

Agenda Items 6 & 7

**Regional Report
Overview, key issues,
water portfolios**



California Water Plan Update 2009

Sacramento River Hydrologic Region

Regional Report Overview & Outline

2009 Regional Workshops

California **Water Plan** Update **2009**

INTEGRATED WATER MANAGEMENT



Bulletin 160-09 • Department of Water Resources

Volume
REGIONAL REPORTS

3

Public Review Draft

January 2009

Regional Report Outline - Challenges and Opportunities

Setting

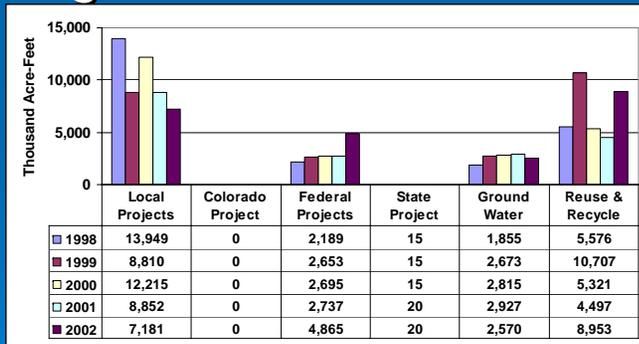


Relationship with other Regions

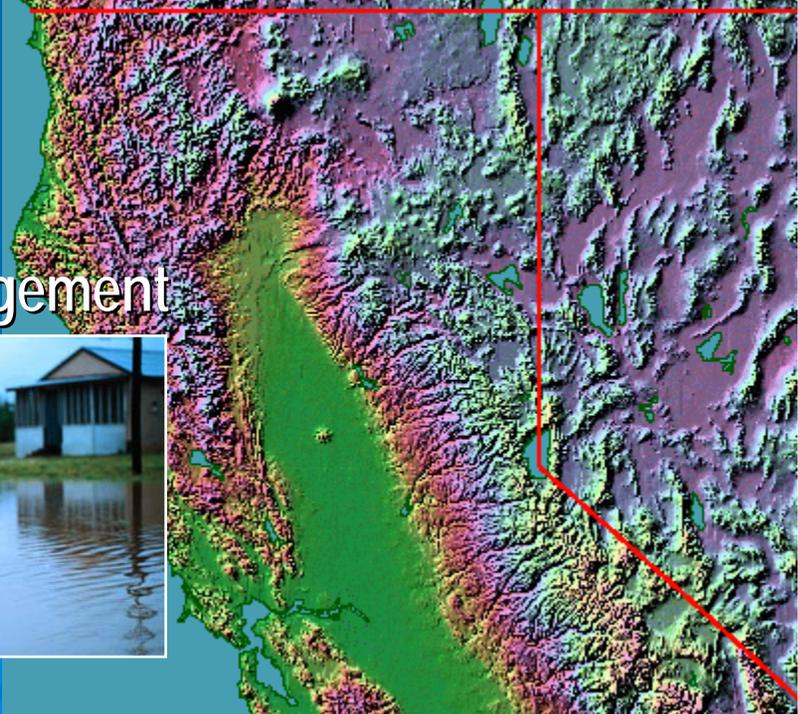


Regional Planning & Management

Regional Water Conditions



Flood Management



Water Portfolios

Select References

The Sacramento River Region

- Home to over 2.6 million people
 - Includes 41,000 American Indians (15% of U.S. Total)
- About 40 Tribes
- 23 Counties (predominately rural)
- State's largest river system – From Oregon to Delta (27,000 sq mi)
- Has about 22 Million Acre-feet of Run-off (1/3 of State's natural run-off)
- Significant part of the people of the State of California's water supply

The Sacramento River Region (continued)

- Imports from 2 Hydrologic Regions (North Coast & Lahontan)
 - Agriculture is largest industry
 - 1/3 of State's National Forests (Lassen, Mendocino, Modoc, Plumas, Shasta-Trinity, El Dorado, Tahoe.)
 - Important Chinook fishery (Winter, Spring, & Fall runs)
 - An area for recreational use
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Regional Report Outline - Challenges and Opportunities

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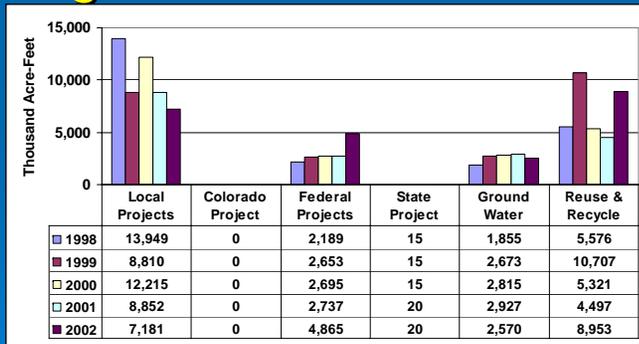


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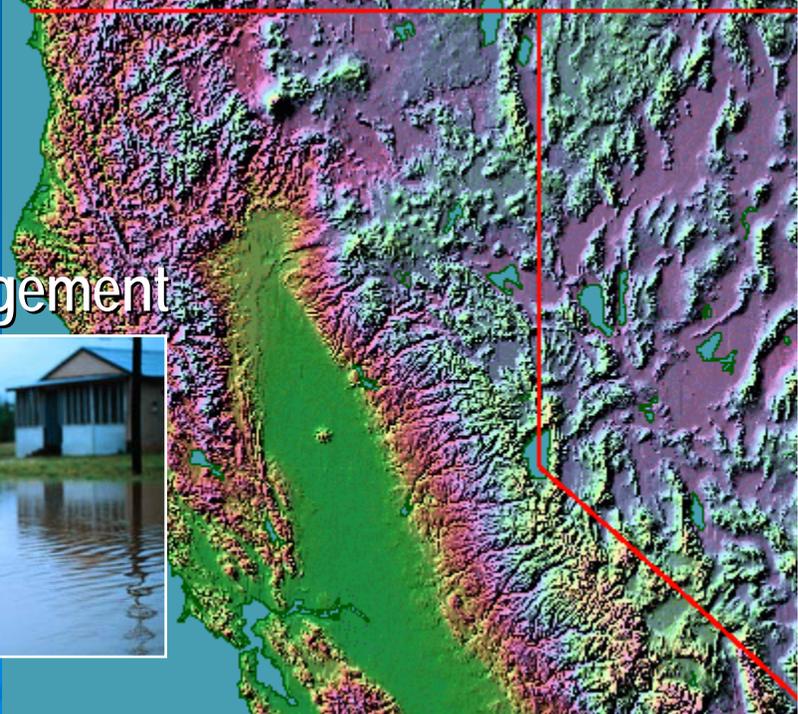


