

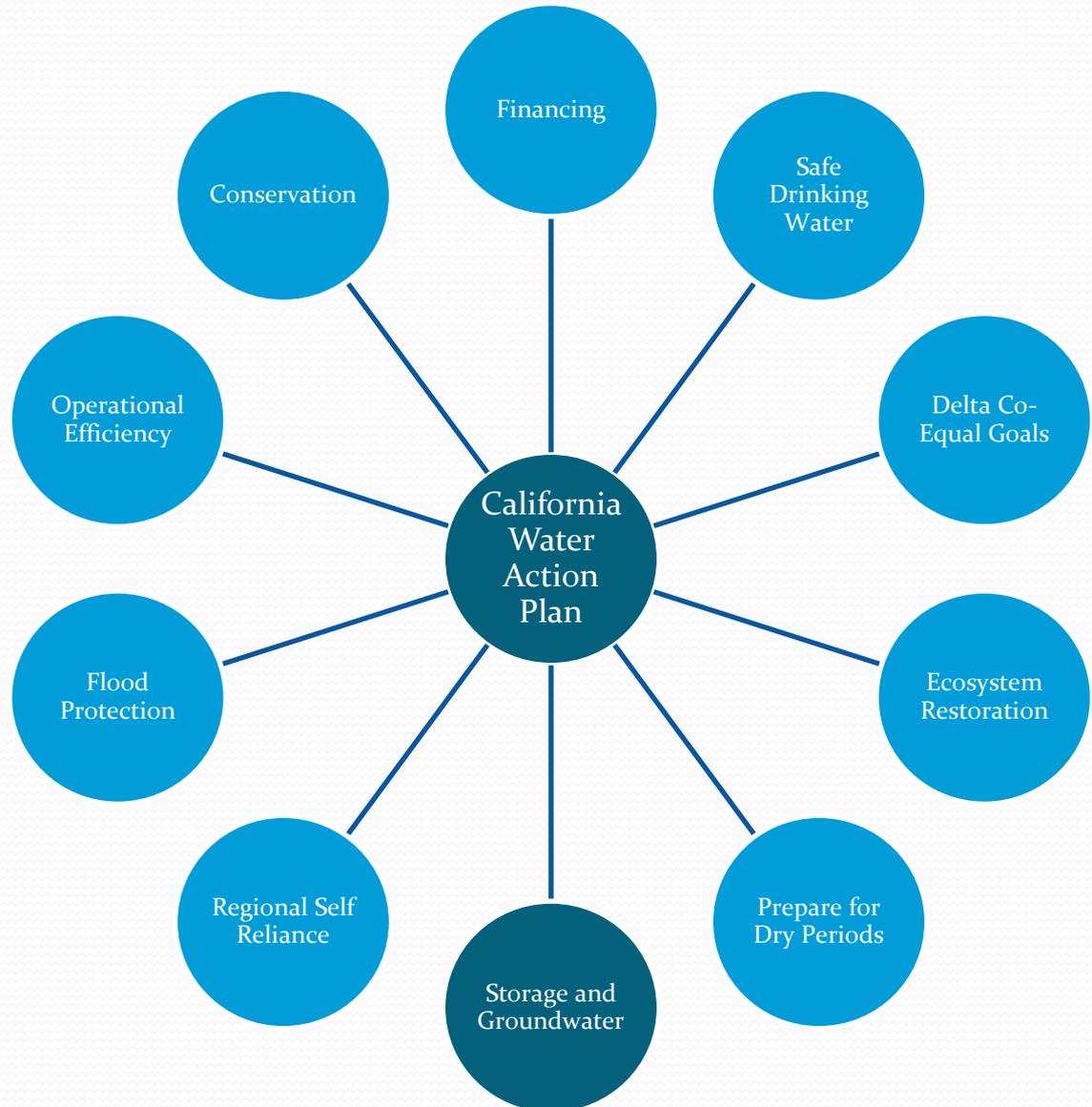
Sustainable Groundwater Management in California

Gordon Burns, Cal EPA
California Water Commission Meeting
Sacramento, June 18, 2014

California Water Action Plan

- Current system unsustainable
- Objectives: more reliable supplies, restoration, and more resilient system
- Ten actions over the next five years

California Water Action Plan





Groundwater is essential

Groundwater management is essential to making local and regional water supplies more reliable and resilient.

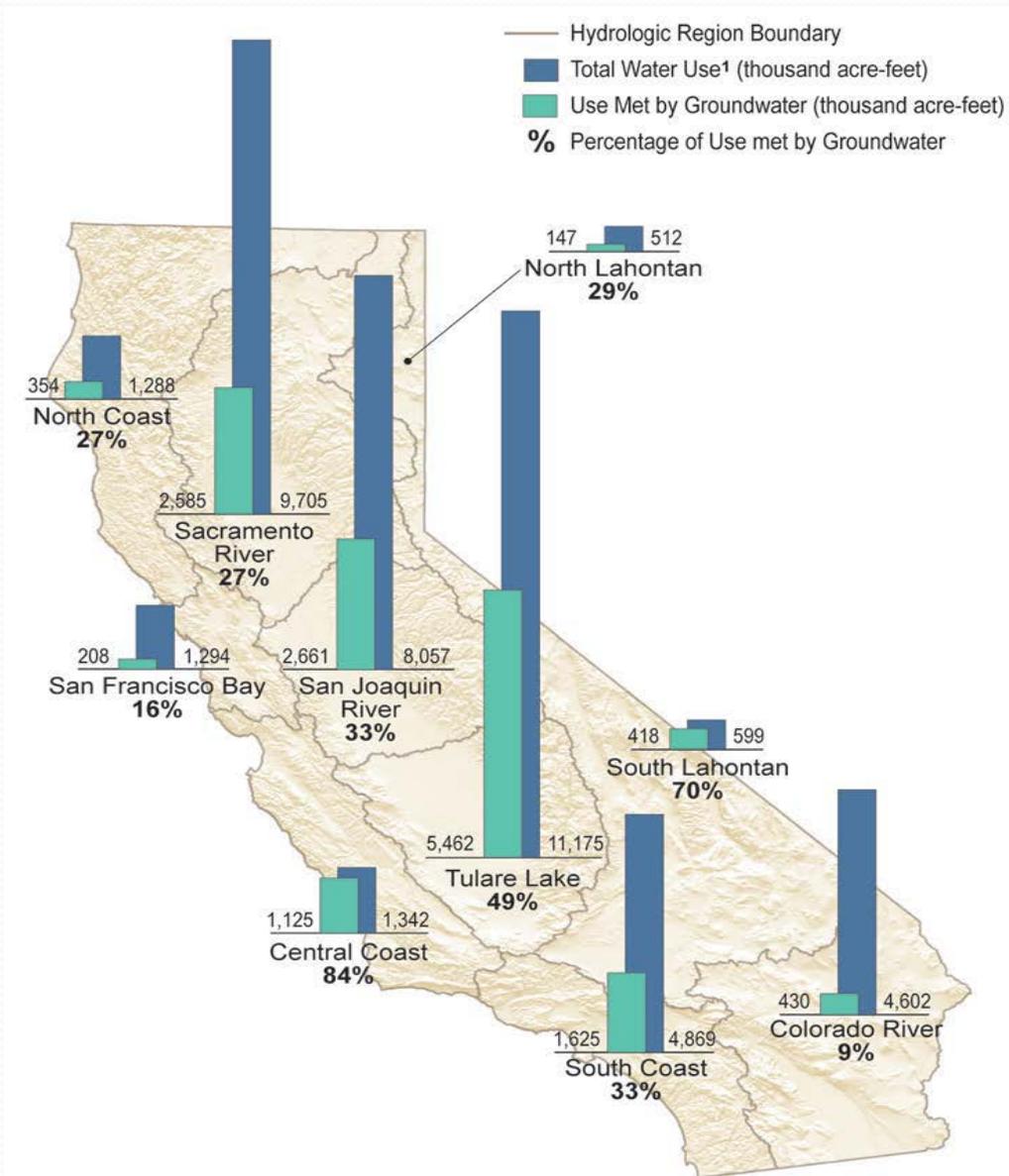
Storage

- 515 basins
- 10 times the capacity of California's surface storage
- Cost-effective, local storage



