



The San Joaquin River Restoration Program

Achieving Large-Scale River Restoration While
Minimizing Water Supply Impacts to
Agricultural Users



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Water Resources Planner



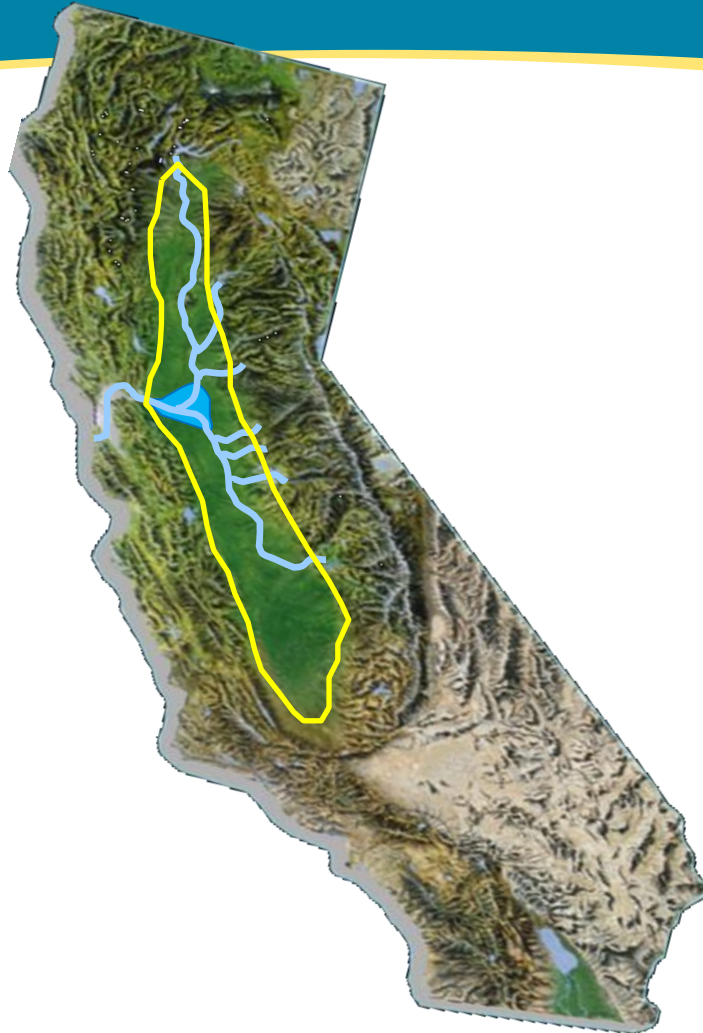
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BUILDING A BETTER WORLD