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Water Portfolios

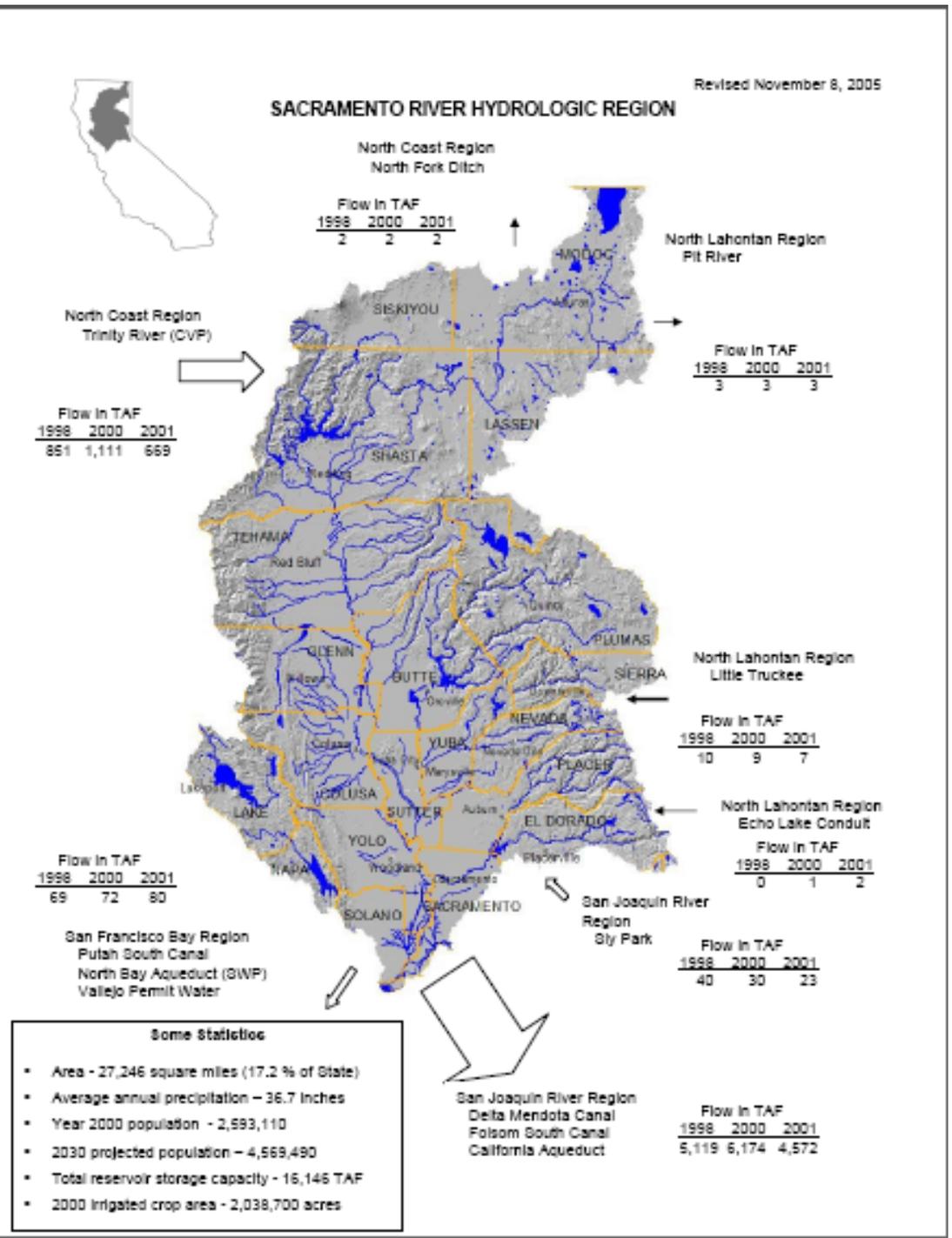
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**Area: 27,000 sq. miles
(17.2 % of State)**

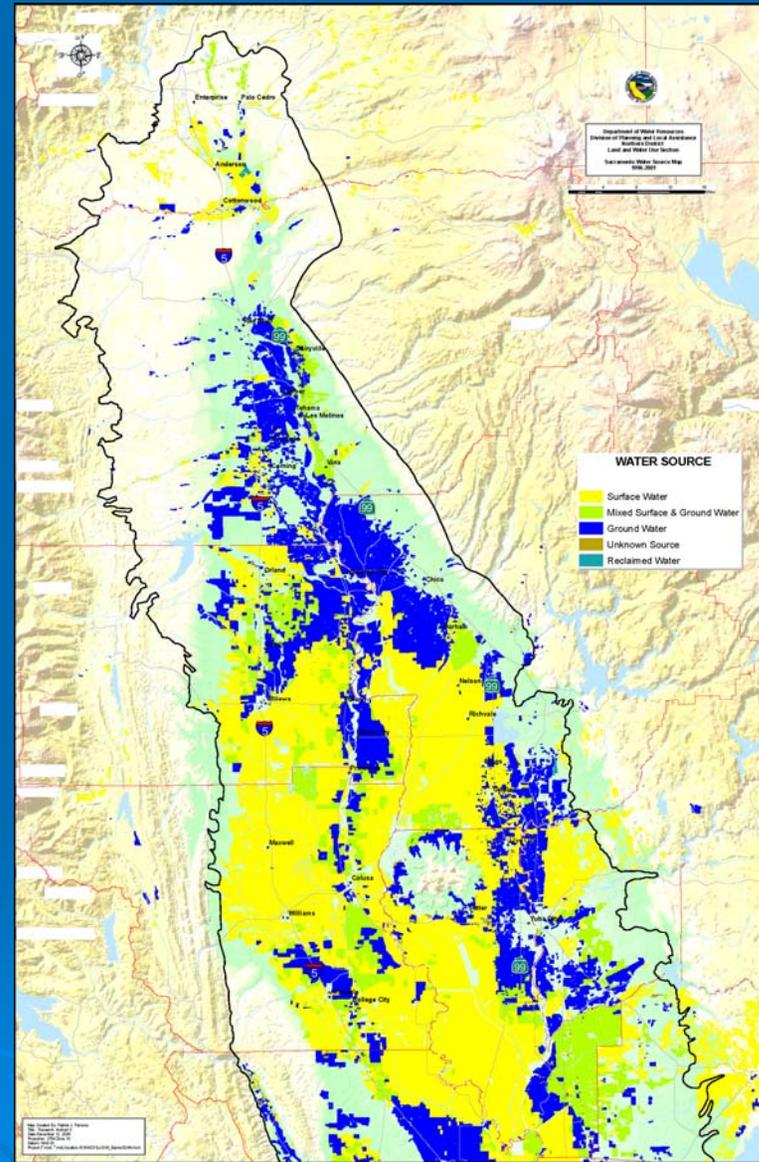
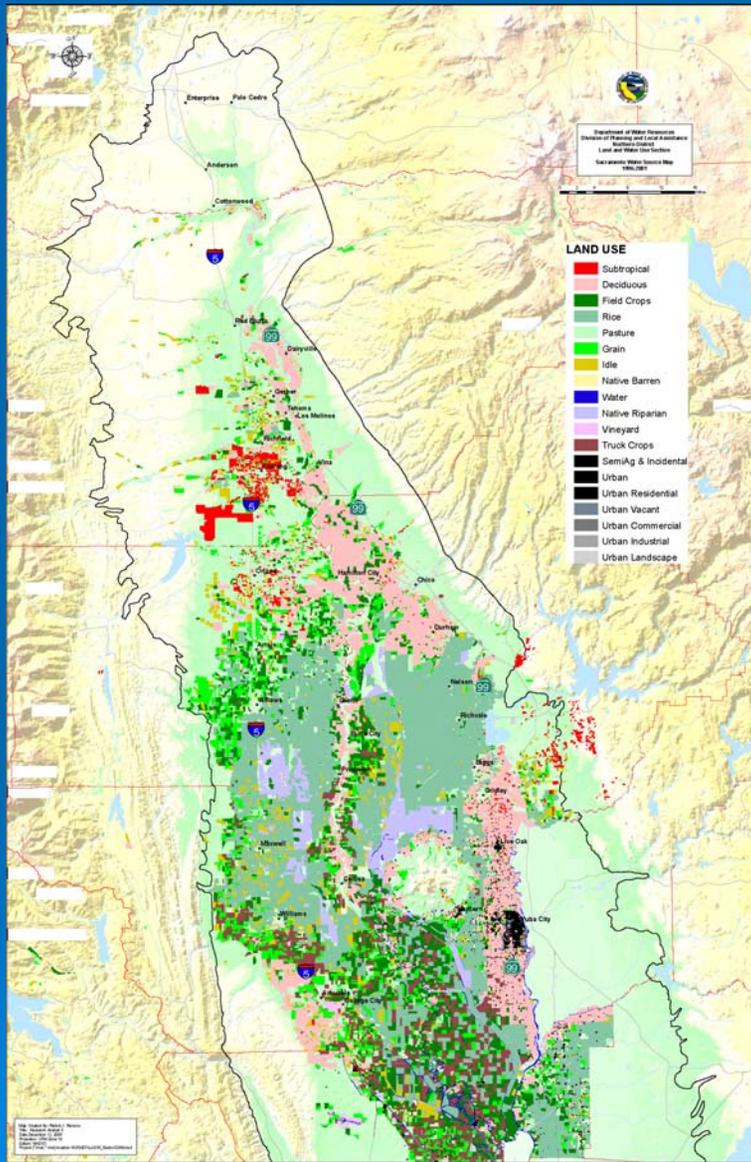
**Avg. Annual Precipitation:
36.7 inches
(State Avg. 23 inches)**

