Nov 2026

Lead Scientist Report

Delta Stewardship Council

A CALIFORNIA STATE AGENCY

Recent Delta Science Program Activities (Fall 2026)

- Bay-Delta Science Conference (Sept 28-30)
- California Council on Science and Technology Science Day (Oct 5-6)
- Resilient California Summit (Oct 20-22)
- Public Meeting for Cycle 2 of NASEM (National Academies) Review of CVP and SWP (Projects) Long-term Operations (Nov 4-6)

On Your Radar

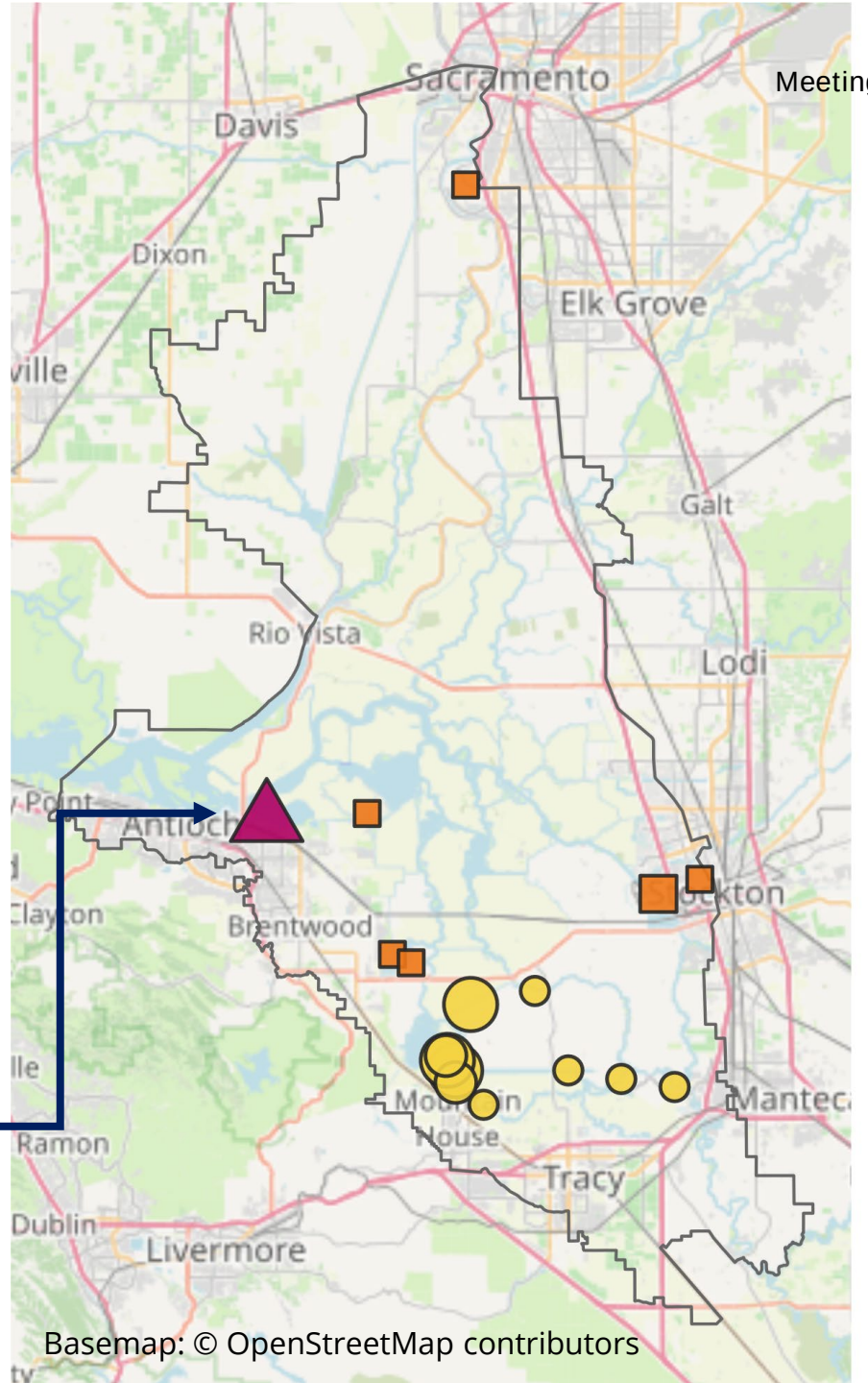
December 7–11, San Francisco

- American Geophysical Union (AGU) Annual Meeting

2026 Harmful Algal Blooms in the Delta

As reported to the State Water Board's monitoring program

- Not all Delta blooms captured here
- "Visual observation" is not an advisory
  - Bloom observed but no Caution, Warning, or Danger advisory warranted
- 17 locations had at least one bloom
- 7 locations had blooms in more than one month
  - 4 locations had blooms in 5+ months
- Big Break
  - Caution in July, Danger in August through November



Highest advisory

- Visual observation
- Caution
- Danger

Number of months with a bloom advisory

- 1 month
- 2-4 months
- 5+ months

Data: https://data.ca.gov/@california-state-water-resources-control-board/surface-water-freshwater-harmful-algal-blooms



Water Year 2026

(October 1, 2025 – September 30, 2026)

Total precipitation across California during Water Year 2026 was average… again!

