

# Adapting California's Water Rights System to a 21st Century Climate

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**PPIC**

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# California's changing climate is exposing weaknesses in our water rights system

- **Managing scarcity**
  - Warming is making droughts more intense
  - Growing atmospheric thirst, less runoff, more rapid shifts in conditions
  - Requires more nimble ability to enforce and curtail water rights



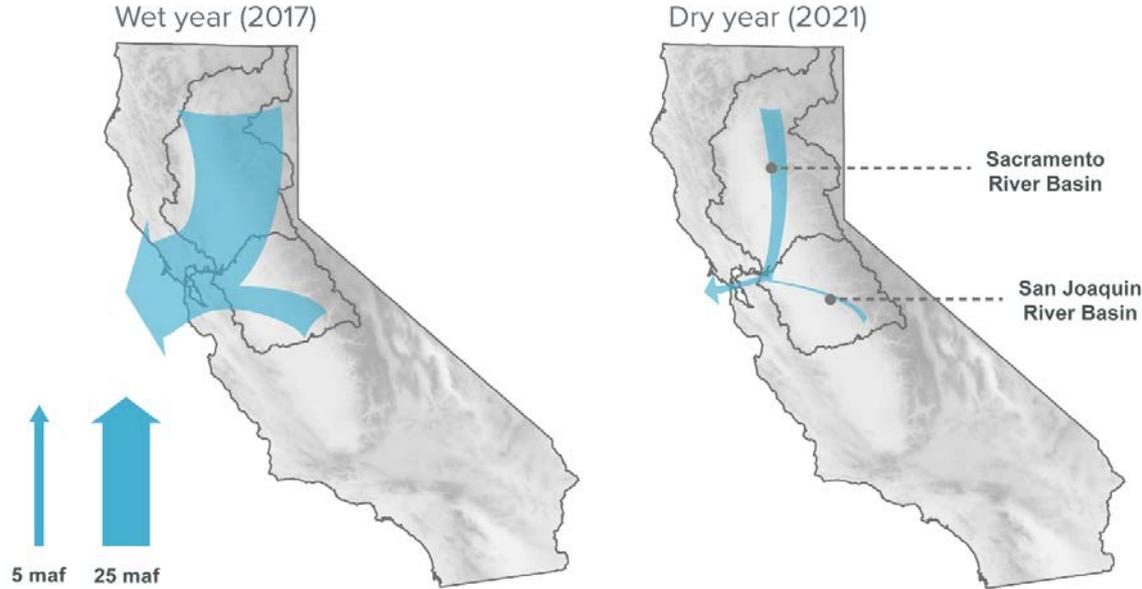
# California's changing climate is exposing weaknesses in our water rights system

- **Managing abundance**
  - Large storms are key part of our water supply
  - Wet periods are projected to become even more intense
  - Capturing more flows from big storms is a key adaptation strategy
  - Requires more nimble permitting of diversions



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

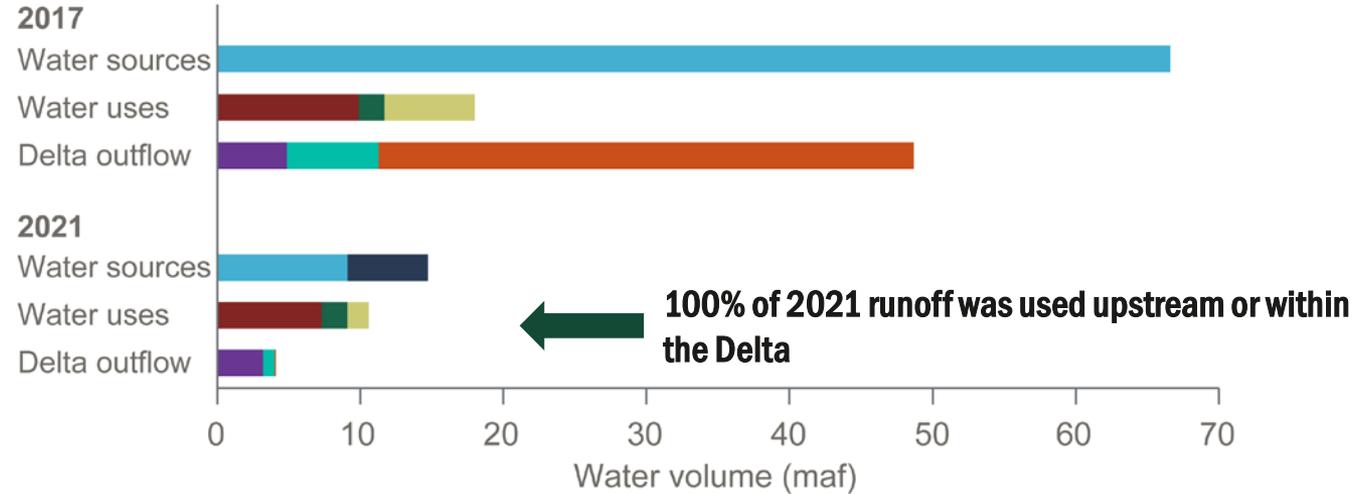
Water sources and outflow from the Delta



