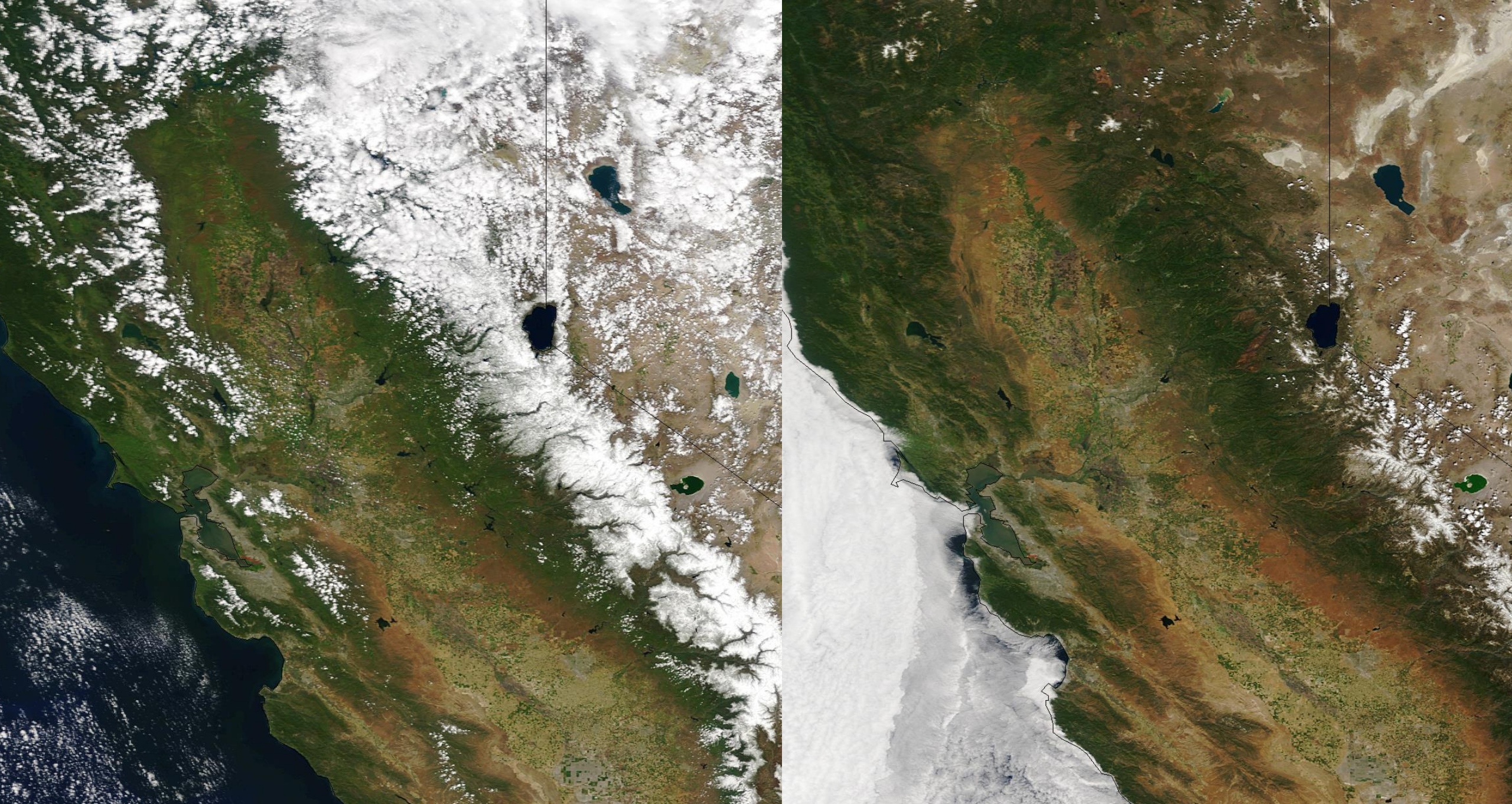
# Human Right to Water

**DURING DROUGHTS, RURAL COMMUNITIES ARE MORE LIKELY TO SUFFER WATER SHORTAGES**



Sources: *Managing Drought in a Changing Climate* (PPIC, September 2018). Developed by the authors using data from the Department of Water Resources (household water shortages) and the State Water Board (small water systems).

From: PPIC Blog, January 2019.



California Sierra-Nevada Snowpack 2003 to 2015

50 miles

50 miles

# The Story of Water

Too Much - Too Little