Total WY26 precipitation averaged over California: 22.6”

- This is 95% of the historical average
- WY25 and WY24 were also pretty average
- Three average years in a row has not happened since the 90s (California Water Blog[1])

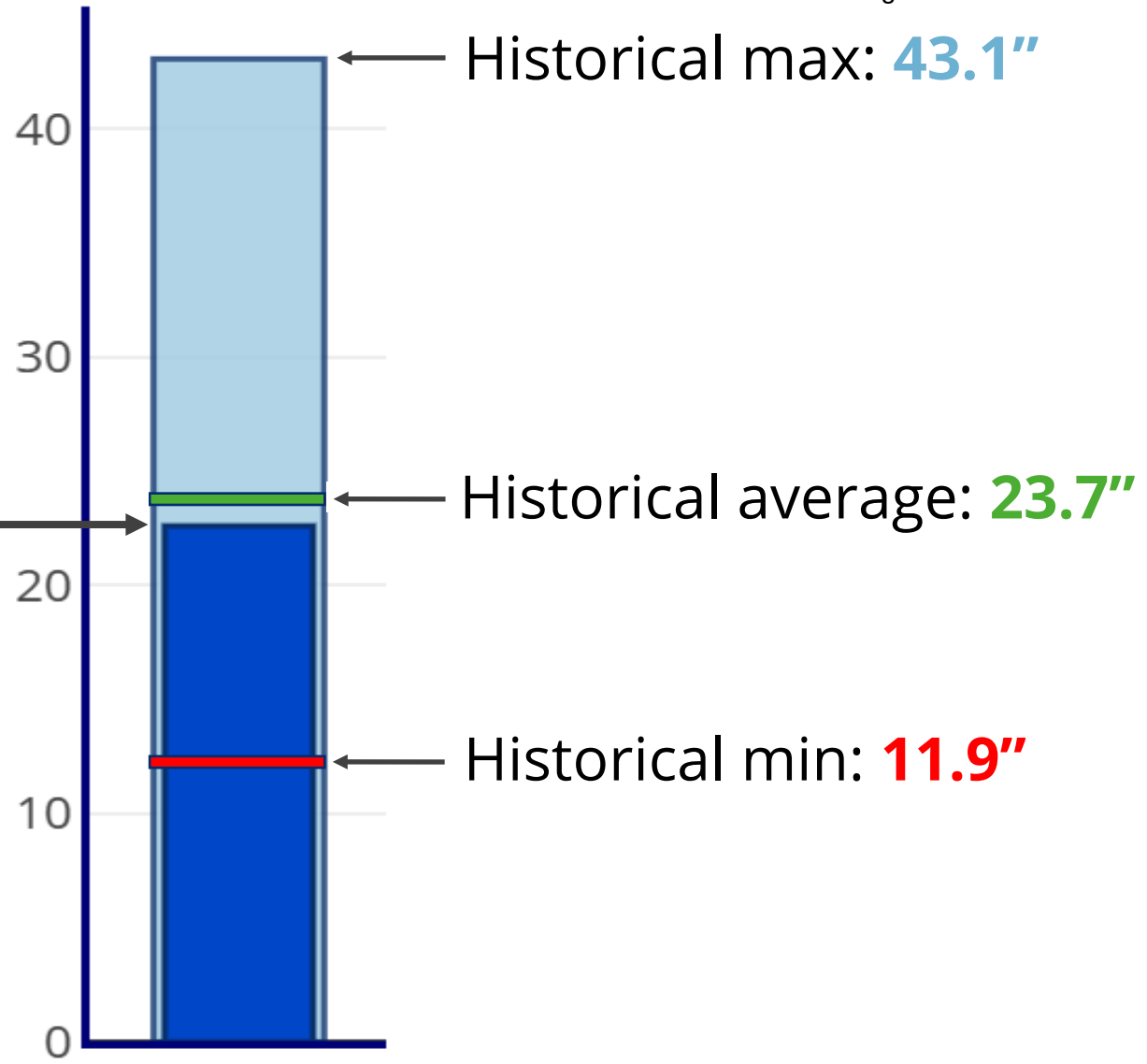
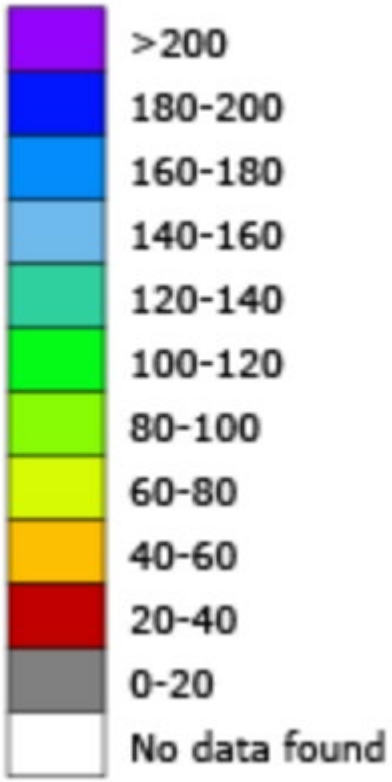


