

An underwater photograph showing a large number of salmon swimming in a river. The water is a murky green color. The salmon are silvery with dark spots and are swimming in various directions. The text "Spring-Run Salmon In the Tuolumne River" is overlaid in white, bold, sans-serif font in the center of the image.

# Spring-Run Salmon In the Tuolumne River



In May 2025, spring-run Chinook salmon  
were discovered in the plunge pool  
below La Grange Dam.



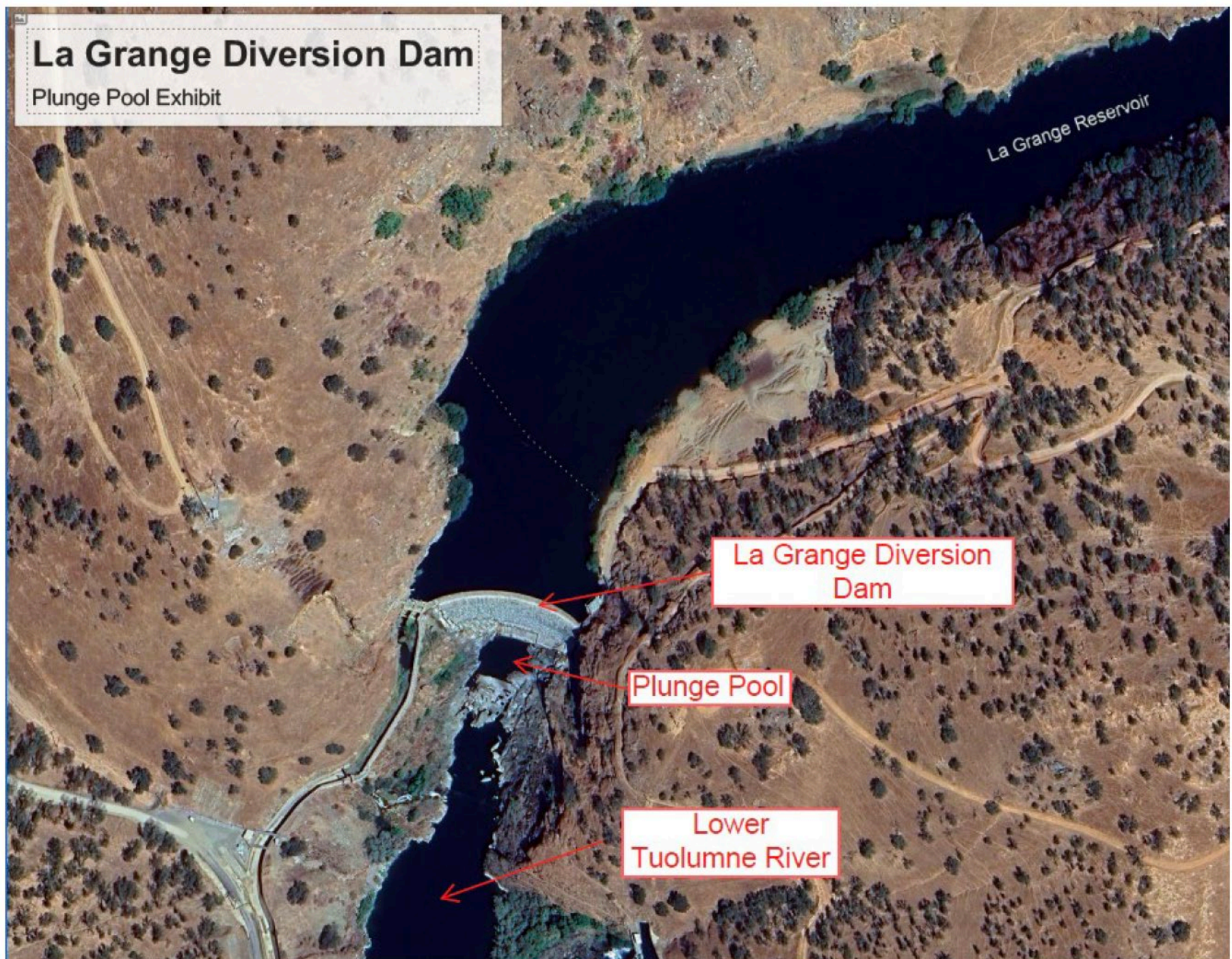






# La Grange Diversion Dam

Plunge Pool Exhibit



La Grange Reservoir

La Grange Diversion  
Dam

Plunge Pool

Lower  
Tuolumne River



















Good timing on restored spawning habitat









- using custom time span -  
April 1, 2025 - June 30, 2025

**Gage height, feet**

**7.50 ft - May 02, 2025 11:30:00 PM PDT**





- using custom time span -  
- using graph zoom -  
April 1, 2025 - June 30, 2025  
**Gage height, feet**

**49.67 ft - May 05, 2025 05:45:00 AM PDT**



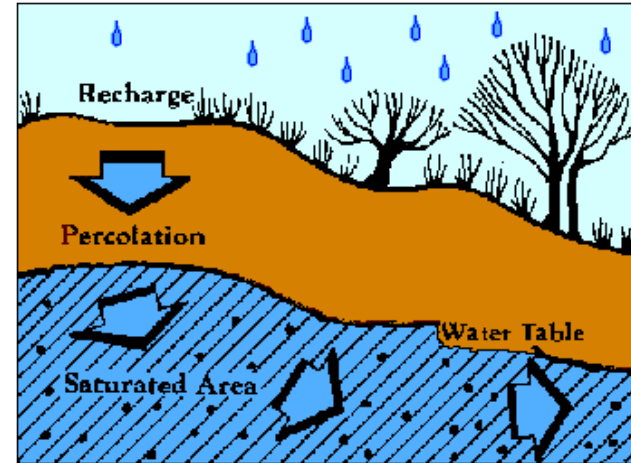


# Integrated Water Management

Turning problem water into a resource



Surface Water



Groundwater



Floodwater



River Water



# California's record winter storms could spawn disastrous floods



BY DAN WALTERS  
MARCH 7, 2023



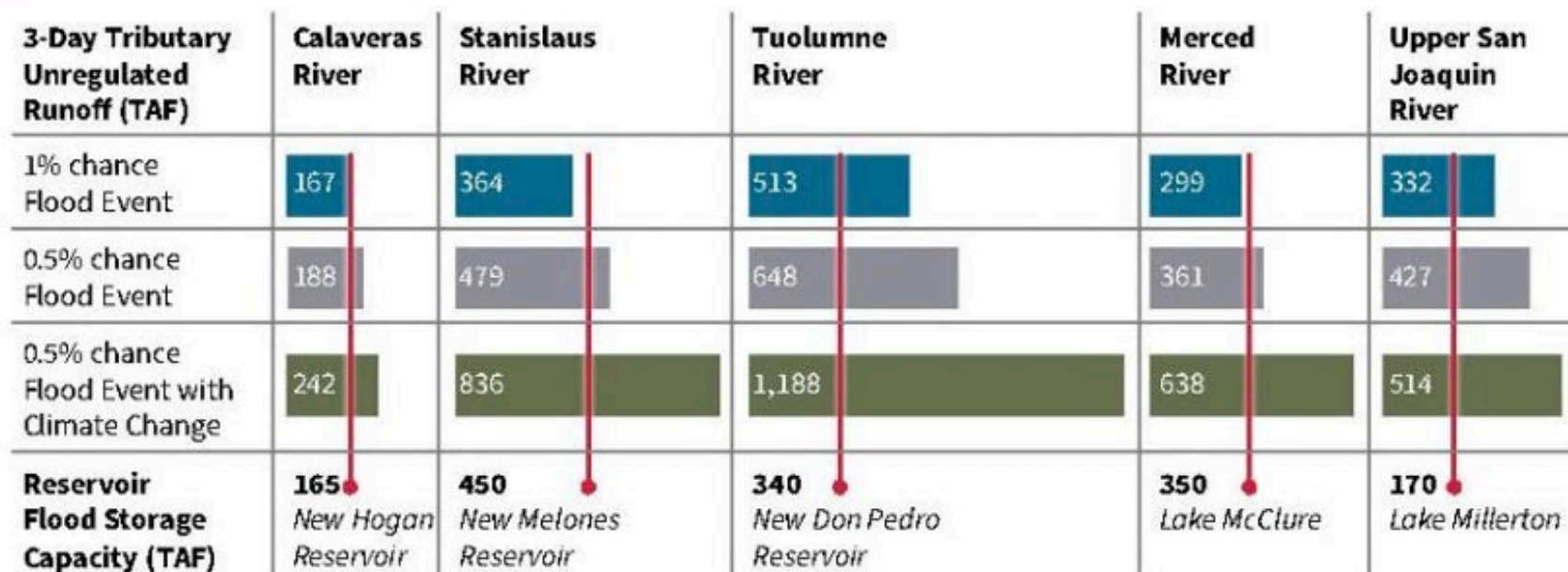
“I hope I’m wrong, but I’m afraid people celebrating the great snows in the Sierra Nevada are seriously underestimating the risk of spring flooding in California, including reservoir operators and state and federal water managers,” Peter Gleick, one of the state’s foremost experts on water, [tweeted](#) on Saturday.