**Population: 2.6 million
(7.6% of State)**

**Irrigated Crop Area:
2 million acres (21% of
State)**



Water Supply & Demand



Data Source: DWR ND 2000 Land & Water Use Data



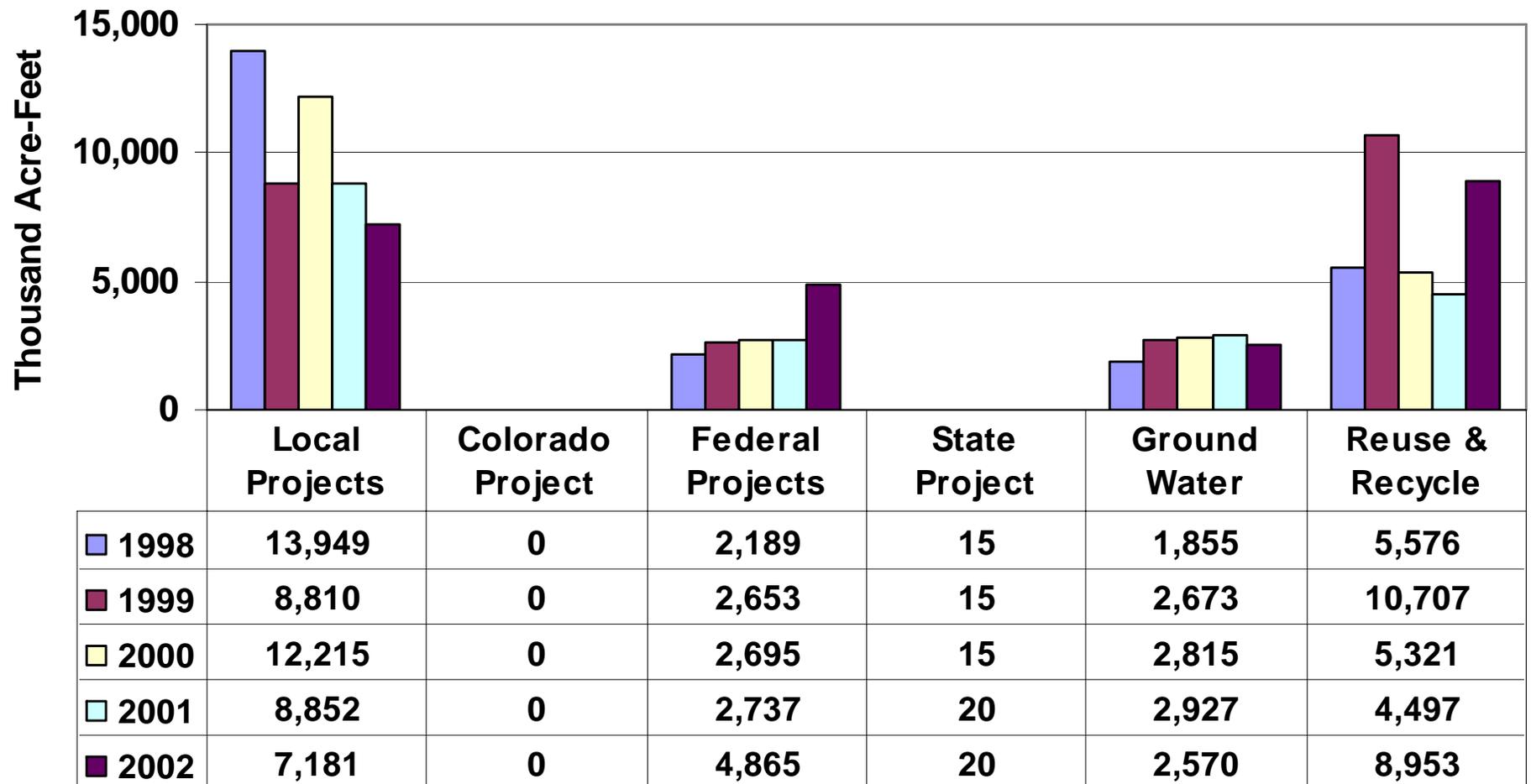
Sacramento River

Regional Water Conditions

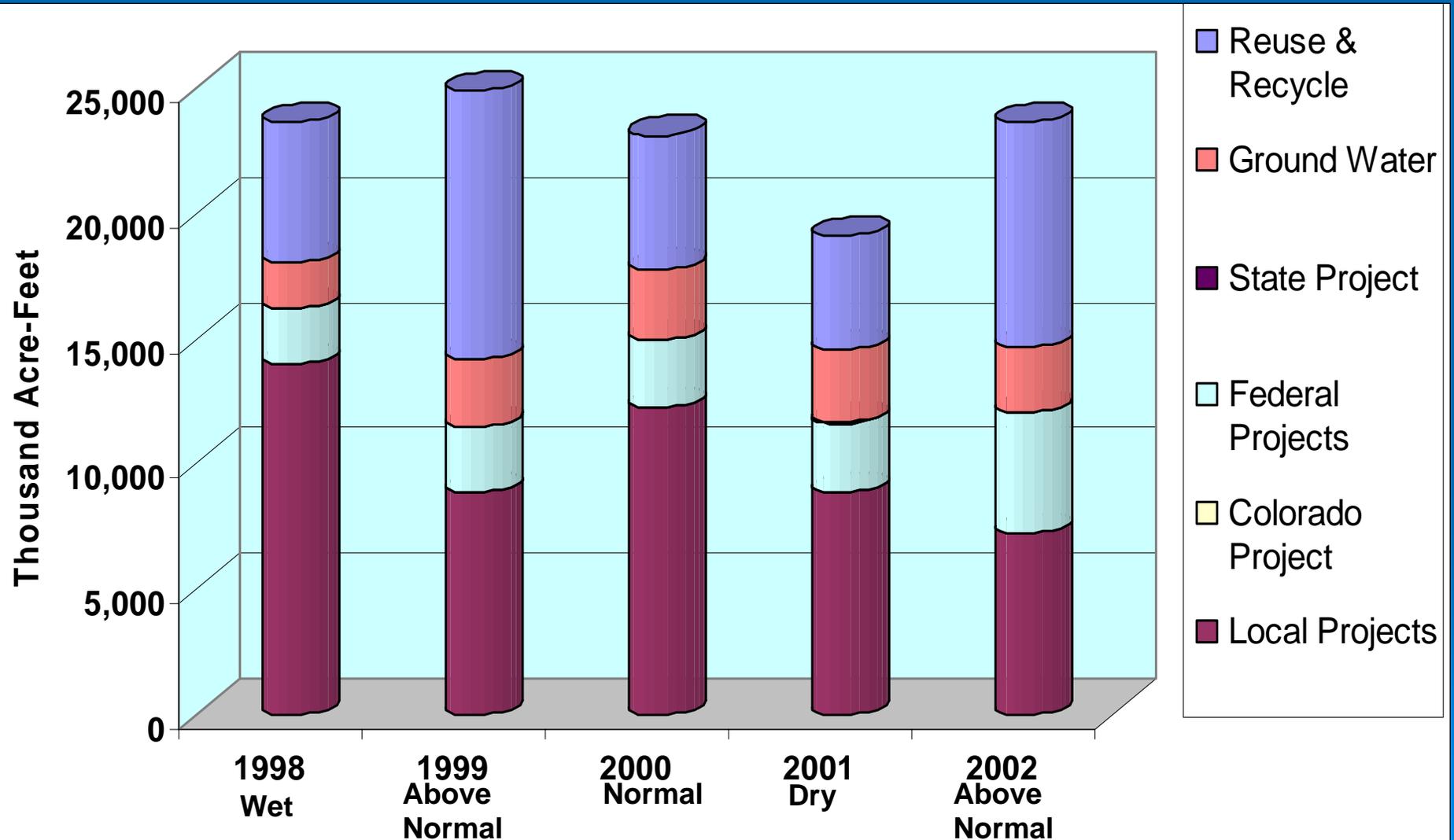
Description of Data Sets

- 33 Detailed Analysis Units; 11 Planning Sub-areas
- 23 Counties
- There are about 80 Agricultural water districts
- Data Set inclusive of years 1998-2003
- Supplies
