

# **Water Resources and Policy Initiatives Conference**

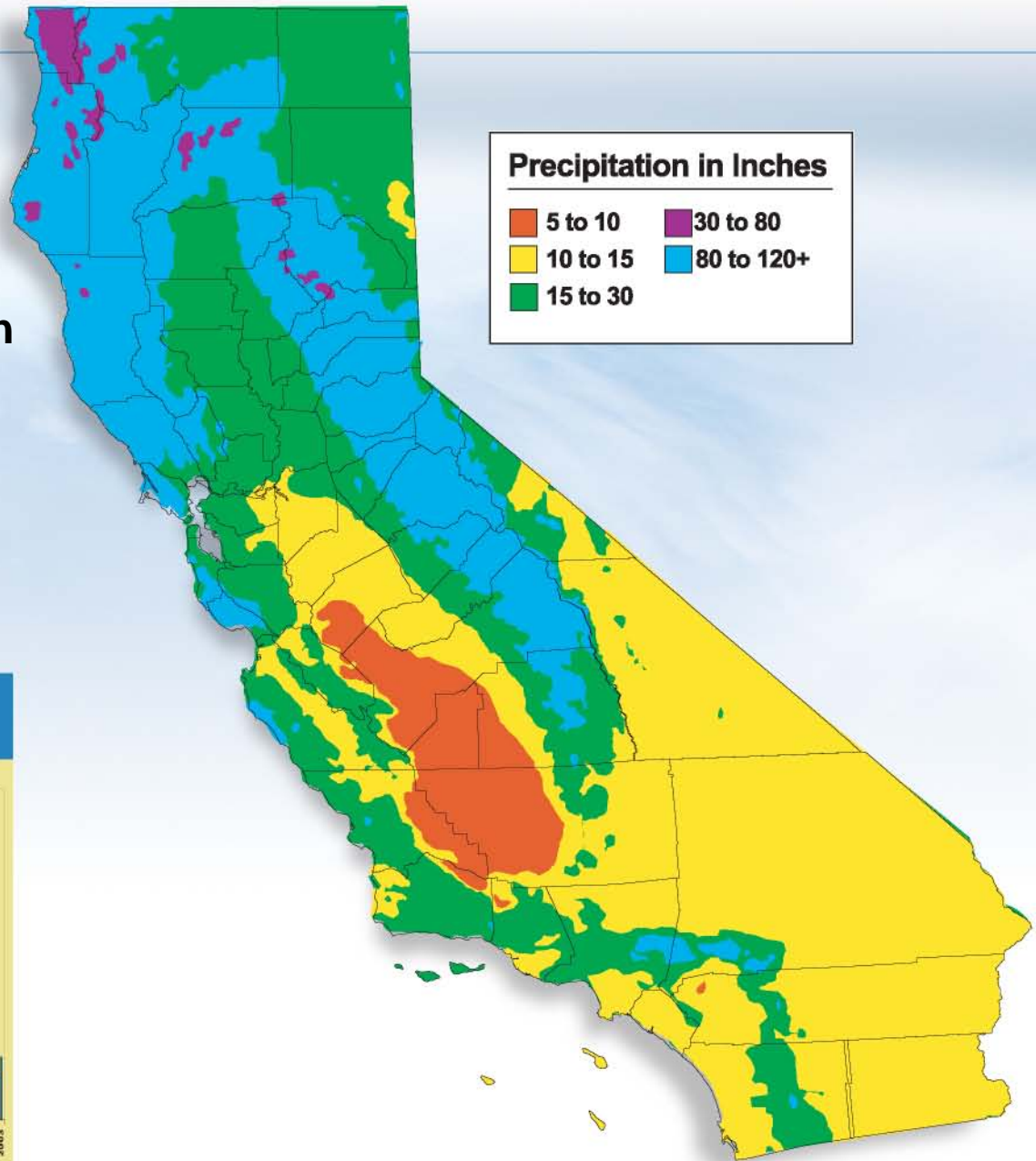
March 3, 2010

**Mark W. Cowin**

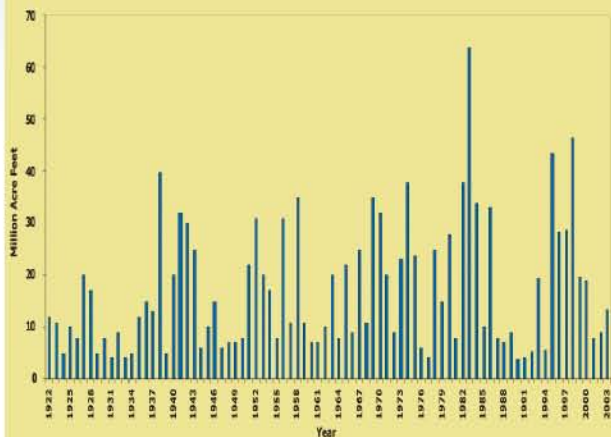
**California Department of Water Resources**

# Water Variability and Use

- 2/3 of precipitation in north
- 2/3 of use in south



**Yearly Total Delta Outflow  
(Calendar Year)**



# California's Interregional Water Systems



# Defining California's Water Challenges



Aging infrastructure and growing population put more pressure on water systems.



California's Bay-Delta ecosystem is declining with many fish populations at record lows, resulting in less reliable water supplies.