Supply

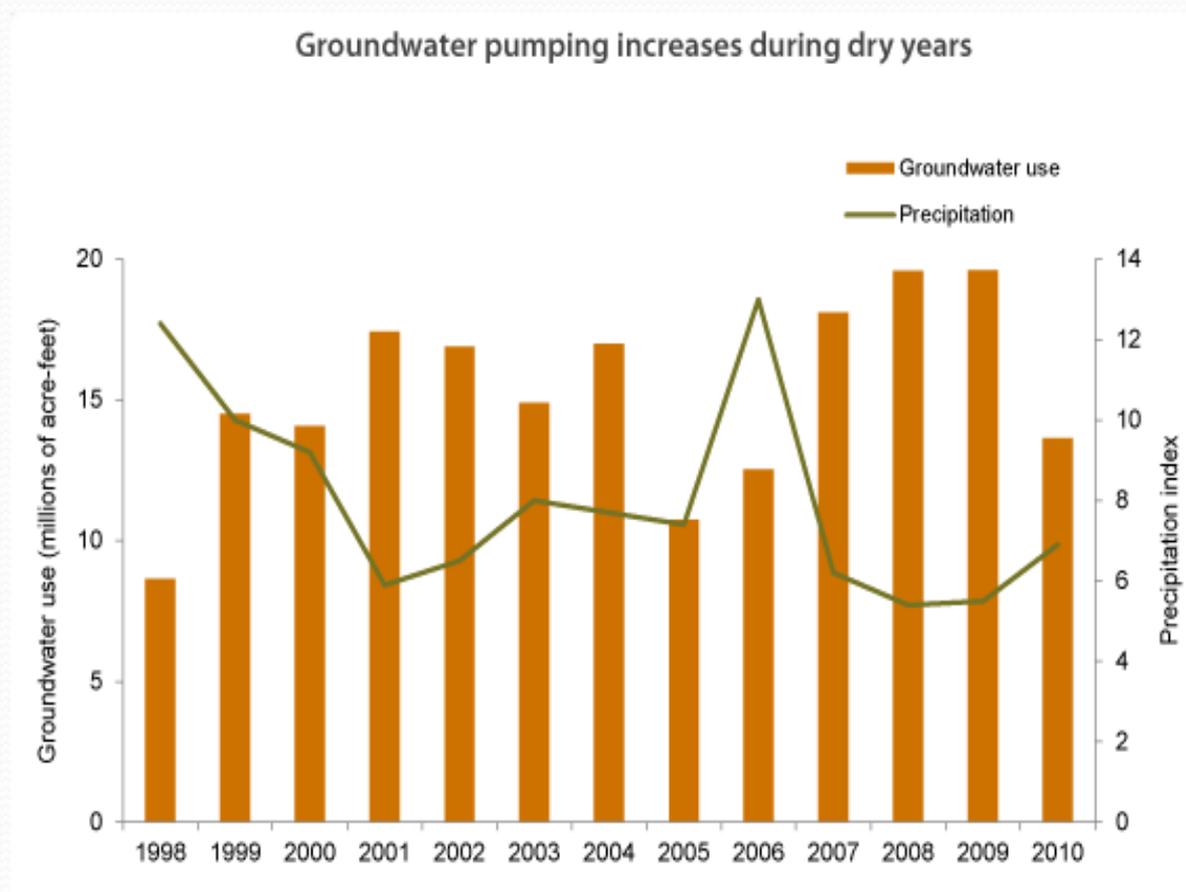
- About 15 MAF pumped per year
- A third of California's total supply in average year
- 80% of Californians rely on groundwater



1. Total Water Use is defined as the sum of water uses for agricultural, urban, and managed wetlands.

Drought Mitigation

- About a third of supply in average years.
- Closer to 60% in dry years



Ecosystems

Cosumnes River

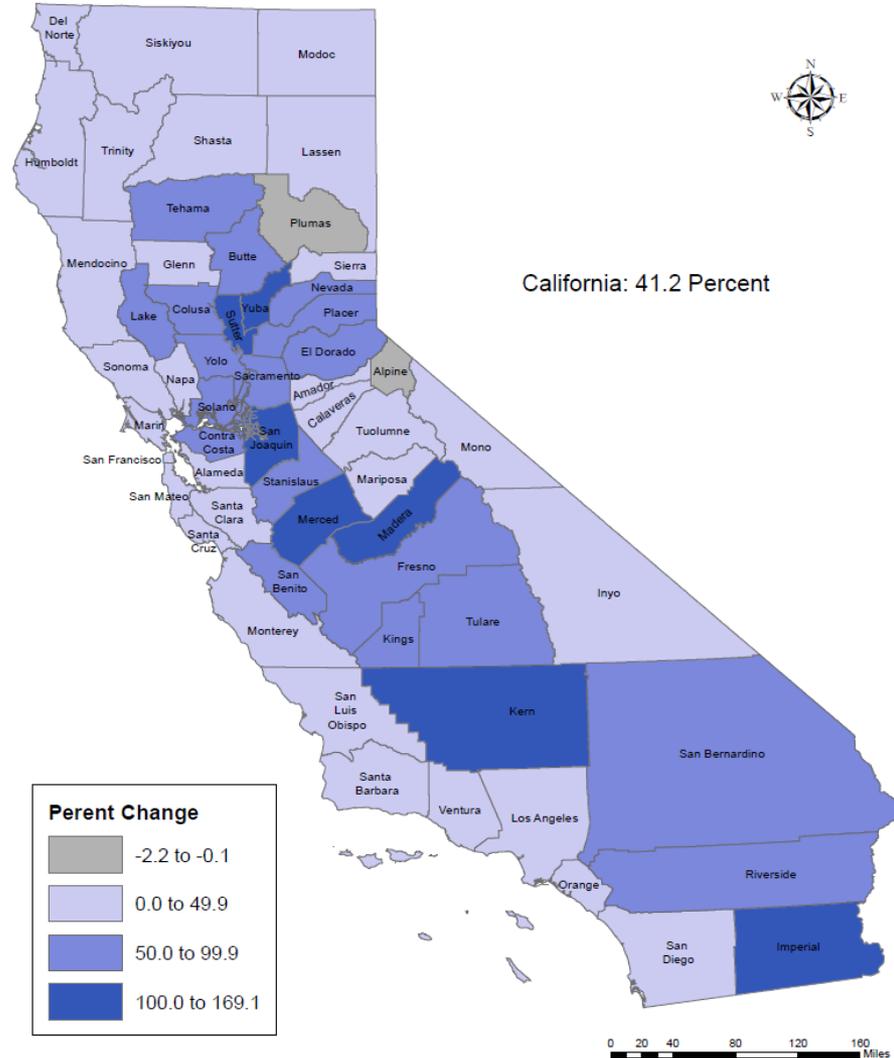
- Hydrologically disconnected from groundwater
- Flows begin one month later in the Fall



