Water and Agriculture in California and the San Joaquin Valley

Joint Agriculture Committee Hearing

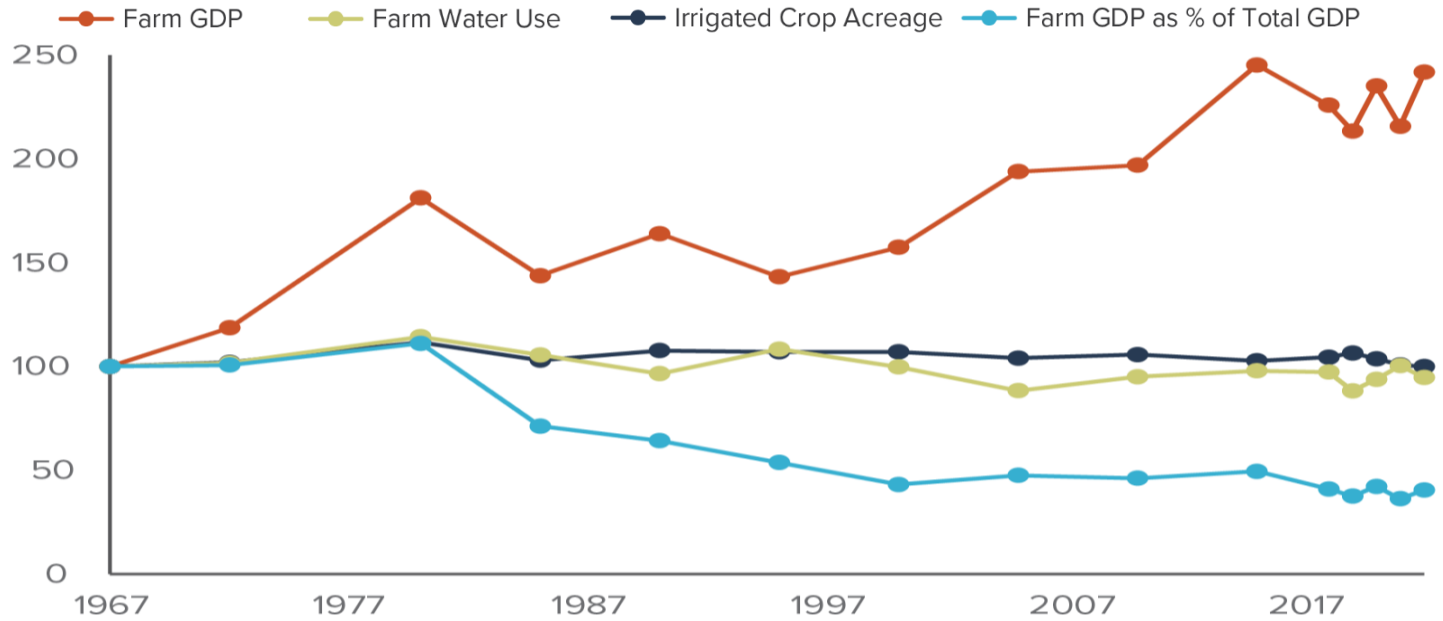
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Caitlin Peterson

