

Priorities for California Water: Thriving with Less

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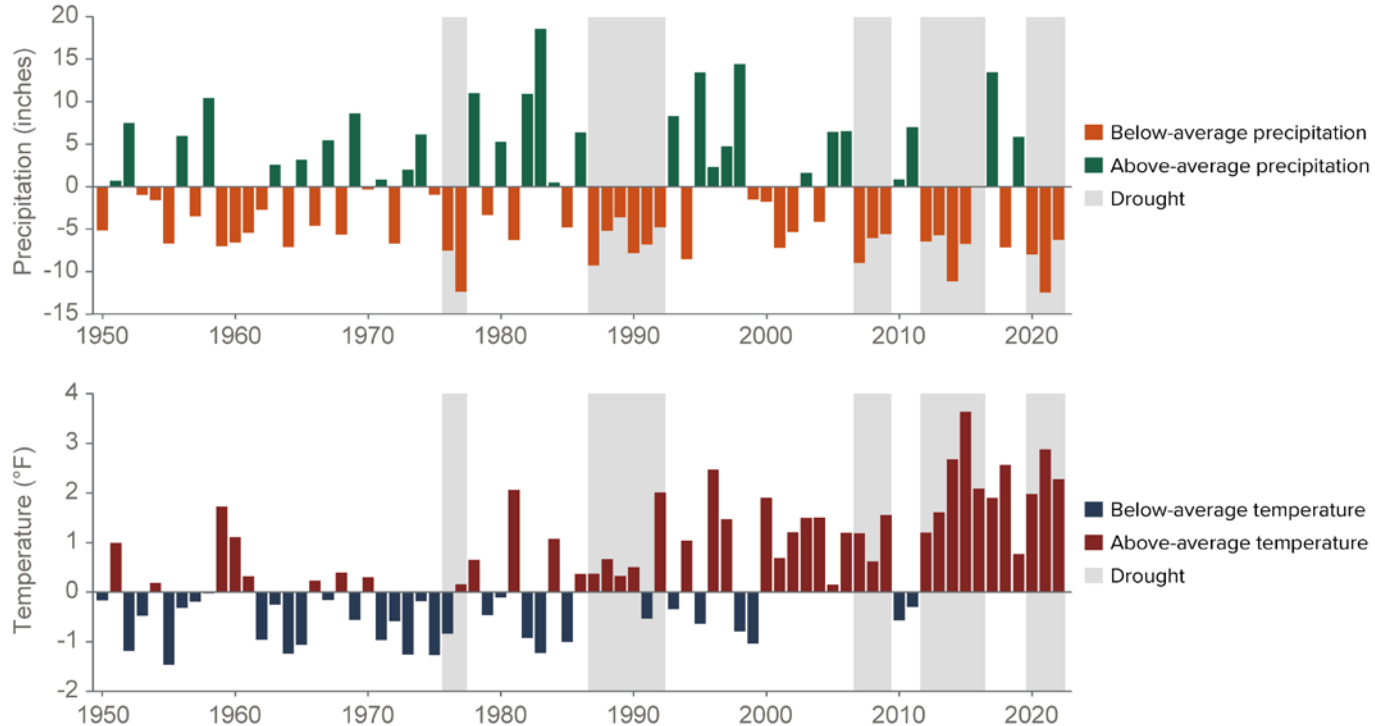


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We are in the era of the hot drought