 - State Water Project; Central Valley Project; Groundwater; Reuse & Recycle; Locally Developed Surface Water; and other Imported Supplies
- Uses
 - Agriculture, Wild & Scenic, Managed Wetlands, and Urban

Portfolio Data – Water Supply



Portfolio Data – Water Supply



Sacramento River Hydrologic Region

Water Entering – Water Leaving = Change in Storage

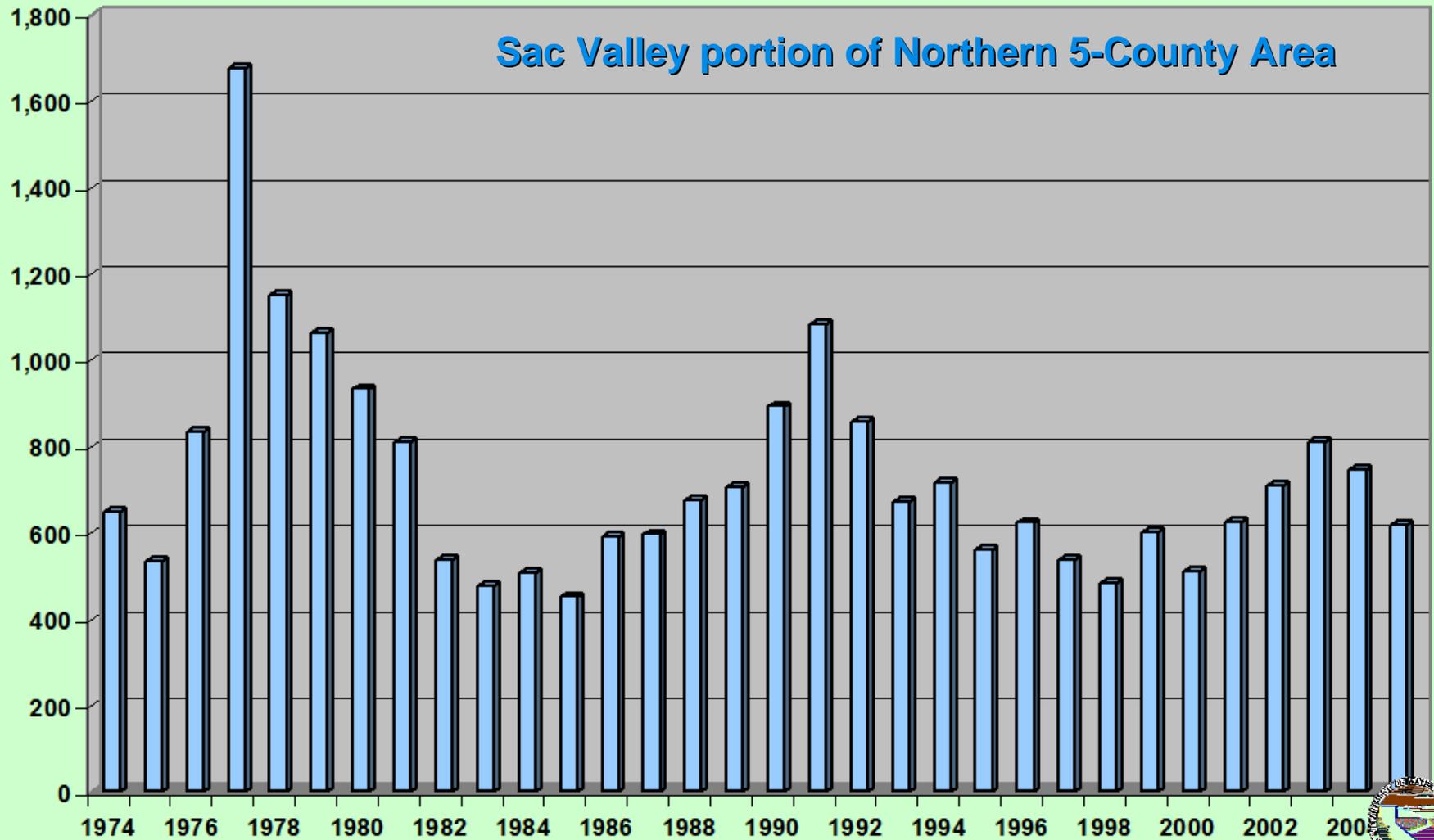
	1998 (168%)	2000 (105%)	2001 (67%)
Water Entering the Region	90 MAF	69 MAF	36 MAF
Water Leaving the Region	87 MAF	70 MAF	40 MAF
Storage Changes in the Region	3 MAF	-1 MAF	-4 MAF