Multi-year drought has further stressed water supplies for all purposes. Reservoirs are low and groundwater levels are declining.



Climate change impacts, including less snowpack, higher flood peaks, and sea level rise, create new uncertainties.

# Climate Change Impacts to California's Water Resources

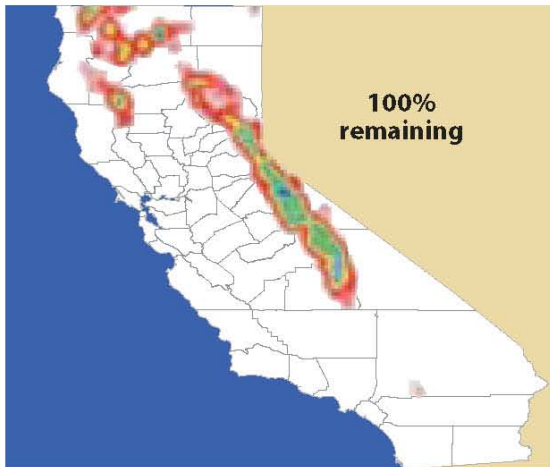
- Diminishing snowpack
- More extreme weather patterns
- Rising sea level
- Higher air/water temperatures impacting ecosystem health
- Increased uncertainty



# Loss of Snowpack

## Decreasing California Snowpack

Historical Average (1961–1990)

