

Managing California's Water: from Conflict to Reconciliation



Managing California's Water From Conflict to Reconciliation

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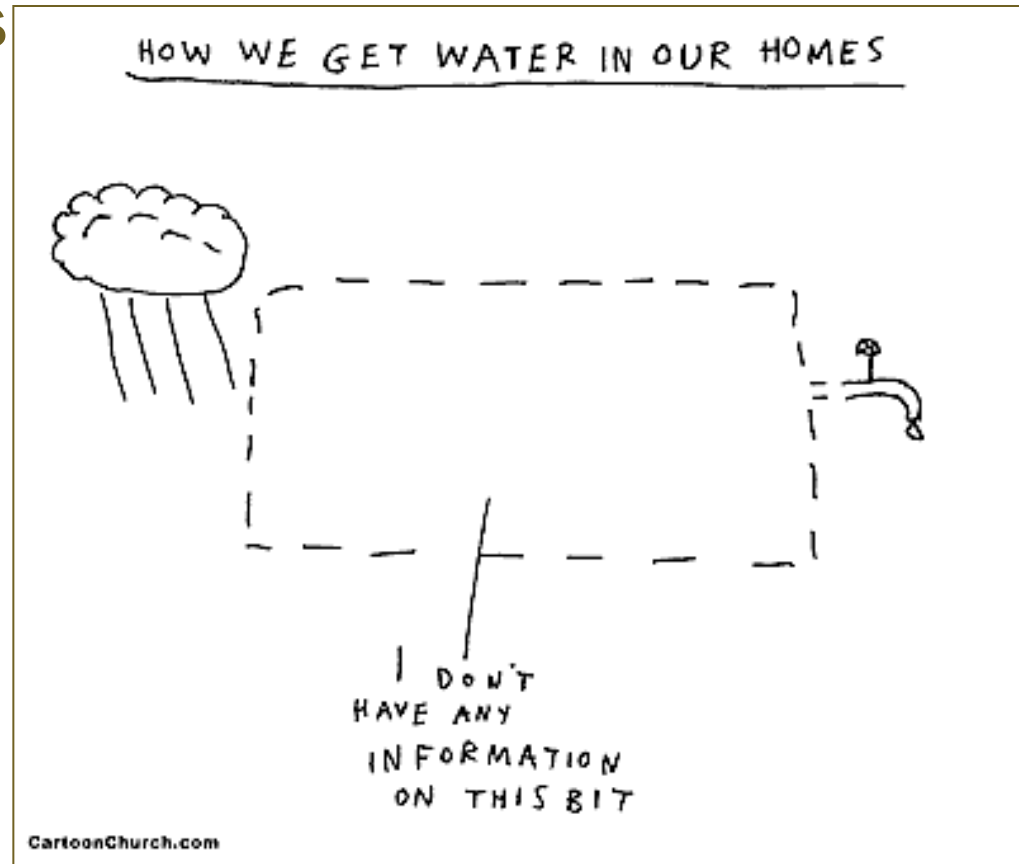
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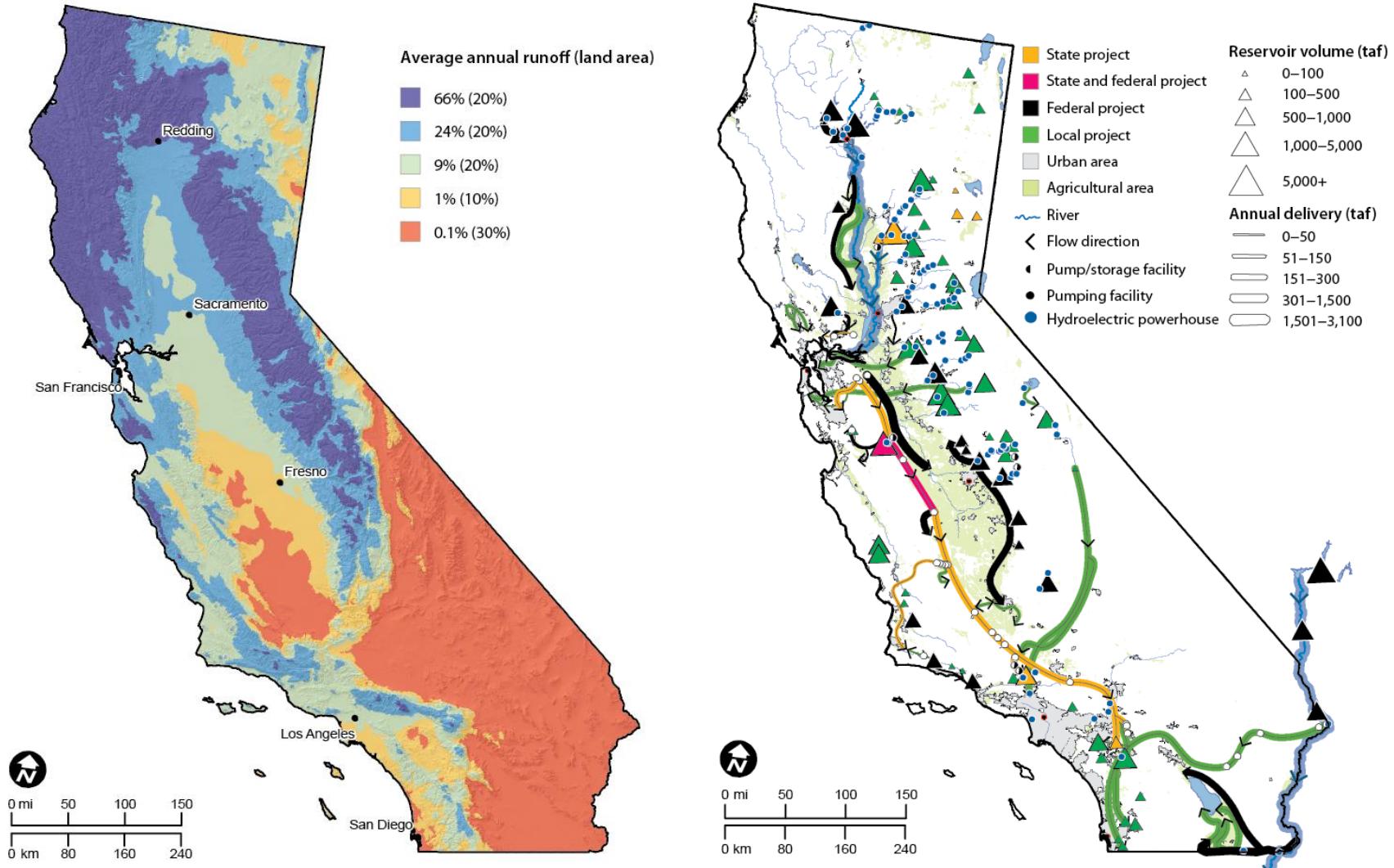