Groundwater

- Provides about 2.5 Million Acre-feet to the supply (30 % of Total).
- About 80 Groundwater Basins and sub-basins (8,000 sq. miles)
- Generally, there are sufficient groundwater supplies to meet current needs
- With the increase in environmental regulations, there is an incentive to increase groundwater use to avoid impacts.
- Land subsidence as only been documented in the Zamora area

Water Well Construction

Total Well Completion Reports Filed Per Year



Regional Report Outline - Challenges and Opportunities

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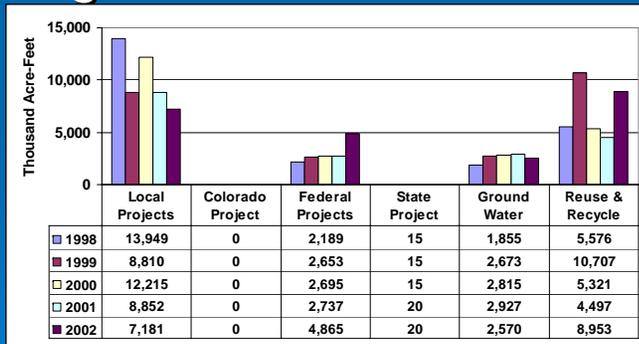


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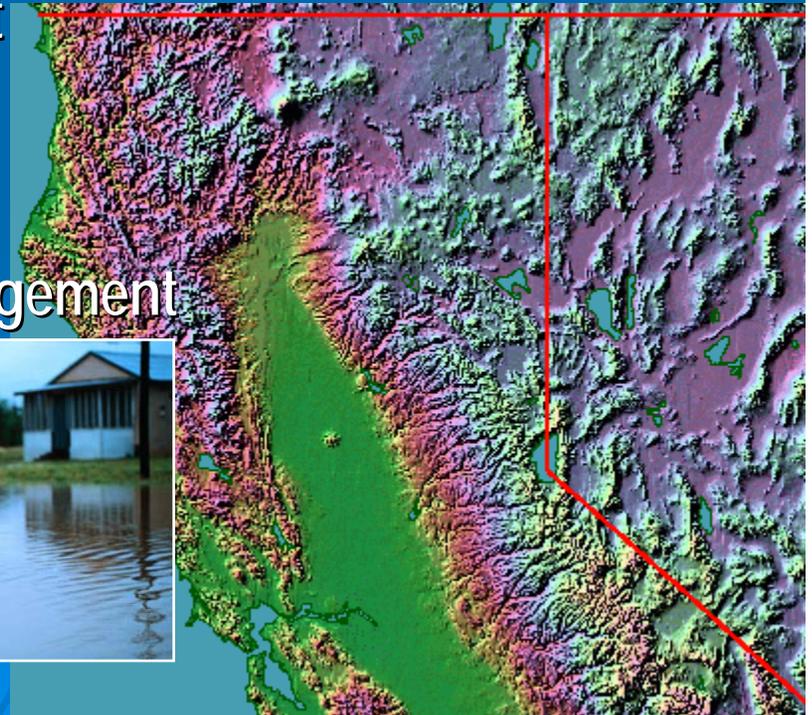