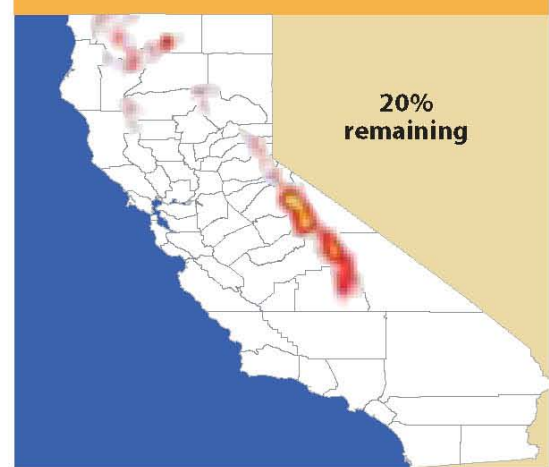


2070–2099

Lower Warming Range  
Drier Climate

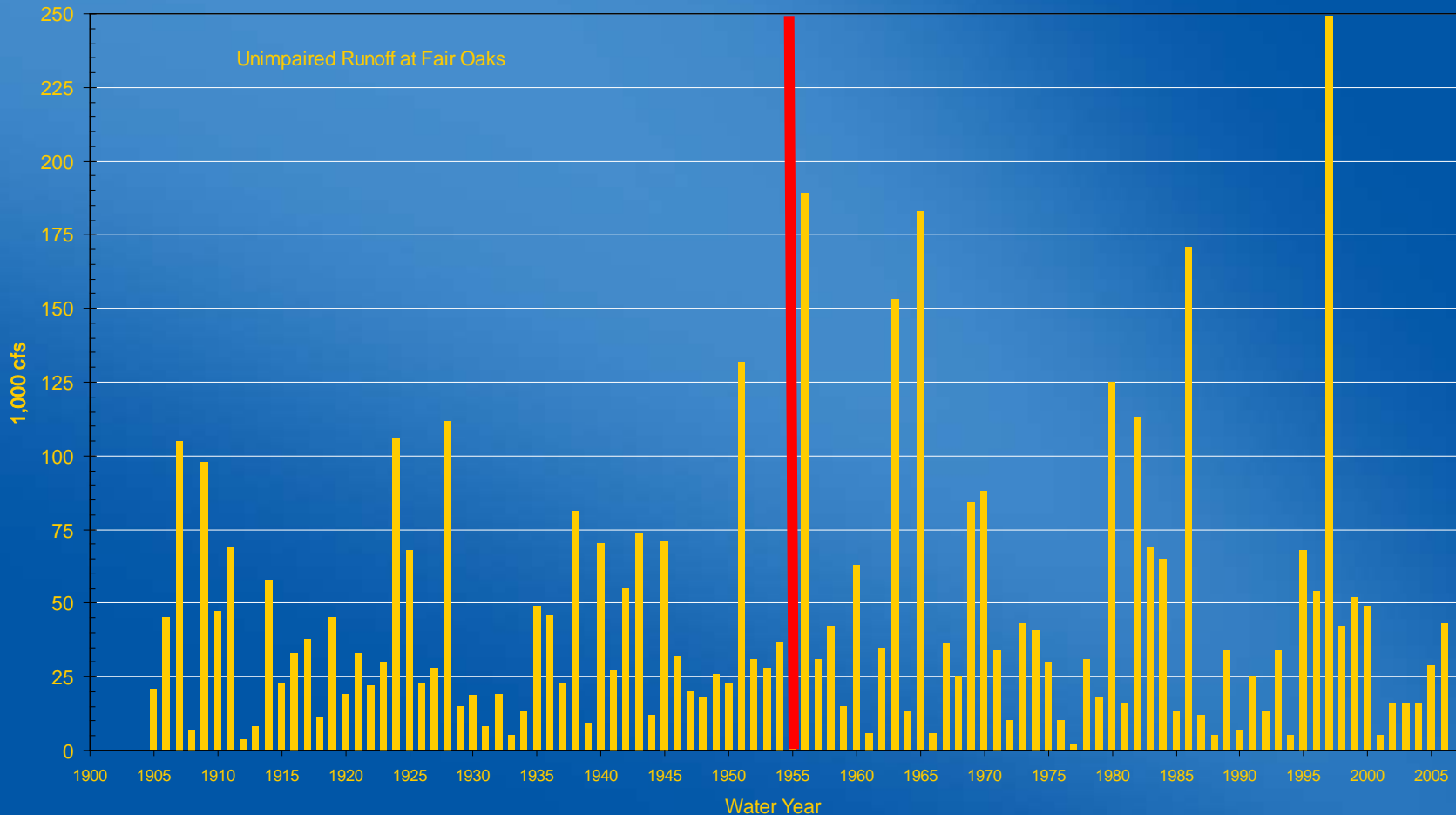


Medium Warming Range  
Drier Climate



# Changes in Peak Flows American River

American River Runoff  
Annual Maximum 1-Day Flow



