



# Implementing SGMA at Ground Zero: Challenges and Opportunities for the San Joaquin Valley

Joint Water Parks & Wildlife and Local Government Committee  
Informational Hearing—February 15, 2022

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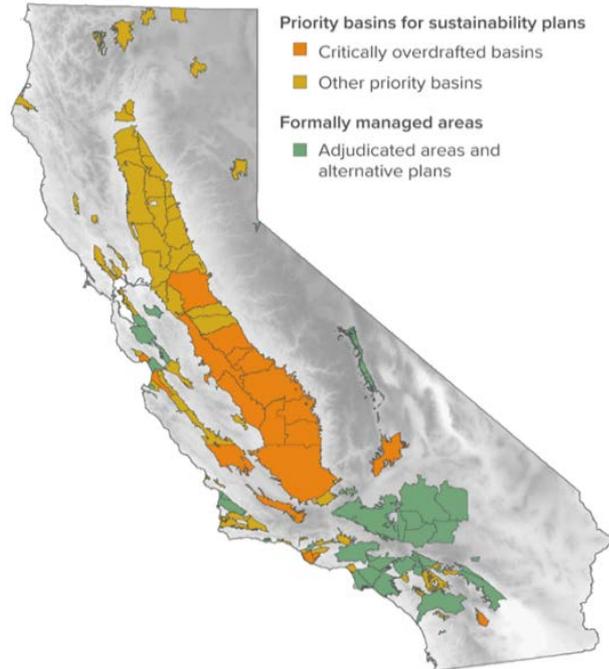
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# California's 2014 Sustainable Groundwater Management Act (SGMA)

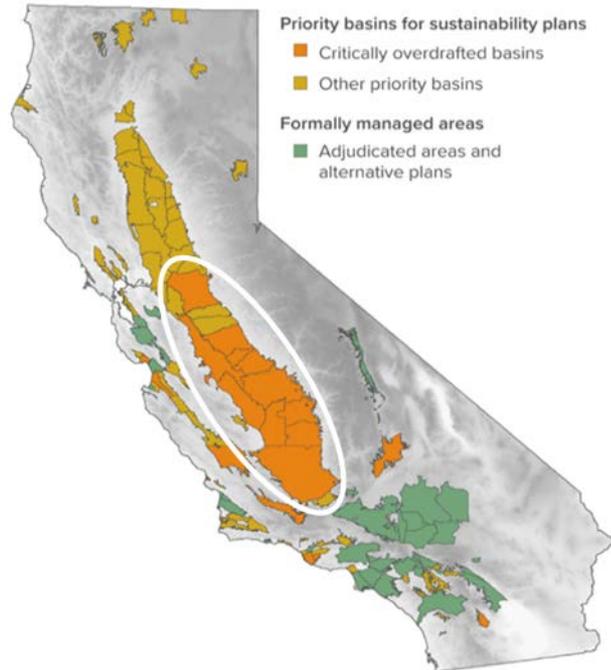
## Main groundwater basins



- Local responsibility, state backstop
  - ~85 priority basins
  - > 250 sustainability agencies
- Sustainability plan deadlines: 2020/2022
  - Annual data reporting
  - Plan updates every 5 years
- Flexible timeline, with guardrails
  - 20 years to attain sustainability...
  - ...as long as no significantly unreasonable, undesirable effects

# San Joaquin Valley is ground zero for implementing SGMA

## Main groundwater basins



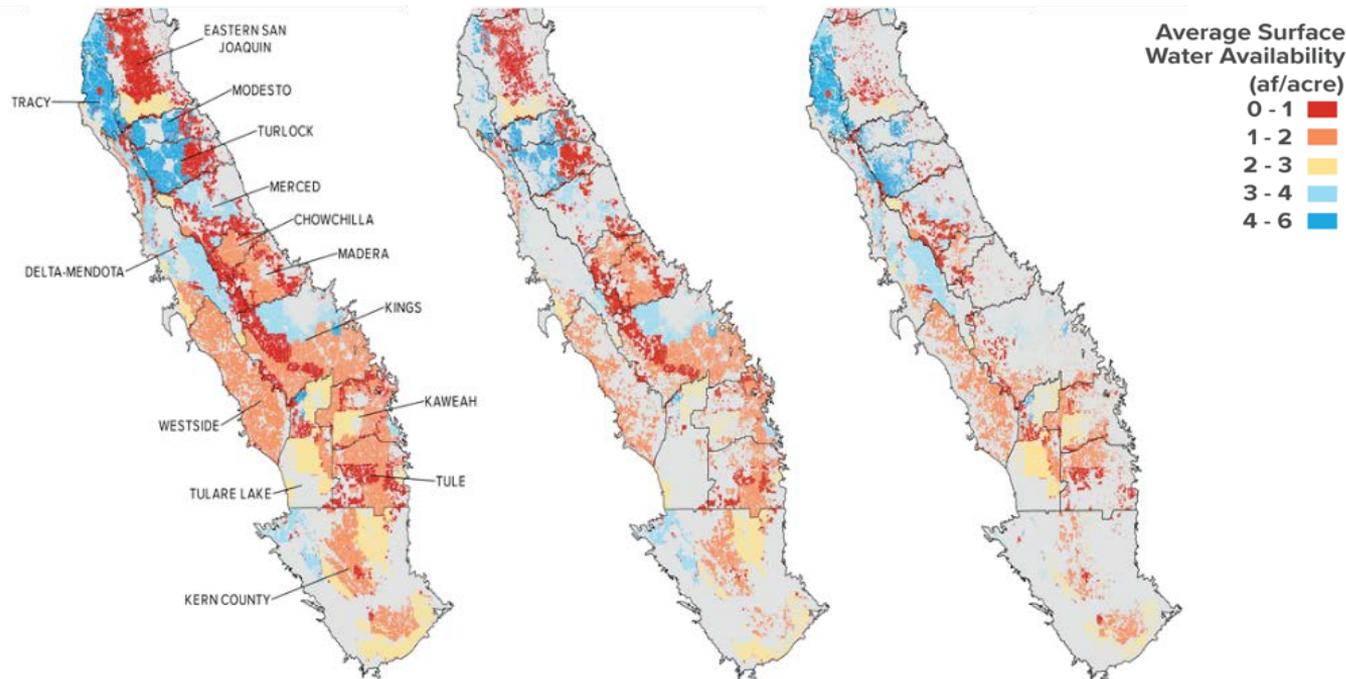
- Largest ag region: >50% of CA output
- Biggest imbalance: ~2 M acre-feet/yr overdraft; 11% of net water use
- Consequences: dry wells, sinking lands, reduced reserves for droughts
- Groundwater math problem: attaining balance means more supply, less water use, or both
- Socioeconomics problem: some solutions are more costly than others
- Governance problem: big basins, diverse conditions make coordination especially hard