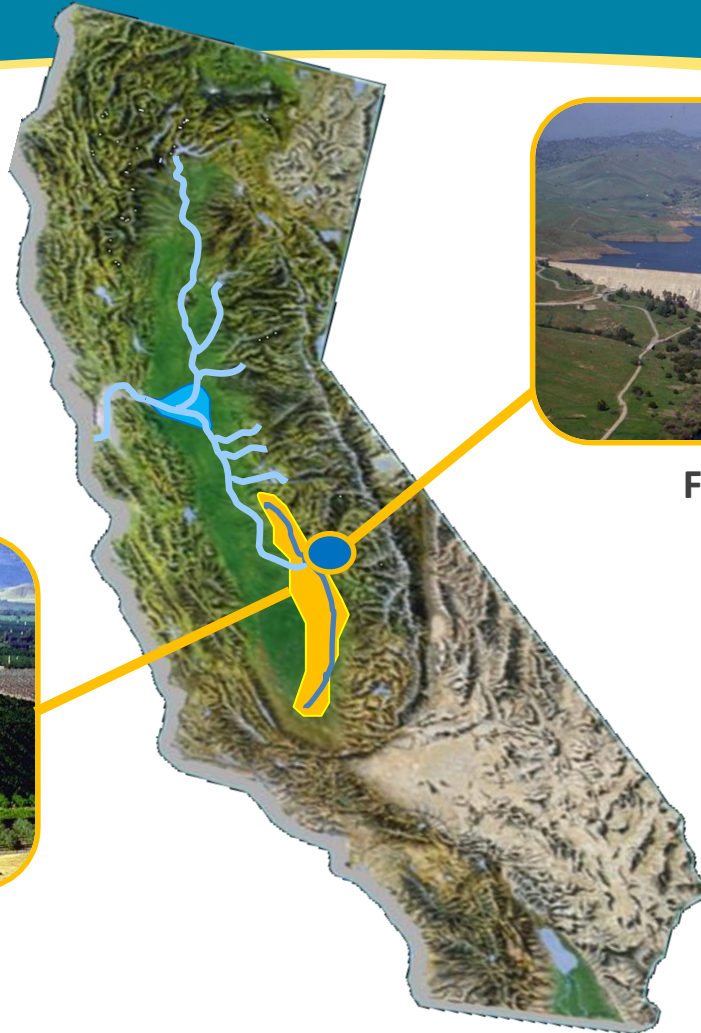
Central Valley of California



Central Valley of California



Central Valley of California



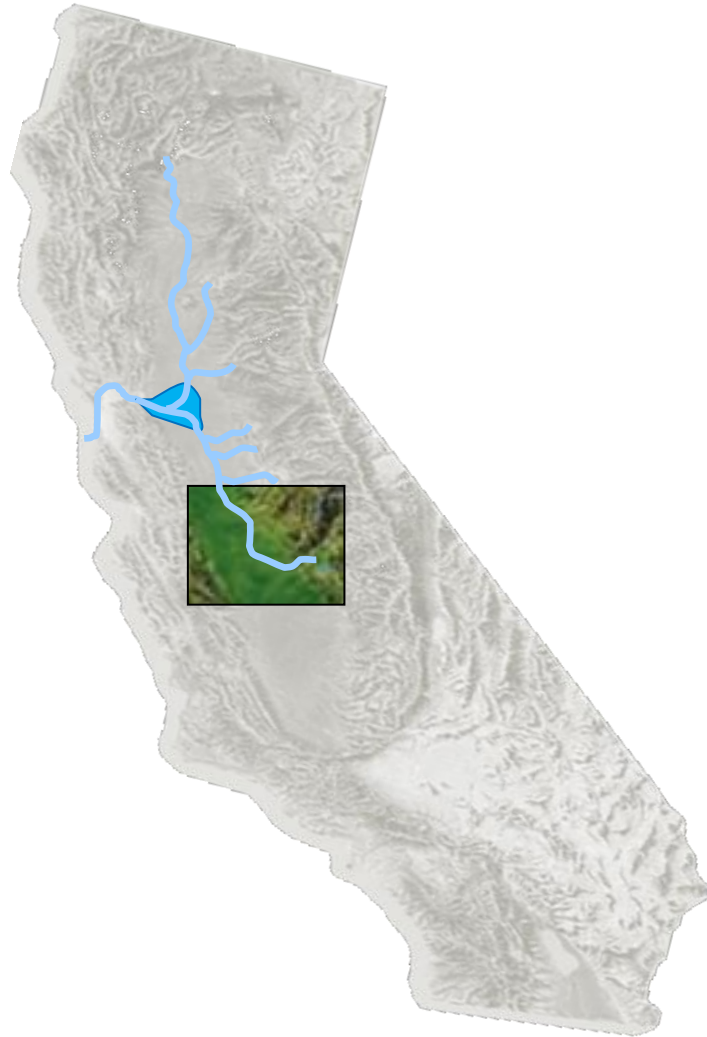
Friant Dam



Friant Division



Central Valley of California



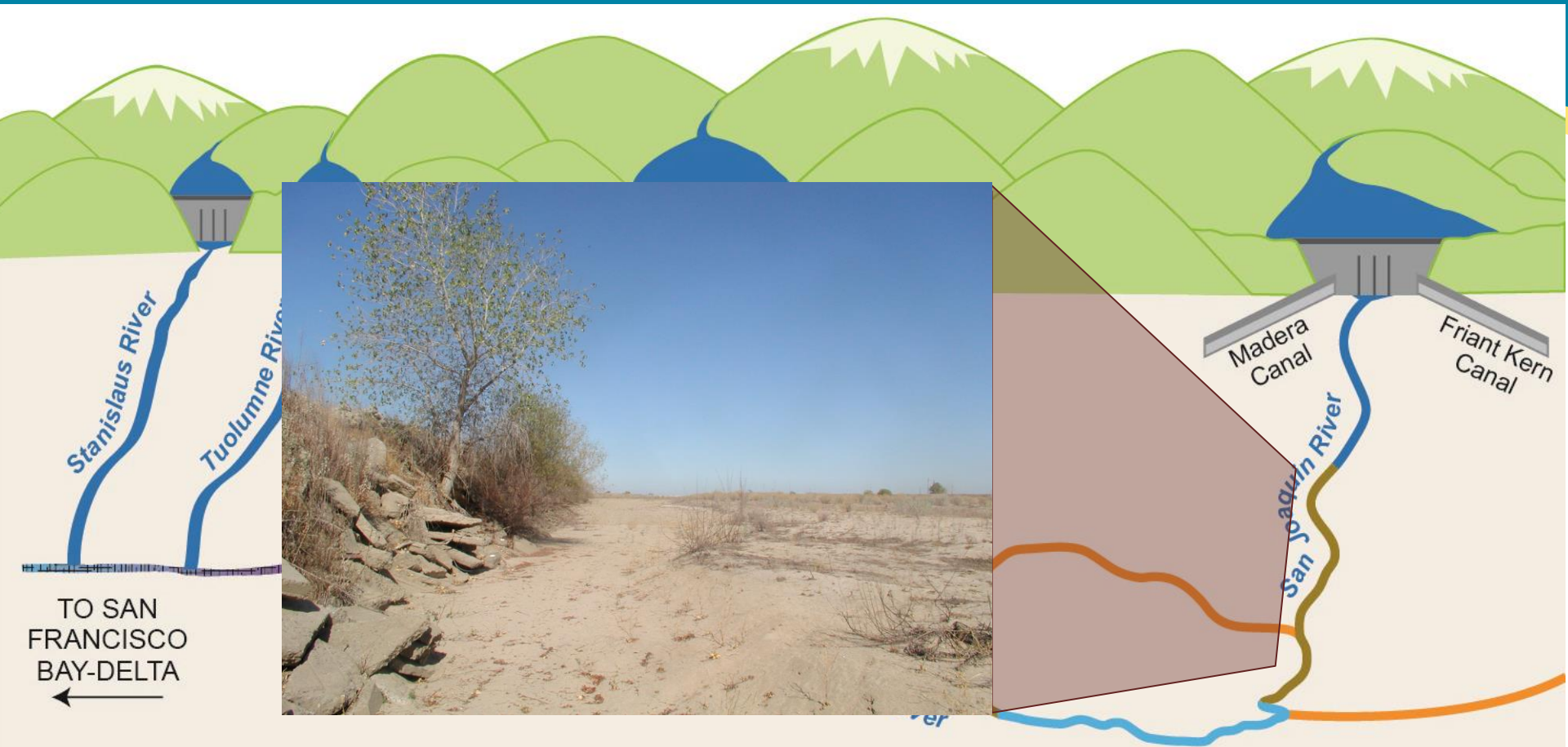
Restoration Area



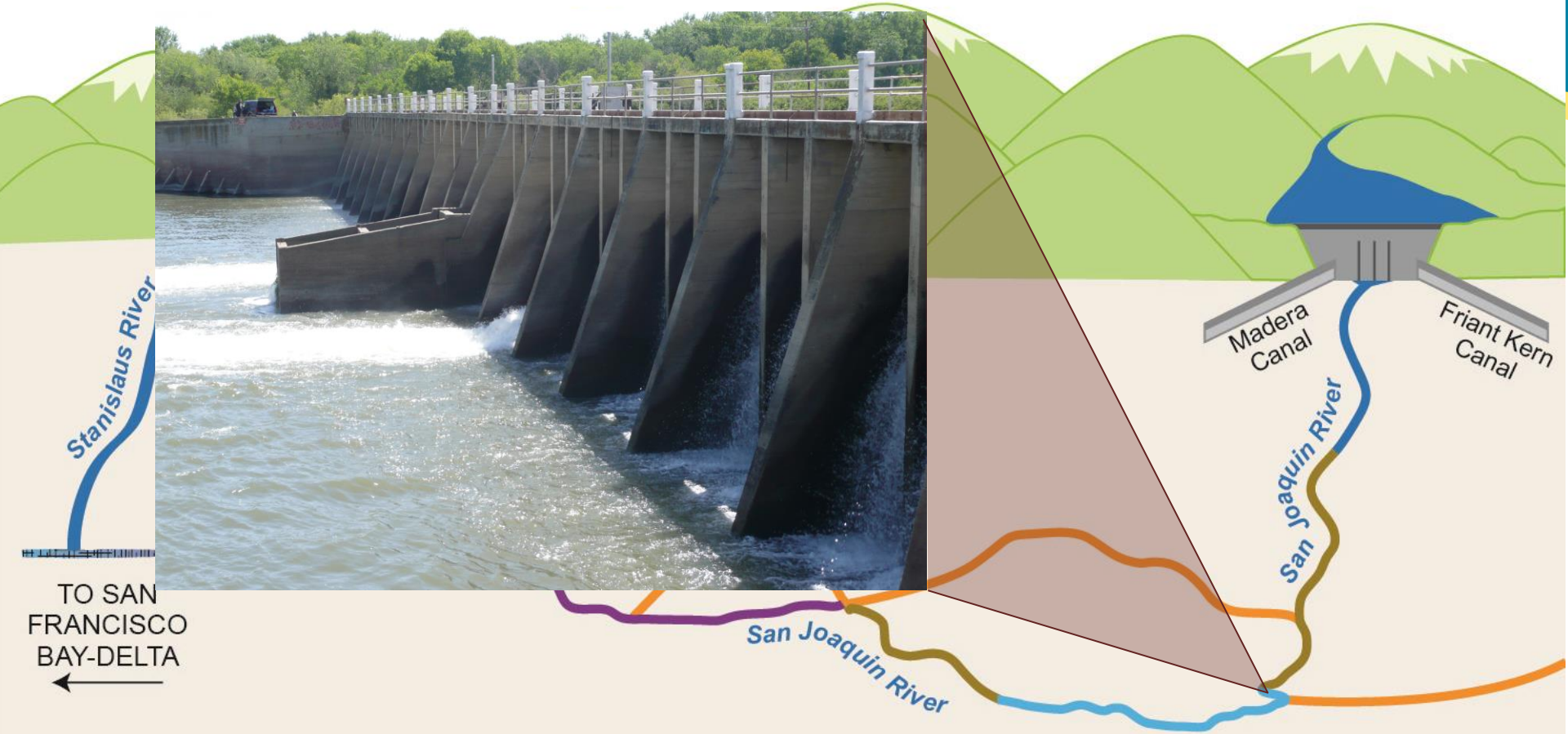