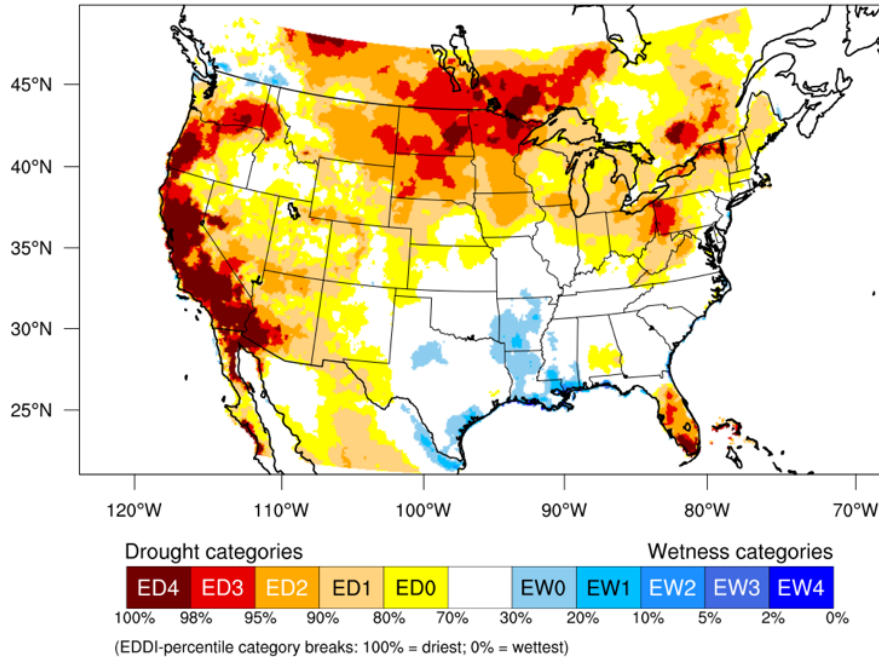


Source: Climate Tracker, Western Regional Climate Center

1950-2000 baseline

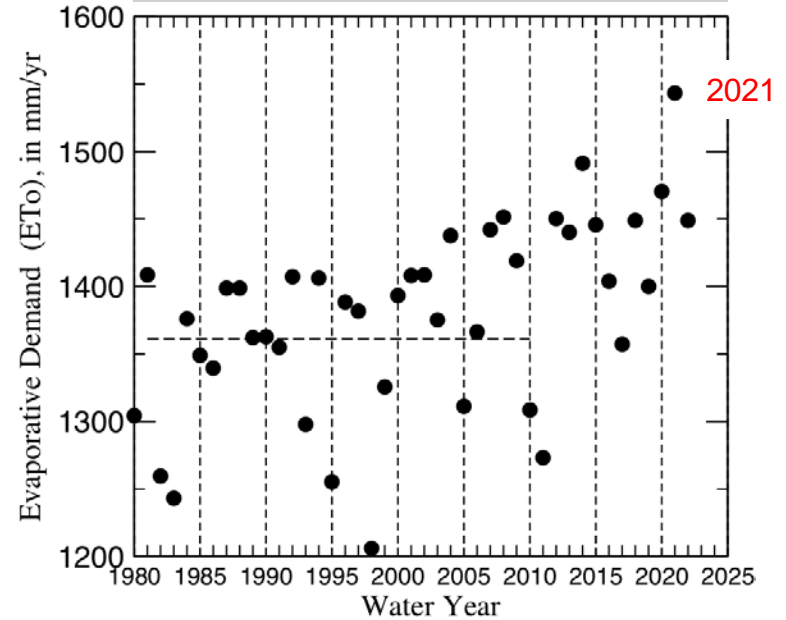
One big change: A thirstier atmosphere

Evaporative Demand Water Year 2021



Generated by NOAA/ESRL/Physical Sciences Laboratory

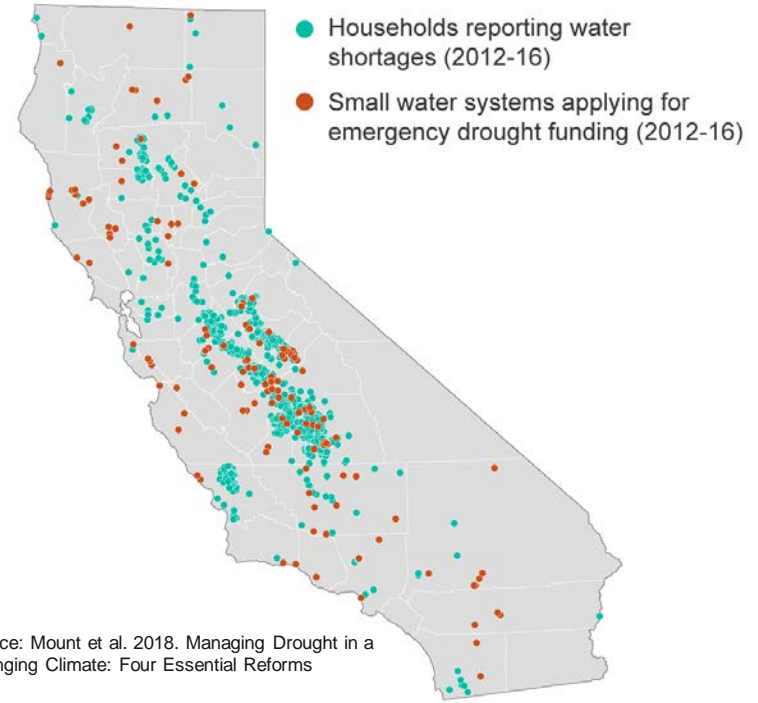
Water Year Evaporative Demand California North of 36N



