Managing California's Water: From Conflict to Reconciliation

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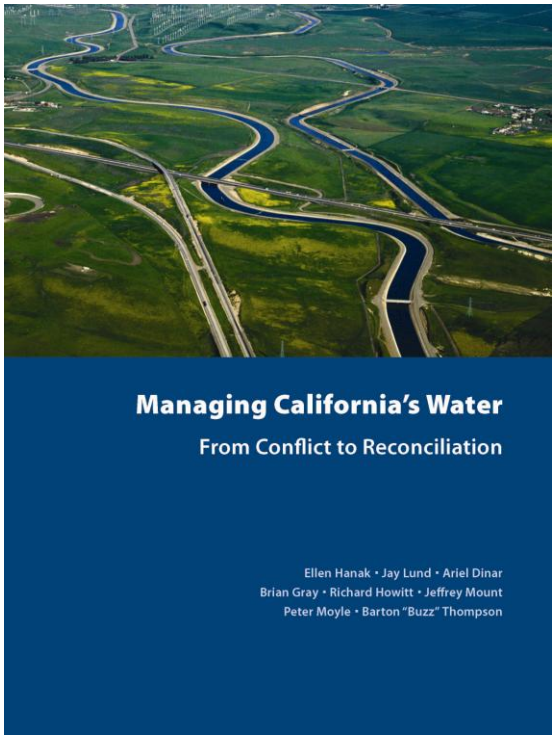
A Collaborative Effort by an Interdisciplinary Team



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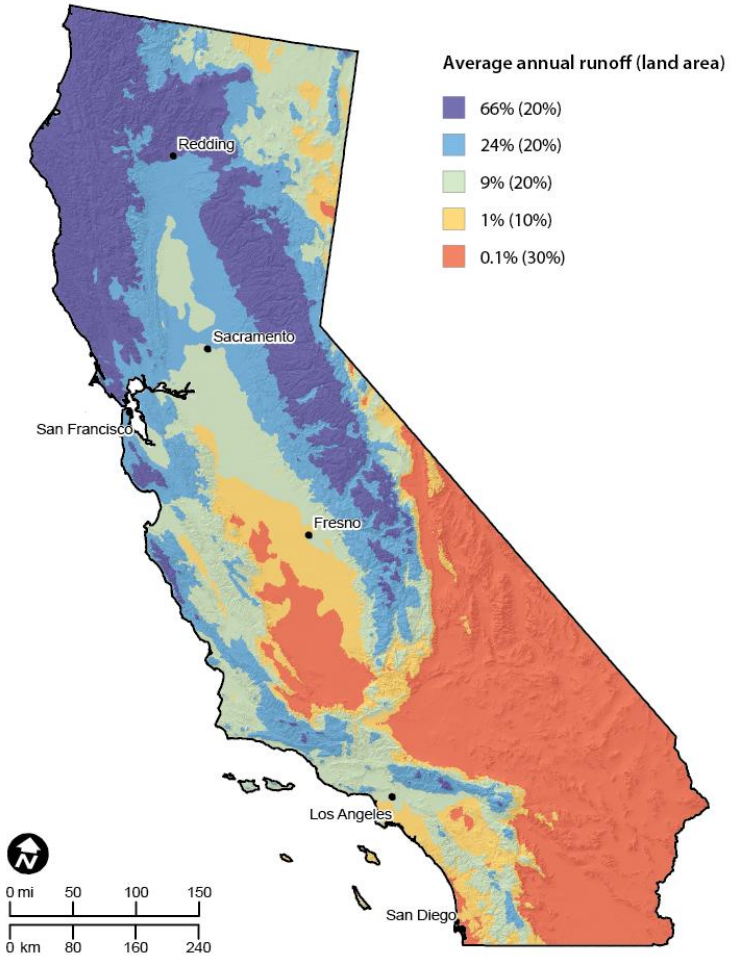
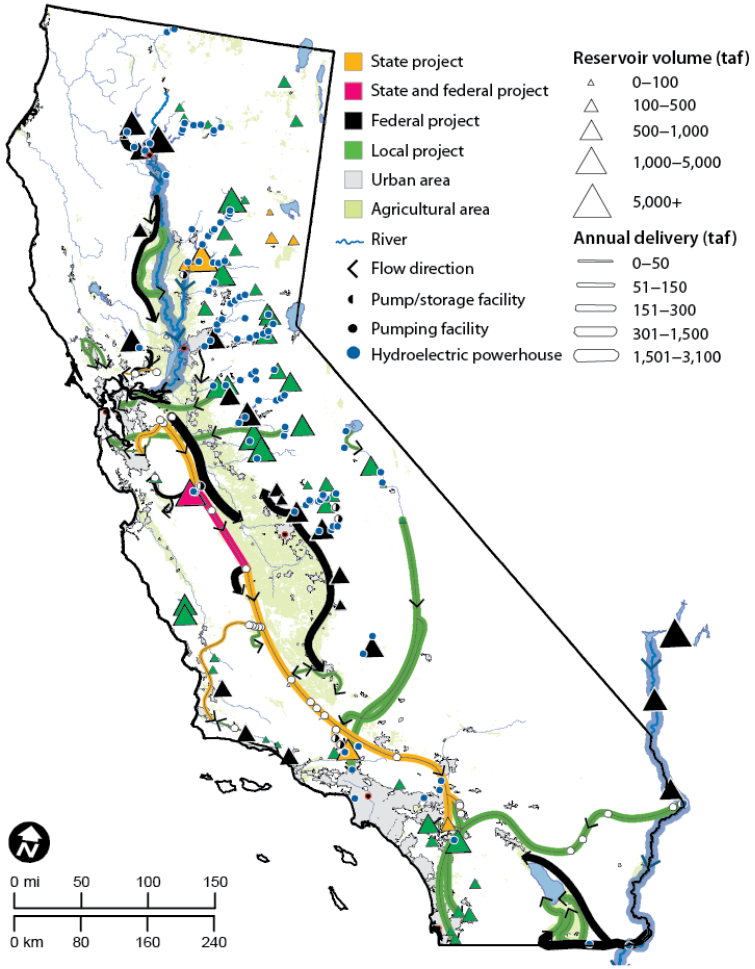
Outline