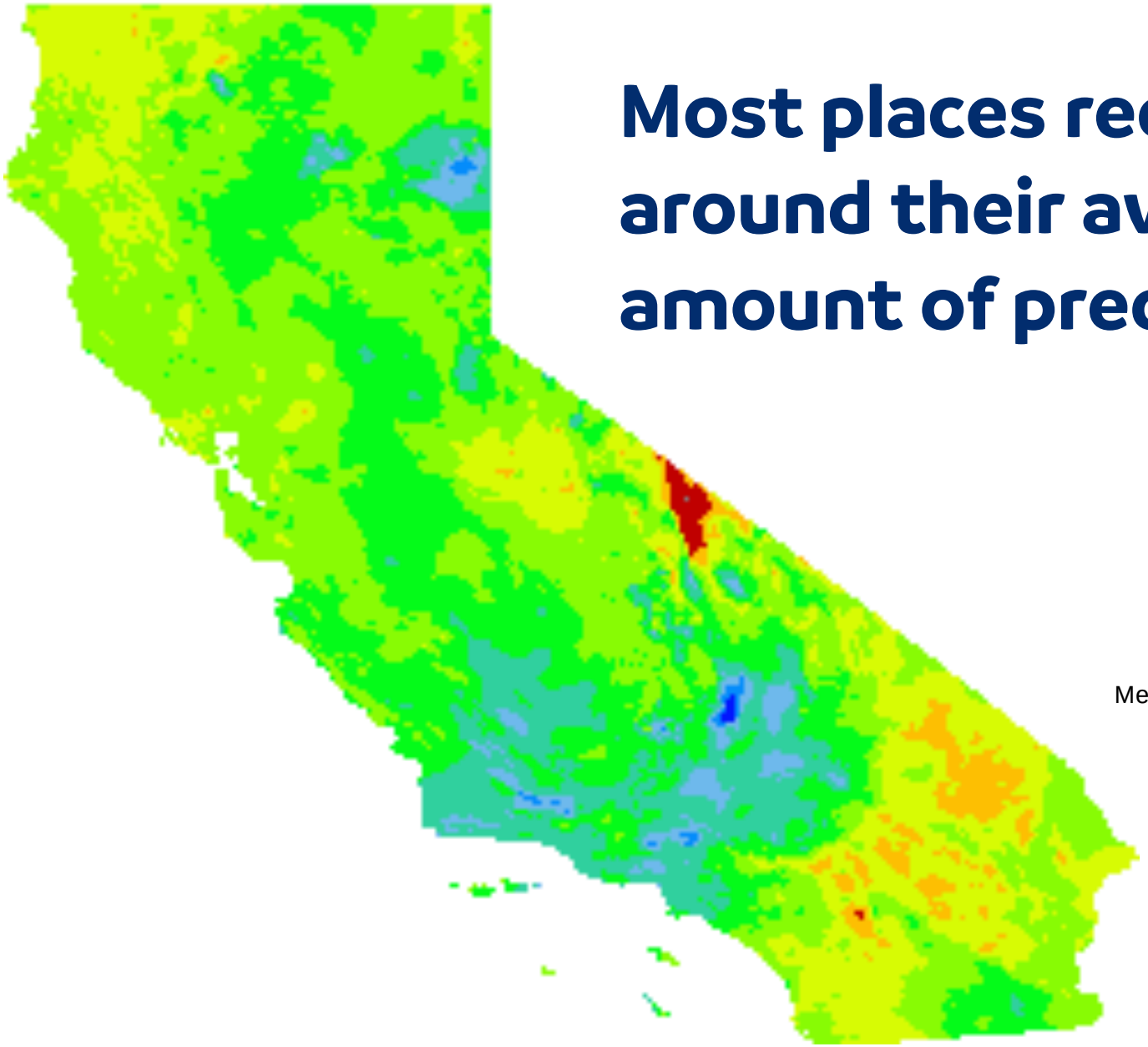
Figure modified from https://cww.water.ca.gov/

1. https://californiawaterblog.com/2026/10/01/happy-new-water-year-2027-following-three-years-of-unusually-average-california-hydrology/

