Preparing California's Water System for Climate Extremes

California Water Commission
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California water management must adapt to change

- Changing climate
- Population growth
- Mandated groundwater sustainability
- Technology, regulations
- State, federal, local relationships

Paso Robles. Photo: DWR

Climate pressures have broad impacts on California's water management…

Warming temperatures


Shrinking snowpack


Shorter wet seasons


More volatile precipitation

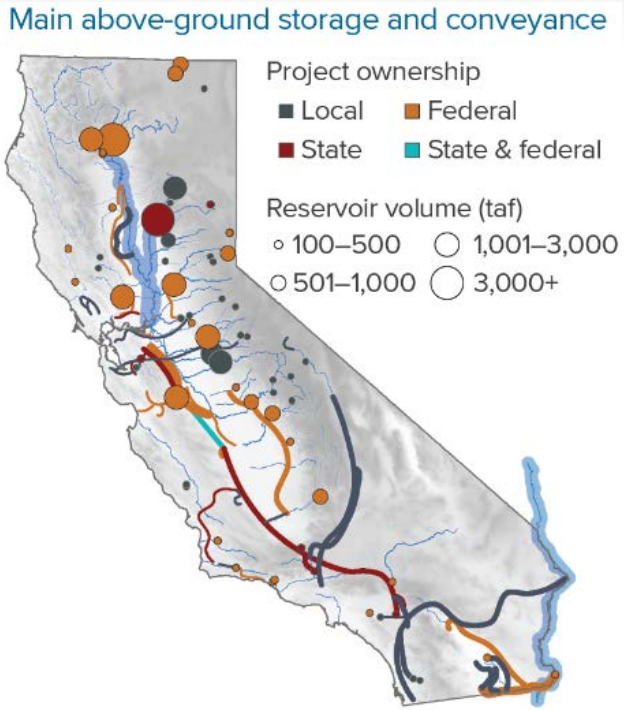

Rising seas

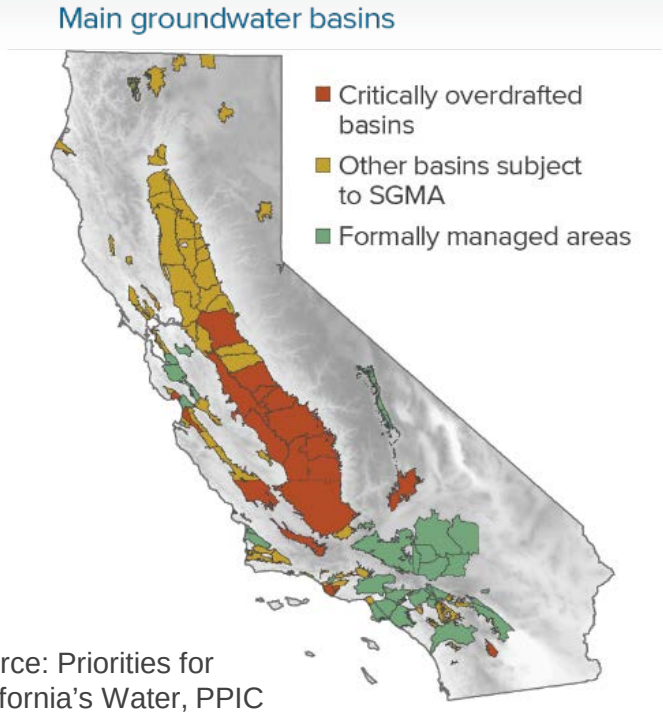
…and addressing them requires an innovative, integrated portfolio of solutions

- Increased volatility makes it harder to store water, manage floods, protect ecosystems
- Aging water grid based on outdated hydrology
- Increasing extremes affect supply and demand patterns