PPIC Water Policy Center associate director & research fellow



The value of farm output has increased, while water and land use remain steady



Source: Peterson et al. (2023) Water Use in CA's Agriculture

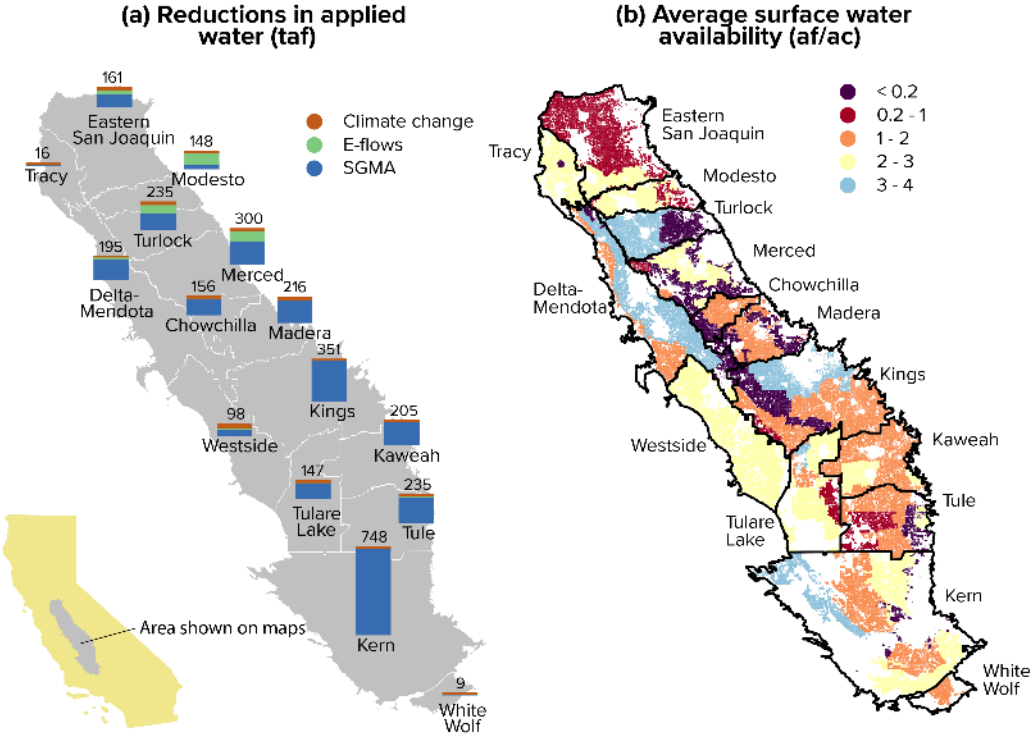
Groundwater resources are critical—and threatened

- Three-quarters of CA's irrigated crops are grown in the Central Valley
- Overdraft equals about 10% of net use
- Reconciling overdraft will require new supplies, less water use, or both



Source: PPIC

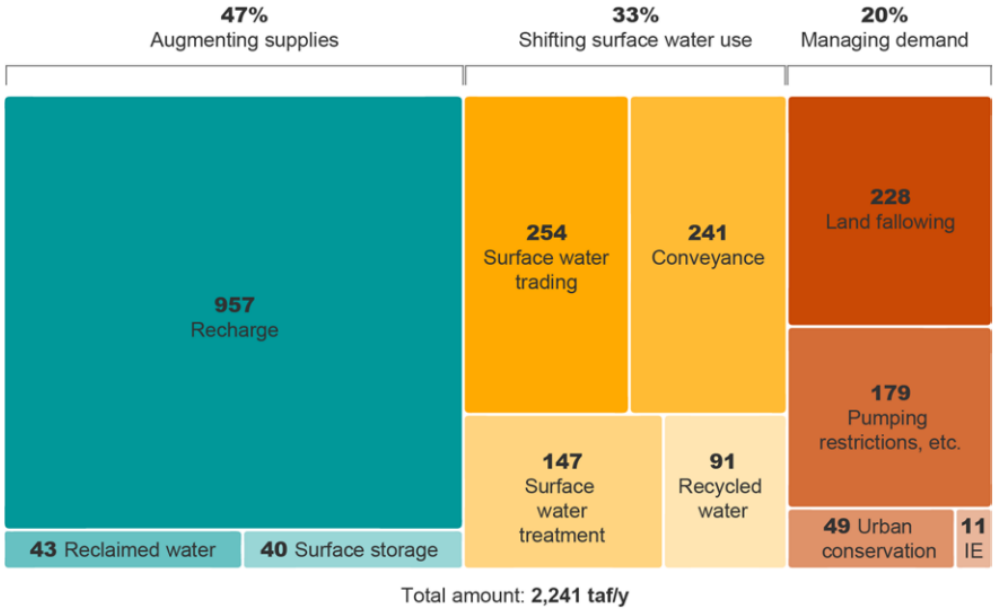
The San Joaquin Valley faces a 20% reduction in supplies