Red Line = Construction of Folsom Dam

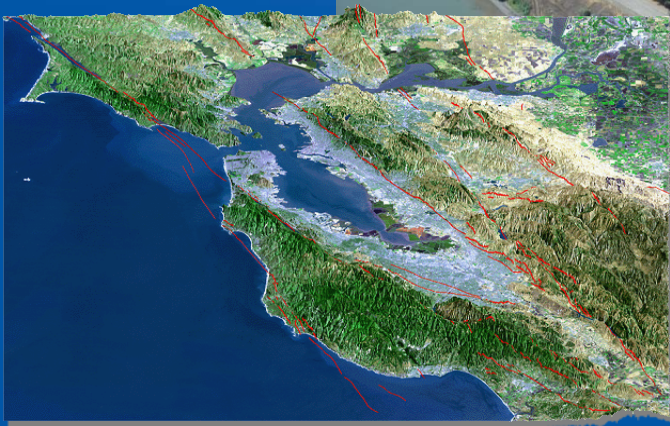
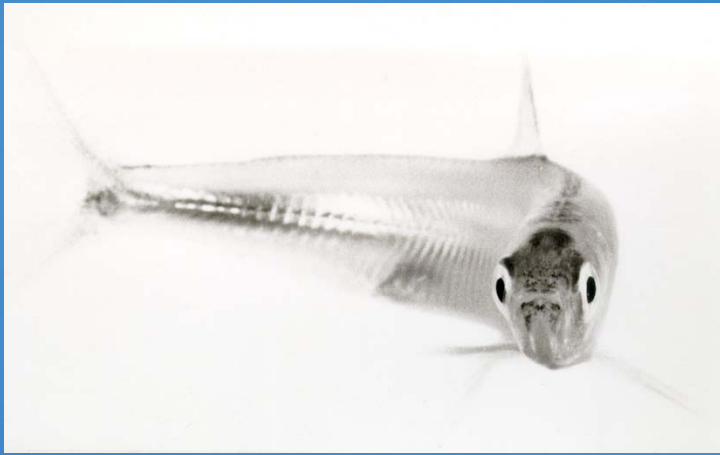
# The Delta – Vital to Economy, Environment





# Delta Challenges

- Subsidence
- Earthquakes
- Climate Change
- Declining Species
- Regulatory Uncertainty