Restoration Area



Restoration Area



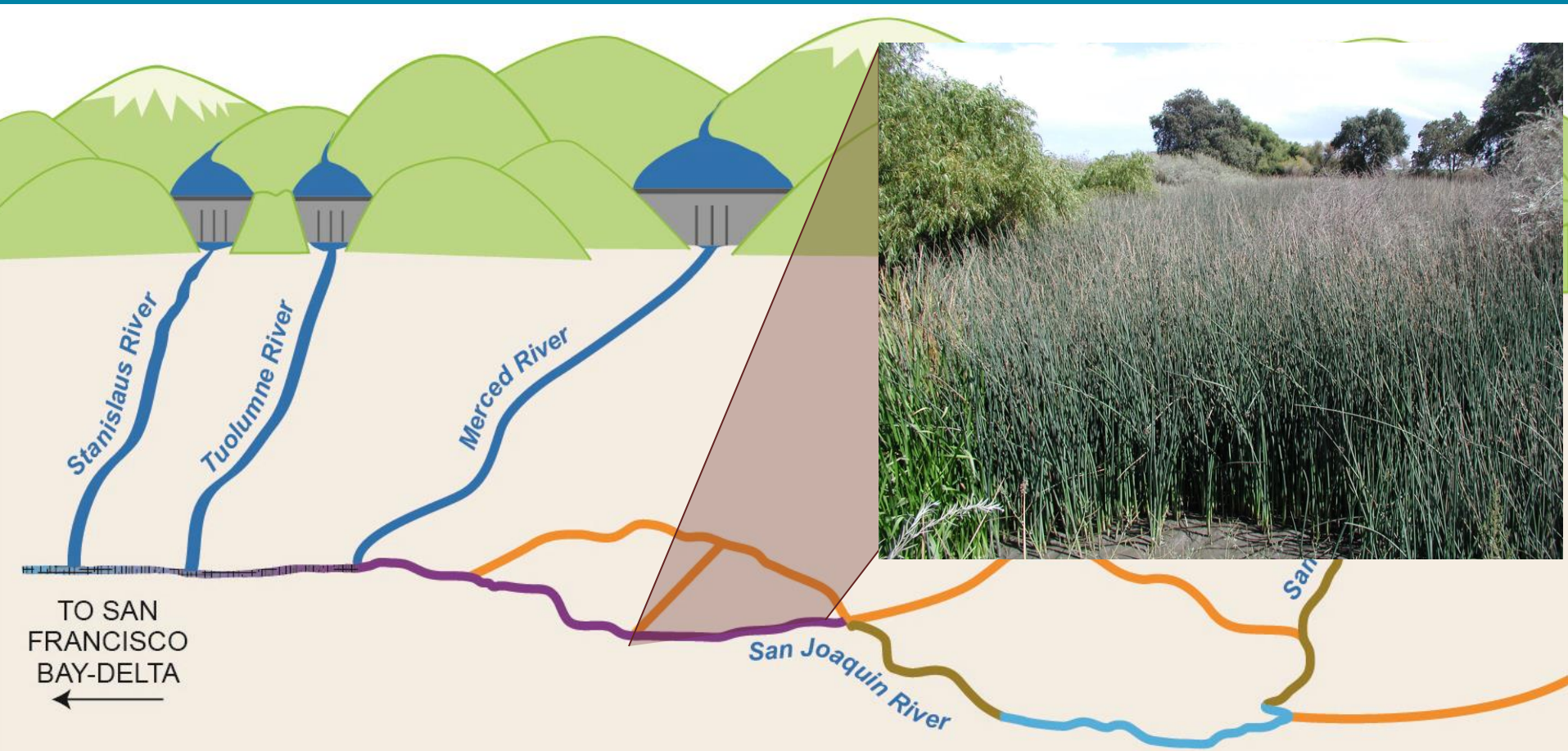
Restoration Area



Restoration Area



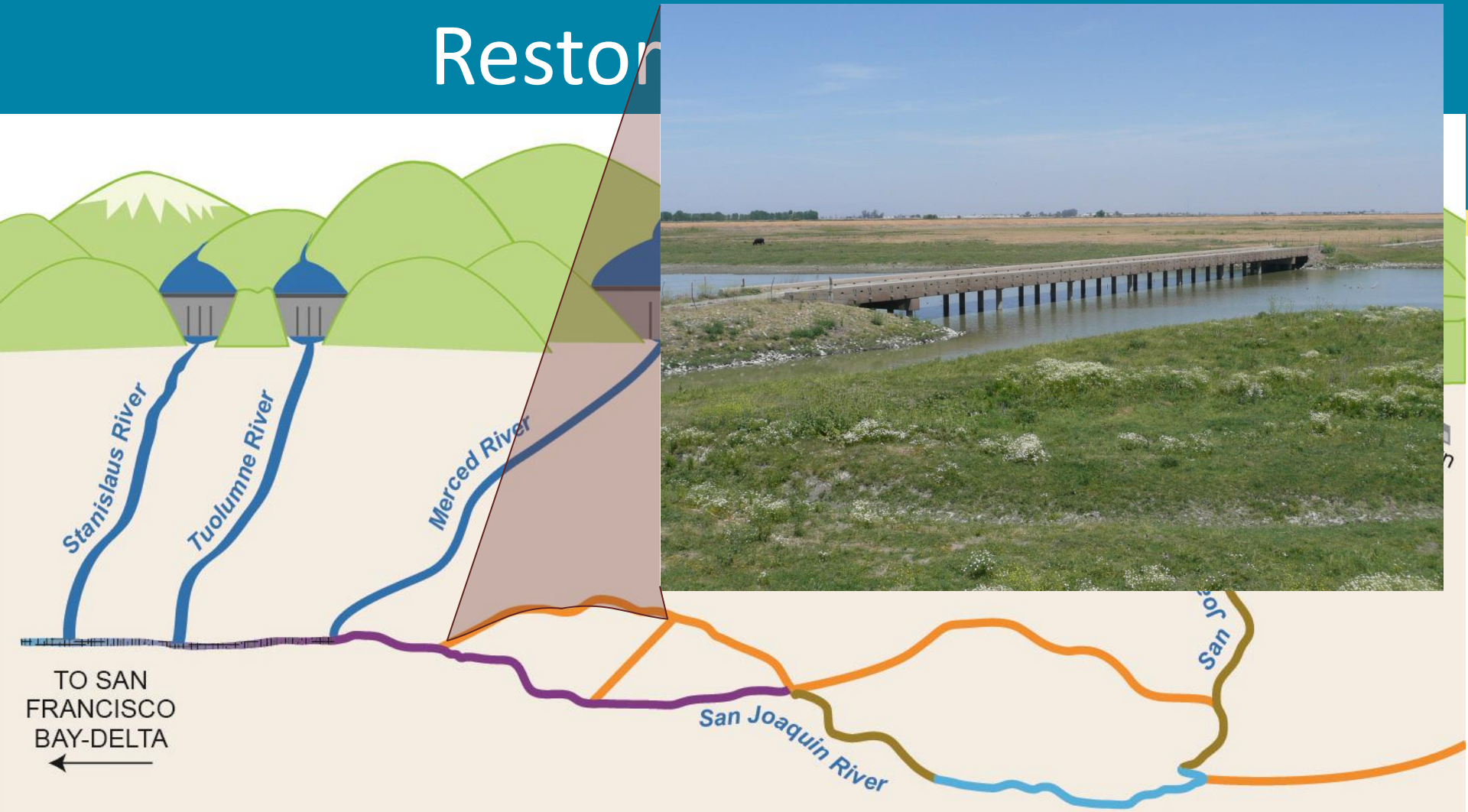
Restoration Area



Restoration Area



Restor



The Settlement

1948 – Initial water contracts signed

1988 – Contract renewal was challenged in Federal court