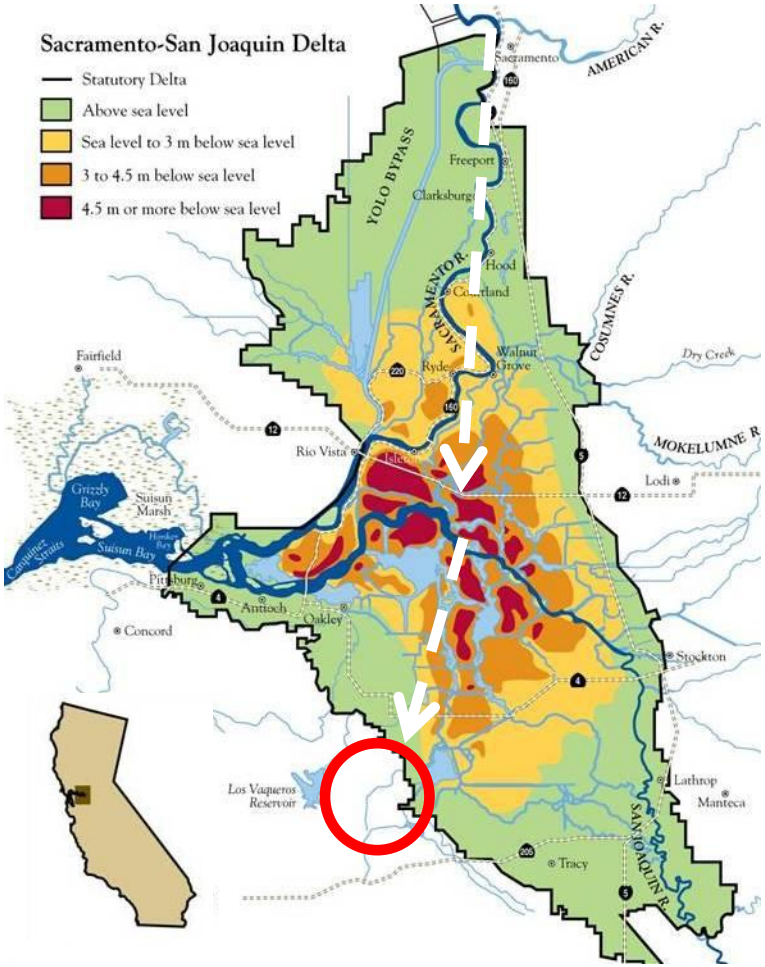
- California's water system
- The ecosystem crisis
- Promising strategies