Outline

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



We all depend on an engineered statewide network

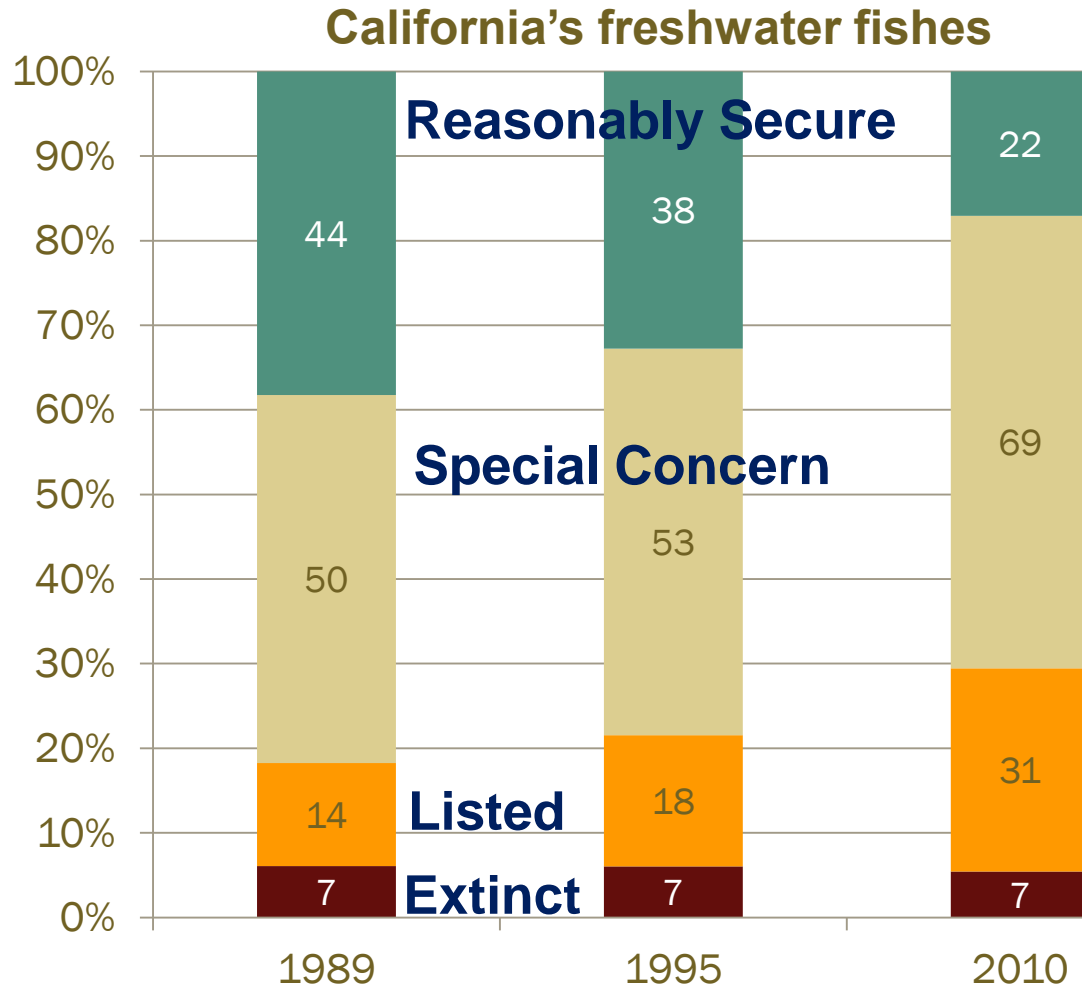


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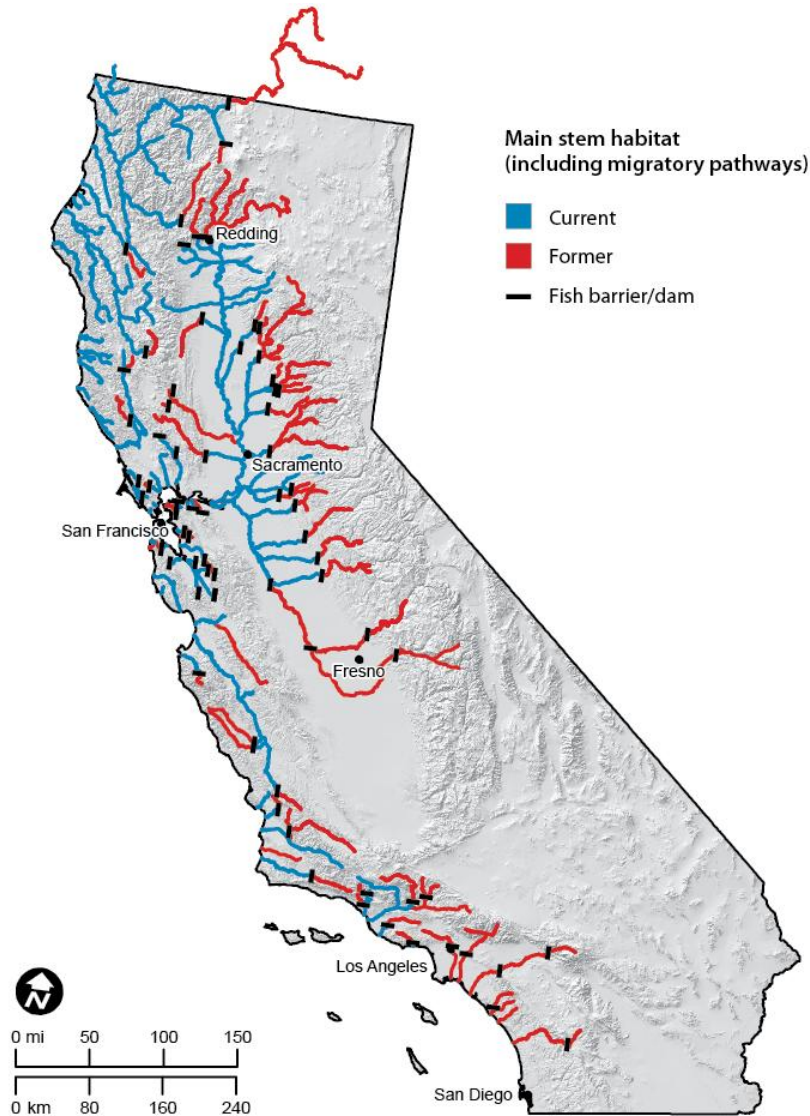