Most places received around their average amount of precipitation

WY26 precipitation as percent of average

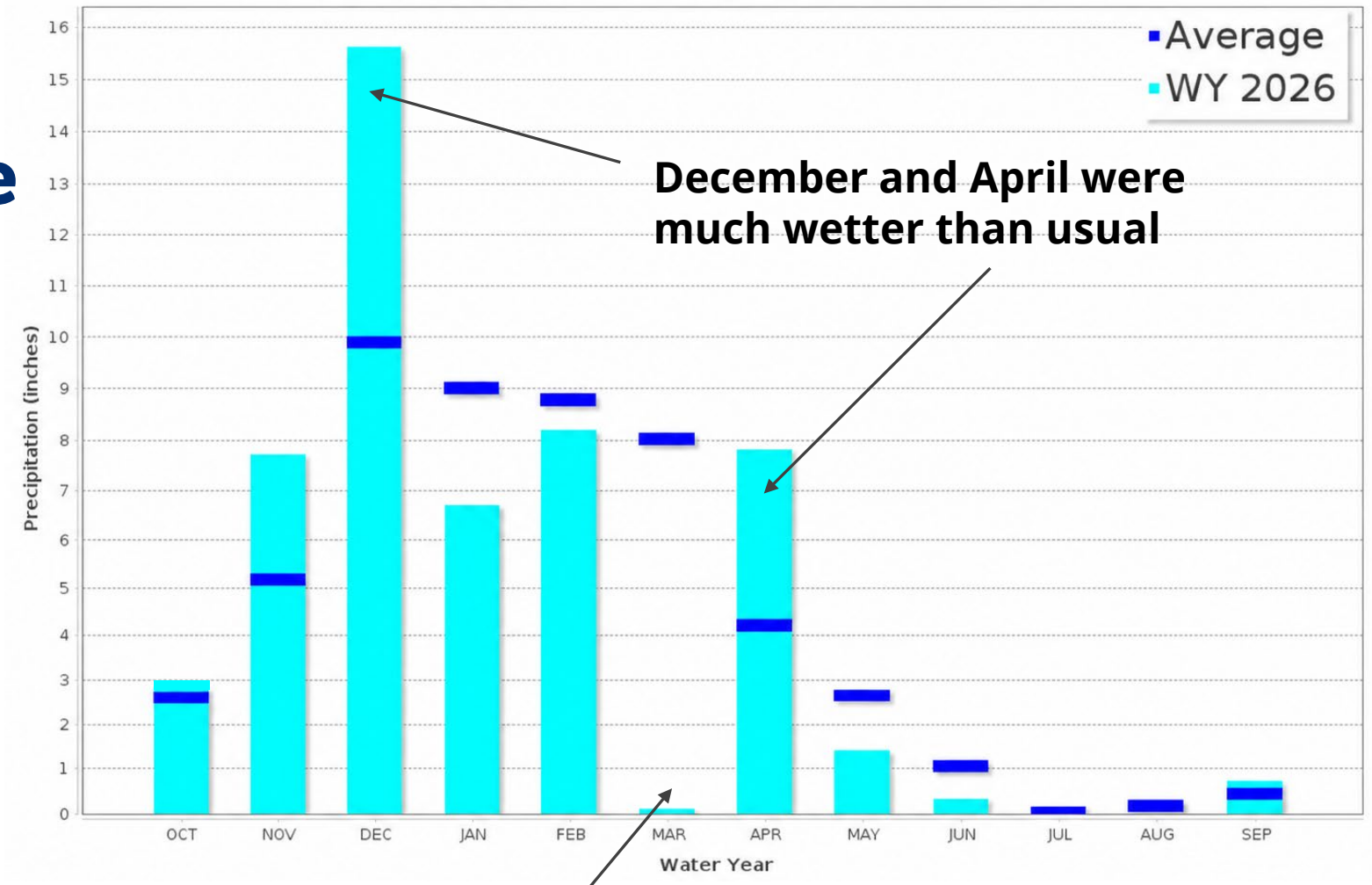




California Water Watch
https://cww.water.ca.gov

But some months were much wetter than average & some were much drier

Northern Sierra 8-station precipitation index, Water Year 2026



Modified from
https://cdec.water.ca.gov/images/WYPrecip/BAR_ESI_2026.PNG

Delta Science Program
DELTA STEWARDSHIP COUNCIL

By the Numbers

11/17/2026

Precipitation[1,2]

Percent average to 11/17

Northern Sierra

3.8" 65%

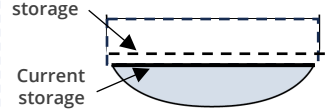
Central Sierra

3.8" 92%

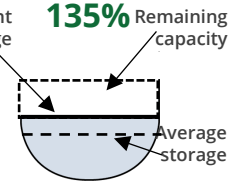
Reservoir Storage [4]

Percent average to 11/17

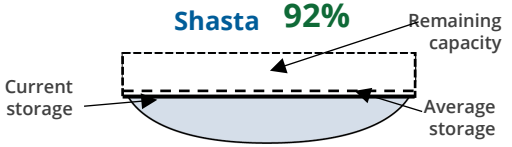
Oroville 81%



San Luis 135%



Shasta 92%



Water Temperature [3]

In degrees Fahrenheit

Average to 11/17

Historical average

Clear Creek

55° 53°

Collinsville

62° 59°

Clifton Court Forebay

61° 59°

Water Flow and Quality [3,5,6]

Flow (cfs) | % of 24 year flow average Salinity (µS/cm) | (ppm)

Sacramento River - Freeport

8,257 cfs | 80% 152 µS/cm |84 ppm

San Joaquin River - Vernalis

1,324 cfs | 87% 418 µS/cm | 230 ppm

Combined CVP + SWP - Diversion

2,575 cfs | 45% 409 µS/cm | 225 ppm

[1] https://cdec.water.ca.gov/cgi-progs/products/PLOT_ESI.pdf
[2] https://cdec.water.ca.gov/cgi-progs/products/PLOT_FSI.pdf
[3] http://cdec.water.ca.gov/dynamicapp/selectQuery
[4] https://cdec.water.ca.gov/resapp/RescondMain
[5] http://cdec.water.ca.gov/queryDaily.html
[6] http://www.usbr.gov/mp/cvo/vungvari/doutdly.pdf