A Highly Engineered Water System





A Precarious Supply Hub



- Fragile levees
- Imperiled ecosystem

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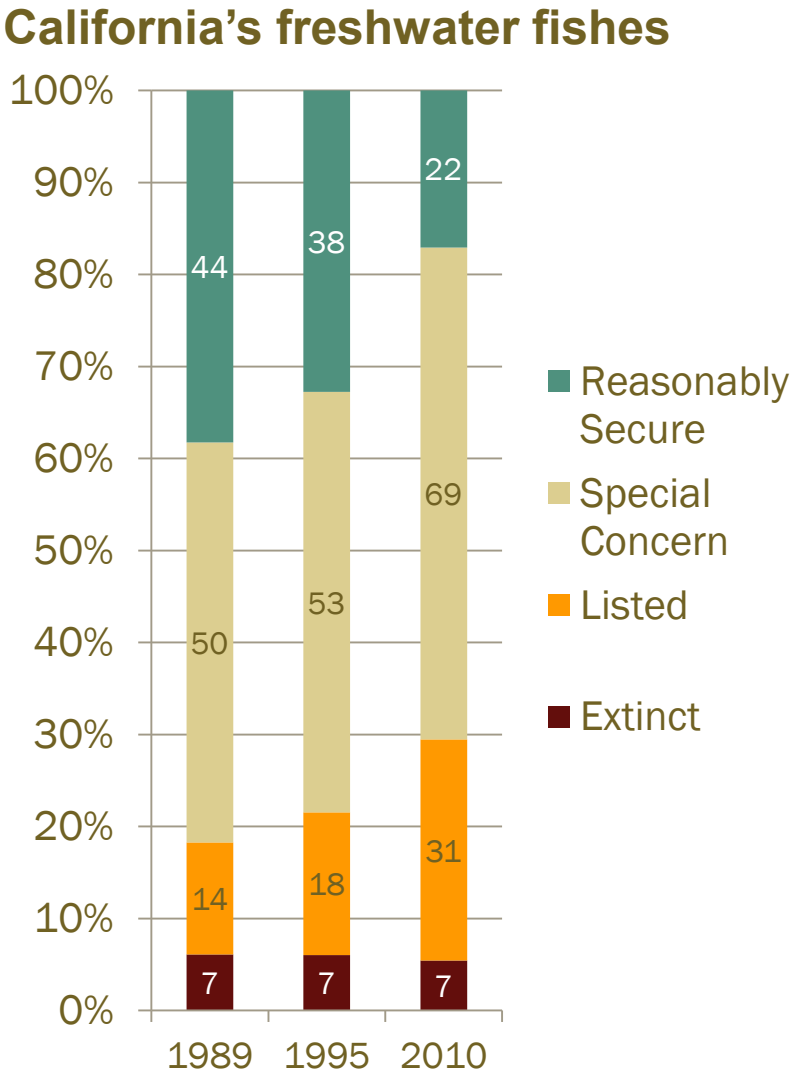
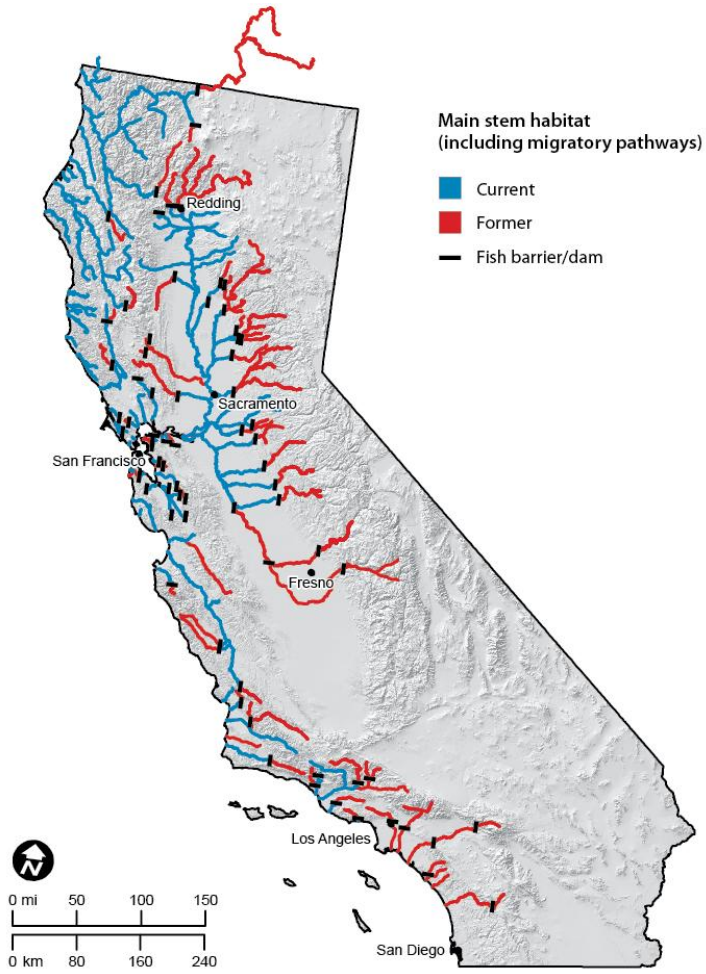
The Fish Are Losing