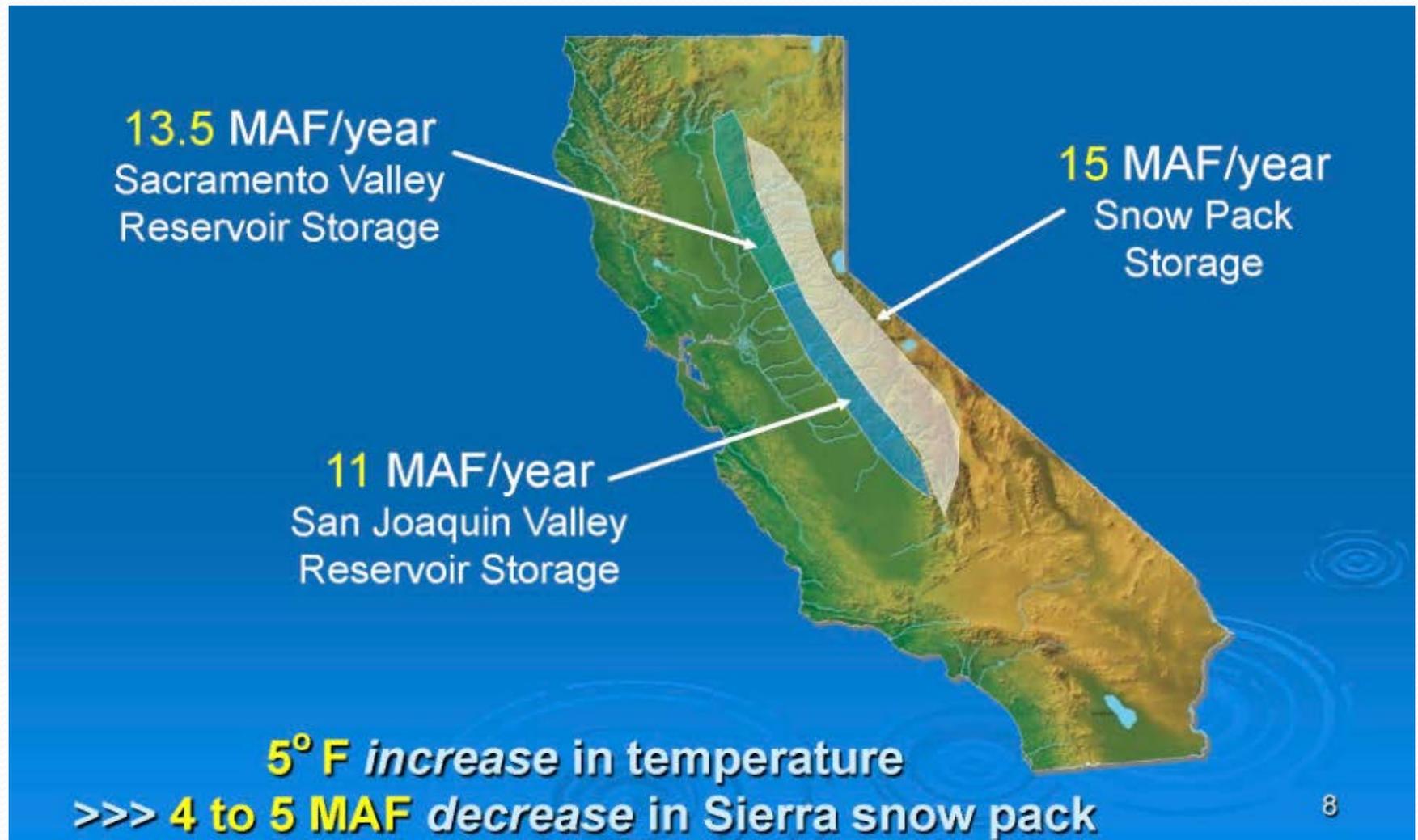
Population Growth

- 50 million by 2050
- Fastest growth in Central Valley and Inland Empire
- San Joaquin Valley to double in population, to 6 million, by 2060

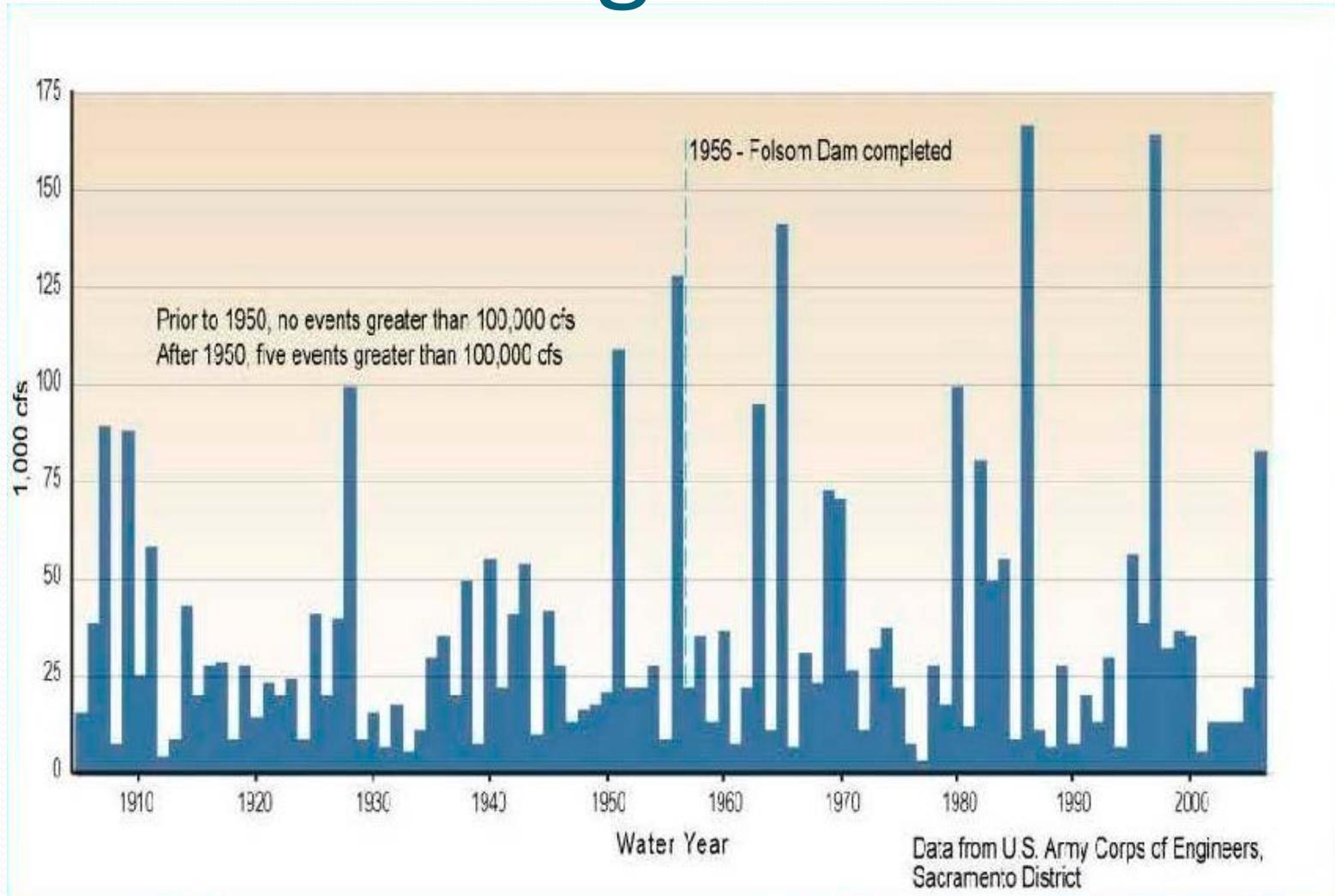
California Projected Population Growth 2010 to 2060
Percent Change



Climate Change



Climate Change



Groundwater is essential

Groundwater management is essential to making local and regional water supplies more reliable and resilient.