2006 – Settlement reached after 18 years of litigation



Settling Parties, Implementing Agencies

Settling Parties

- **Environmental Coalition:** 14 organizations led by NRDC
- **Friant Water Authority:** 22 water agencies

Implementing Agencies

- **Federal Government:** *Bureau of Reclamation*, Fish and Wildlife Service, National Marine Fisheries Service
- **State of California:** Department of Water Resources, Department of Fish and Game
- Restoration Administrator and Committee



Co-Equal Goals

- **Restoration Goal**

- To restore and maintain fish populations in “good condition”, including naturally reproducing and self-sustaining populations of salmon and other fish

- **Water Management Goal**

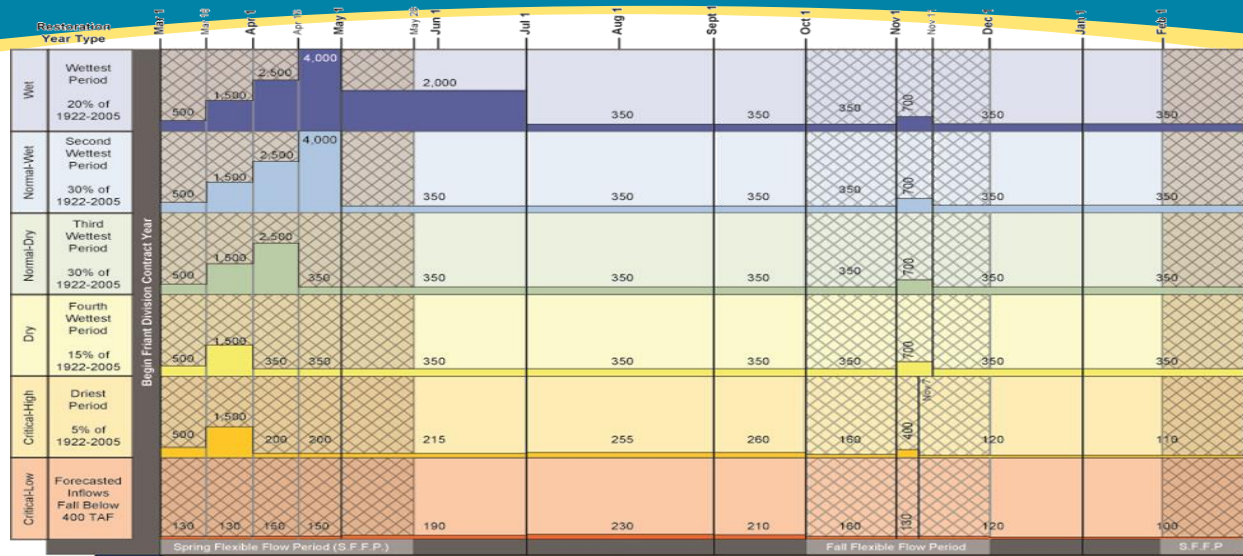
- To reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows



Implementation Challenges



Flow Management



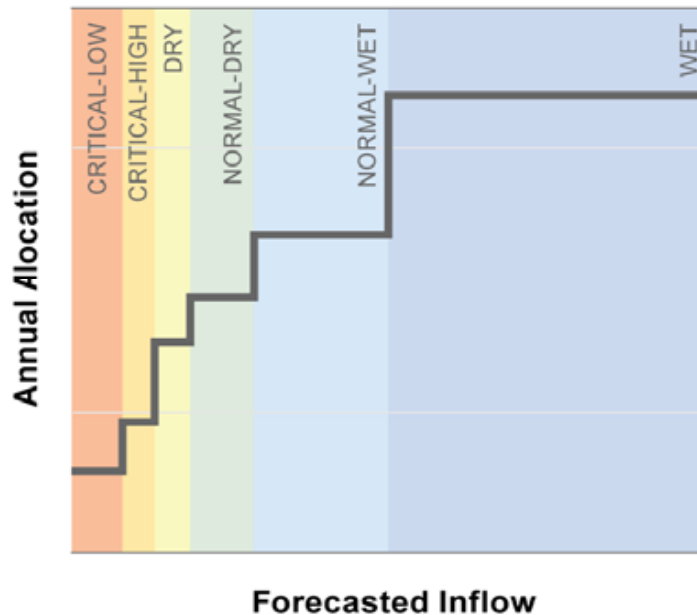
- Varies according to available supply
- Year-round base flow plus peaks
- Peak spring flows mimic snow-melt patterns
- Flow targets exist throughout river