# Modesto Flood - 1997



**Figure 2.6** Reservoir Storage Capacities and Estimated Unregulated Runoff for 3-Day Storm Events



Note: TAF = thousand acre-feet

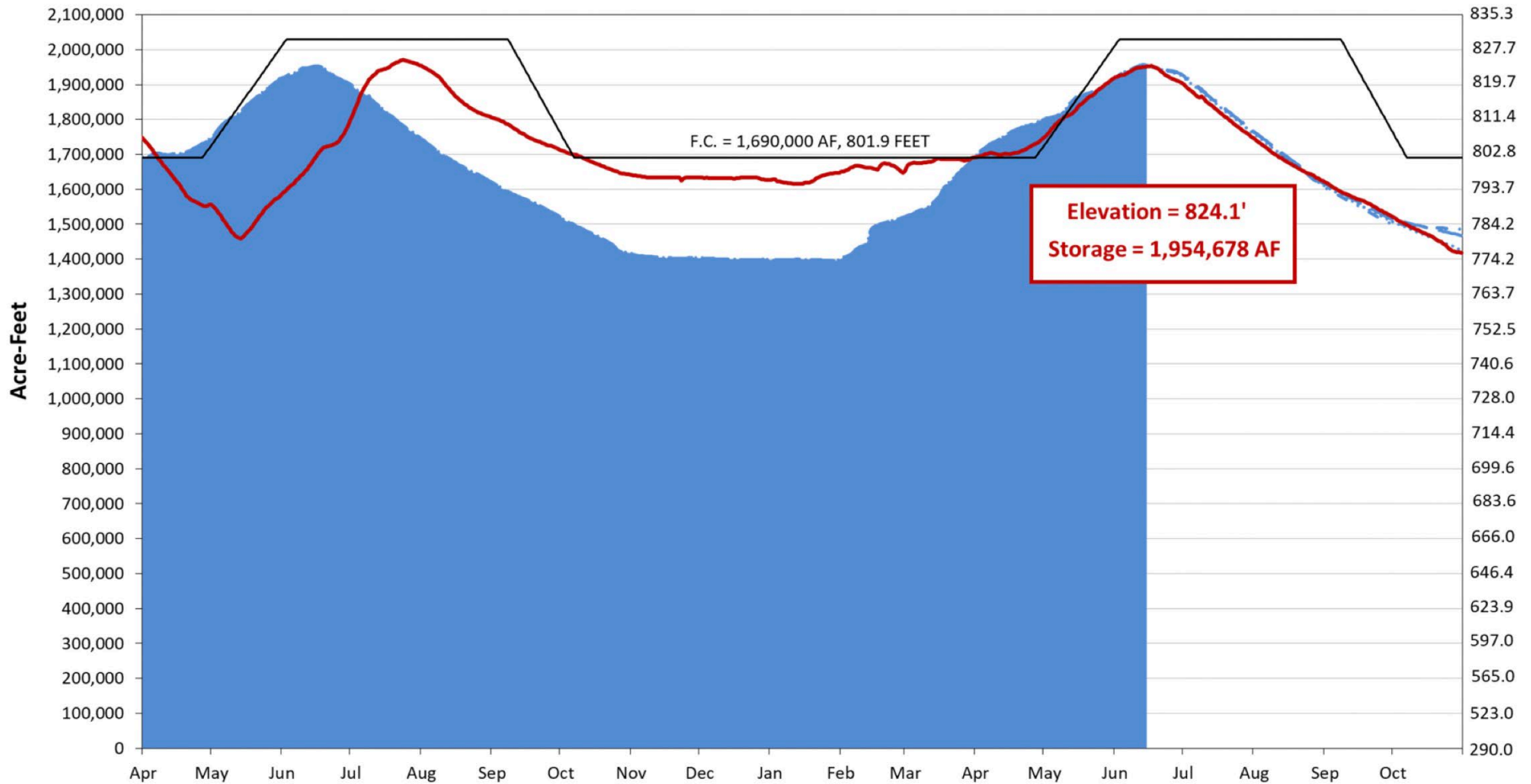
22\_214

Source: California Department of Water Resources 2017c



## Don Pedro Storage

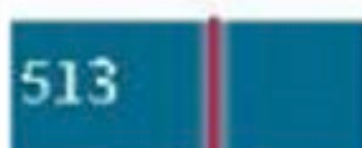
Observed Dry Ave Wet Last Year Flood Control Curve



**3-Day Tributary  
Unregulated  
Runoff (TAF)**

**Tuolumne  
River**

1% chance  
Flood Event



0.5% chance  
Flood Event



0.5% chance  
Flood Event with  
Climate Change



**Reservoir  
Flood Storage  
Capacity (TAF)**

**340**  
*New Don Pedro  
Reservoir*



# FEMA Direct Technical Assistance

1. City of Modesto one of 20 communities selected nationwide
2. FEMA assisting Modesto in preparing a proposal to the Building Resilient Infrastructure and Communities (BRIC) grant program
3. Primary focus is Tuolumne floodplain
  - Sutter Wastewater Treatment Plant relocation
  - Carpenter Road bridge abutment
  - Municipal landfill relocation



*Photo credit: modestgov.com*

# Dos Rios Acquisition

Multiple Benefits

<b><u>Agency</u></b>	<b><u>Amount</u></b>
California Natural Resources Agency	\$2,619,400
California Wildlife Conservation Board	\$5,491,736
California Department of Water Resources	\$2,927,388
U.S. Bureau of Reclamation	\$806,736
U.S. Department of Agriculture, Natural Resources Conservation Service Wetlands Reserve Program	\$6,904,740
U.S. Fish and Wildlife, Division of Bird Habitat Conservation (North American Wetlands Conservation Act funds)	\$1,000,000
San Francisco Public Utilities Commission	\$2,000,000
River Partners	\$50,000
<b>Total Easement &amp; Fee Title</b>	<b>\$21,800,00</b>