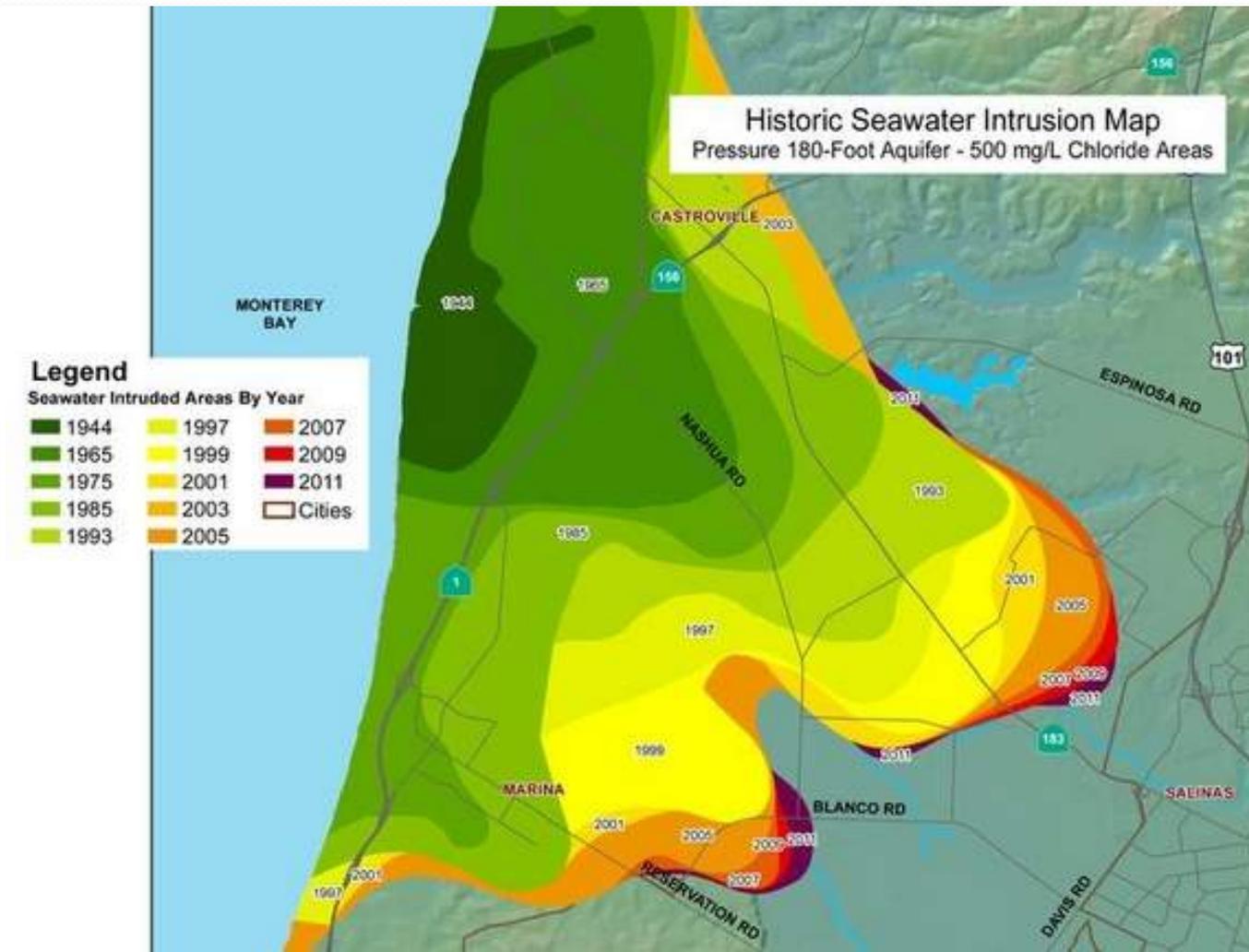
- Storage
- Supply
- Drought mitigation
- Ecosystems
- Population growth
- Climate change

Poor management = problems

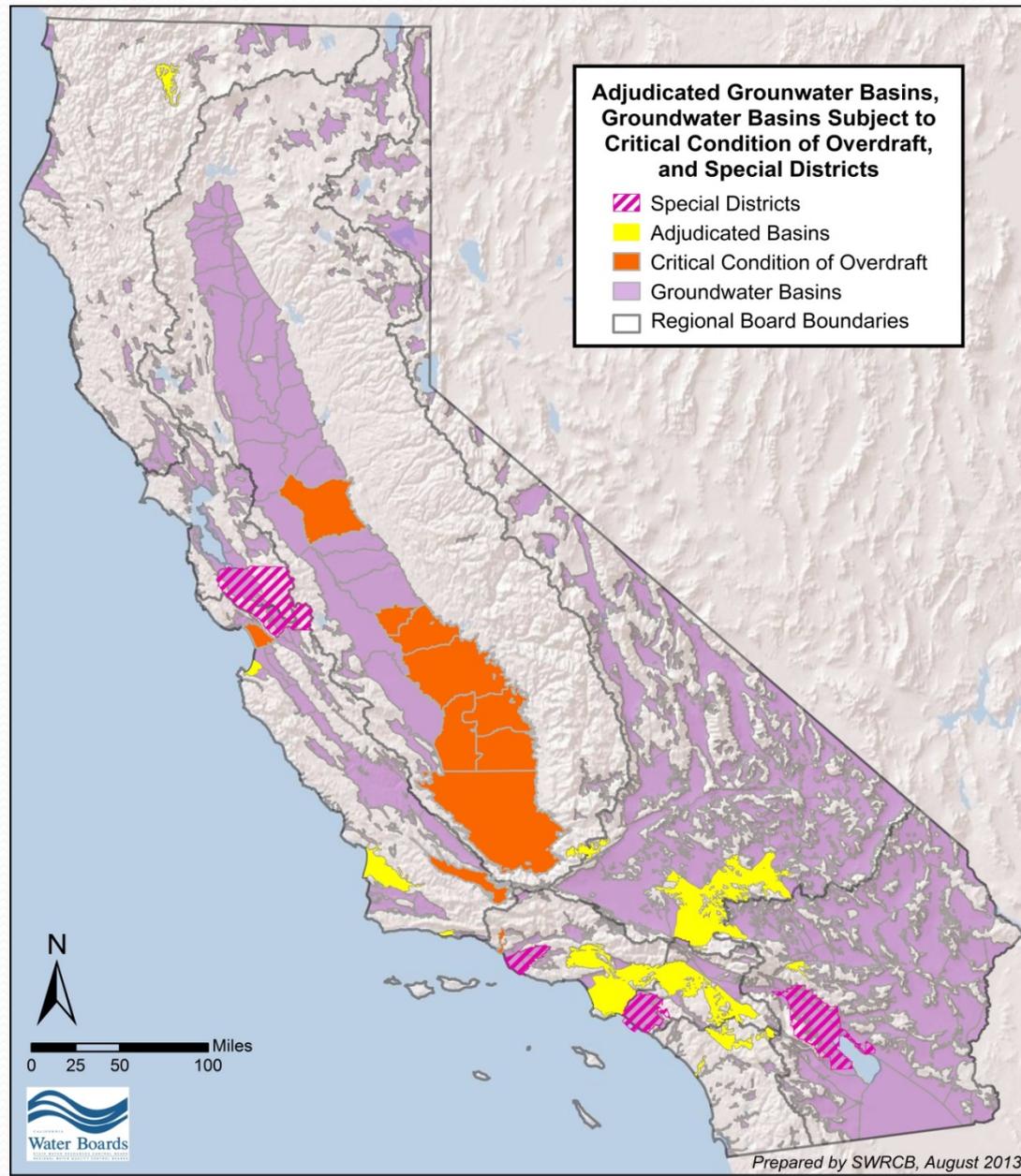
- Problems vary basin-to-basin.
- Solutions much be tailored to the basin and its users.