The Fish Are Losing



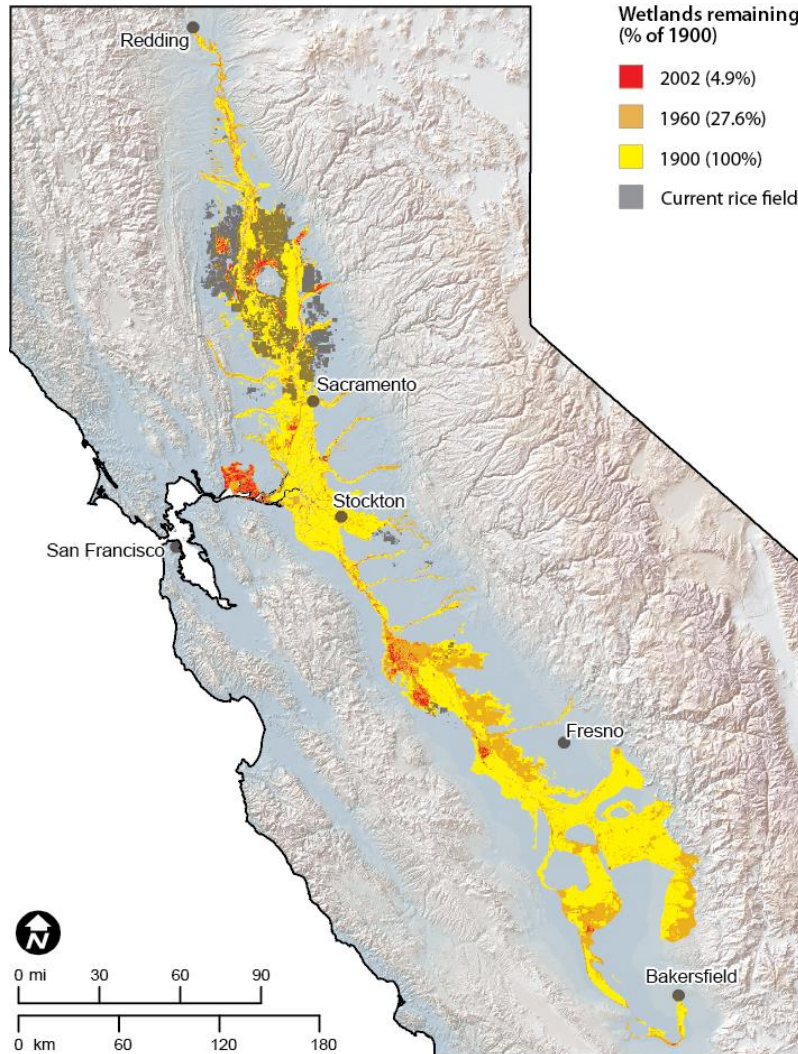
- Widespread decline despite decades of well-intentioned effort
- Threat to water supply reliability & flood protection
- Conditions worsen with climate warming, invasive species