# Rim Fire







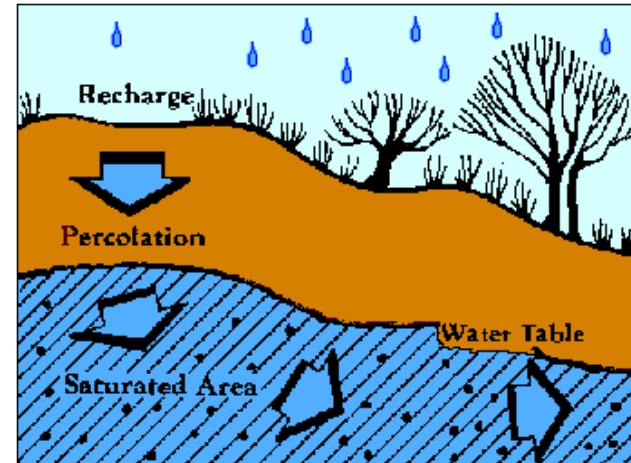
Meadow restoration conserves water



# Solutions should benefit all interests



Surface Water



Groundwater

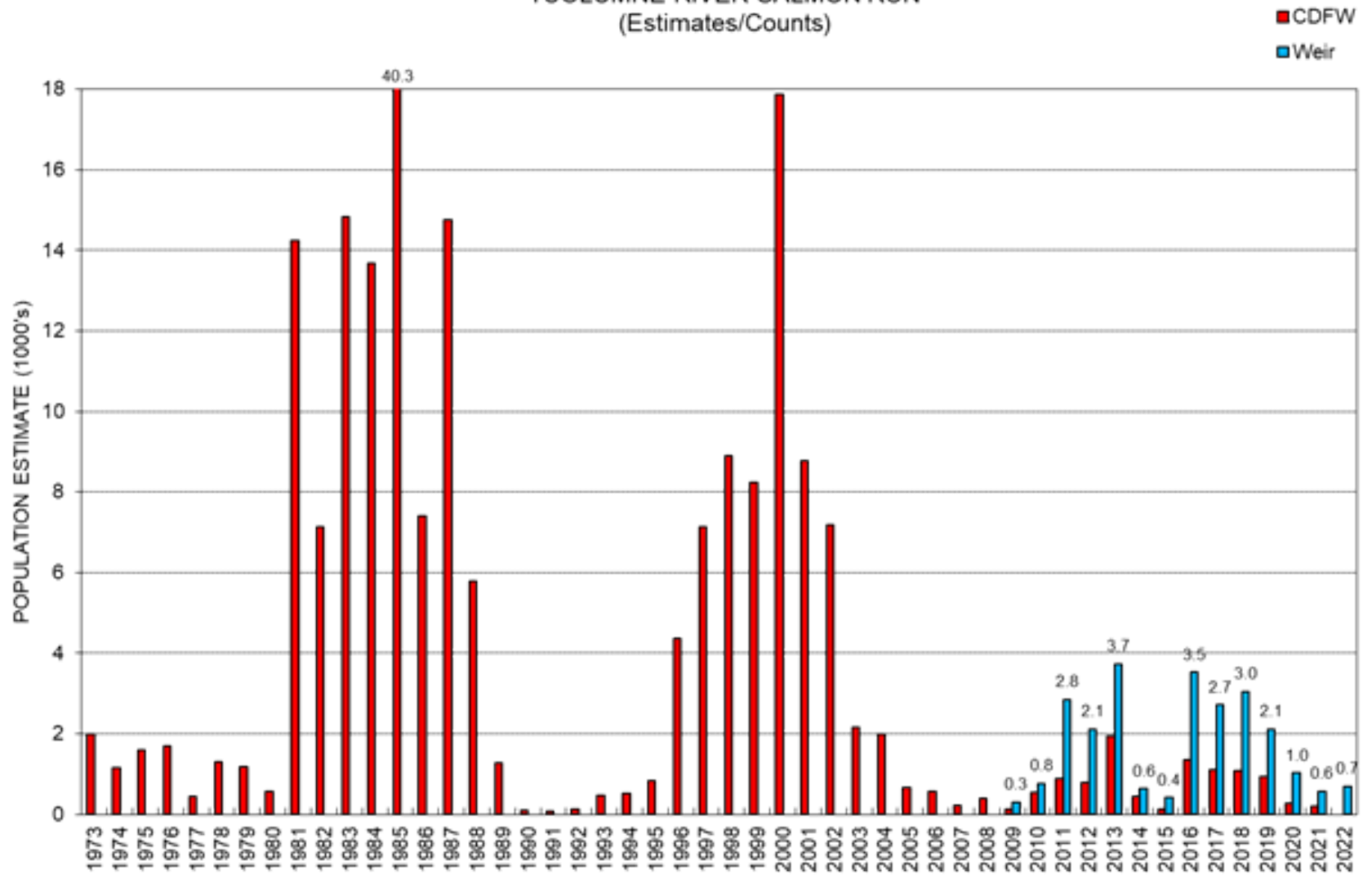


Floodwater



River Water

# TUOLUMNE RIVER SALMON RUN (Estimates/Counts)



Years 2009-2022 are based on counting weir results. All previous years from CDFW surveys as reported by CDFW GrandTab. Survey periods may vary over the years for both methods.