Oroville Spillway damage in 2017. Photo: DWR

Modernize the water grid





Source: Priorities for California's Water, PPIC

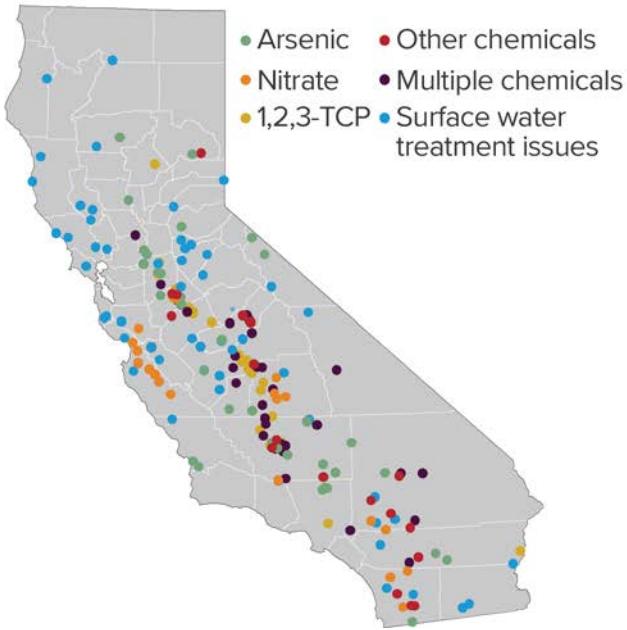
Prepare for changing supply and demand

- Emphasize regional portfolios
- Connect water and land use planning
- Make it easier to trade water

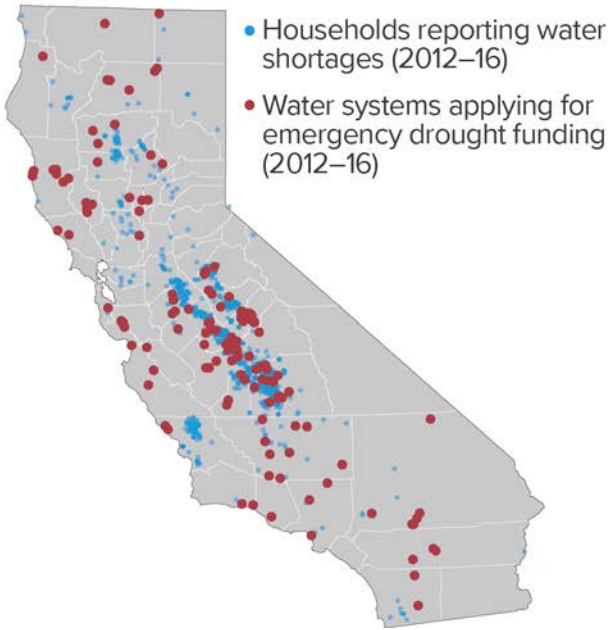
Water flowing from an irrigation system. Photo: Getty Images

Provide safe, affordable, reliable drinking water

Communities with unsafe water



Communities facing shortages



Source: Priorities for California's Water, PPIC

Reduce wildfire risk in headwater forests

- Increase pace and scale of management on federal lands
- Use new tools on private lands
- Identify multiple benefits and beneficiaries
- Stretch available funds

Mechanical thinning. Photo: Michael De Lasaux

Improve the health of freshwater ecosystems

- Promote watershed-scale planning and management
- Use more flexible tools (e.g., ecosystem water budgets)
- Anticipate, prepare for change

Many native fishes are at risk. Photo: Getty Images

These issues all come together in major watersheds

- Watershed-wide solutions are key to improving resilience, managing for competing goals

Sacramento-San Joaquin Basin
Photo: DWR

Colorado River Basin
Photo: Getty Images

Managing water in changing climate: 4 principles

- **Flexibility** to manage increased volatility, build resilience
- **Incentives** to implement smarter, more flexible management
- **Alignment** across agencies to make it easier to trade water, recharge aquifers, restore ecosystems
- **Multiple-benefit approaches** to broaden cooperation and leverage more sources of funding

Improving conveyance can help us adapt to water scarcity, now and in future…

- Ease transition to groundwater sustainability by:
  - Increasing recharge, especially where it's most needed
  - Facilitating water trading
- Increase drought resilience
- Reduce flood risk

The California Aqueduct
Source: DWR

…but challenges remain

- Finding the money:
  - Capital investments
  - Operations and maintenance
- Easing local concerns about moving water between basins, counties, regions

Farming in the San Joaquin Valley
Source: PPIC

Collaboration is essential for lasting solutions

Sierra lake. Photo: Lori Pottinger

About 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.

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