Dams and Diversions Are Major Factors



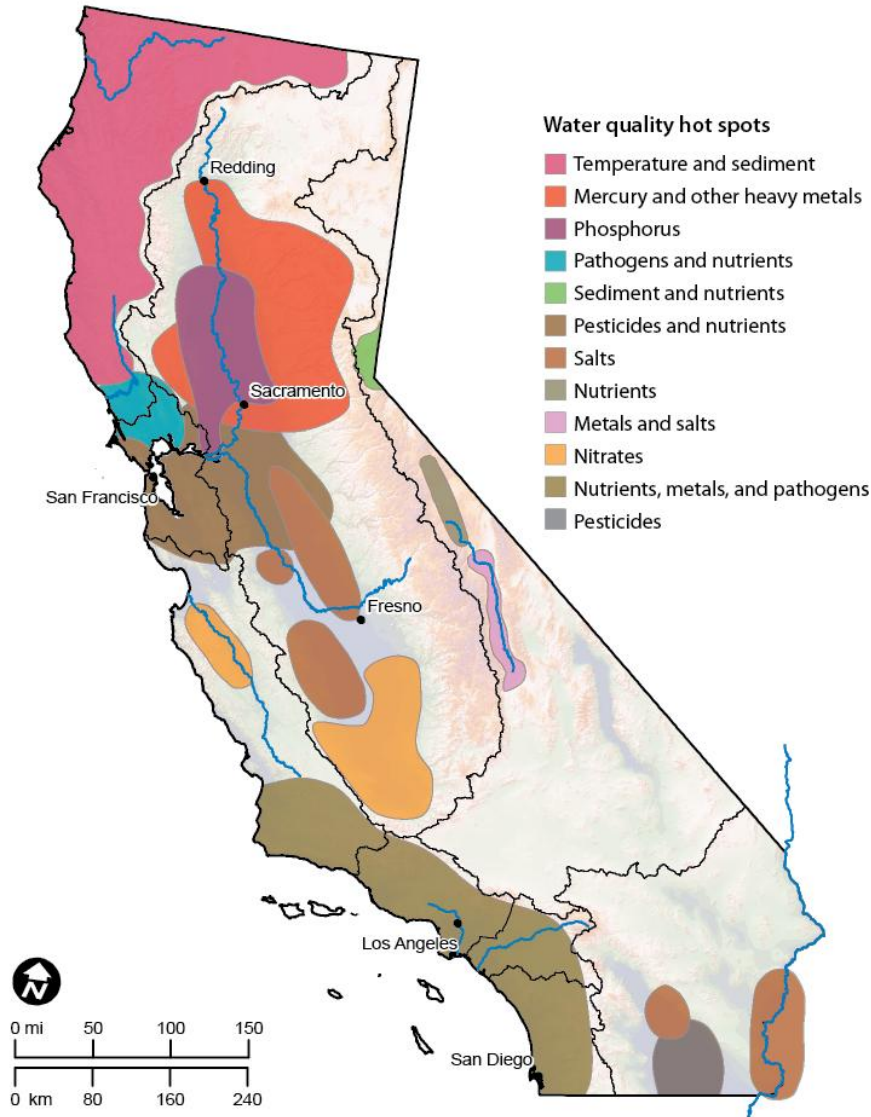
- Blockage of upstream habitat
- Alteration of downstream habitat
- Disturbance of natural flow patterns

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

Change is not new to California

History of change in California water

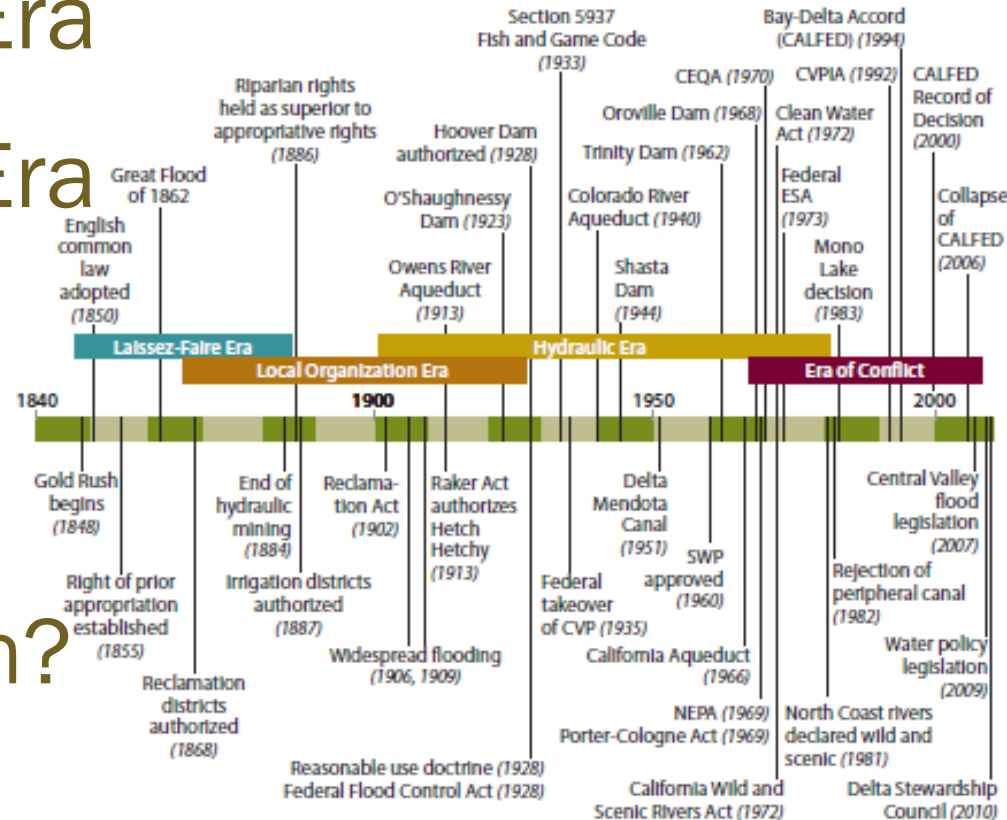
Drivers of change:

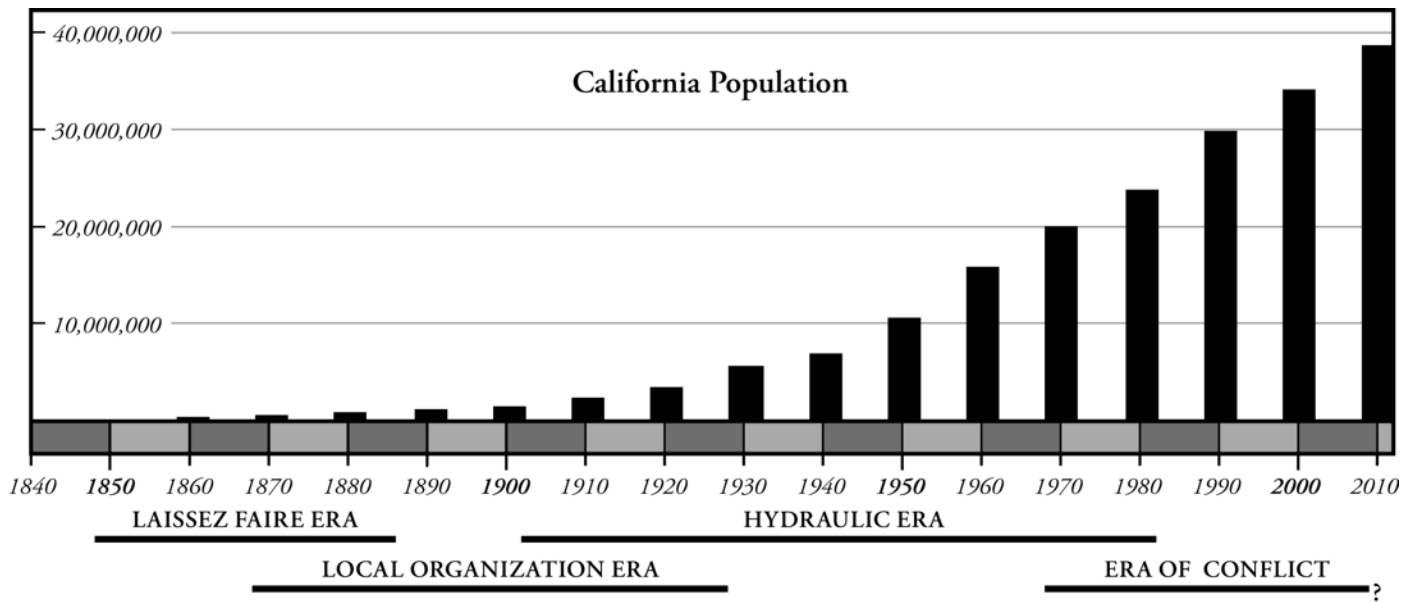
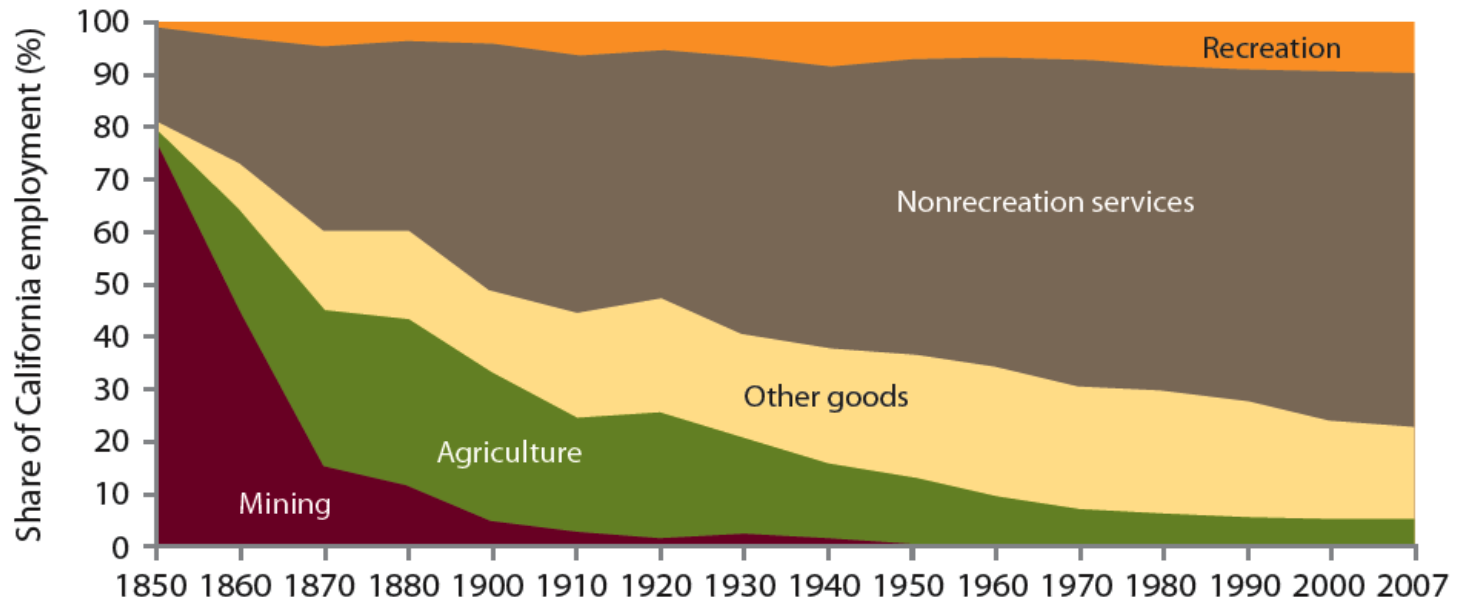
- Deterioration
- Climate
- Economic and demographic transitions
- Changing ecosystems, invasive species
- Scientific and technological progress



Transitions in Water Management

- Early Laissez Faire Era
- Local Organization Era
- Hydraulic Era
- Era of Conflict
- Era of Reconciliation?