Water Quality

- Seawater intrusion in coastal areas

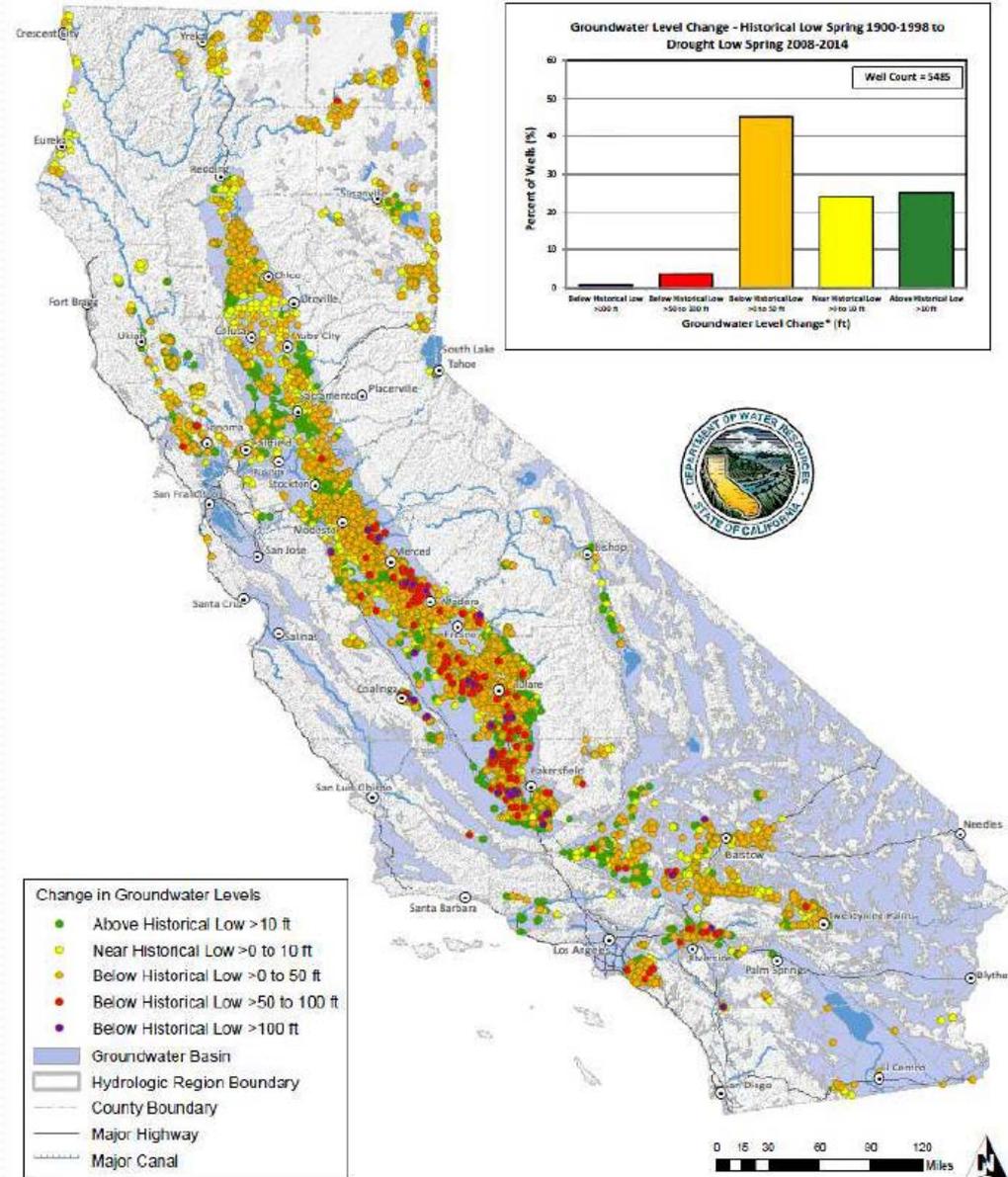


Overdraft



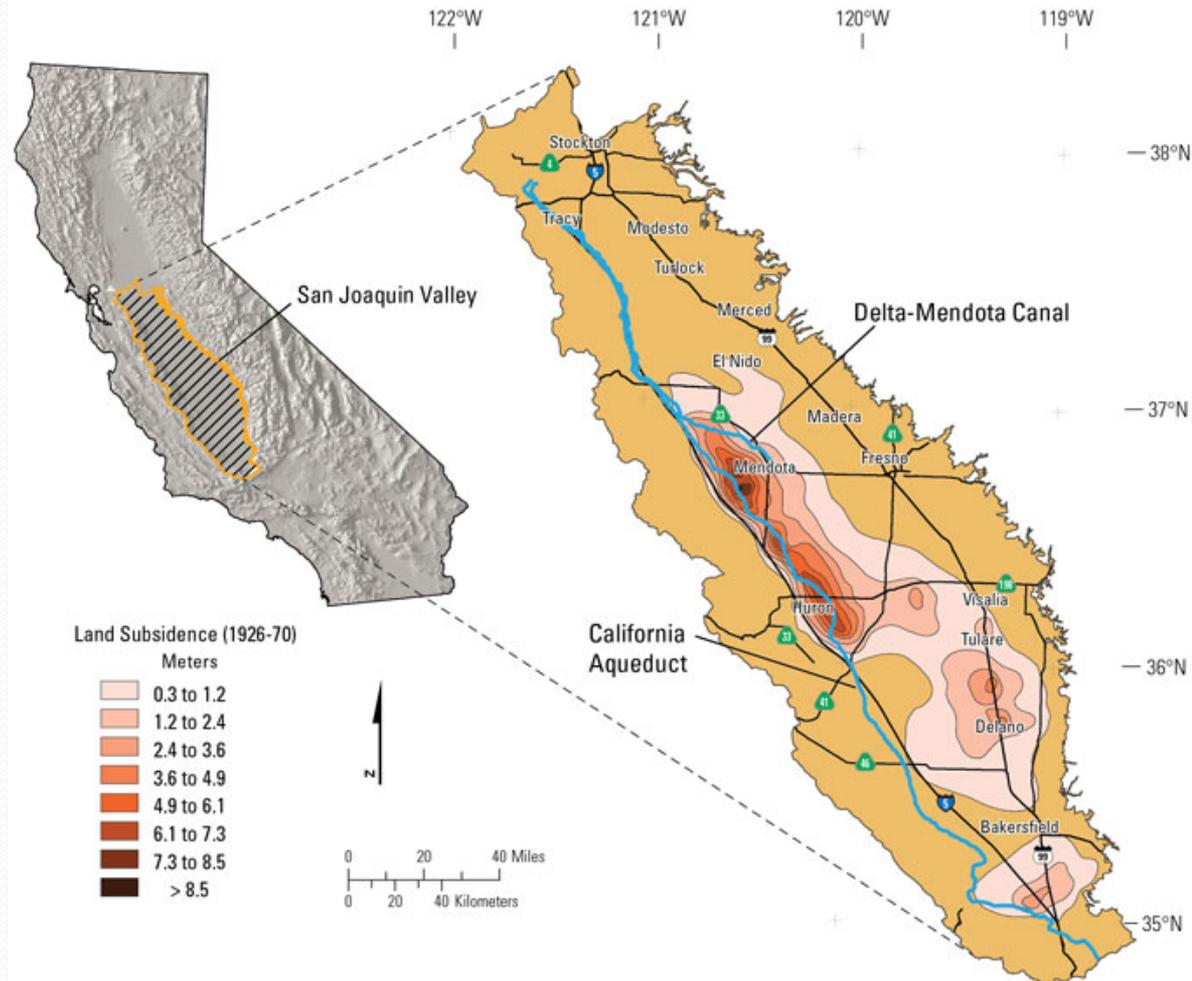
Overdraft

- Historical lows for most areas of state:
 - Southern SJ Valley
 - South Lahontan
 - South Coast