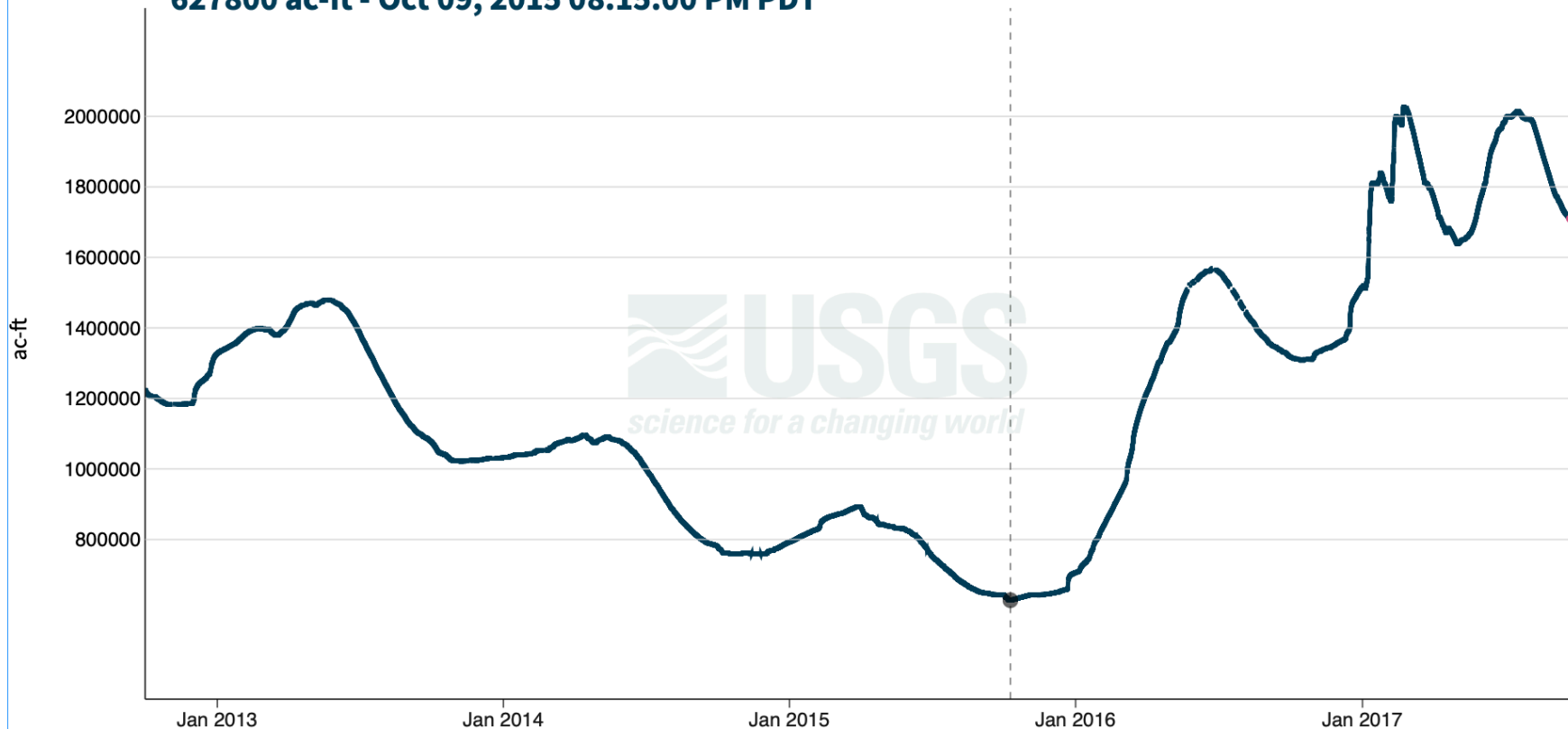
- using custom time span -

# Don Pedro Res NR LA Grange CA

October 1, 2012 - September 30, 2017

Reservoir storage, acre-ft ⓘ

627800 ac-ft - Oct 09, 2015 08:15:00 PM PDT



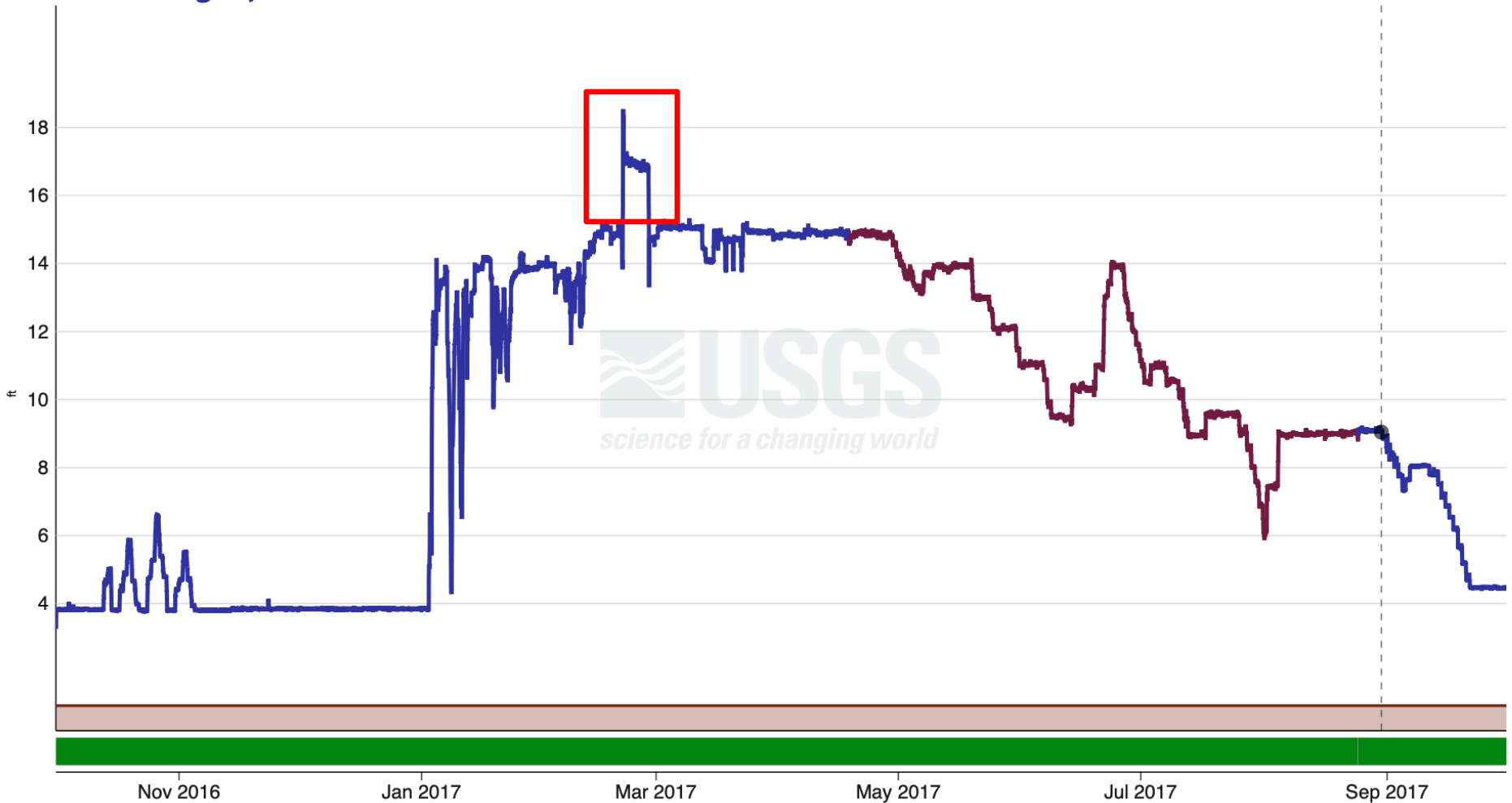
# 2017 flow in lower Tuolumne River

Tuolumne R BL Lagrange Dam NR Lagrange CA - 11289650

[Subscribe to WaterAlert](#)

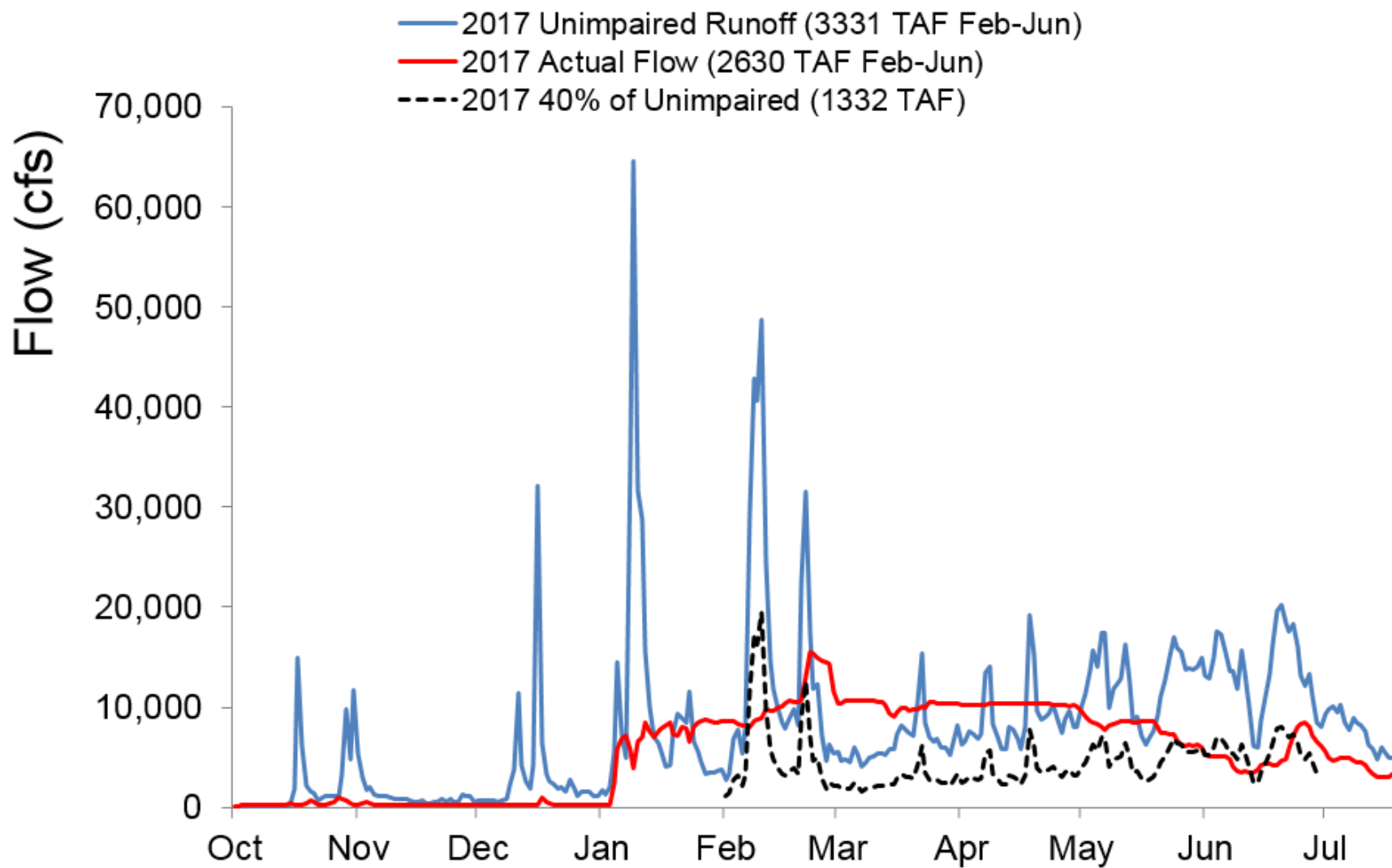
- using custom time span -  
October 1, 2016 - September 30, 2017  
**Gage height, feet**