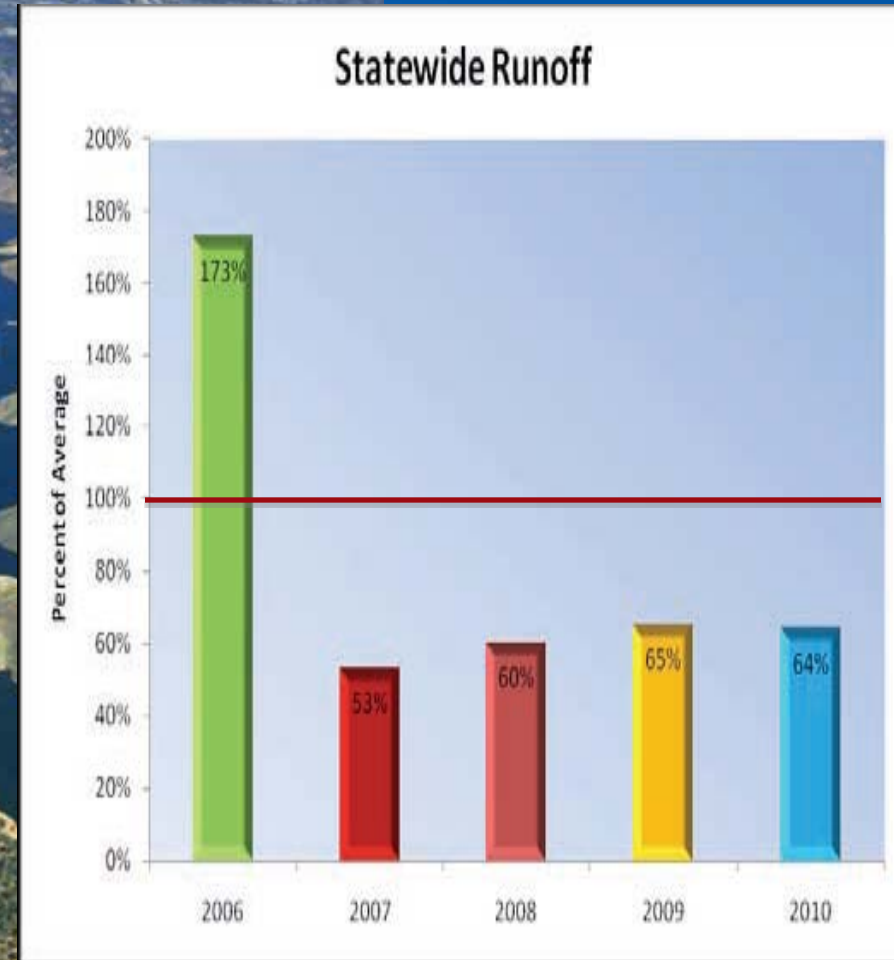


**“64% chance of catastrophic failure due to earthquake or storm in the next 50 years.”**

# 2010 Water Supply Conditions



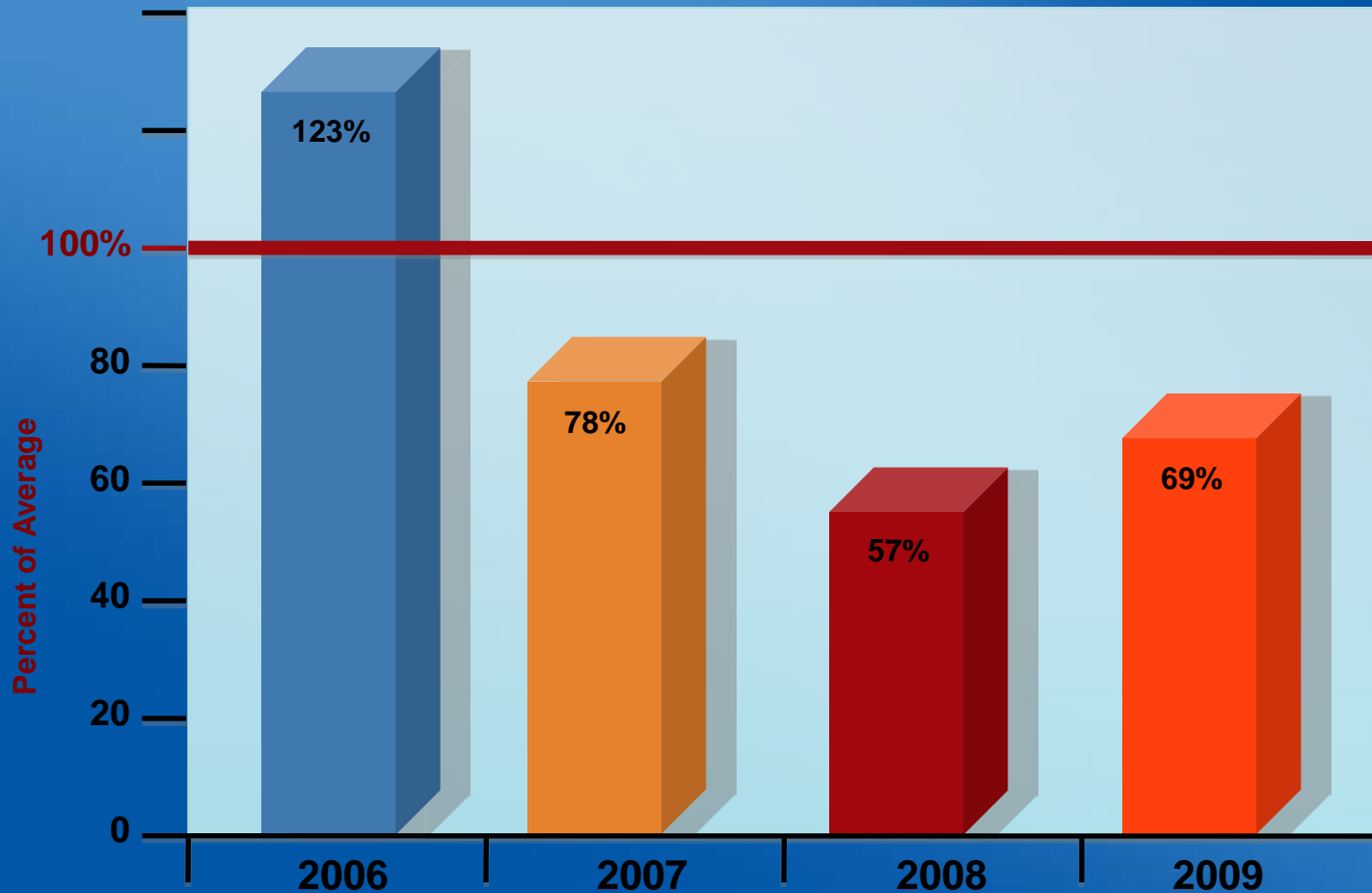
Lake McClure



Through Jan 31, 2010

# Carryover Storage Major Reservoirs

(Trinity, Shasta, Oroville, Folsom, New Melones, Don Pedro, San Luis)



# Current Reservoir Conditions



	% Average	% Capacity
Shasta	99	73
Oroville	54	38
San Luis	81	70

- Oroville 2008 - lowest carryover storage since 1977, lowest Jan 1 storage level ever
- San Luis 2009 – lowest high point

# Water Supply Allocations

Year	Type	CVP South of Delta	SWP
2006	Wet	100% ag / 100% urban	100%
2007	Dry	50% ag / 75% urban	60%
2008	Critical	40% ag / 75% urban	35%
2009	Dry	10% ag / 60% urban	40%
2010	Dry	5% ag / 55% urban	15%
	Avg	30% ag / 75% urban	40%



# Water Supply Implications

## Delta Exports

(not including water transfers)

**5.7 maf**

Drought Impact

**~1.6 maf**

~500 taf

Fish Protection Actions (Boa)

**~3.6 maf**

Expected Annual Average  
(Pre – 2008)