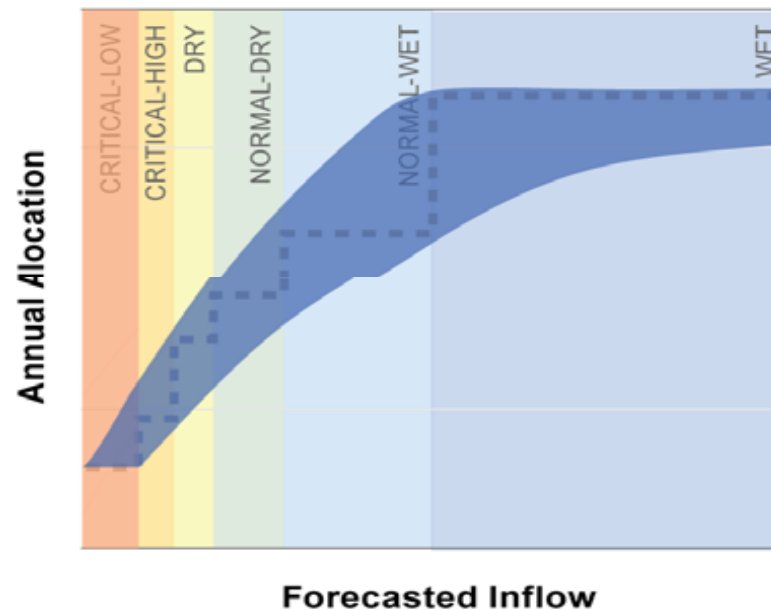
Flow Management

Settlement Flow Schedules Adapted for Real-Time Application

Exhibit B Annual Restoration Flow



Continuous Line Restoration Flow



River Continuity

- Preserve design water level in all river reaches
- Provide for fish migration upstream and downstream