Source: Mike Dettinger

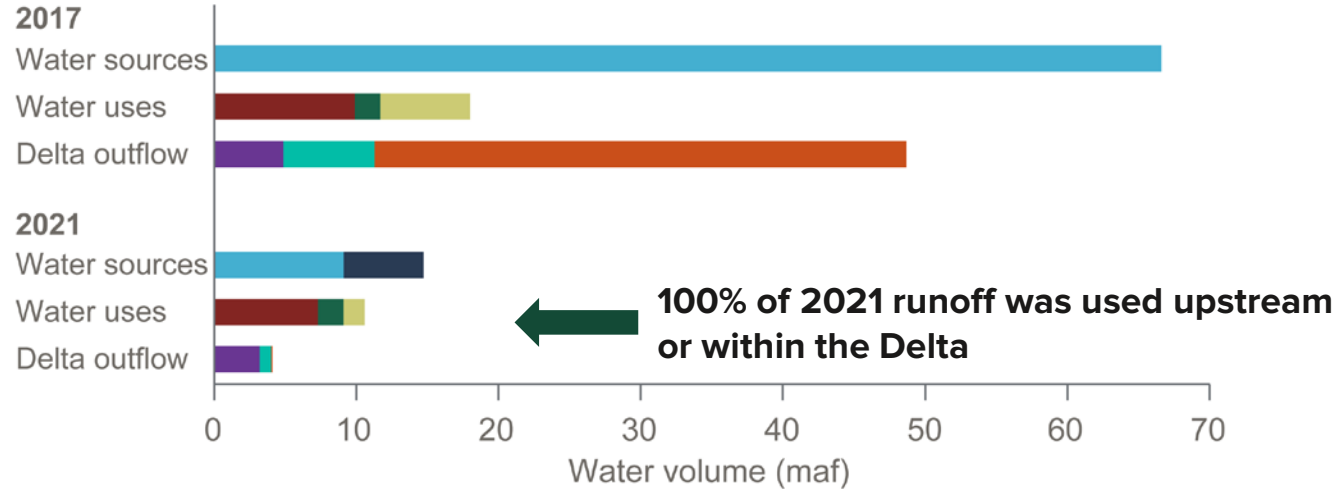
The 2012-16 drought “broke” our groundwater supplies

- Dramatic groundwater level declines with increasing costs and dry wells
- Groundwater water quality degradation
- Widespread land subsidence
- Surface water depletions impacting flows and ecosystems
- Culminating in the 2014 Sustainable Groundwater Management Act