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Shift to Ecosystem Reconciliation Approaches



Matilija Dam



Yolo Bypass

- Both humans and native species
- More natural flow regimes
- Set back, remove levees
- Reduce contaminants
- Limit new invasive species
- Re-operate, retire dams
- Improve hatcheries
- Specialize some streams

Much Can Be Done Within Existing Environmental Law

- Reasonable use doctrine in California water law
- Endangered Species Act allows shift in focus
 - From single species to ecosystems
 - From single stressor to multiple stressors
- In 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: Balance and Flexibility

- Promote water market to ease conflicts
- Reasonable use and public trust basis
- Equal treatment for groundwater
- 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

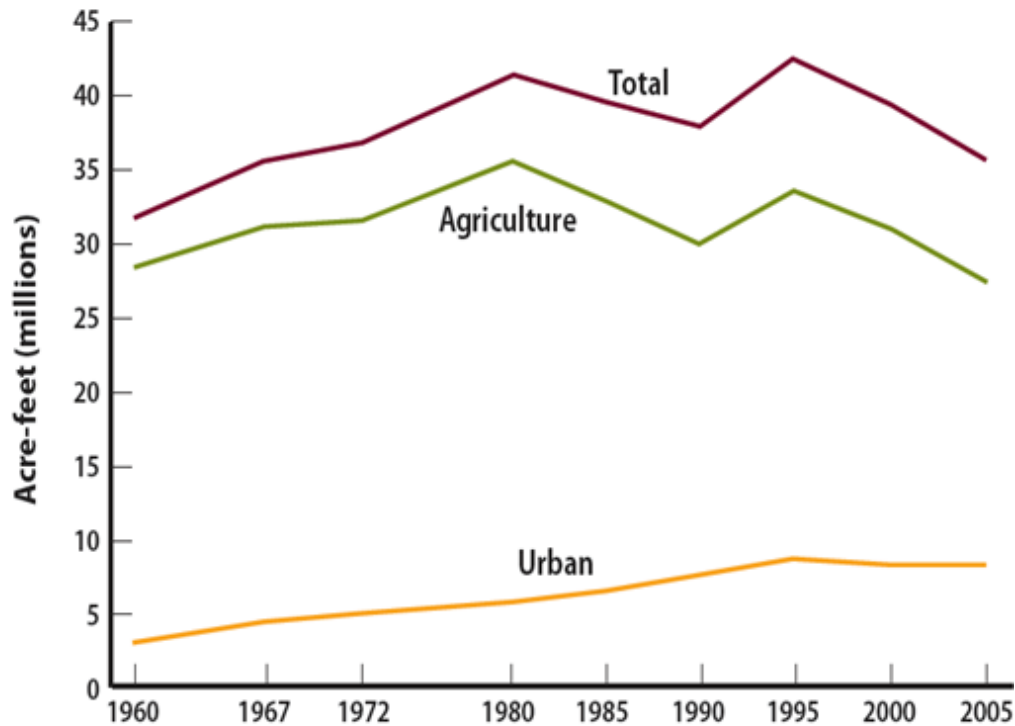
Water quality permit fees

Ecosystem reconciliation

Administration (state and regional)

Risk-based flood management fees

Expand Water Supply Portfolios



SOURCE: Authors' calculations using data from *California Water Plan Updates* (Department of Water Resources, various years).

- Urban conservation
 - Big help with the Delta
- Groundwater banking
 - Cheaper than surface storage
 - Eases impact of climate warming
- Water markets
 - Many opportunities, given low-value acreage share
- More regional coordination