<50% 50–74.9% 75–90% >90%

What the 2026/27 El Niño means for California and the Delta

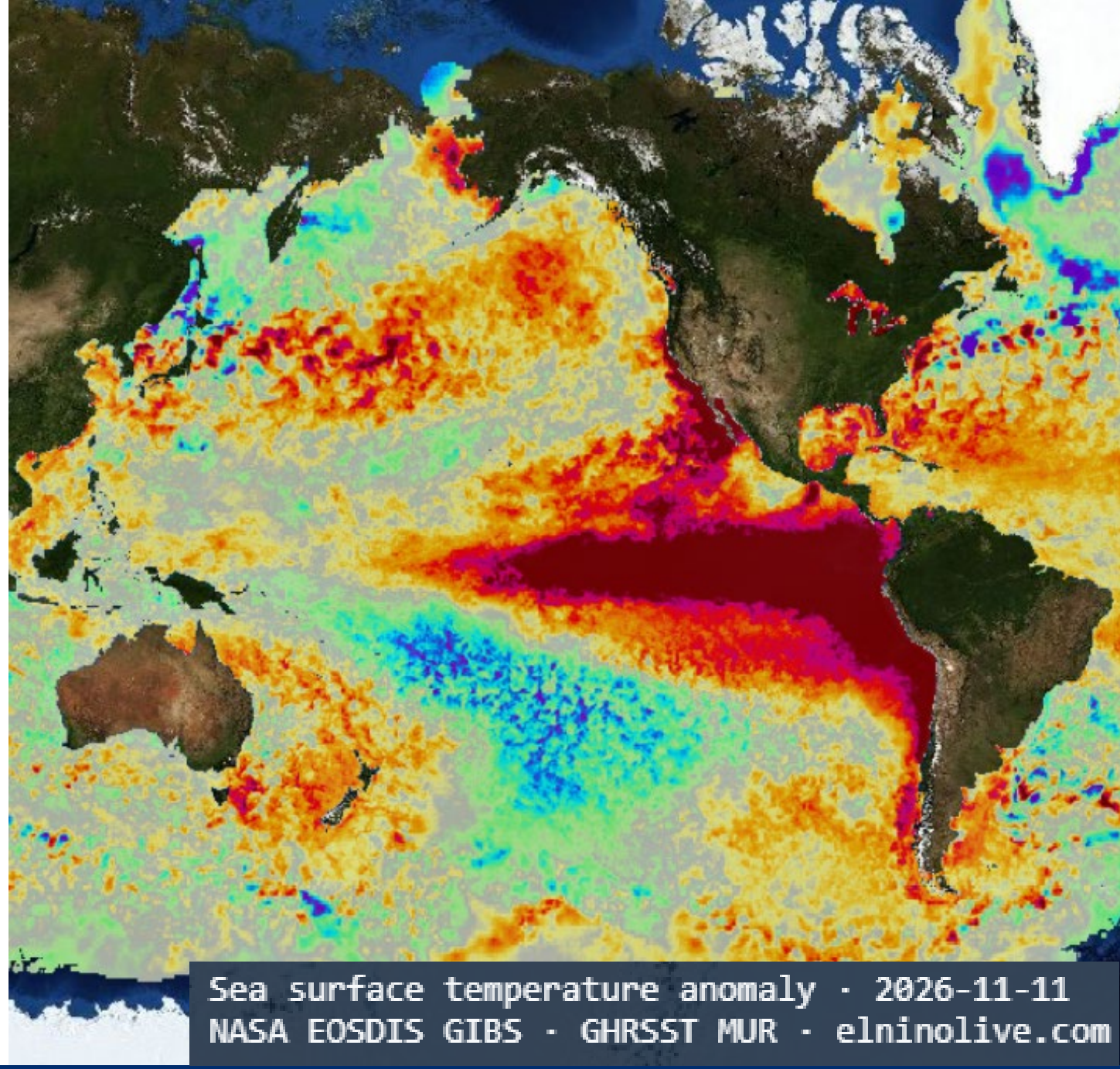
When high river flows meet elevated sea levels, the Delta gets squeezed from both ends



Made using Delta Atlas + ChatGPT

El Niño makes the Eastern Pacific Ocean much warmer, which changes global weather

- Trade winds weaken/reverse
- Warm water spreads eastward in the Pacific
- This changes where rain falls and how storms behave
- Often causes more intense and frequent storms in California, especially in southern counties



Heavy precipitation (rain or snow) during El Niño can bring opportunities as well as challenges





Images made using ChatGPT

Dr Patrick Barnard

Center for Coastal Climate Resilience

When high river flows meet elevated sea levels, the Delta gets squeezed from both ends

Elevated sea levels

Warmer ocean temperatures
(El Niño effects + marine heatwave)

Kelvin waves
(raises sea level)

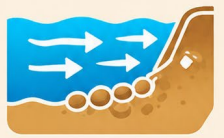
Storm surges
(pushes water into the Bay)

Unusually high tides
(king tides + 18.6y lunar cycle + 4.4y wobble cycle)

High river flows



Overtopping
(water can flow over levees)



Erosion and scour
(fast-moving water can wear away riverbeds and levees, increasing pressure)

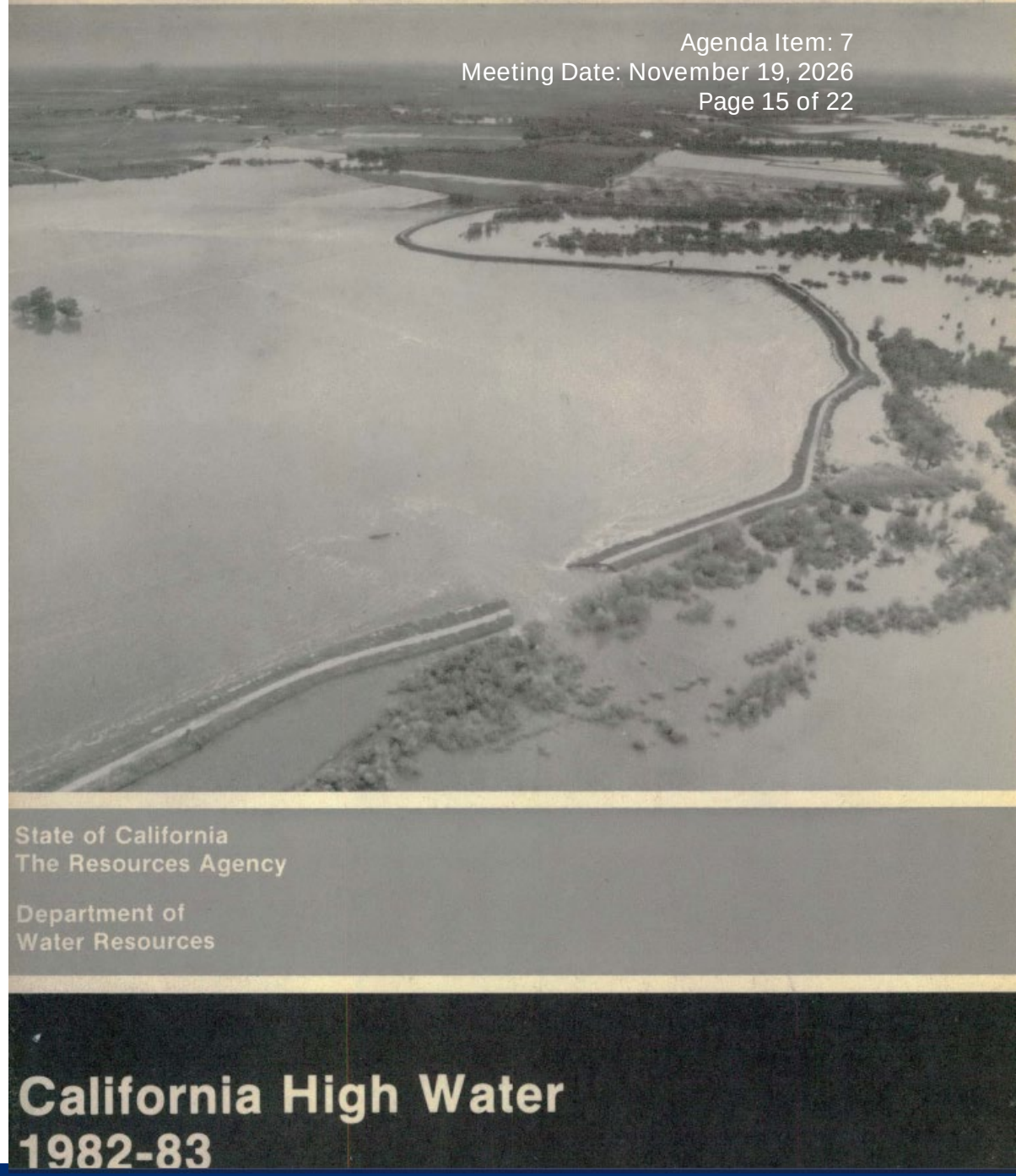
Compound flooding is a big concern.