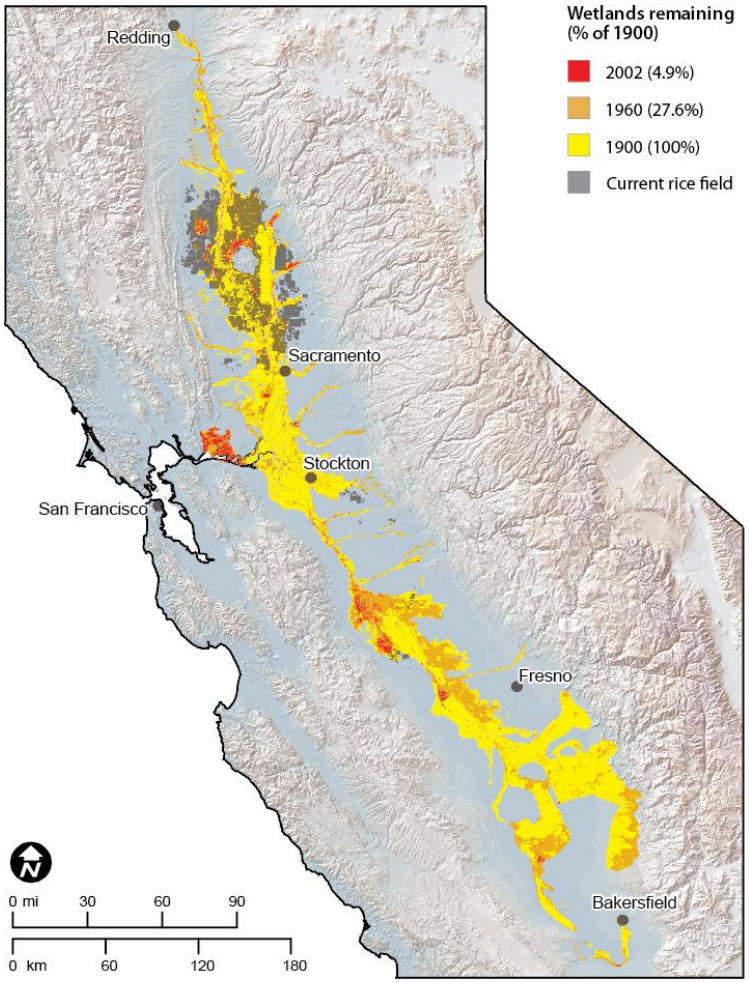
- Widespread decline in aquatic ecosystems despite decades of well-intentioned efforts
- Efforts now threaten water supply reliability and flood protection
- Conditions will worsen with climate warming, more invasive species