Subsidence

- Permanent loss of water storage
- Damage to infrastructure and water delivery systems



Subsidence

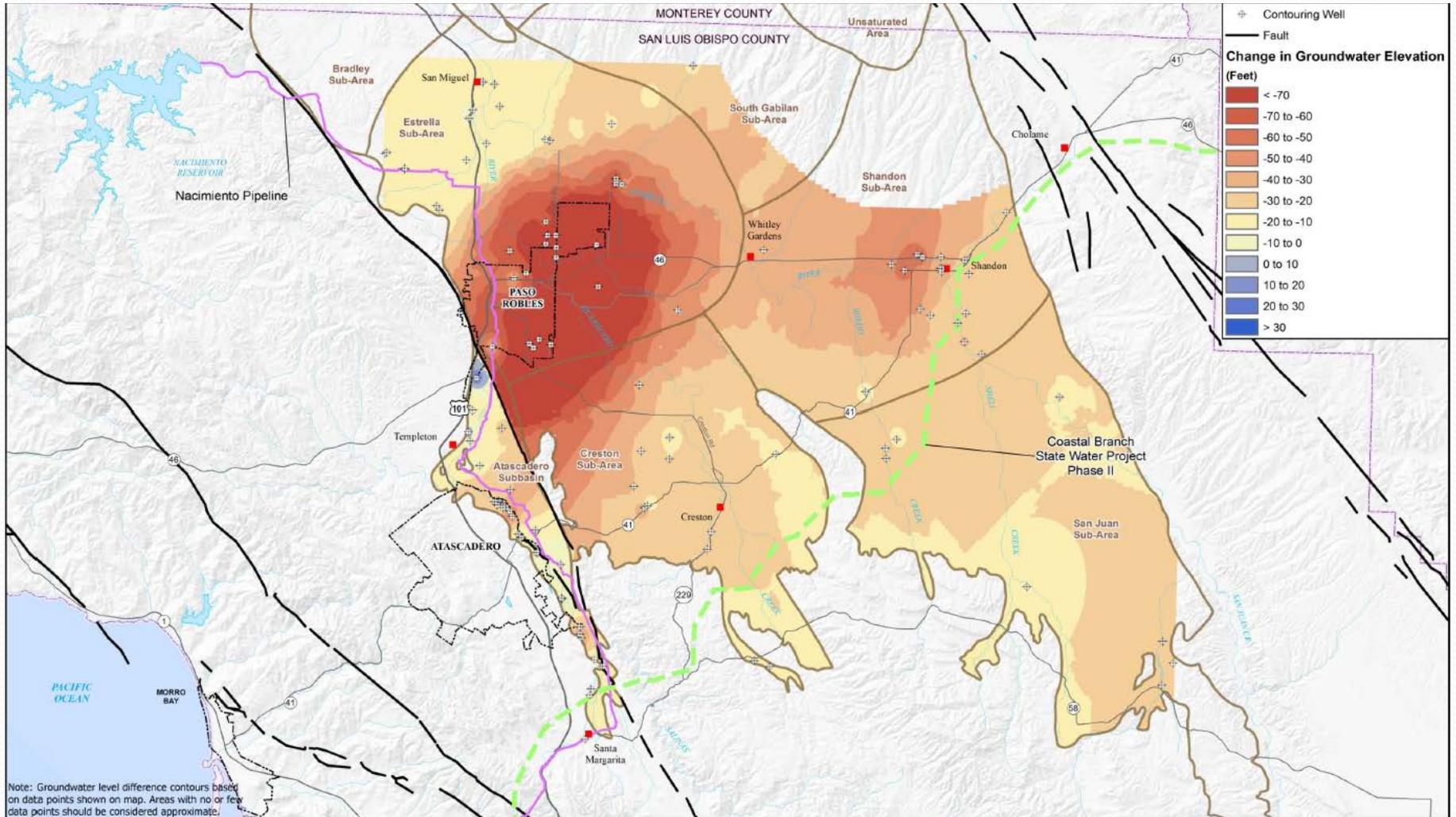


Paso Robles: A Case Study

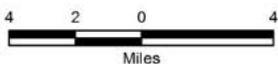
- Vineyards vs. homeowners
- 8,000 wells



Groundwater User	1997	2000	2006	2009
Net Agriculture	49,683 afy	56,551 afy	58,680 afy	63,077
Urban	13,513	14,629	15,665	16,382
Rural	9,400	9,993	10,891	11,817
Small Community	---	---	594	---
Small Commercial	1,465	1,465	2,323	2,631
Total	74,061	82,638	88,153	93,907



Note: Groundwater level difference contours based on data points shown on map. Areas with no or few data points should be considered approximate.



Paso Robles Groundwater Basin
Groundwater Management Plan

City of Paso Robles
San Luis Obispo County, California



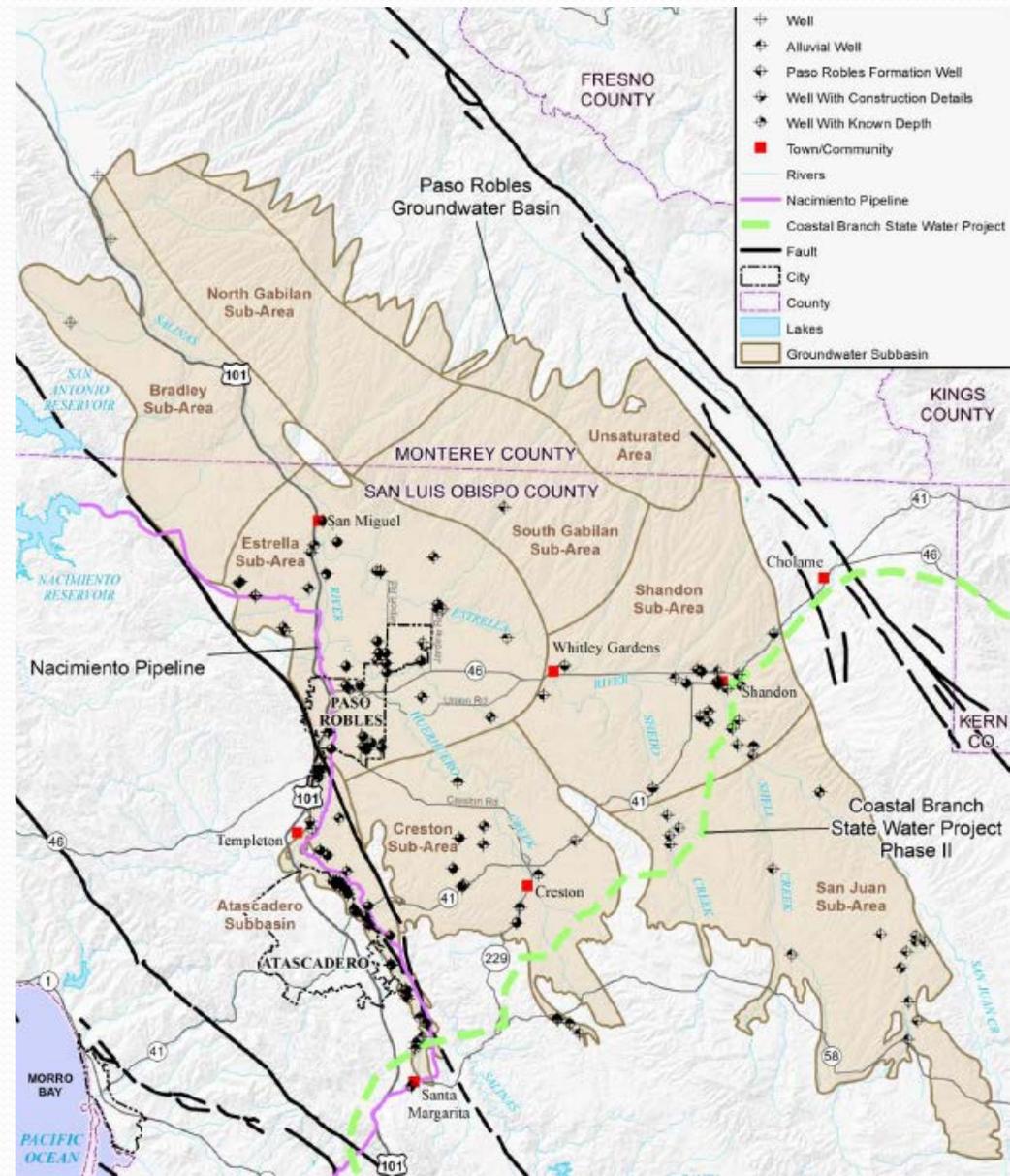
DIFFERENCE IN SPRING GROUNDWATER ELEVATION
1997-2009