Made using Delta Atlas + ChatGPT

The “squeeze” led to 1983 Mildred Island levee failure

- Atmospheric river + storm surge + king tide
- 900 acres drowned





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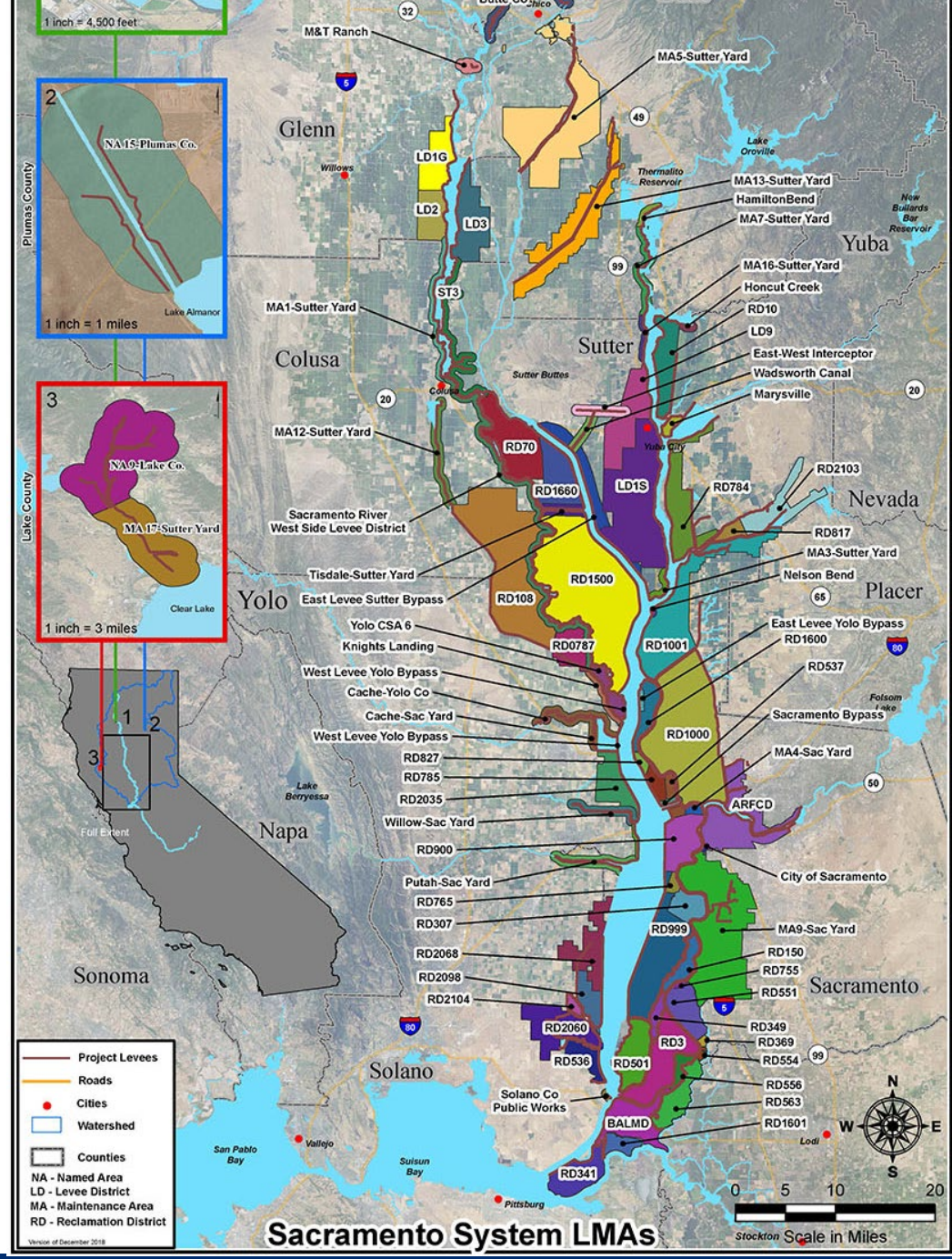




State and local agencies are coordinating to prepare

- Developing emergency plans
- Inspections/maintenance of levees & other flood control infrastructure
- Staging emergency equipment

The next presentation will provide more information on flood emergency preparedness & response in the Delta



Local maintaining agencies, Sacramento system.
(https://water.ca.gov/Programs/Flood-Management/Maintenance)