Dams and Diversions Are Major Factors



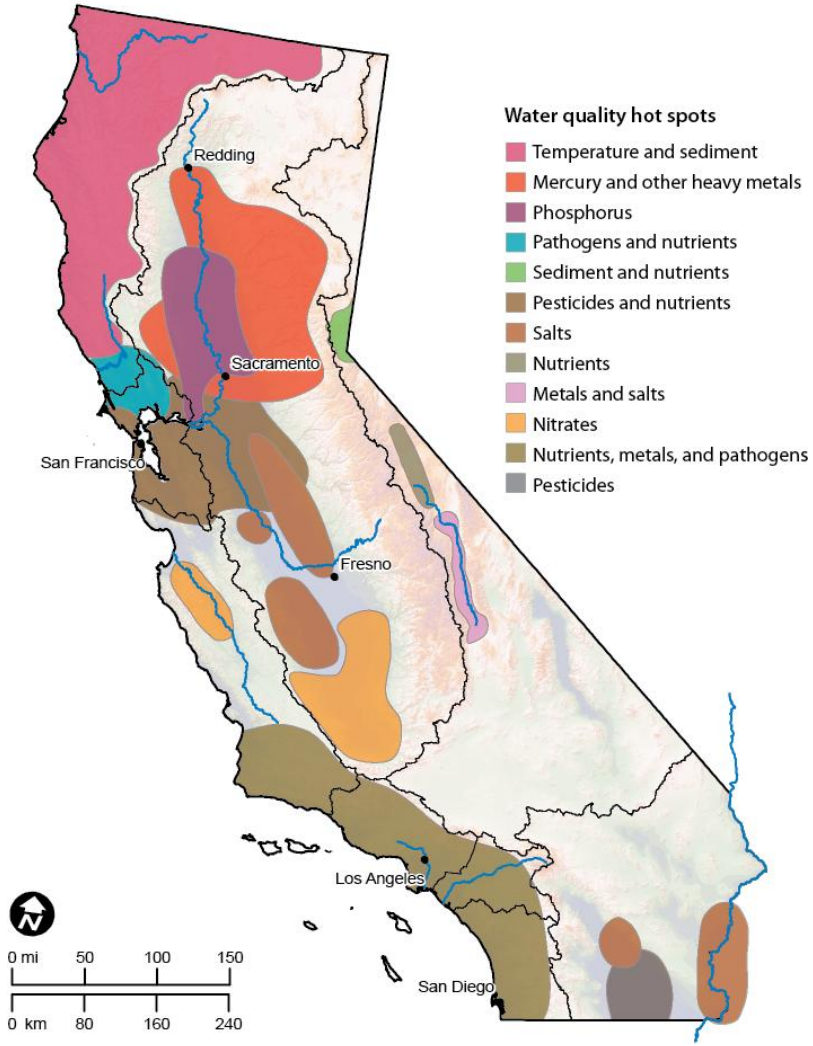
- Blockage of upstream habitat
- Alteration of downstream habitat
- Disturbance of natural flow patterns