Source: Hanak et al. (2023) Managing Water and Farmland Transitions in the SJV

GSAs are counting on groundwater recharge to bring in new supplies

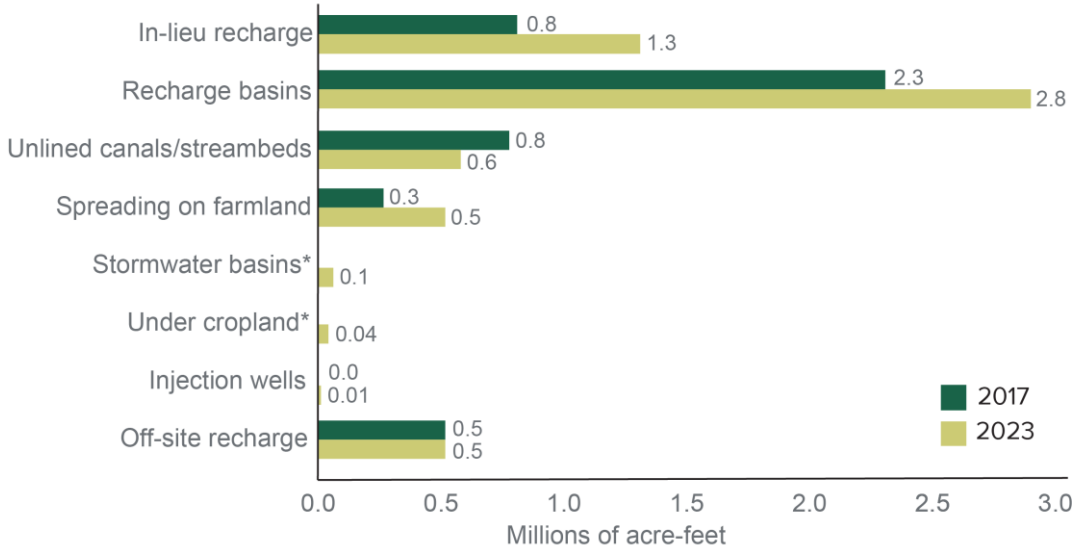
- Plans' overdraft reduction portfolios emphasize supply-side solutions
- Shifting surface water use is a secondary emphasis, followed by managing demand



Source: Hanak et al. (2020) A Review of Groundwater Sustainability Plans in the SJV