**9.04 ft - Aug 30, 2017 01:30:00 PM PDT**





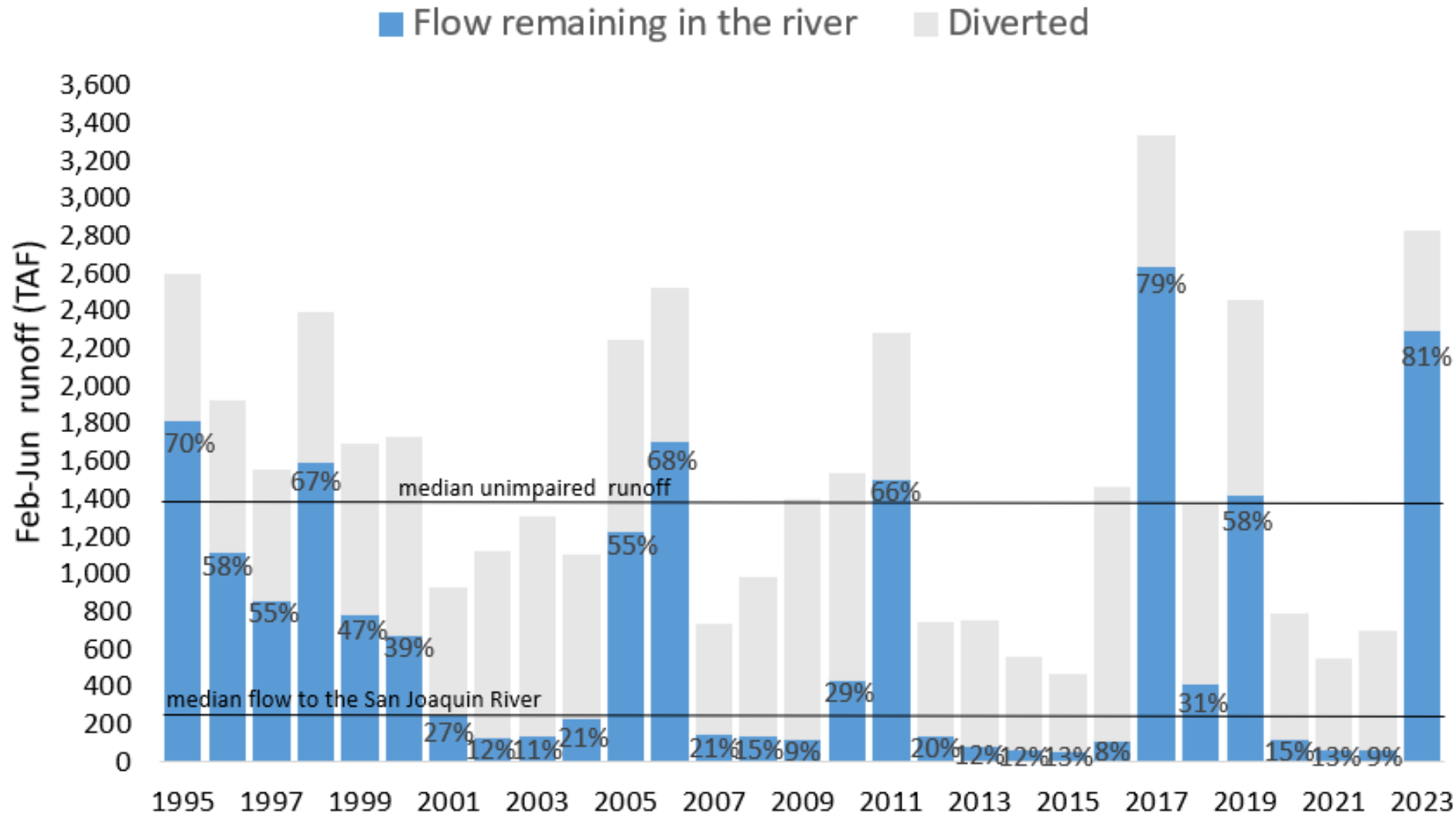
# Tuolumne River



# Current policy starves the river in dry years

## Tuolumne River

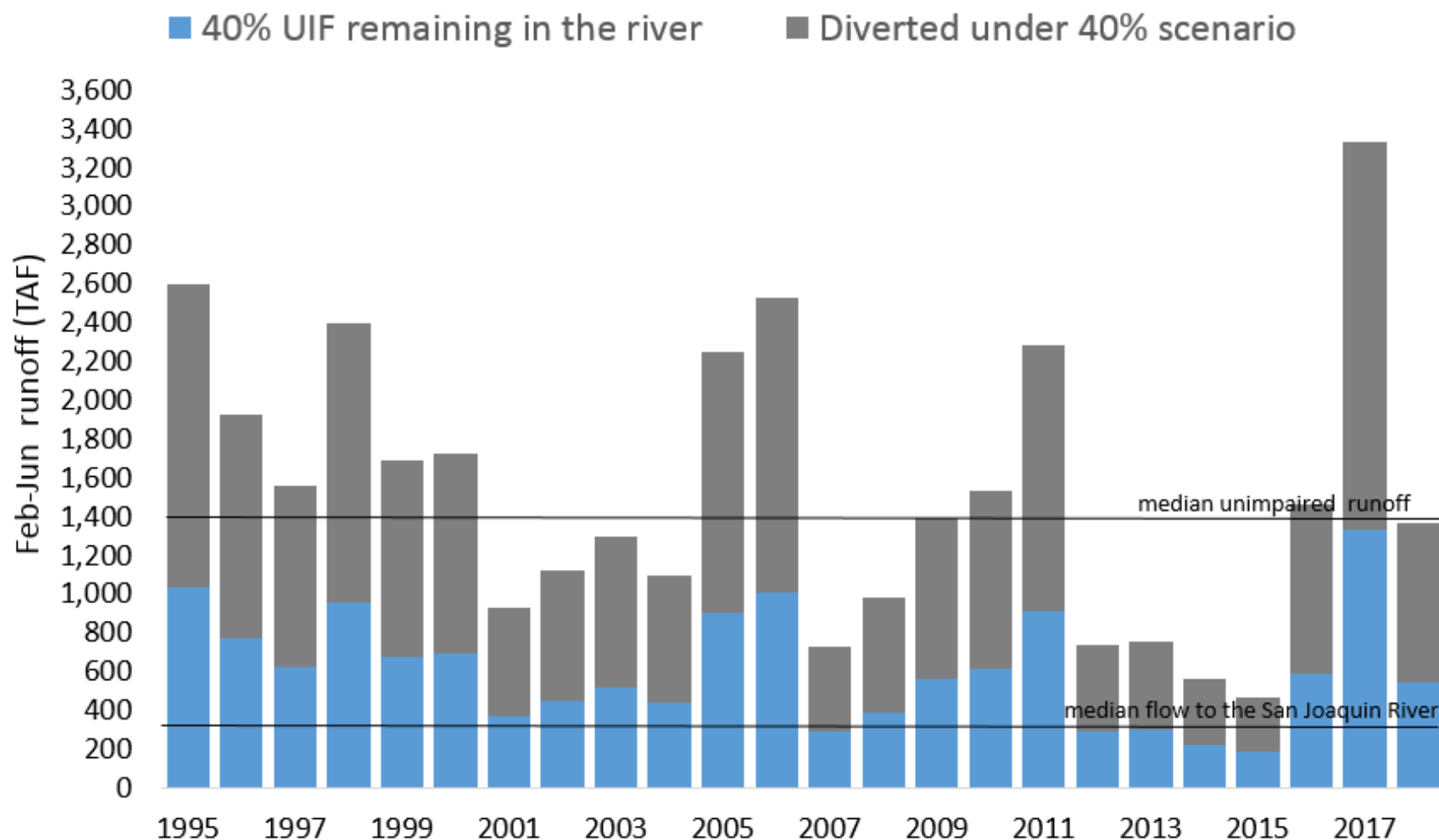
Graph courtesy of The Bay Institute - [www.bay.org](http://www.bay.org)