# Variable access to surface water highlights importance of—and challenges to—cooperation

Irrigated acres (2016)

Perennial crops

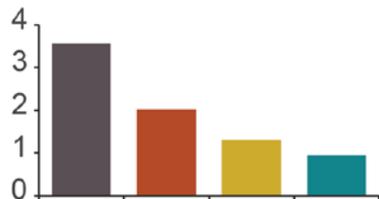
Annual crops



# Flexibility can lower regional costs of managing farm water demand; new supplies can reduce land fallowing

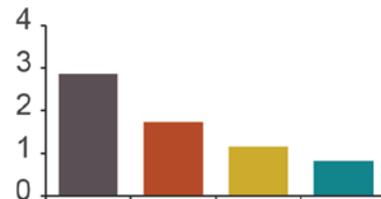
## Crop revenue losses

(billions of \$)



## Farm-related GDP losses

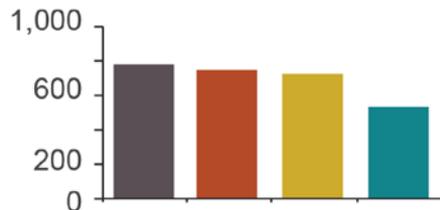
(billions of \$)



- Inflexible local water use
- Local water trading
- Valley-wide surface water trading
- Valley-wide surface water trading + new supplies

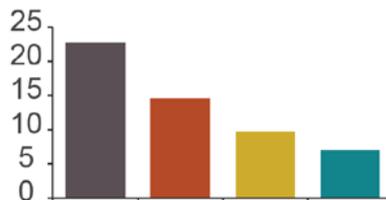
## Land fallowing

(thousands of acres)



## Farm-related job losses

(thousands of jobs)



Source: Hanak et al. [A Review of Groundwater Sustainability Plans in the SJ Valley: Public Comments to DWR](#) (PPIC, 2020)

# DWR's reviews of first groundwater sustainability plans highlight some key areas for improvement

- Plans don't adequately address undesirable results of groundwater use—e.g., impacts on drinking water wells, subsidence
- In some basins, plans don't coordinate adequately on data, methods, management approaches
- Some plans don't propose enough supply and demand actions to bring basins into balance

# Our work highlights some additional issues with the plans' groundwater math problem

- Overly optimistic assumptions about:
  - The extent of groundwater overdraft
  - The potential for new supplies to address it
- Too little emphasis on:
  - Managing demand
  - Contingencies for warmer, more intense droughts in our changing climate

# We're already back in severe drought—which will make the balancing act even harder

- Fewer opportunities to recharge basins
- More groundwater pumping, more risks of undesirable results

*Wells impacted in the Central Valley  
by fall 2022 if drought persists*



Source: Escrivá-Bou & Pauloo ([CalMatters, June 9, 2021](#))

# Five near-term priorities for state support

1. Address undesirable results of overdraft
  - Hold GSAs accountable
2. Accelerate demand management
  - Support strong water accounting, common tools
3. Promote realistic efforts on new supplies
  - Determine what's available, incentivize cooperation, facilitate permitting
4. Assess smart infrastructure investments
5. Plan for successful farmland transitions

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

- [“Priorities for California’s Water: Responding to the Changing Climate”](#) (report, Nov 2021)
- [“Improving California’s Water Market: How Water Trading and Banking Can Support Groundwater Management”](#) (report, Sept 2021)
- [“Groundwater and Urban Growth in the San Joaquin Valley”](#) (report, Sept 2021)
- [“A Review of Groundwater Sustainability Plans in the San Joaquin Valley”](#) (public comments submitted to DWR, May 2020)
- [“Water and the Future of the San Joaquin Valley”](#) (report, Feb 2019)
- [“Replenishing Groundwater in the San Joaquin Valley”](#) (report, April 2018)
- [“Water Stress and a Changing San Joaquin Valley”](#) (report, Feb 2017)

## 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.