2021 “broke” the Central Valley water supply system

Where water goes in the Delta watershed



Water sources

- Net runoff
- Storage release

Water uses

- Upstream use
- In-Delta use
- Exports

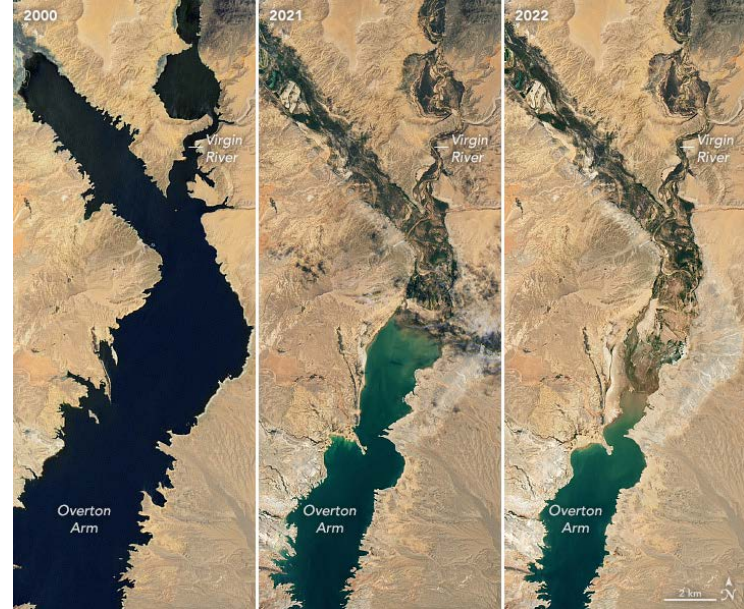
Delta outflow

- System outflow
- Ecosystem outflow
- Uncaptured outflow

Source: Gartrell, Mount and Hanak 2022. Policy Brief: Tracking Where Water Goes in a Changing Sacramento-San Joaquin Delta

Did 2022 “break” the Colorado River?

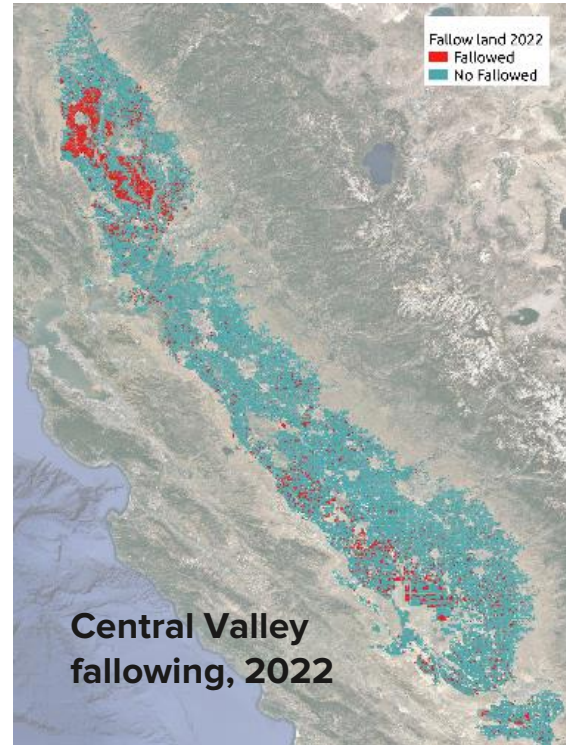
- Conditions are worsening fast, and feds are pressing for more action
- California has largest share, most senior rights
- But urban, ag communities will need to adapt to using less



Source: NASA Earth Observatory

The consequences of scarcity are widespread

- Farmland fallowing—esp. in Sacramento Valley
- Dry drinking water wells in many small communities
- Tight supplies in some import-dependent cities (esp. So Cal)
- Crisis for fish, waterbirds



Source: J. Medellin-Azuara et al. (forthcoming) "Economic Impacts of the 2020-2022 Drought on California Agriculture" (CDFA-supported project).