# What 40% UIF would have looked like

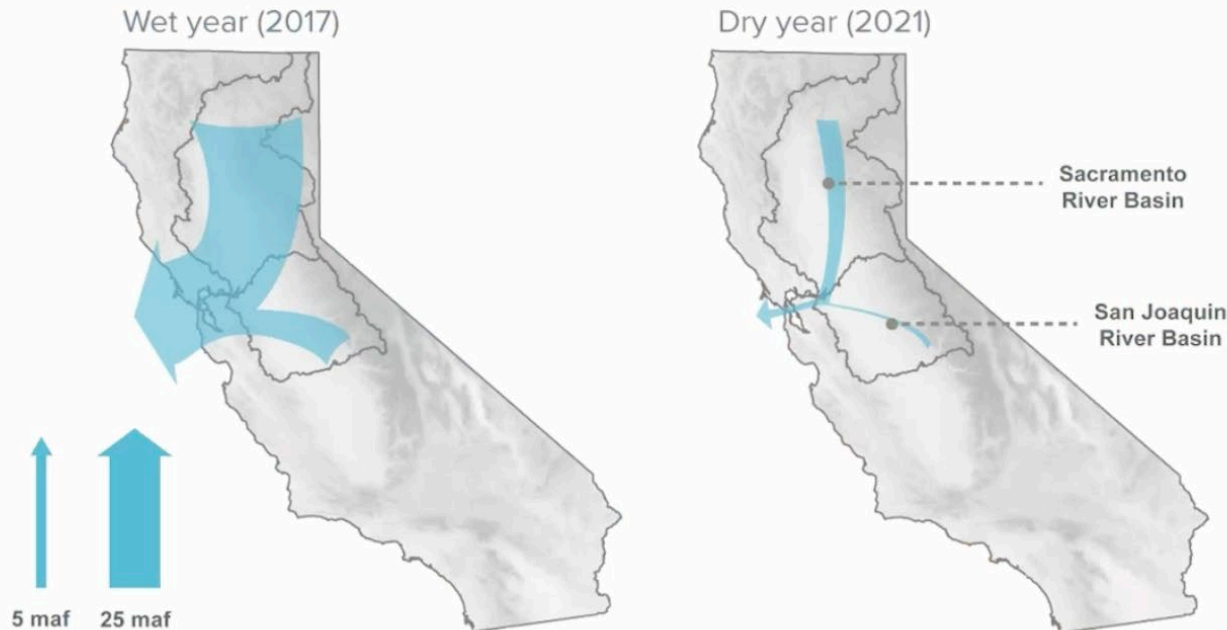
## Tuolumne River



# Capturing excess water in wet years for environmental and human needs in dry years

**Most Californians rely on the Delta watershed, and flows vary greatly between wet and dry years**

Water sources and outflow from the Delta

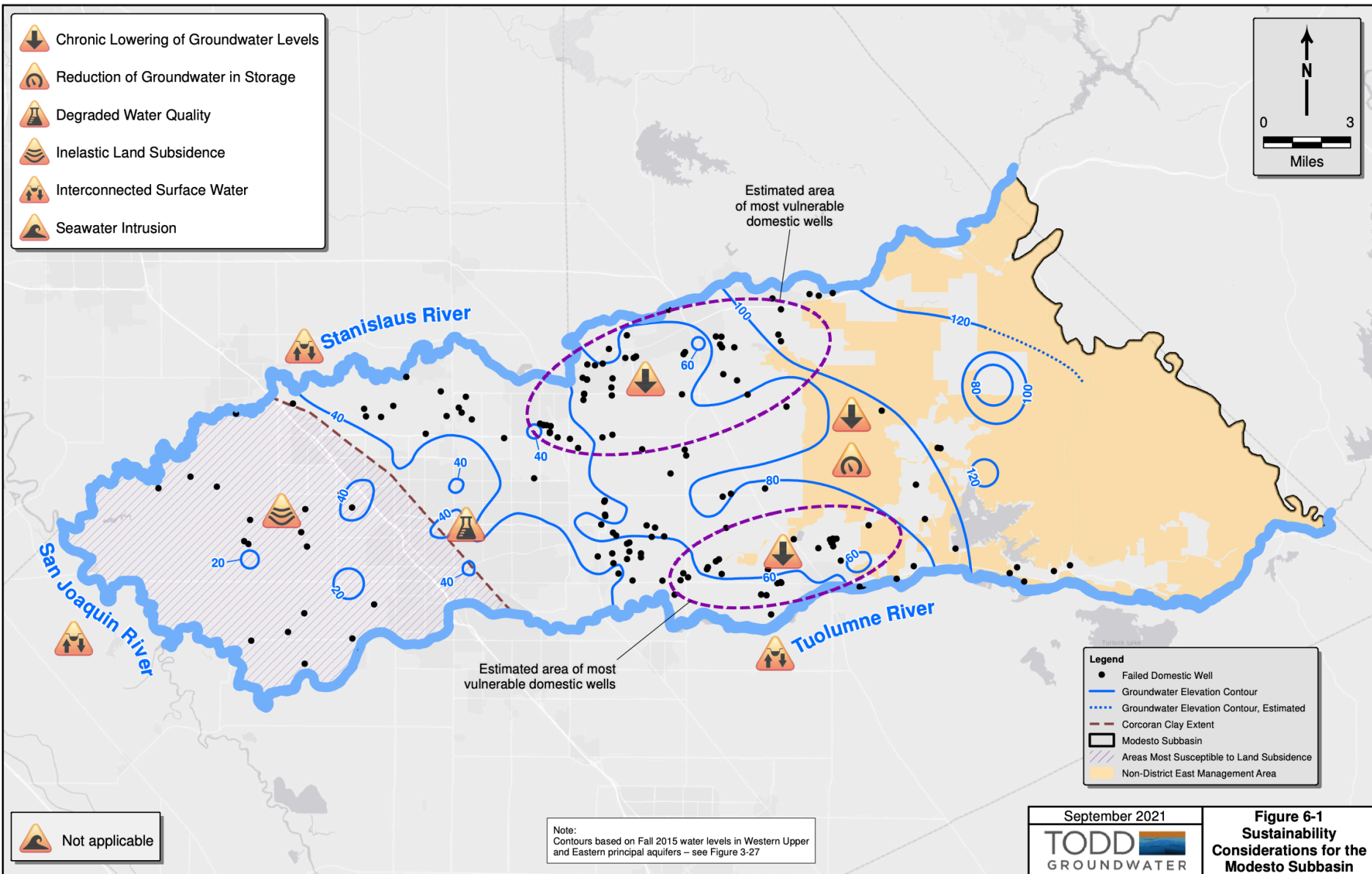


Source: Gartrell, Mount, and Hanak. [Tracking Where Water Goes in a Changing Sacramento-San Joaquin Delta](#) (PPIC, 2022)



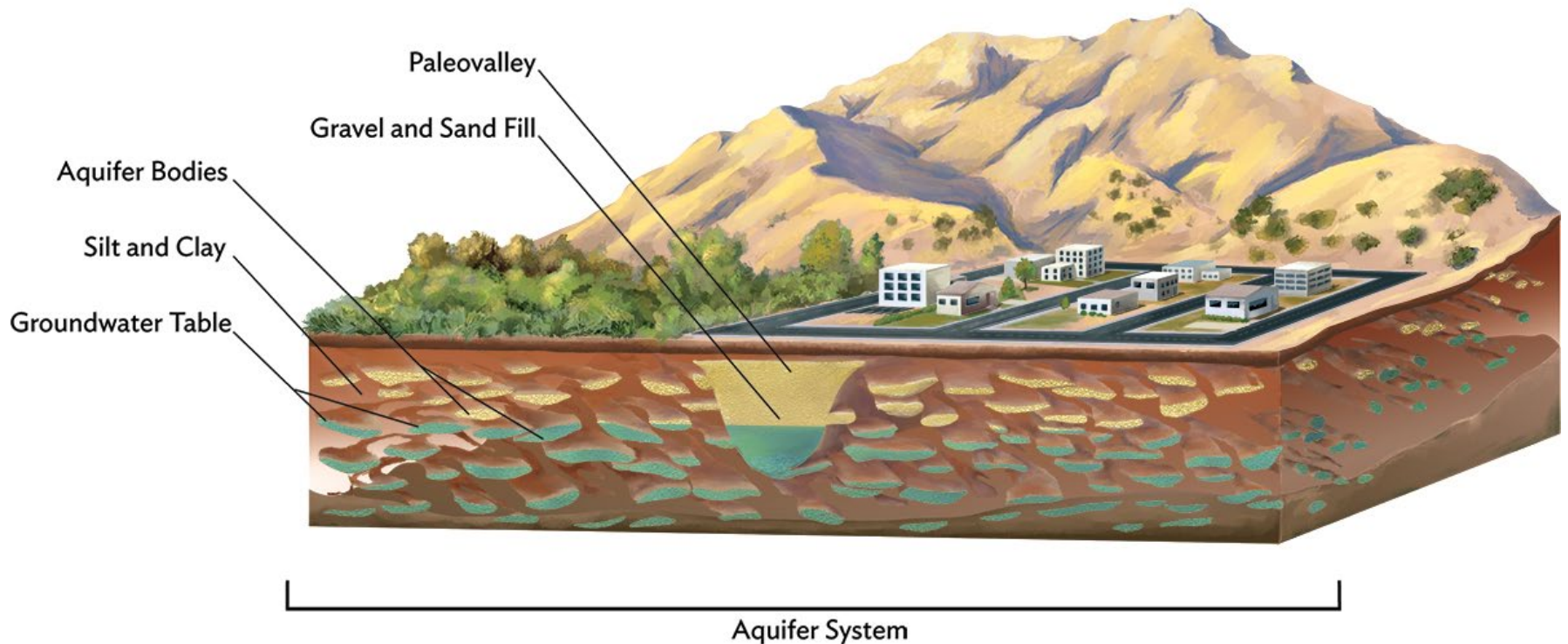


# Groundwater recharge is key



# Capturing the Flood in California's Ancient Underground Waterways

*Long buried riverbeds can move and absorb excess stormwater, storing it for future droughts.*







## **FOR IMMEDIATE RELEASE**

January 27, 2022

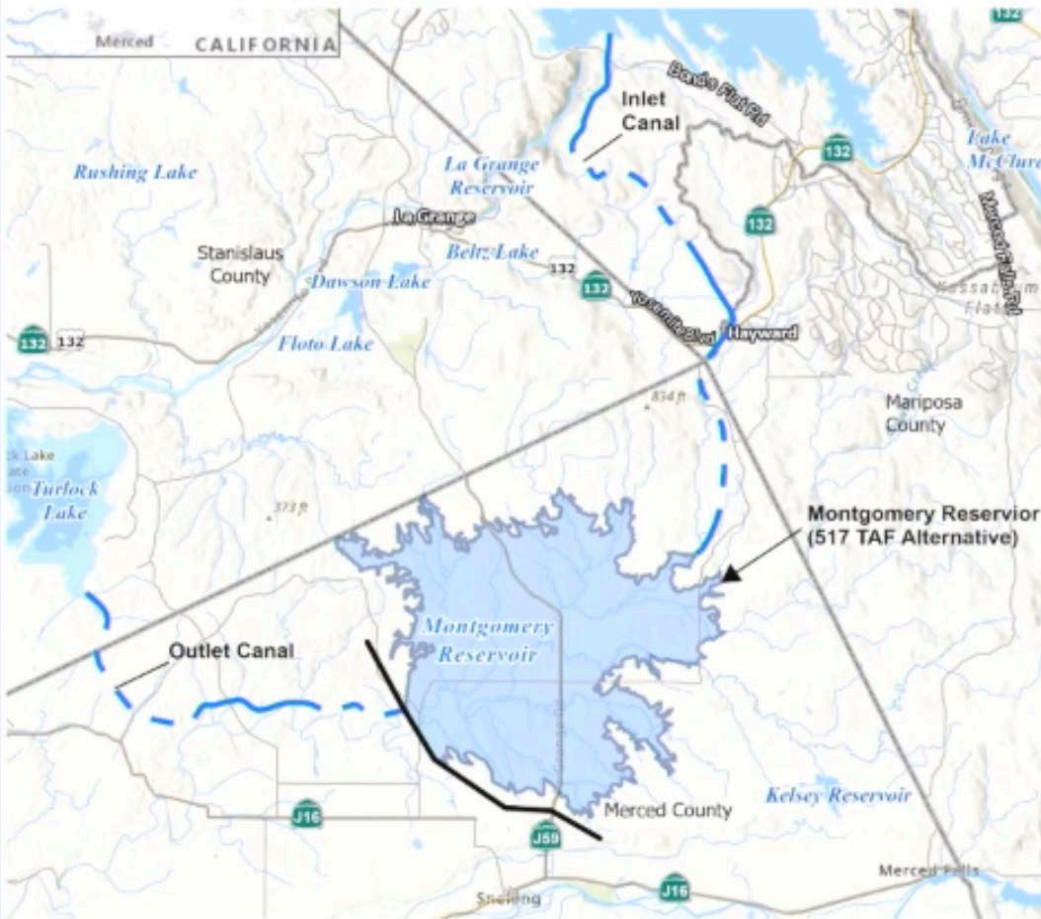
# **MID and TID seek additional waters rights to benefit customers, communities and environment**

*The Districts submit first water rights application since 1951 to divert wet-year water*

Responding to the impacts of climate change and other stressors, Modesto Irrigation District and Turlock Irrigation District filed a water rights application with the State Water Resources Control Board to capture unappropriated flood waters from the Tuolumne River and put them to beneficial use.