Address Water Quality Gaps

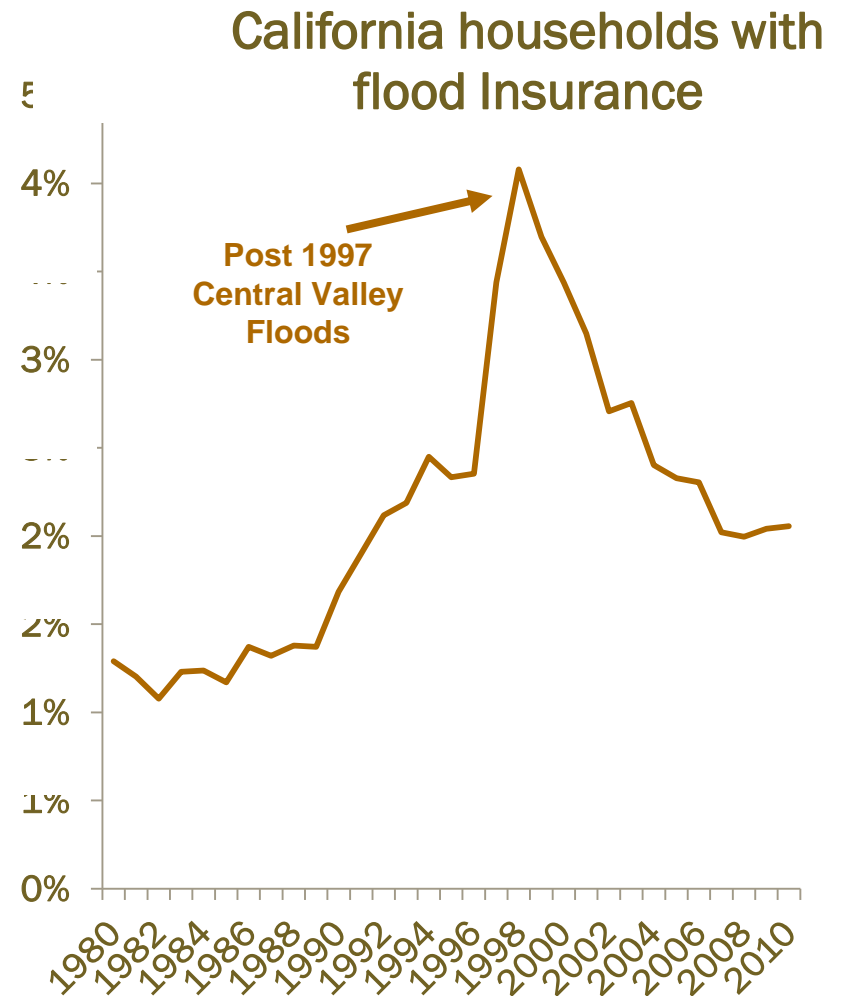


Beach closure in Southern California

- 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



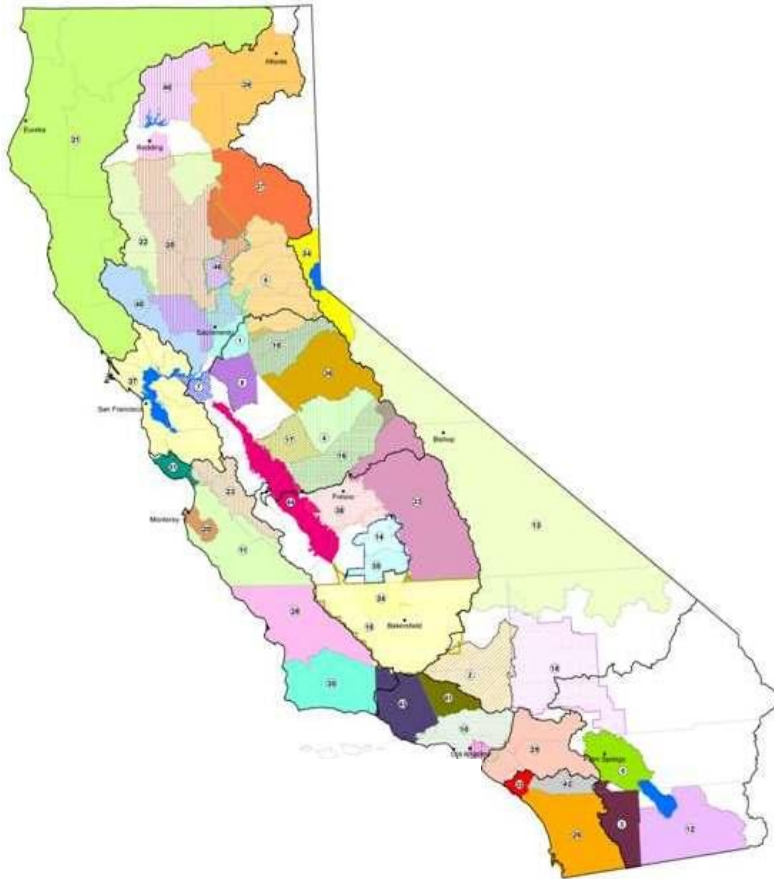
Address Coordination Failures

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

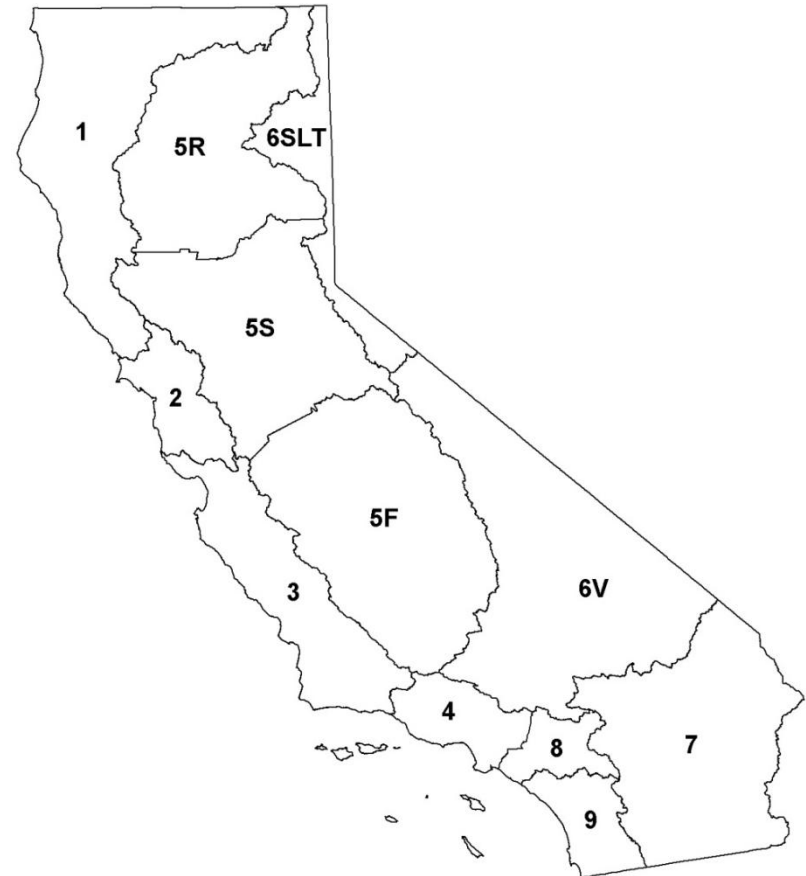


A simplified “conceptual model”