Recharge volumes were up in 2023 compared to 2017

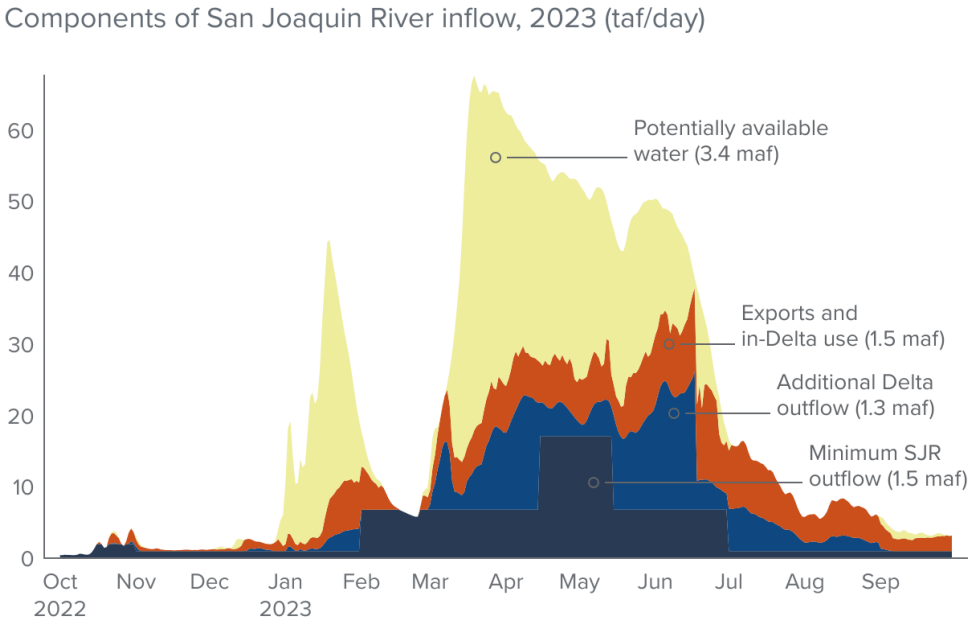
- Similar precipitation in 2017 and 2023
- More agencies recharging: 79% (up from 75%)
- Volumes up
  - Reports of **5.3 maf** stored on-site
  - **7.6 maf** estimated valley-wide
  - Increase of **1.1 maf (17% jump)** over 2017



Source: Peterson et al. (2024) Replenishing Groundwater in the SJV: 2024 Update

More water could be available for recharge, some with tradeoffs

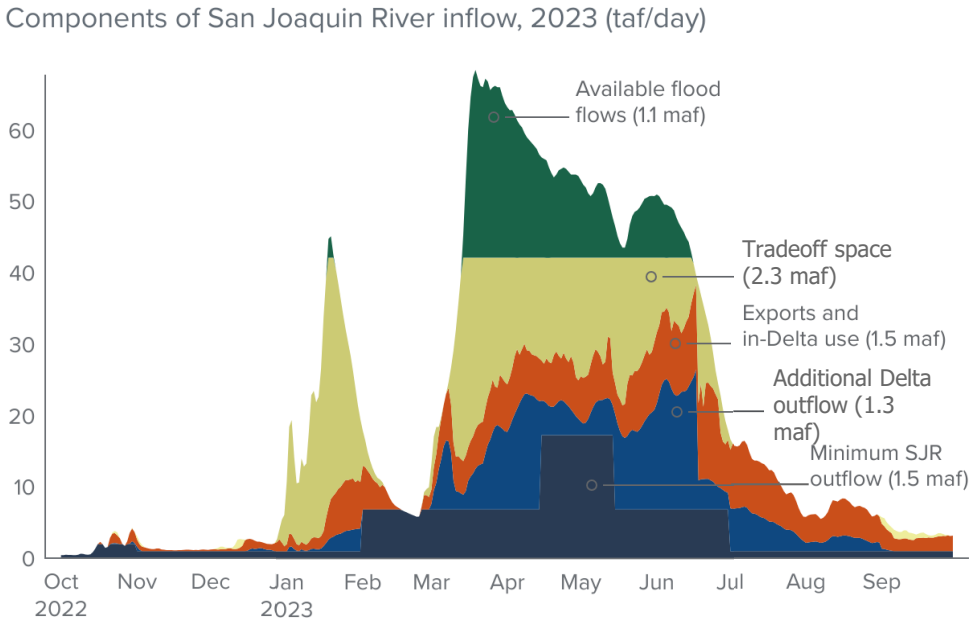
- On the San Joaquin River, up to **3.4 maf more** water available upstream of the Delta



Source: Hanak et al. (2025) How Much Water is Available for Recharge in the Central Valley?