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Regional Water Conditions



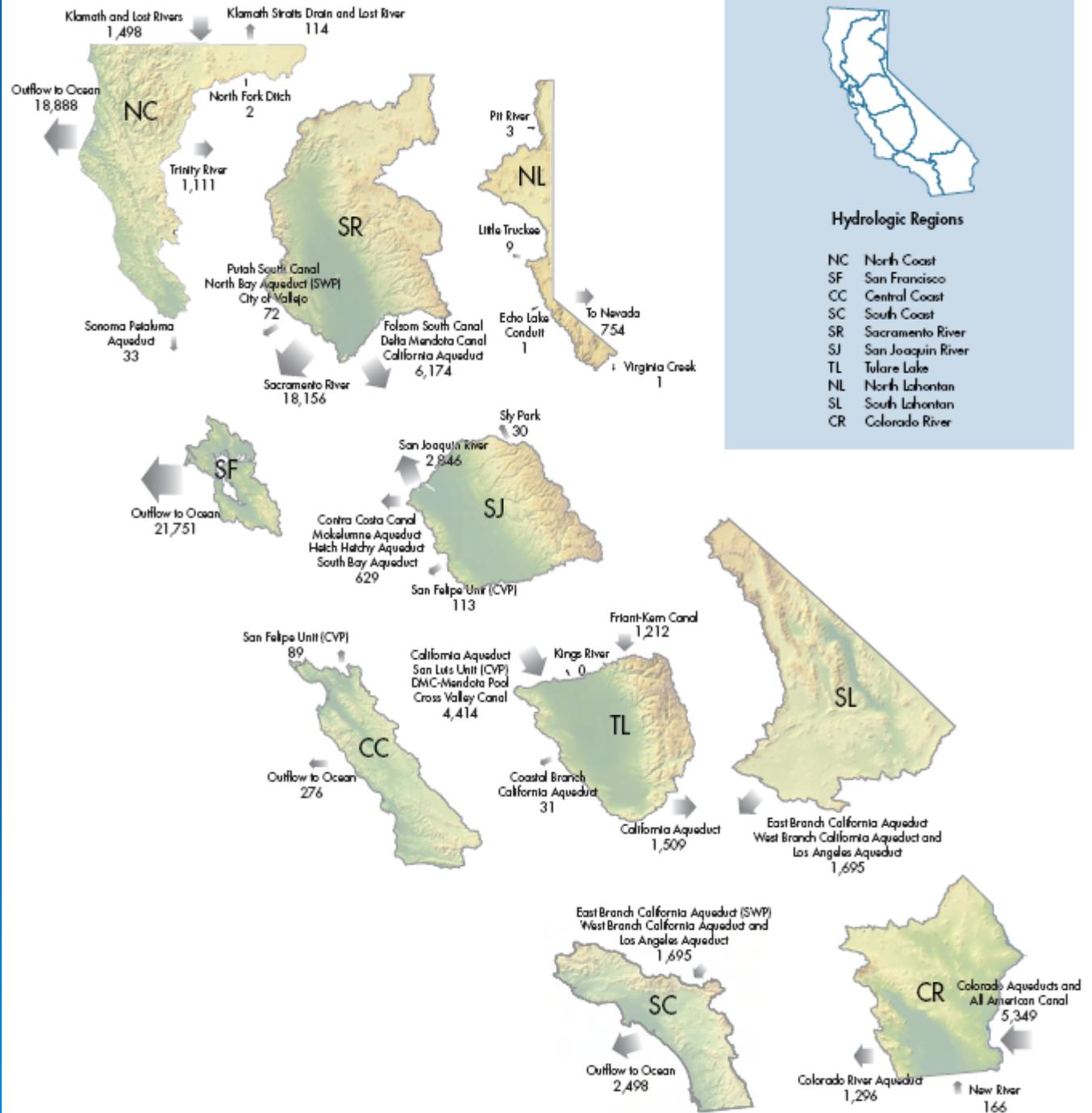
Flood Management



Water Portfolios

Select References

Relation with Other Regions



Regional Acceptance Process & Integrated Regional Water Management Process

RAP and IWRM provide a vehicle for funding of management strategies

- Prop 50, Prop 84, Prop 1E
- Sacramento Region has 10 of 47 Statewide IRWM Groups
- Expedited Prop 84 Implementation Grant Round
 - RAP – Applications Submitted on April 29th ; undergoing review
 - RAP Approval – Fall 2009
 - Expedited Implementation Grants – winter 2009/winter 2010
 - Long Term Prop 84 IRWM Process – 2010 - 2012
 - Two implementation cycles \$350 million each
 - Two planning cycles \$15 million each
 - Proposition 1E
 - One cycle appropriated - \$150 million

Challenges

- Invasive Species (**mitten crab, Asian clams**)
- **Quagga mussel** are not currently in the Region, but are in our south state reservoirs and California has programs in place to prevent their introduction
- **Mud Snails** are in Shasta Lake
- **Striped bass** and **large mouth bass** are introduced, non-native species, and threaten native species
- **Northern Pike** appear to be eradicated from Lake Davis
- **Water hyacinth, Egeria, Microcystis** (Algal blooms), **Arundo donax** (giant reed)
- Alignment-CWP, strategies, IRWMP, FloodSafe, Bay-Delta Conservation Plan, Climate Change, Drought, Stakeholders

Regional Report Outline - Challenges and Opportunities

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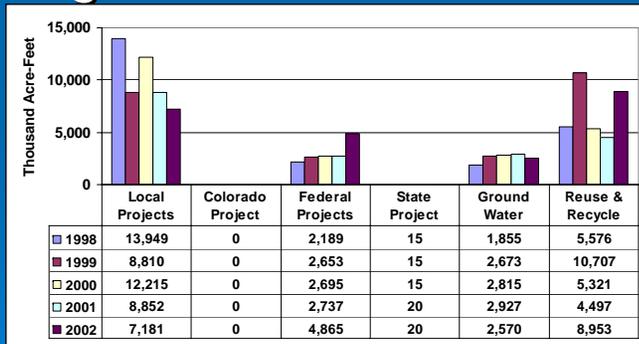


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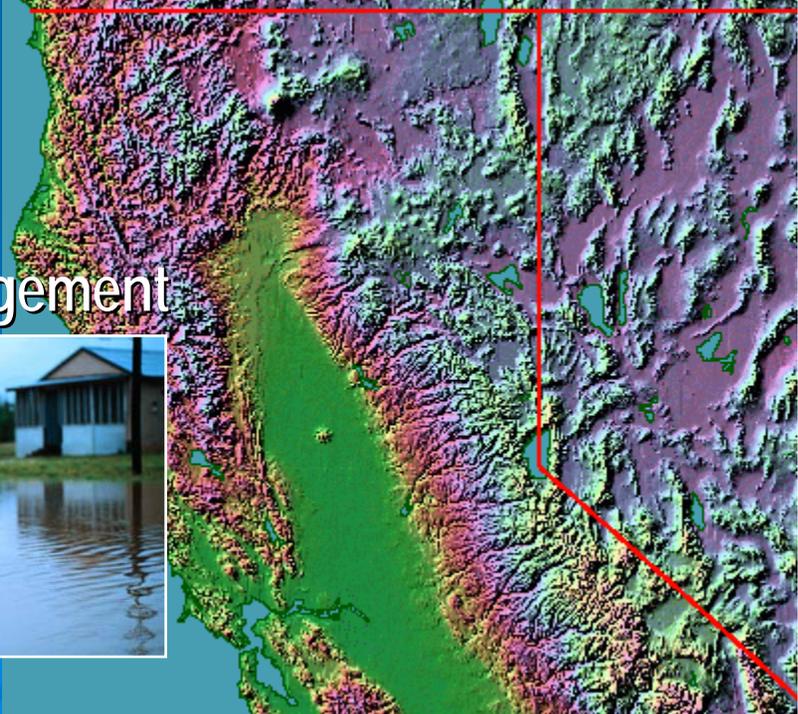


Regional Planning & Management

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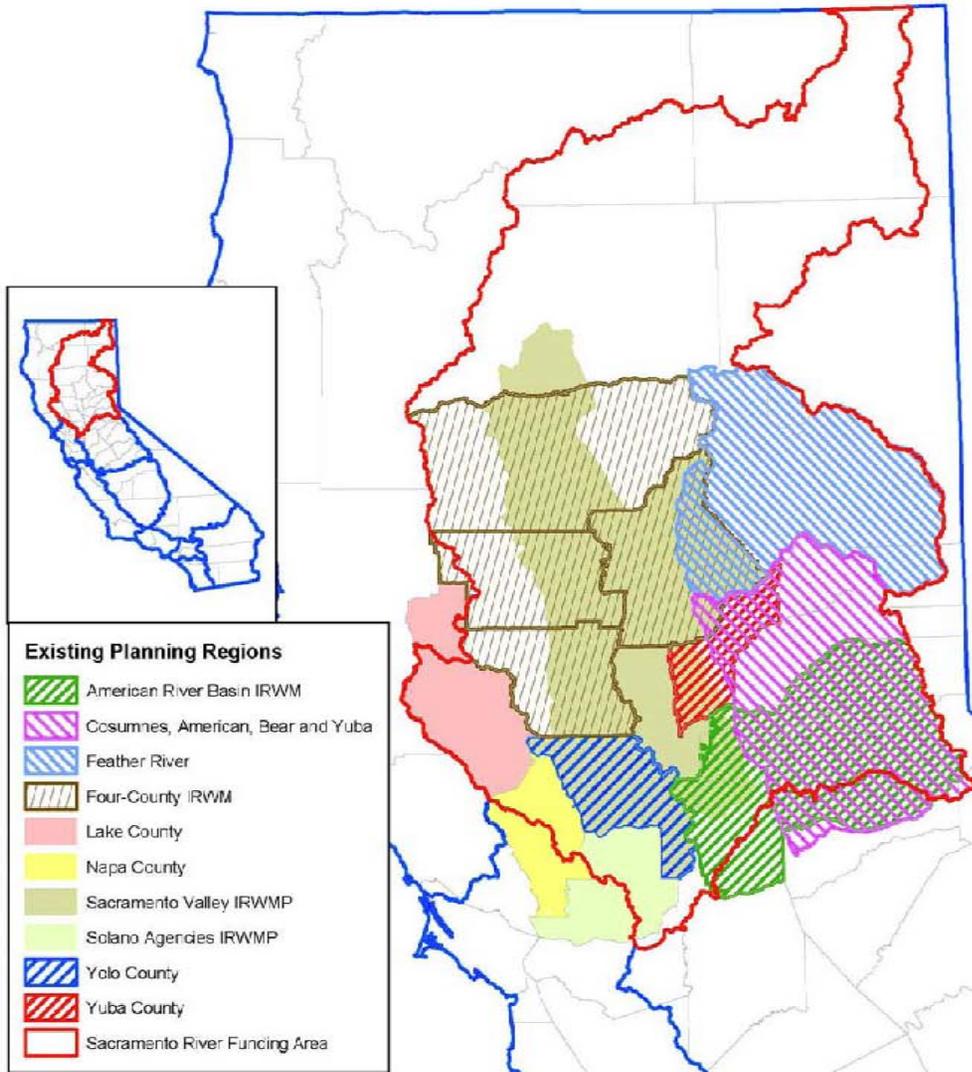
Flood Management