California has the capacity to adapt to changing conditions

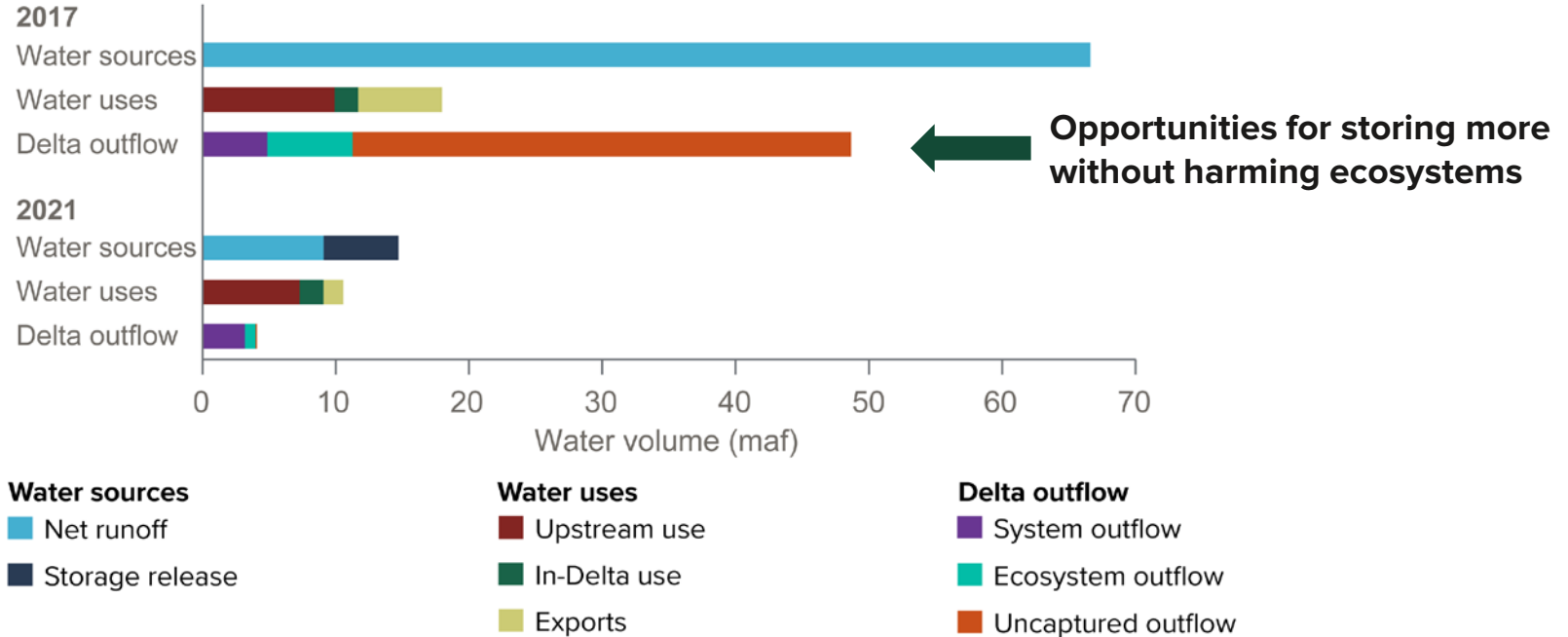
- Smart demand management
 - Continued efficiency gains, flexible trading, nimble state oversight

California has the capacity to adapt to changing conditions

- Smart demand management
 - Continued efficiency gains, flexible trading, nimble state oversight
- Strategic supply investments
 - Alternative supplies (e.g., recycled water)
 - Above and below-ground storage, conveyance to take advantage of wet years

We need to take better advantage of wet years

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Source: Gartrell, Mount and Hanak 2022. Policy Brief: Tracking Where Water Goes in a Changing Sacramento-San Joaquin Delta

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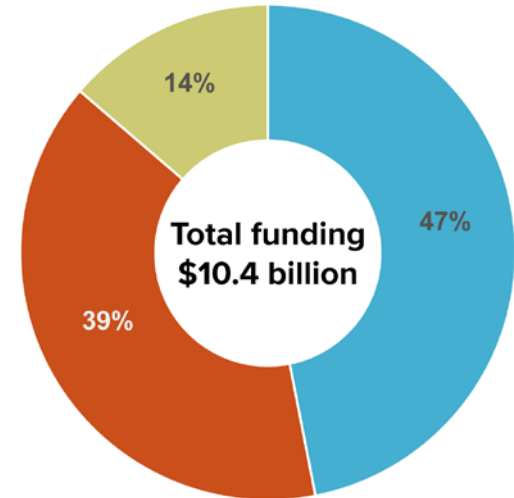
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- Safety nets and farmland transition support
- Governor's new drought strategy addresses many of these issues

And there are new resources available to help

- Federal support
 - Bipartisan Infrastructure Bill
 - Inflation Reduction Act
- State support
 - Drought and Water Resilience Package (2021)
 - Climate Resilience Package (2021)
 - Drought Response and Resilience Package (2022)
 - Nature-based Solutions Package (2022)

New state water funding since 2021



Funding categories

- Water supply management
- Ecosystems and nature-based solutions
- Immediate drought assistance

Today's panels: How to better manage through surplus and shortage?



Note on the use of these slides

These slides were created to accompany a presentation. They do not include full documentation of sources, data samples, methods, and interpretations. To avoid misinterpretations, please contact:

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Thank you for your interest in this work.