2009

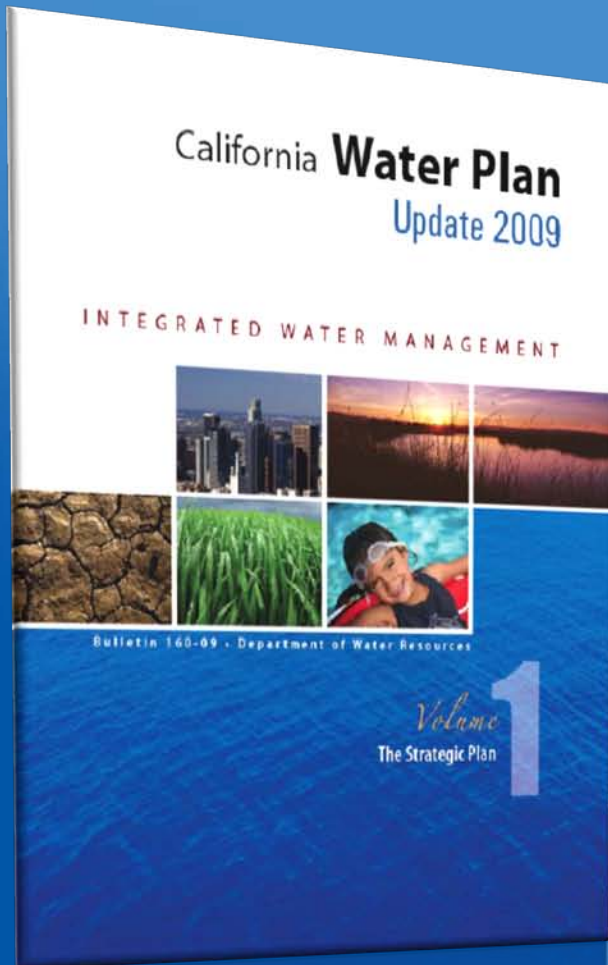
**SWP Pumps** **CVP Pumps**



# California Water Plan

## Key Initiatives:

- Statewide Water Management
- Integrated Regional Water Management



# Bay Delta Conservation Plan

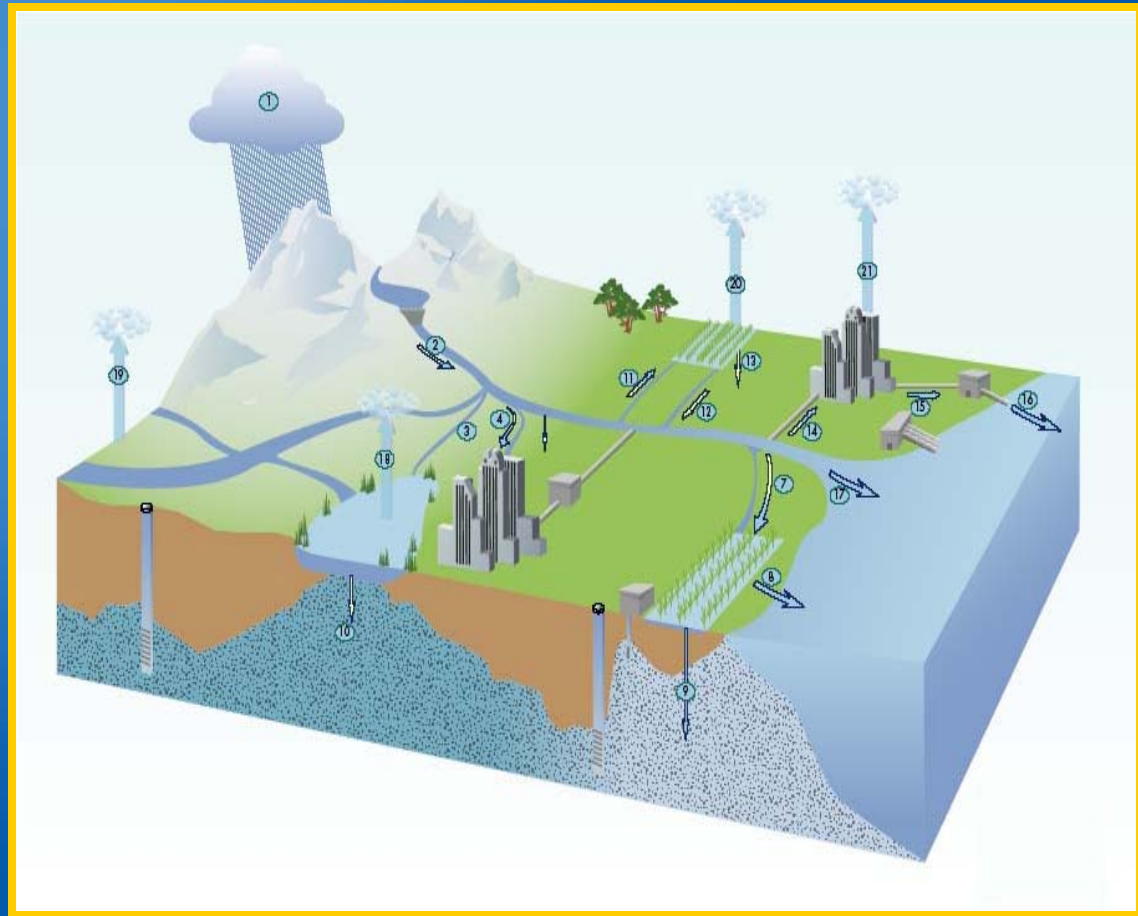


- Habitat Conservation Plan
- Natural Community Protection Plan
- Addresses multiple species
- Conservation measures adopted to address major stressors
- Contributions to Conservation and Recovery beyond jeopardy and mitigation



# Integrated Regional Water Management

- Conservation
- Increased storage
- Water recycling
- Conjunctive management
- Groundwater clean-up
- Floodplain preservation
- Watershed management



# 2009 Comprehensive Water Package



- Delta Governance
- Statewide Water Conservation
- Statewide Groundwater Monitoring
- Water Rights Enforcement
- Funding for Water Supply Reliability

# Delta Governance and Sustainability

- New framework for government agencies to work together under one cohesive plan
- Advances the co-equal goals of enhancing water supply and restoring the Delta ecosystem



# Statewide Water Conservation

- Statewide goal of 20% per capita water reduction in water use by the year 2020
- Requires development of Agricultural Water Management Plans