The joint application petitions the state to permit the Districts to appropriate up to 2.7 million acre-feet (AF) of water Nov. 1 through June 14 annually, when the Tuolumne River is not classified as a fully appropriated stream. An initial analysis indicates that since 1998 there have been thirteen years when water would be available averaging approximately 840,000 AF annually.

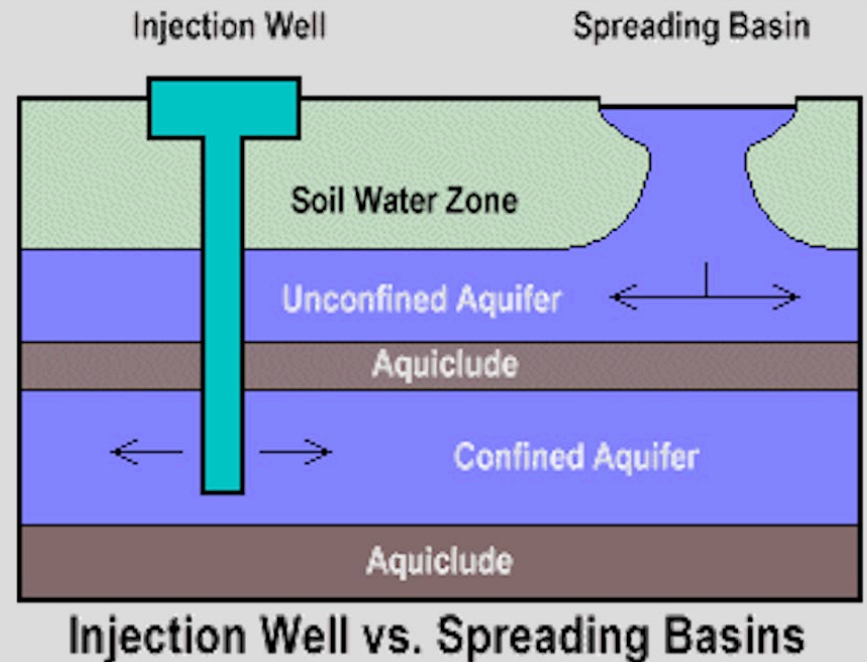
# Montgomery Off-Stream Reservoir



- **Features:**
  - 5000 cfs intake at Don Pedro
  - 10.6 mile long gravity & tunnel conveyance system
  - Outflow via 6 mile canal to TL
  - 6.3 MW Hydropower facility
- **Storage Capacity:**
  - 517,00 AF
- **Project Cost (2025 dollars):**
  - **\$617.8 Million**
    - \$581 Million
    - \$36.8 Million (Powerplant)
- **Impacts:** Inundation of J59 and surrounding lands



The Irrigation Districts could partner with the SFPUC to recharge groundwater in wet years and establish a water bank similar to Don Pedro



# The SFPUC is planning for an extremely unlikely mega-drought



## San Francisco Water Supply Planning

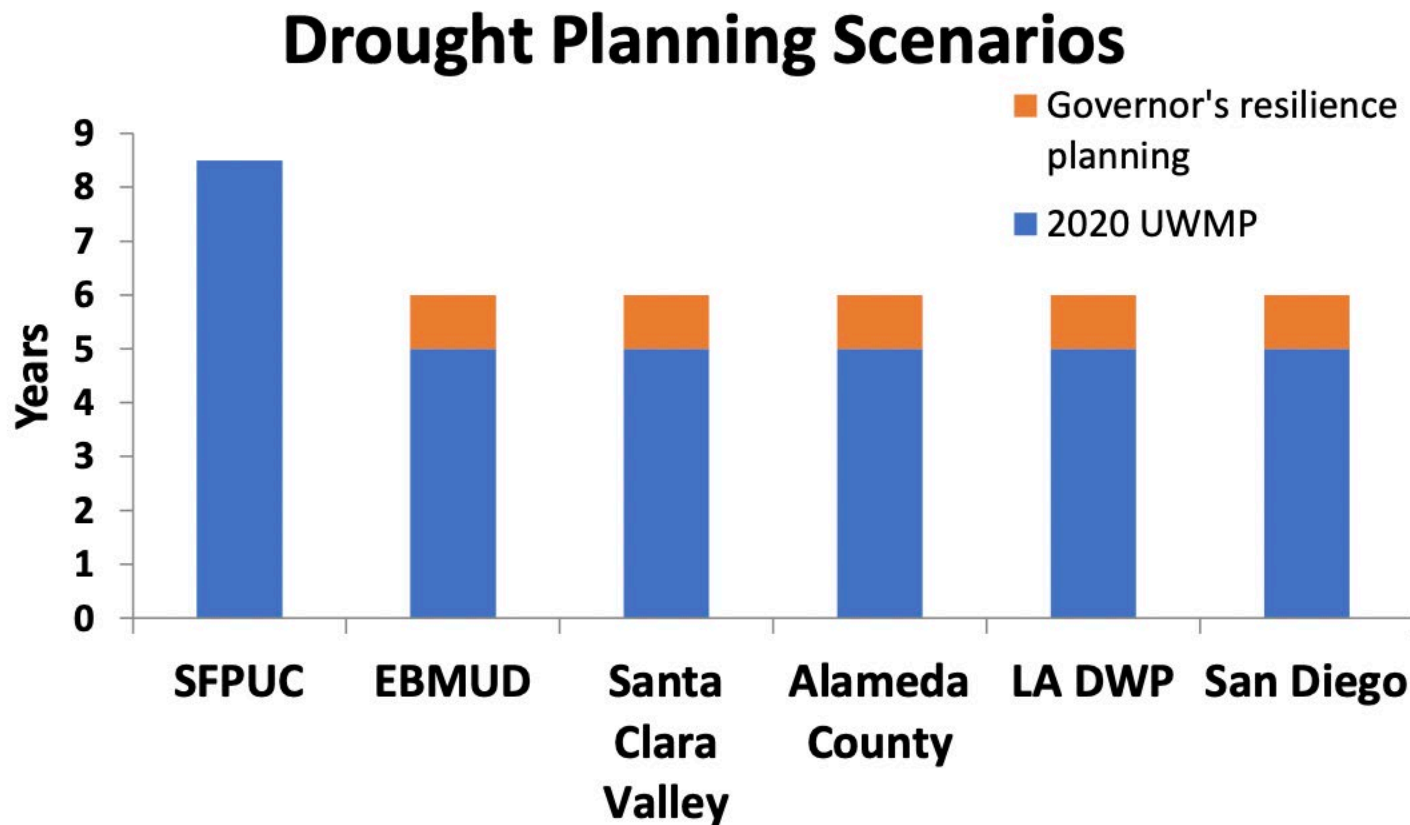
- Our Level of Service objective for water supply (used since 1994 and adopted in 2008) is to **survive a specific 8.5-year drought planning scenario (1987-92 followed by 1976-77) with no more than 20% rationing from a total system demand of 265 MGD.**