FEBRUARY 2011

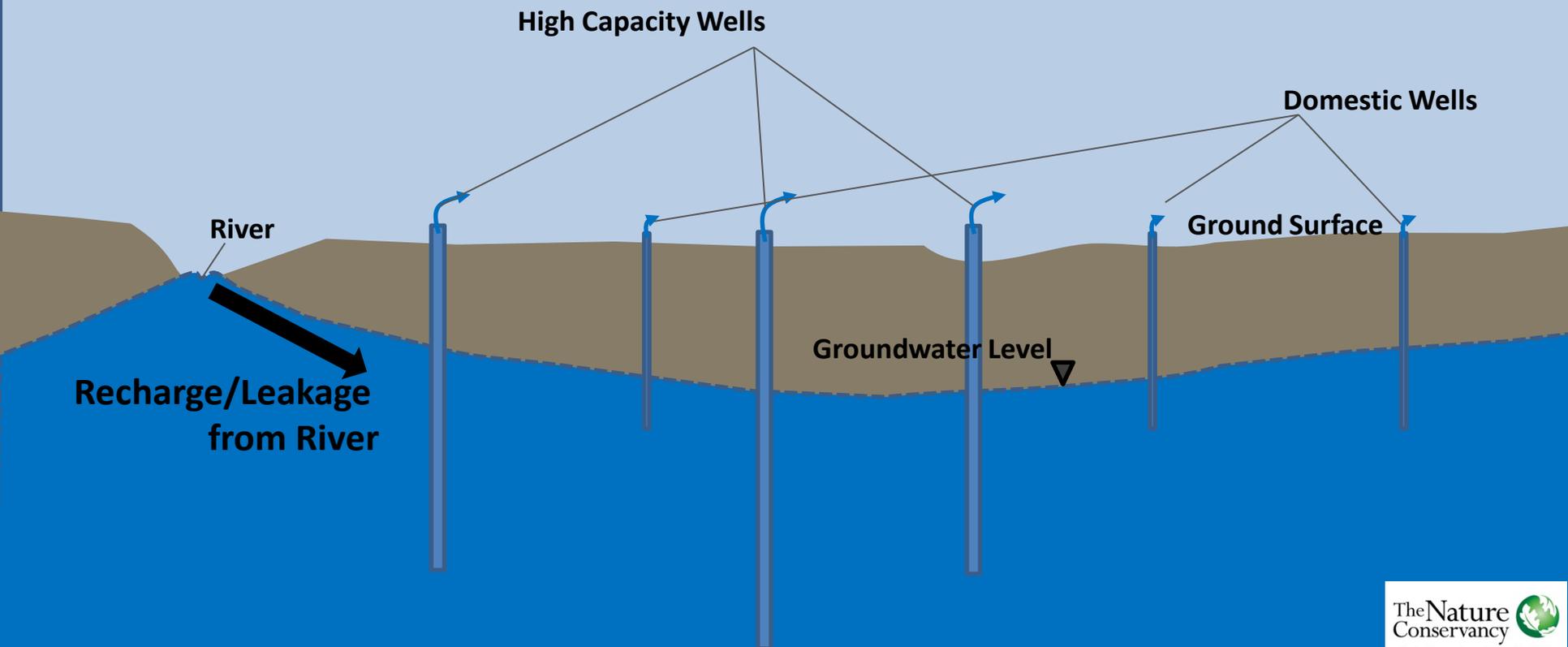
FIGURE 3-3

Paso Robles

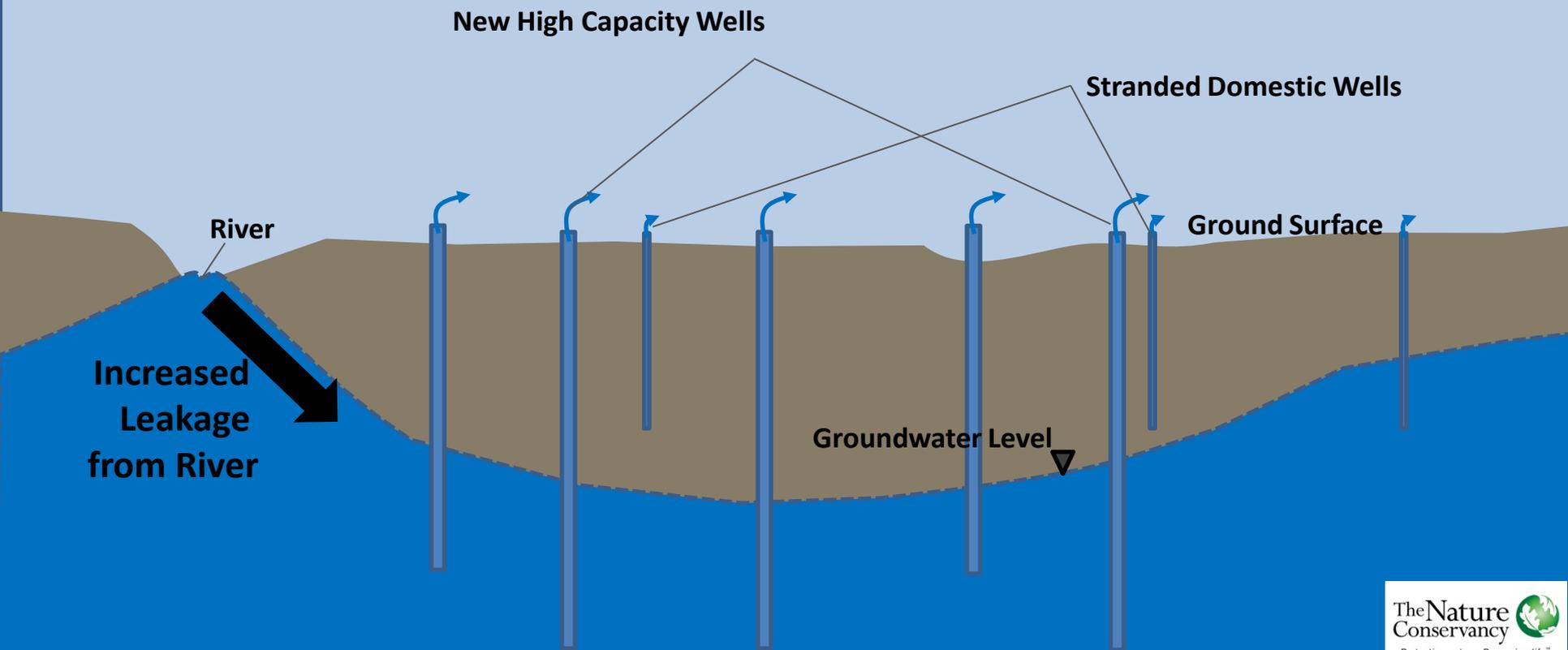
- No single governing authority
- Basin straddles two counties