So Are Losses of Floodplains and Wetlands



- Habitat declines from water and land development

And Water Quality Is Still a Major Concern



- Clean Water laws have reduced "point" source pollution
- But runoff from farms, cities still not well managed
- And few controls on new chemicals

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Shift to Ecosystem Reconciliation Approaches

Matilija Dam

Yolo Bypass

- Use natural flow regimes
- Set back, remove levees
- Reduce contaminants
- Limit new invasives
- Re-operate, retire dams
- Improve hatcheries
- Specialize some streams

Much Can Be Done Within Existing Environmental Law

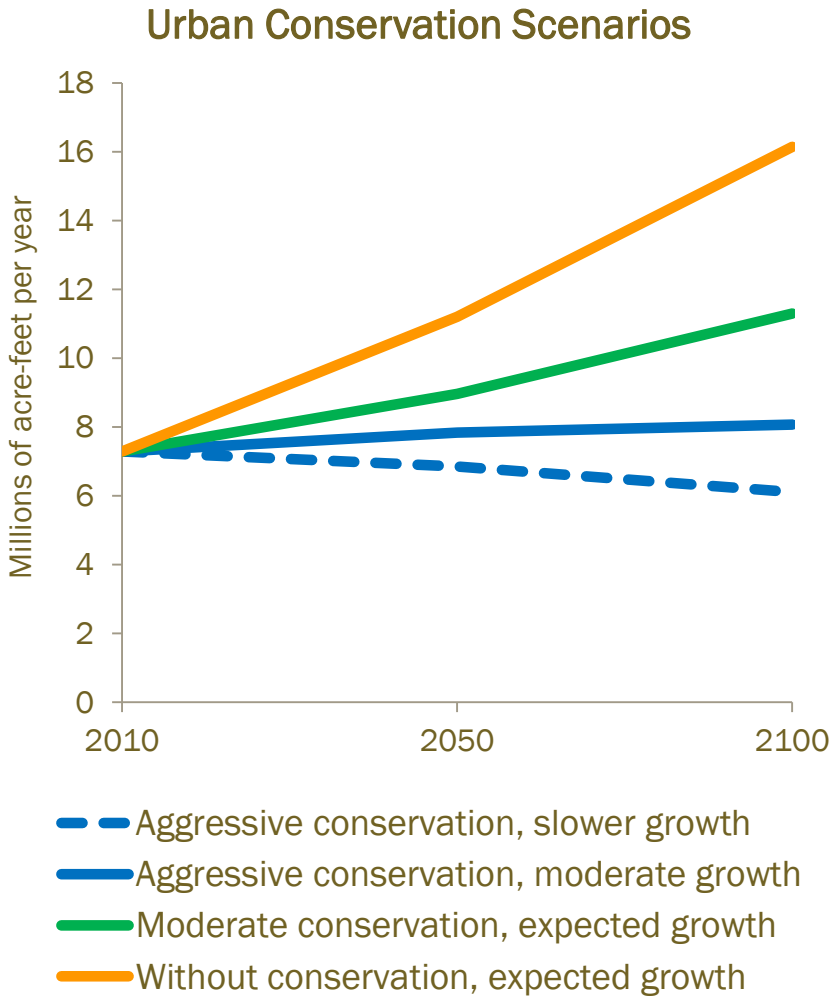
- Endangered Species Act allows shift in focus
  - From single species to ecosystems
  - From single stressor to multiple stressors
- Over time, more flexible implementation rules may be needed
  - Conflicts among beneficial uses (Clean Water Act)
  - Tradeoffs between individual species and aggregate conservation strategies (ESA)

Treat Water As a Public Commodity

- Build on reasonable use and public trust
- Manage groundwater
- Promote water market to ease conflicts
- Fund public goods management aspects

Public goods charge
Ecosystem reconciliation
Regional supply reliability
Administration
Research and development
Special mitigation fees
Dam removal and mitigation for fish
Chemical contaminants surcharge
Water quality permit fees
Ecosystem reconciliation
Administration (state and regional)
Risk-based flood management fees