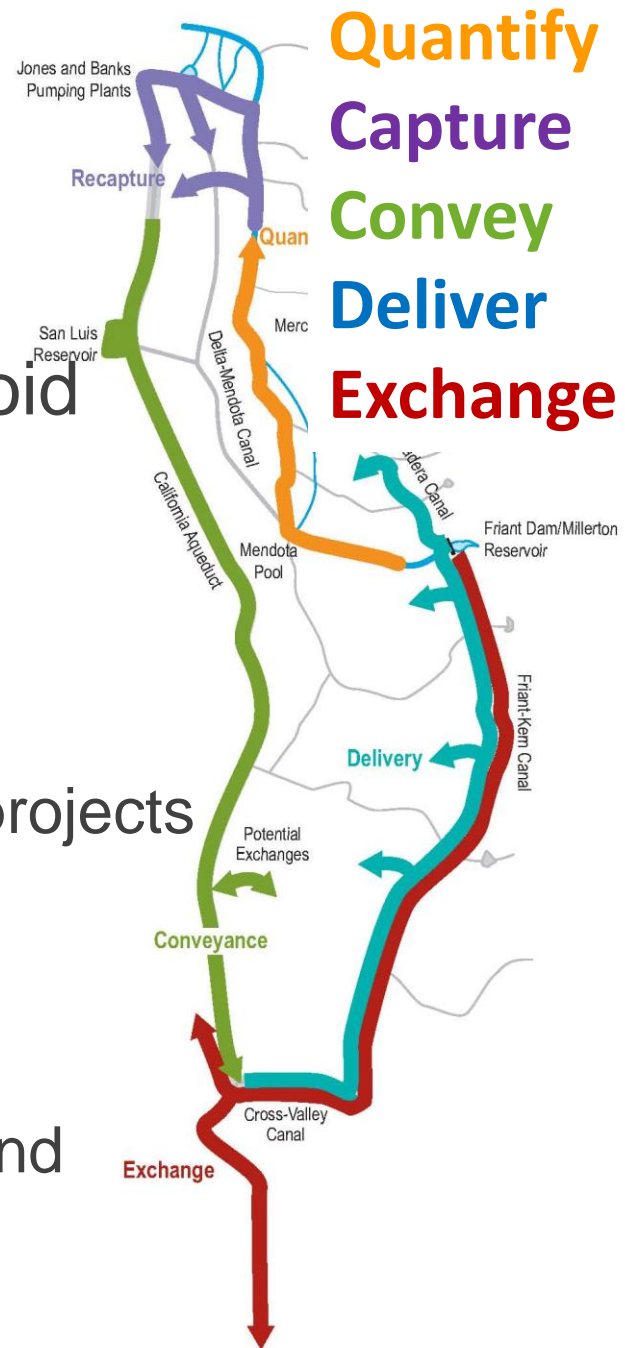


Photo: Mark Crosse, The Fresno Bee



Water Recapture

- Complex operations to avoid interference with:
 - The Restoration Goal
 - Senior water rights
 - Operations of Major water projects
- Complex accounting
 - Rigorous monitoring
 - Recovered water delivery and exchange



Flood Management

- Change from intermittent flood flows
 - Steady flows cause levee seepage
 - Sediment and vegetation management
 - Maintenance costs increase
- Collecting new information
 - Characterize levee conditions
 - Limit flows to safe capacity at all times
 - Involve stakeholders in flow decisions



Schedule

2006
Settlement
reached

2009
Begin
Interim
Flows

2012
Reintroduce
Salmon

2013
Complete
first phase
channel
and
habitat
work

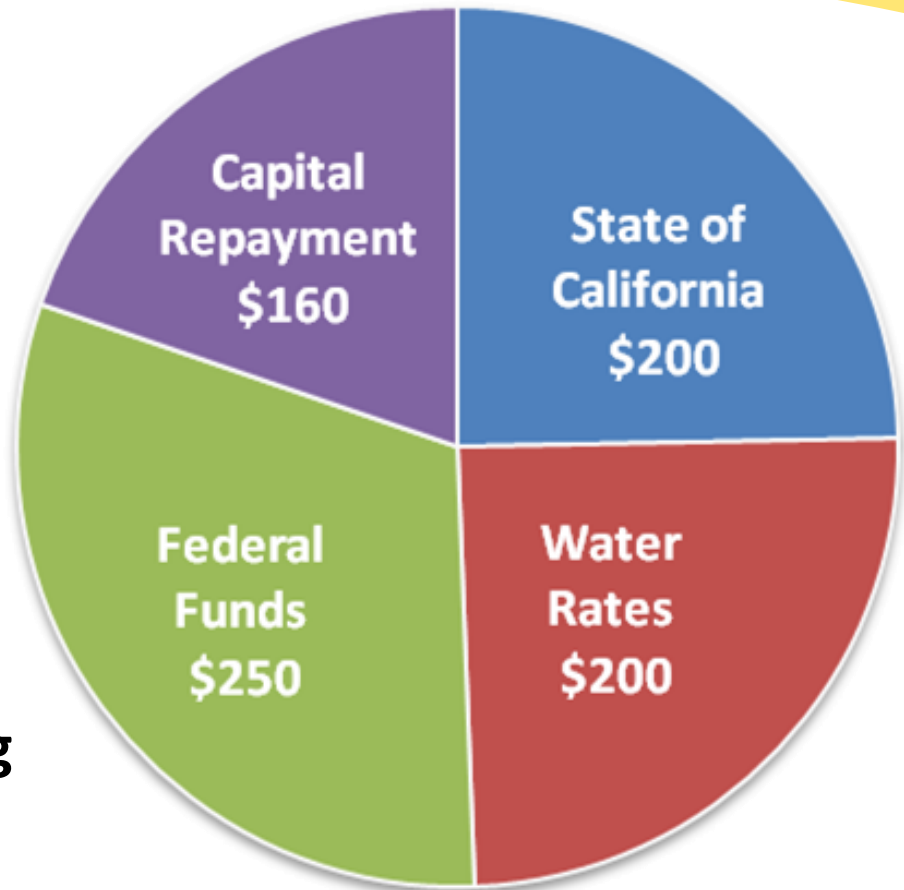
2014
Initiate full
Restoration
Flows

Resolving Unexpected
Issues Will Require
More Time



Financing

- Settlement and legislation provided funding for expected costs at the time
- Federal budget rules limit expenditures until 2018
- Additional needs are being identified through detailed studies
- **Current estimates approaching \$1.5B**



Communication

- Over-communicate with stakeholders and public officials
- Establish performance targets to guide actions
- Science-based processes assure agreement on the facts
- Comprehensive monitoring
- Adapt plans to changing conditions while meeting objectives



Thank You