Water Portfolios

Select References

PROPOSITION 84
Integrated Regional Water Management Program
Sacramento River Funding Area



Need for Regional
Planning?

Water Supply Issues

- New General Plans – Sufficient water for proposed development ??
 - Foothill & Mountain Hardrock areas; assessing the water supply is difficult.
- Impacts of water transfers on neighbors and environment; policies of State and Federal Government can be a hindrance.
- Bottle water companies vs. available supply
- Water exports to Bay Area and So Cal.
- Phase 8 Settlement and impacts on neighbors

Water Quality Issues

- Land Use and Develop increase on WQ impacts on water supply – Red Bluff Nitrate and Chico toxic issues.
- Mercury Contamination and bioaccumulation in fish.
- Alga Blooms in Lakes and Reservoirs, Oroville and Clear Lake.
- Protection of Water Supplies from Transportation Corridor (remember Cantara)

Environmental Water Issues

- Endangered Species Act impacts on water supply; Operation, maintaining existing, and development of new water supplies.
- Riverine restoration and potential impacts on ag land and private property – rivers naturally want to migrate.
- Lake Davis – Northern Pike Eradication
- Red Bluff Diversion Dam – Water delivery method (ESA induced) vs. local economy.

Water Management Issues

- **Water Users opting out of State Watermaster Service**
 - **Disadvantaged areas' fiscal inability to manage system resources.**
 - **Federal vs. State vs. County vs. District vs. NGO vs. no control.**
 - **Like Rest of State; AG/ M&I / Environ confrontations reign in the region.**
- 

Regional Report Outline - Challenges and Opportunities

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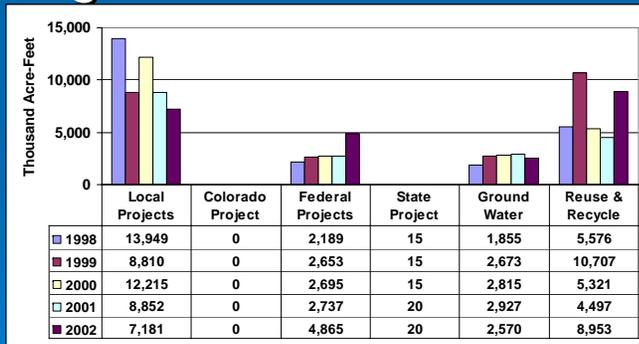


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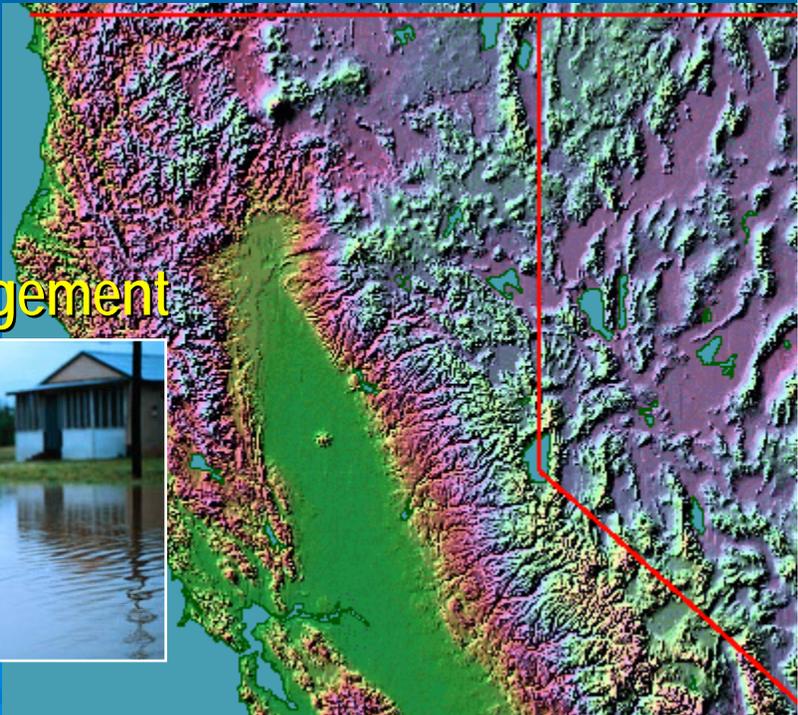


Regional Planning & Management

Regional Water Conditions



Flood Management



Water Portfolios

Select References

Flood Management is Incorporated in the CWP Update 2009

YUBA CITY 1955



Historic
Floods

FEATHER RIVER



Flood
Hazards

CALIFORNIA STATE CAPITOL



Governance

SACRAMENTO WEIR



Risk
Management

Flood Management

- Historic Floods—TYPES, STREAMS, NOTABLE EVENTS
- Flood Hazards—SPECIFIC PROBLEMS
- Flood Governance—PARTICIPATING AGENCIES
- Flood Risk Management (*Follows outline of RMS 28*)
 - *Structural Approaches*—FACILITIES, COORDINATION, MAINTENANCE
 - *Land Use Management*—FLOODPLAIN RESTORATION, REGULATION, FLOOD INSURANCE
 - *Disaster Preparedness, Response, and Recovery*—INFORMATION AND EDUCATION, EVENT MANAGEMENT