More water could be available for recharge, some with tradeoffs

- On the San Joaquin River, up to **3.4 maf more** water available upstream of the Delta
- 1.1 maf could have been diverted under executive orders



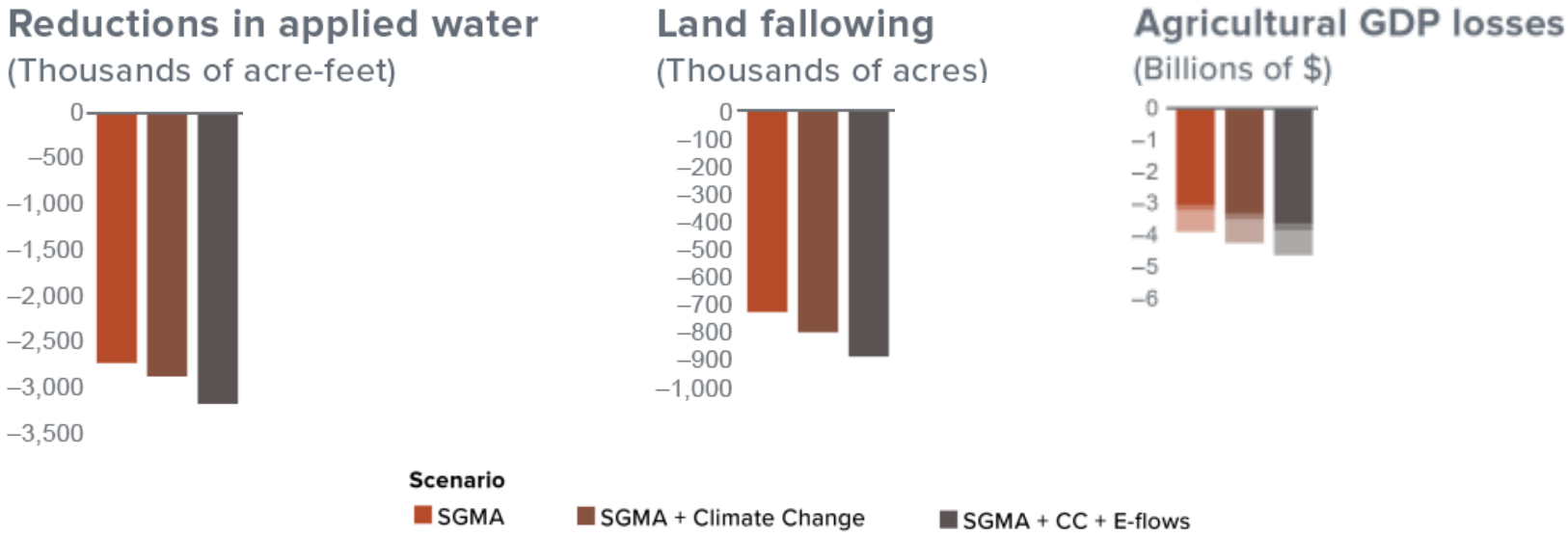
Source: Hanak et al. (2025) How Much Water is Available for Recharge in the Central Valley?

Recommendations for scaling up recharge

- Refine rules on when/how much water can be diverted
- Address other regulatory barriers
- Ease infrastructure constraints
- Enhance groundwater accounting
- Accelerate the rollout of recharge on farmland
- Continue building partnerships



Water reductions by 2040 will result in farmland fallowing and impacts to farm GDP



Source Escriva Bou et al. (2023) The Future of Agriculture in the SJV

Widespread fallowing brings both risks and opportunities

- Even with new supplies, 500,000+ acres will need to come out of intensely irrigated production
- What happens to these lands?
  - Economic, public health, environmental risks
- New land uses must deliver:
  - Ongoing control of dust, weeds, and other pests
  - Ideally also support local economic activity, other local benefits
  - Cost-effective solutions



Recommendations for managing farmland transitions

- Invest in infrastructure, workforce training, and innovative practices
- Promote effective and responsible water trading
- Align regulatory and fiscal incentives
- Support pilots and incentives for SGMA-ready crops, farmland repurposing



Thank you!



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:

Caitlin Peterson (peterson@ppic.org; 415-291-4435)

Thank you for your interest in this work.