Longer-term Council initiatives are helping to improve flood planning

- Wetland restoration & other nature-based solutions
- Delta Levees Investment Strategy
- Delta 2D Flood Model



Image: https://deltacouncil.ca.gov/dlis/

Thank you

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Deltacouncil.ca.gov

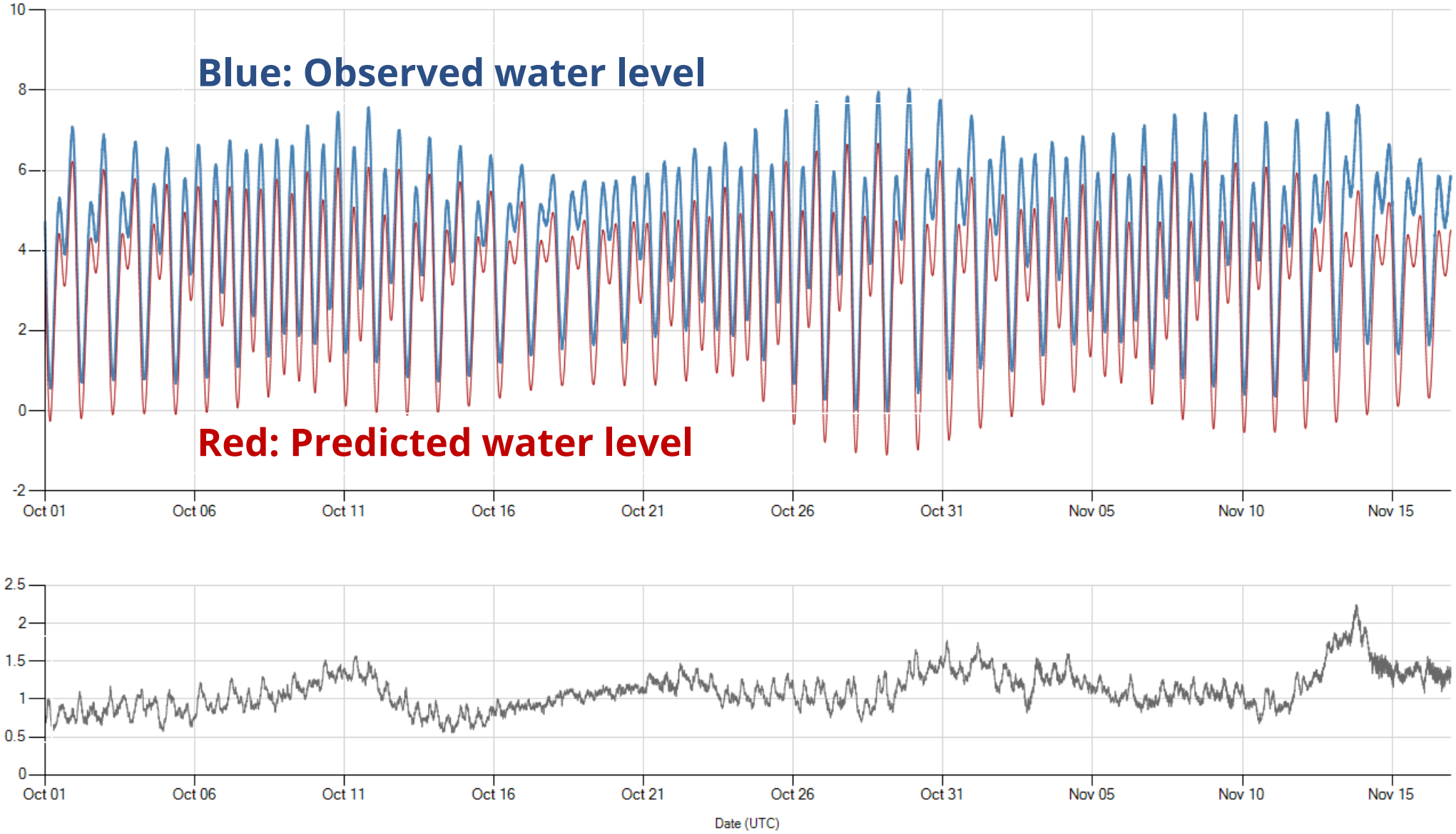
@DeltaCouncil

@deltastewardshipcouncil

Delta Stewardship Council

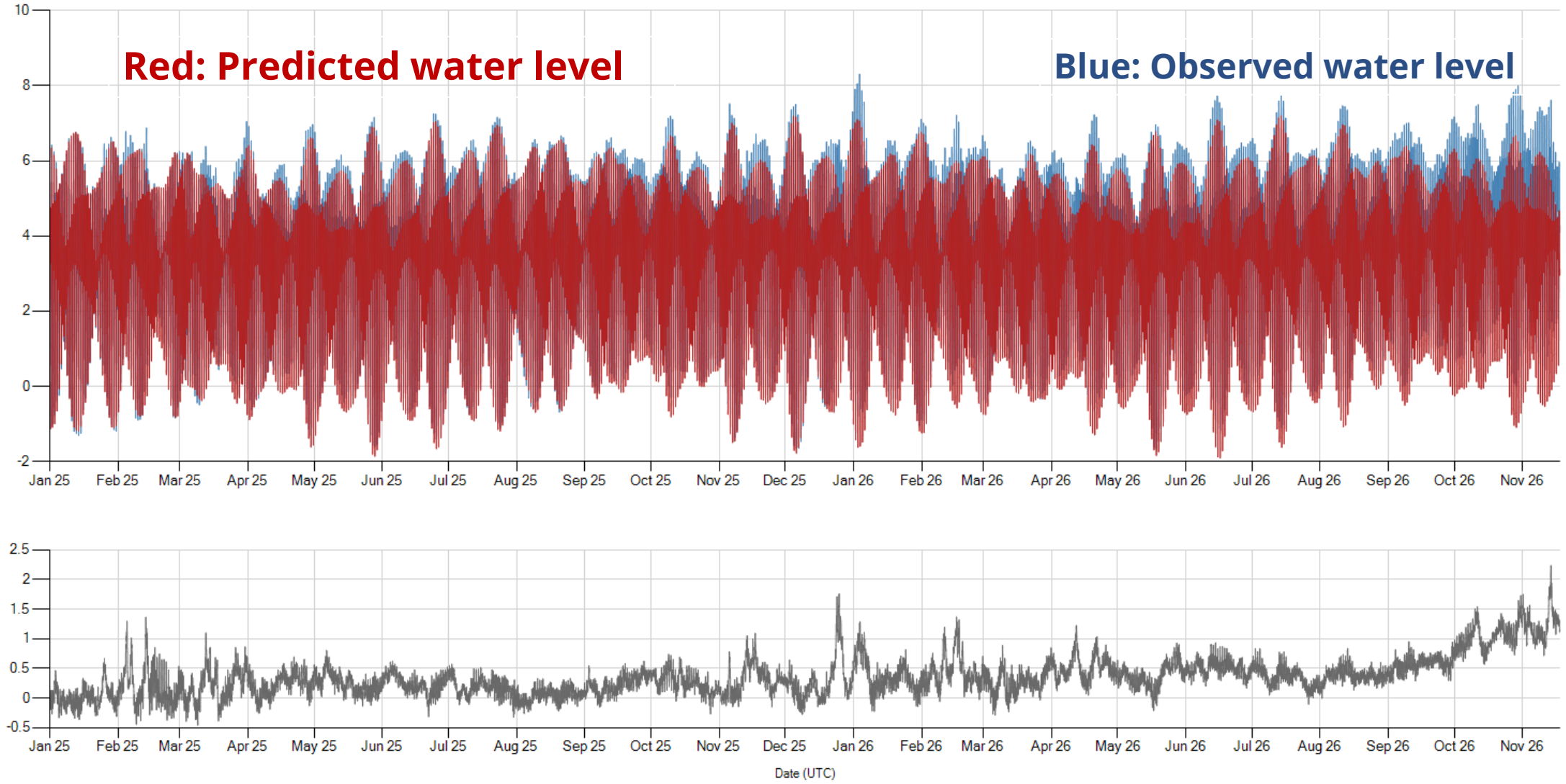