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

# 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

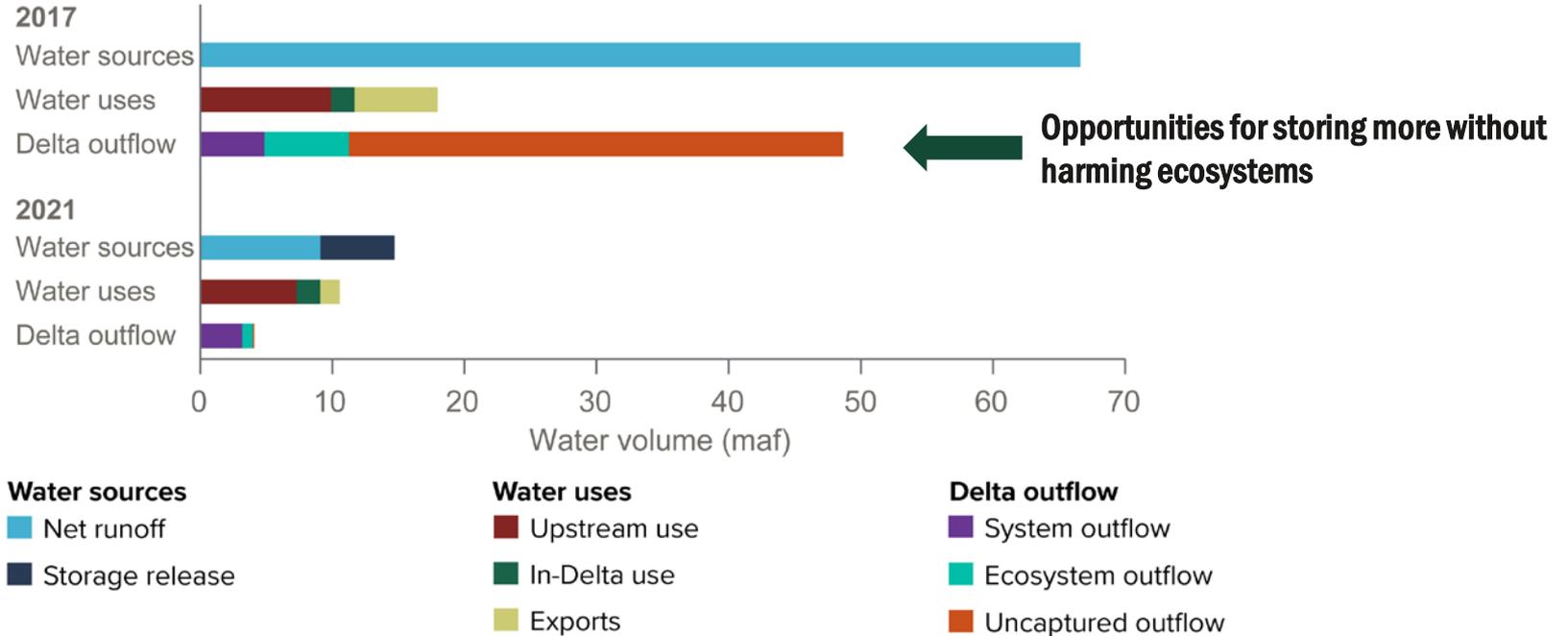
**Delta outflow**

- System outflow
- Ecosystem outflow
- Uncaptured outflow

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

# We need to take better advantage of wet years

Where water goes in the Delta watershed



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

# Some recent progress on adapting water rights administration has occurred, but more work is needed

## ▪ Managing scarcity

- Water Code Section 1058.5 (amended in 2014) authorizes the State Water Board to issue emergency regulations for curtailment, but requires meeting one of two restrictive “triggers”:
  - Emergency drought declaration by Governor
  - Critically dry year preceded by two+ dry years
- New measurement and reporting requirements for diversions (2015), but compliance has been a challenge

## ▪ Managing abundance

- State Water Board created streamlined permitting guidelines for high flows (2019), but uncertainties remain

# Recommendations for better managing scarcity

1. Expressly authorize the State Water Board to enforce, and if necessary, curtail:
  - All surface water rights (incl. riparian and pre-1914 appropriators)
  - Groundwater rights that significantly affect surface waters
2. Enable Board to respond more quickly to changing conditions
  - Remove triggers in Water Code Section 1058.5
3. Create incentives to improve measurement, reporting
  - Require more frequent reporting
  - Require diverters to prove both the existence of a valid water right and the lawful exercise of that right under current conditions
4. Encourage renegotiation of CVP and SWP senior contracts

# Recommendations for better managing abundance

1. Empower the Board to administer a special permitting system for “high-water” flows
2. Develop watershed-specific high-flow diversion thresholds
  - Current default is daily flows at 90<sup>th</sup> percentile
  - Board and DWR (with stakeholder input) could determine thresholds by watershed
3. Confirm that recharge with high flows is a beneficial use
  - Building on AB 658 (2019), which authorized temporary recharge permits to Groundwater Sustainability Agencies
4. Allow for quick action when storms come
  - Facilitate up-front programmatic permitting

## The cornerstone of California’s water policy—Article X, Section 2—supports these recommendations

- “Because of the conditions prevailing in this State, the general welfare requires that the water resources of the State be put to beneficial use *to the fullest extent of which they are capable.*”
- The right to use water is “limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not ... extend to the waste or unreasonable use ... of water.”
- The Legislature shall have authority to “enact laws in the furtherance of the policy in this section contained.”

## Additional PPIC resources ([ppic.org/water/](https://ppic.org/water/))

- [Priorities for California's water: Thriving with less](#) (Mount et al. 2022)
- [Tracking where water goes in a changing Sacramento-San Joaquin Delta](#) (Gartrell et al. 2022)
- [Improving California's water market](#) (Ayres et al. 2021)
- [Managing drought in a changing climate: Four essential reforms](#) (Mount et al. 2018)
- [Allocating California's water: Directions for reform](#) (Gray et al. 2015)

## Notes 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.