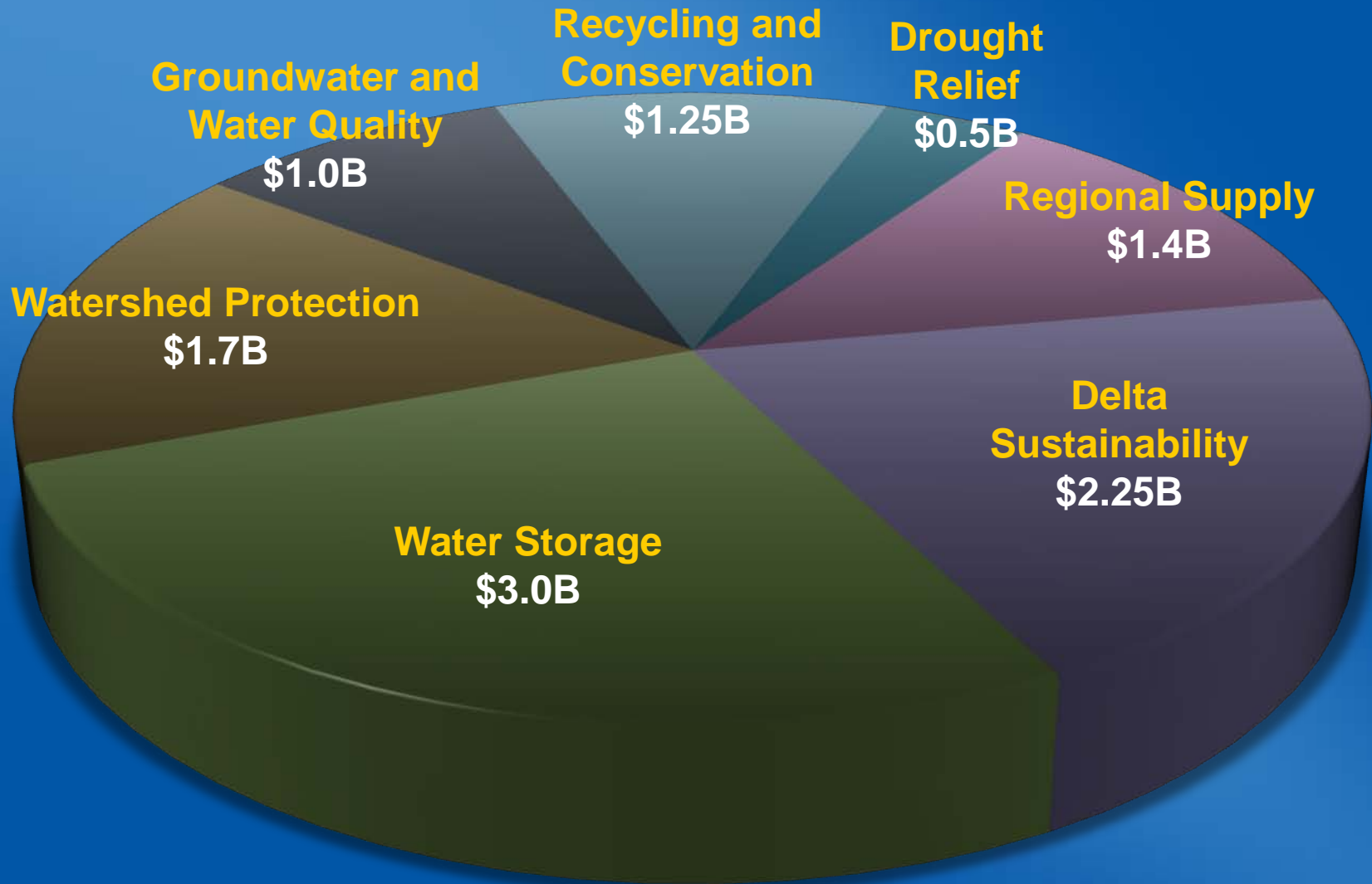


# Groundwater Monitoring

- Establishes groundwater monitoring requirements for local agencies
- Allows local entities to determine regionally how best to set up their groundwater monitoring program
- Provides landowners with protection from trespass by state or local entities



# Safe, Clean, and Reliable Drinking Water Supply Act of 2010





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