@deltastewardshipcouncil

Oct/Nov water levels at Golden Gate Bridge (NOAA 9414290)



Plot courtesy Cathy Ruhl, Hydrologist, USGS

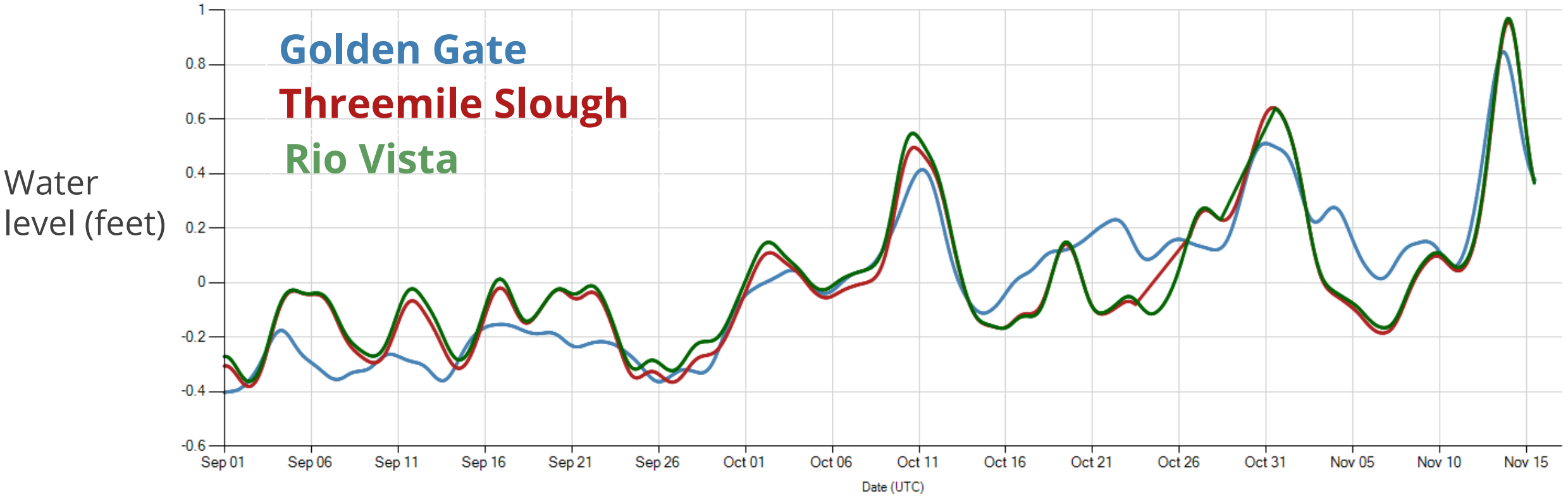
2025/26 water levels at Golden Gate Bridge (NOAA 9414290)



Plot courtesy Cathy Ruhl, Hydrologist, USGS

2026 Kelvin Wave, Sep 1 – Nov 16

Sea level elevation (feet) with tidal fluctuation removed



Plot courtesy Cathy Ruhl, Hydrologist, USGS
Golden Gate data: NOAA
Threemile Slough and Rio Vista data: USGS