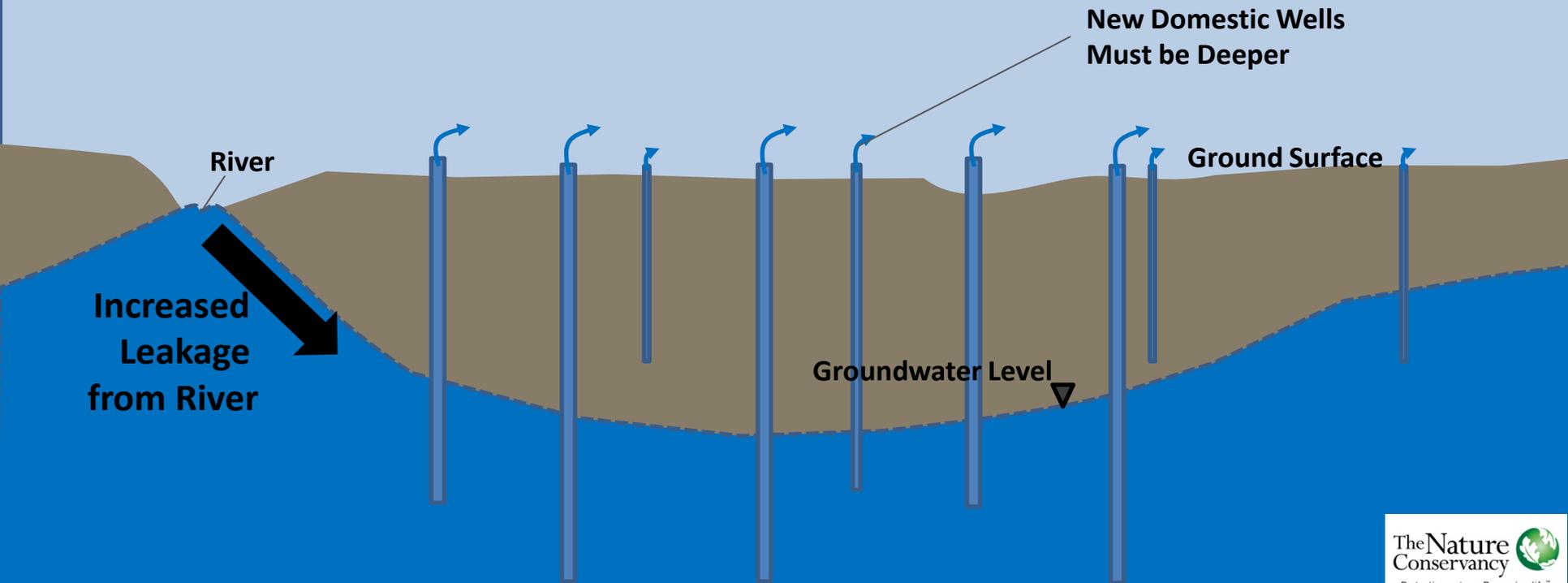
Pumped Groundwater Basin Initial Level of Use



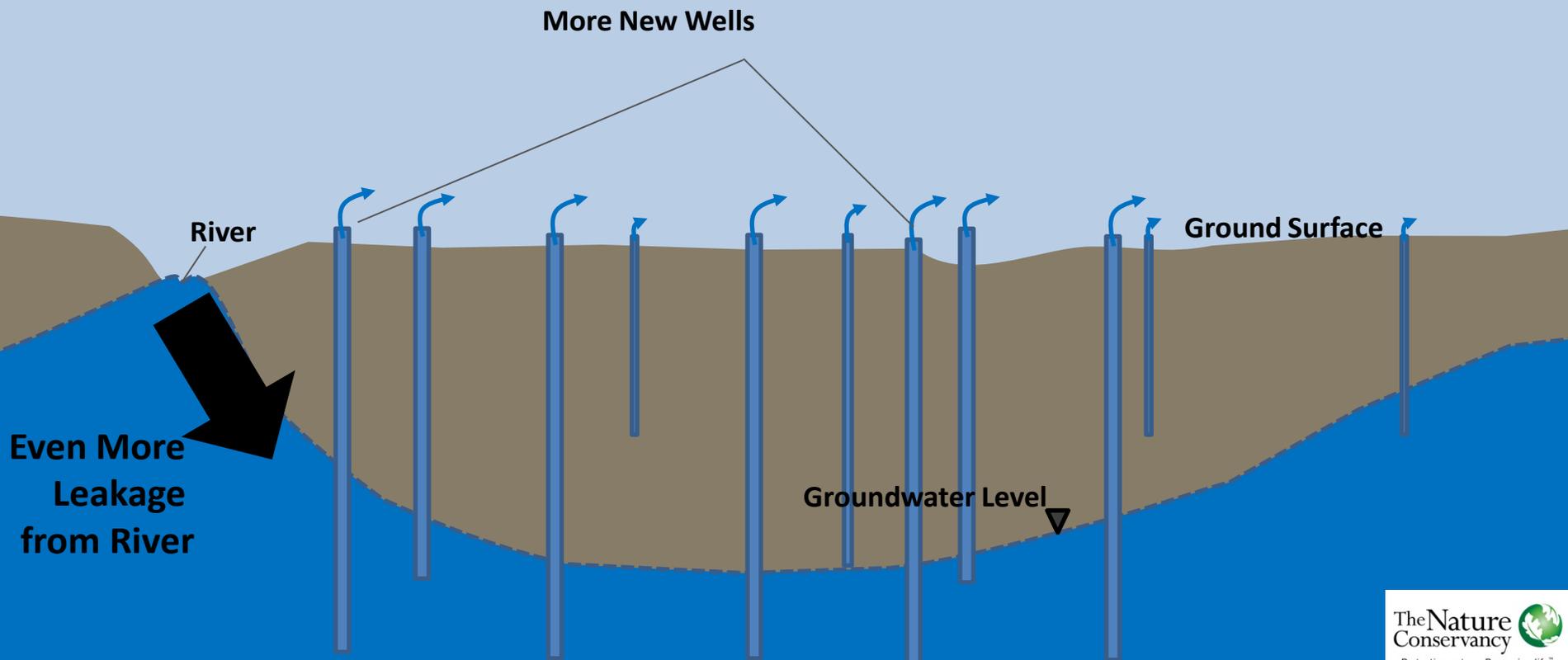
Pumped Groundwater Basin Increased Level of Use



Pumped Groundwater Basin Increased Level of Use



Pumped Groundwater Basin Even More Use



Key principles: Local control

- Groundwater is best managed at the local or regional level.
- Groundwater should be managed sustainably.
- Local agencies should receive the necessary authority, technical assistance and financial resources.

Key principles: State backstop

- Triggered when local agencies unable or unwilling to address critical problems.
- Temporarily protects the basin and its users.
- Long term goal is local sustainable management.
- Water rights should be protected.

Administration proposal

1. Define “sustainable groundwater management”
2. Empower local agencies to achieve sustainability
3. Legally protect groundwater recharge
4. Provide State technical assistance
5. Strengthen link between land use and groundwater planning
6. Provide for State backstop authority
7. Make adjudications more efficient
8. Protect water rights

Summary

- This is too important to keep ignoring.
- The solution is to help the locals do it better.
- The State's role should complement the goal of local sustainable groundwater management.
- A sustainable water system will strengthen local communities, ag and urban economies, and the environment for future generations.

Thank you

Ideas, feedback and suggestions are welcome:

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For more information:

- groundwater.ca.gov – Brown administration draft groundwater management language
- www.water.ca.gov/groundwater – DWR Groundwater Information Center (2014 Groundwater Report)
- www.waterboards.ca.gov/water_issues/programs/groundwater – State Water Resources Control Board groundwater page