Integrate Actions Within Watersheds



Current integrated regional water management areas



Proposed regional stewardship authorities

Refocus Institutions On Regions

Existing structure

State Water Resources Control Board

Water rights
Water quality

9 regional water quality control boards

Water quality permits
Regional water quality plans

Fish and Game Commission

Fishing and hunting regulation
Species protection
Department of Fish and Game policy

Department of Fish and Game

Implementing Fish and Game
Commission policies

Department of Water Resources

State Water Project (SWP)
Flood management
Statewide planning and coordination
4 district offices

Proposed structure

Department of Water Management

Water trustee (director)
Water rights (with public trust advocate)
Water quality and permitting
Flood management
Statewide planning and coordination

9 regional stewardship authorities

Each with regional water quality,
flood management, ecosystem,
supply and land use planning/
coordination authorities

Department of Fish and Game

Expanded executive authority over
policies and listings
Independent check on flows
Fish and Game Commission retains
hunting and fishing regulation
policies

State Water Project Utility

Independent public benefit
corporation
State-owned
Holds SWP rights and assets

Water Independent System Operator (ISO)

Grid operator, transfer
clearinghouse

ISO members

SWP (independent public utility)
Central Valley Project
Local projects (encouraged to join)

Use Cooperative Approaches to Decentralize Decisions

- State, feds set goals, standards, deadlines
- Locals develop implementation and enforcement plans with greater autonomy
- Watershed stewardship authorities coordinate local supply, flood, and ecosystem actions
- More use of flexible market mechanisms
- Failing to reconcile conflicts increases costs for all

Summary Recommendations

- It's still the Delta
- Pursue reconciliation strategies rather than species-specific
- Promote portfolio-based approaches
- Cooperative watershed scale integration
- Groundwater included
- Modest adjustments in environmental laws
- Facilitate water transfers
- Risk-based flood management
- Reform state institutions

Questions?

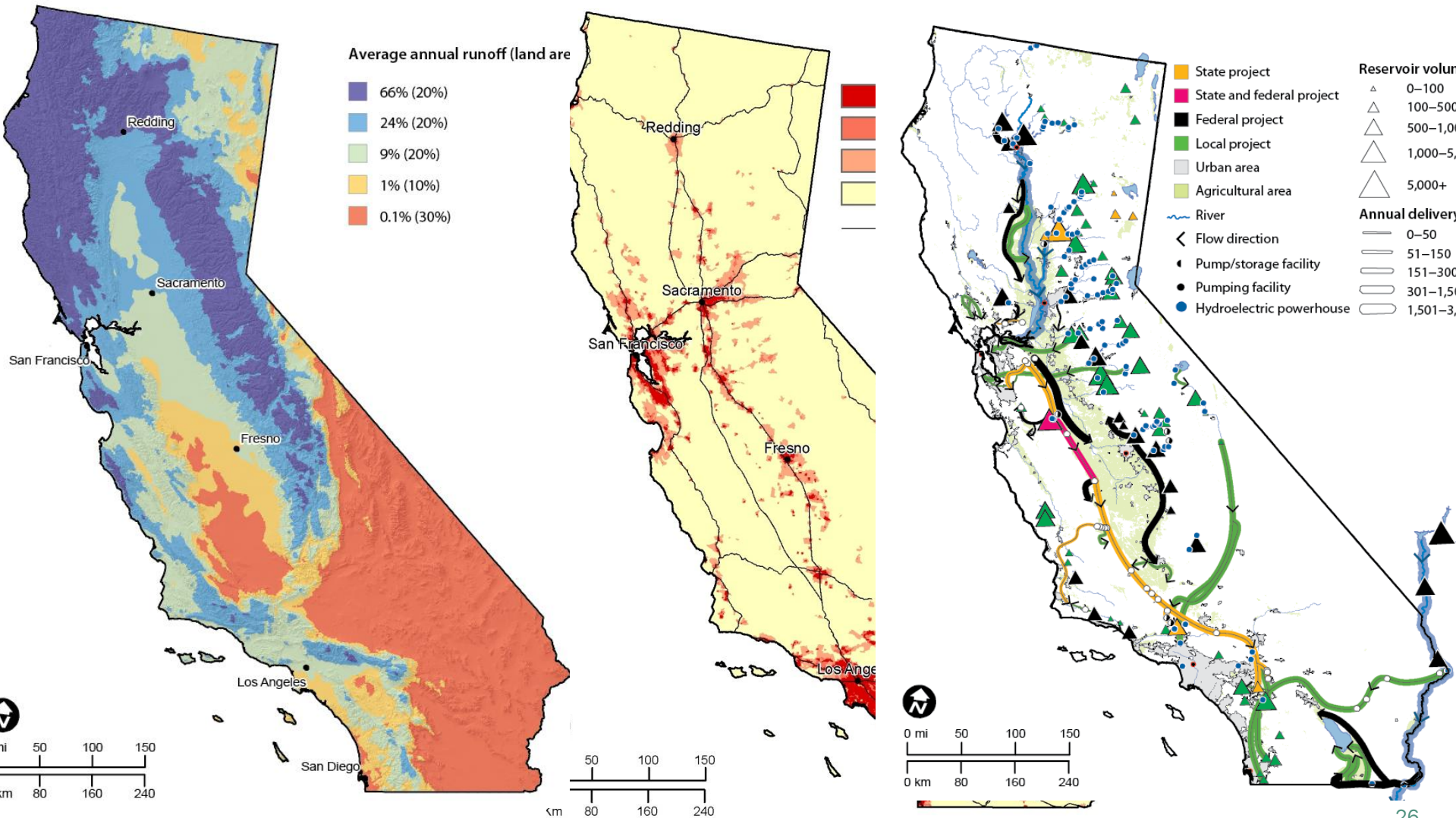
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Any questions?



We all depend on an engineered statewide network



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