Expand Water Supply Portfolios



- Urban conservation
- Groundwater banking
- Water markets

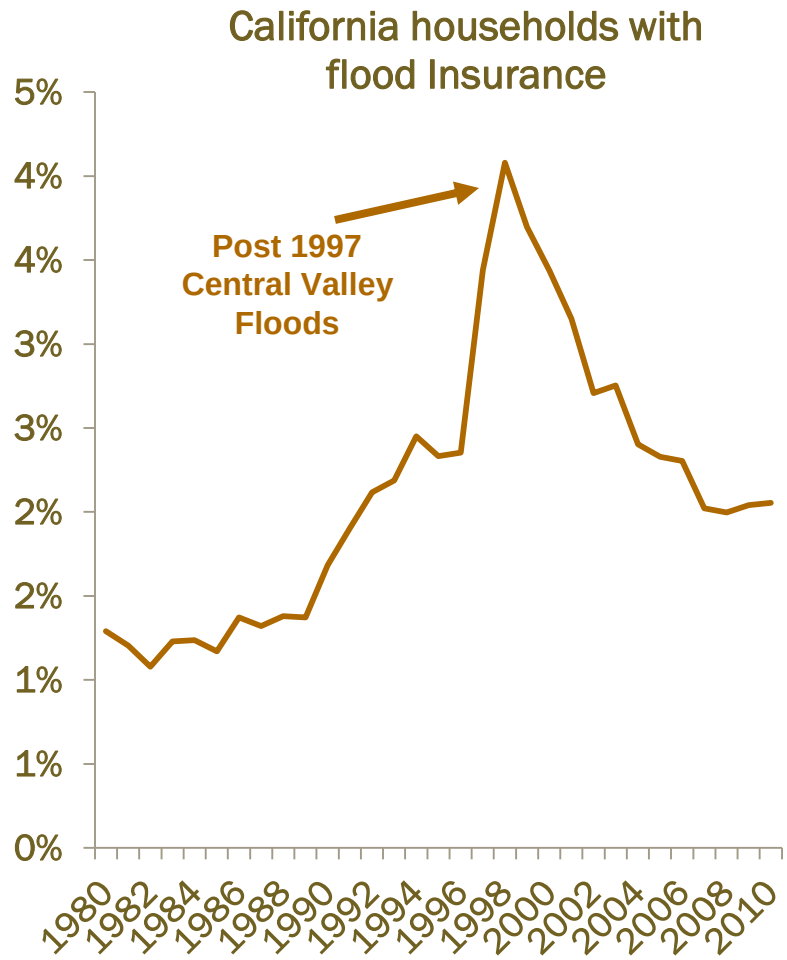
Address Water Quality Gaps

Beach closure in Southern California

- Manage pollution sources
- Control contaminants
- Expand disclosure, use cap-and-trade

Shift to Flood Risk Management

- Reduce flood vulnerability
- Focus investments
- Pay by risk level
- Use reconciliation approaches
- Develop statewide policy



Address Coordination Failures

- Decentralized system misses opportunities
- Coordination also a problem for state, federal agencies

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Integrate Actions Within Watersheds

- Plan at scale of large watersheds
- Create regional stewardship authorities
- Water supply, quality, floods, habitat (water and land)

Reshape State Institutions

- Convert State Water Project to state-owned public utility
- Create Department of Water Management
  - Supply, quality, floods: planning and regulation
- Strengthen Department of Fish and Game

Use Cooperative Approaches to Reduce Costs

- State, feds set goals, standards, deadlines
- Locals develop implementation and enforcement plans

For More Information

- Book
  - Free pdf from ppic.org
  - E-reader and paperback from Amazon and Google books
- Executive summary
  - Free from ppic.org
- Interview appendix
  - Free from ppic.org

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Notes on the use of these slides

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Thank you for your interest in this work.