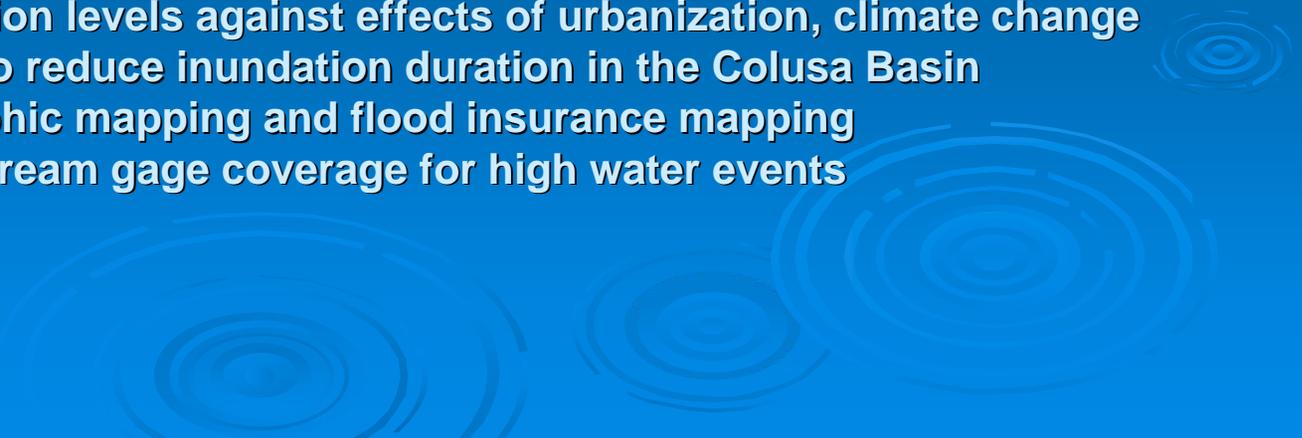
Flood Protection Issues

- Floodplain construction w/ general public picking up the tab.
- Development of Levee system for the 21st century could remove land from tax rolls.
- Need for Safe Harbor agreements
- Living with hydrologic uncertainty vs. concrete and rebar control; or somewhere in between?

Flood-Related Challenges

- New or improved facilities
 - Reduce flooding of agricultural lands
 - Reduce local flooding in communities: Burney, Cameron Park, Chico, Madison, Oroville, Penn Valley, Red Bluff, Valley Springs, Yuba City
 - Increase capacity of rivers at Natomas to carry 1% flood event
 - Reconstruct Folsom Dam to provide protection from 1% flood event

 - Maintenance of existing facilities
 - Resolve deficiencies in levees: Cache Creek, Natomas, Oroville, Sacramento, Sutter County, others
 - Improve vegetation management in the region's waterways: Little Chico Creek, Hangtown Creek,
 - Overhaul Magalia Dam to restore flood capacity

 - Planning and Data Acquisition
 - Maintain protection levels against effects of urbanization, climate change
 - Develop a plan to reduce inundation duration in the Colusa Basin
 - Update topographic mapping and flood insurance mapping
 - Provide better stream gage coverage for high water events
- 

Questions & Discussion B



Agenda Item 10

Management Strategies



Resource Management Strategies

Resource Management strategy is a project, program or policy that helps local agencies and governments manage their water and related resources.

- County and City General Plans
- Water Agency Planning Documents
- Urban Water Management Plans
- Groundwater Management Plans
- Integrated Regional Water Management Plans
- Flood Organizations – NFIP
- Planning Organizations & Forums – NSVWF, SRCAF, SAFCA, RWA, GVC
- Institutional Challenges – Wanger Decision

Resource Management Strategies

A Range of Choices

Reduce Water Demand

- Agricultural Water Use Efficiency
- Urban Water Use Efficiency

Improve Operational Efficiency & Transfers

- Conveyance – Delta
- Conveyance – Regional/Local
- System Reoperation
- Water Transfers

Increase Water Supply

- Conjunctive Management & Groundwater Storage
- Desalination –Brackish & Seawater
- Precipitation Enhancement
- Recycled Municipal Water
- Surface Storage – CALFED
- Surface Storage - Regional/Local

Improve Flood Management

- Flood Risk Management

Improve Water Quality

- Drinking Water Treatment and Distribution
- Groundwater/Aquifer Remediation
- Matching Quality to Use
- Pollution Prevention
- Salt & Salinity Management
- Urban Runoff Management

Practice Resource Stewardship

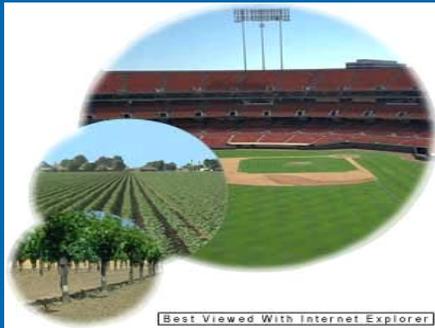
- Agricultural Lands Stewardship
- Economic Incentives (Loans, Grants, and Water Pricing)
- Ecosystem Restoration
- Forest Management
- Land Use Planning & Management
- Recharge Areas Protection
- Water-Dependent Recreation
- Watershed Management

CIMIS

CALIFORNIA IRRIGATION MANAGEMENT INFORMATION SYSTEM
DEPARTMENT OF WATER RESOURCES
OFFICE OF WATER USE EFFICIENCY



Source: <http://www.cimis.water.ca.gov/cimis/welcome.jsp>



- CIMIS began operations in 1982
- Network of automated / computerized weather stations - \$6k per station
- No cost crop irrigation data to over 6,000 registered users statewide
- 9 CIMIS stations within Sacramento River Region
 - 7 in valley, 2 in mountain valleys

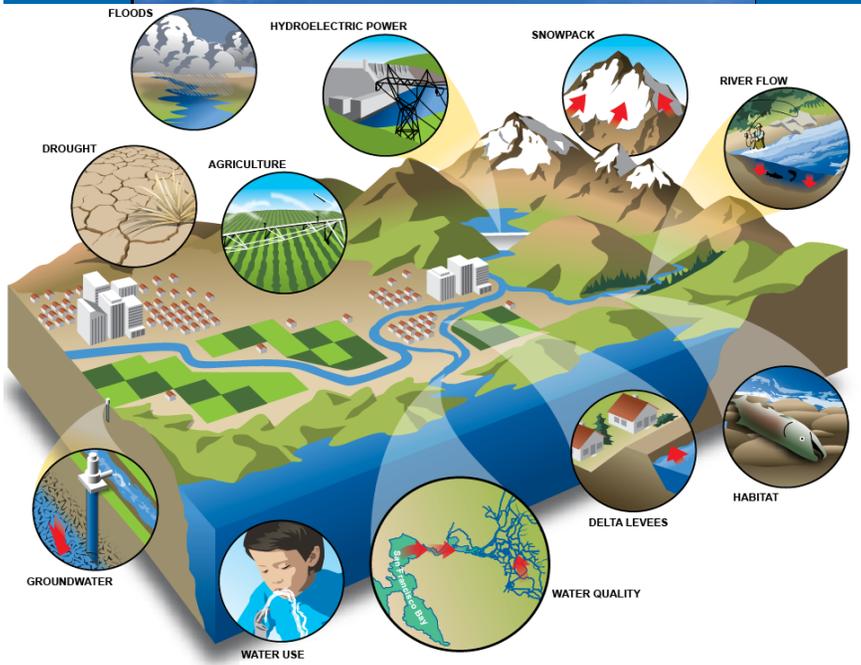
Climate Change



- Increase in Temperatures = increase in water use

- More rain, Less snow = Storage shortage

- Sea-Level Rise = more water from storage for salt water repulsion in Delta



Questions & Discussion C