Source: SFPUC

## The Design Drought



# The SFPUC has the longest drought scenario of California's major urban water agencies



# The Design Drought is 72% more severe than the worst drought on record

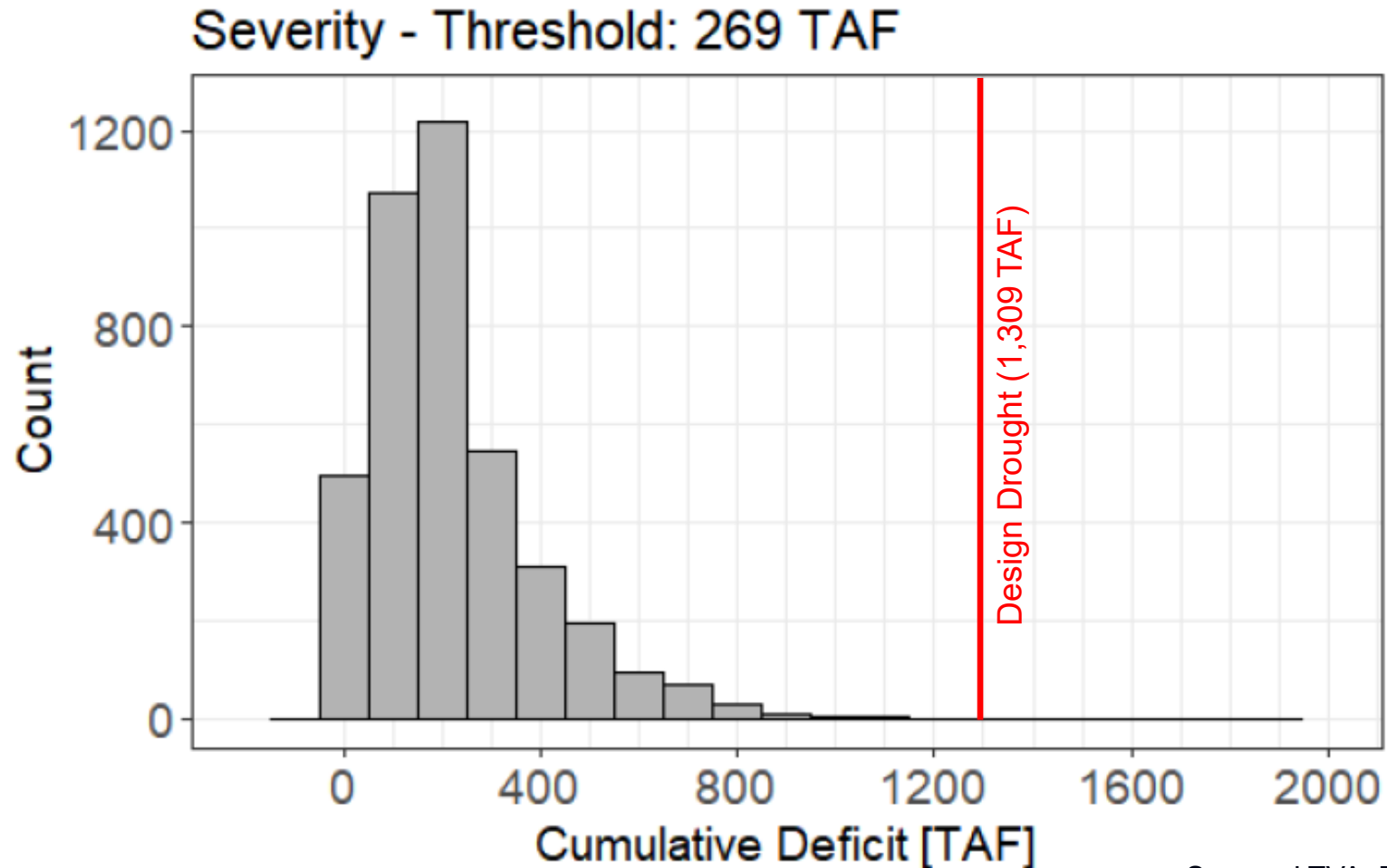
**Table 3-9. Extracted Drought Events from Historical Tuolumne Flow at La Grange for Two Different Thresholds.**  
For each threshold, the drought events are sorted by decreasing severity.

Threshold: 269 TAF			Threshold: 365 TAF		
Year Drought ends	Severity [TAF]	Duration of Deficit [Years]	Year Drought Ends	Severity [TAF]	Duration of Deficit [Years]
1992	707.39	6	1992	1283.39	6
2015	594.35	4	2015	978.35	4
1977	510.18	2	1977	702.18	2
1961	389.44	3	1961	677.44	3
1931	312.14	3	1931	600.14	3
1924	233.66	1	2008	418.98	2
2008	226.98	2	1934	357.10	2
1934	218.34	1	1924	329.66	1
1994	204.77	1	1968	229.06	1
1968	133.06	1	1939	223.20	1
1939	127.20	1	1947	190.42	1
1947	94.42	1	1964	189.19	1
1964	93.19	1	1981	165.90	1
1981	69.90	1	1972	154.99	1
1972	58.99	1	1985	118.42	1
1985	22.42	1	1955	104.96	1
1955	8.96	1	2001	75.15	1
			1926	72.70	1
			1966	45.69	1
			1944	37.45	1
			2004	37.09	1

Source: SFPUC  
LTVA, 2021



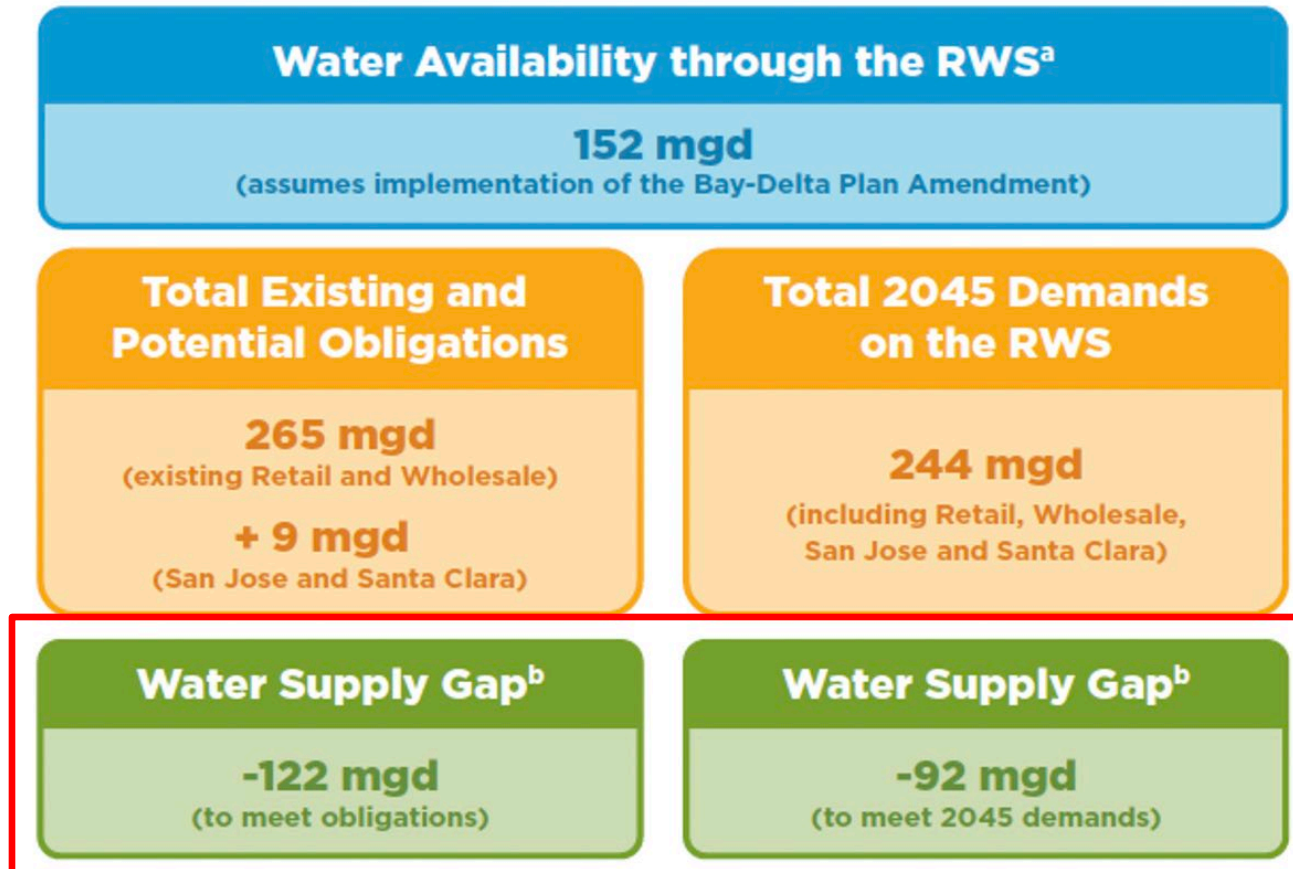
# The LTVA's Most Severe Drought Used 1,200 TAF of Storage



Source: LTVA, Figure 3-29

# SFPUC Alternative Water Supply Plan

**Figure 3-4: Water Supply Gap for Meeting Obligations and 2045 Demands in Dry-Year Conditions**



Developing 92 mgd would cost \$17 billion.  
Developing 122 mgd would cost \$25 billion.







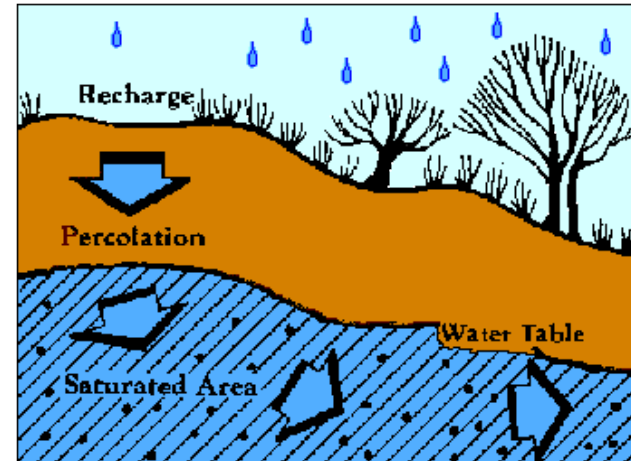


# Integrated Water Management

Turning problem water into a resource



Surface Water



Groundwater



Floodwater



River Water



# Contact Me

Feel free to contact me with additional  
comments or questions.

[peter@tuolumne.org](mailto:peter@tuolumne.org)

