

# California Water Plan Update 2009

## Central Coast 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

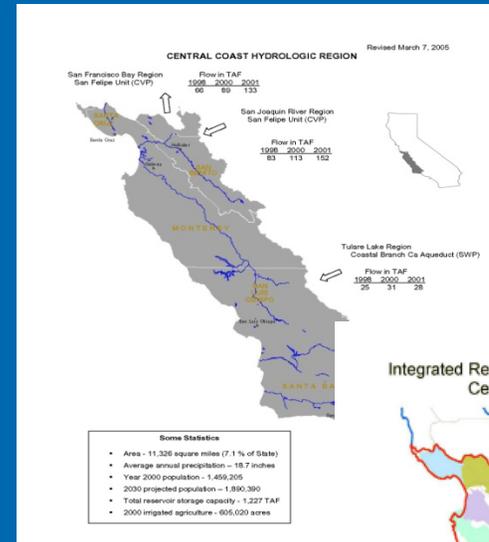
January 2009

# Regional Report Outline

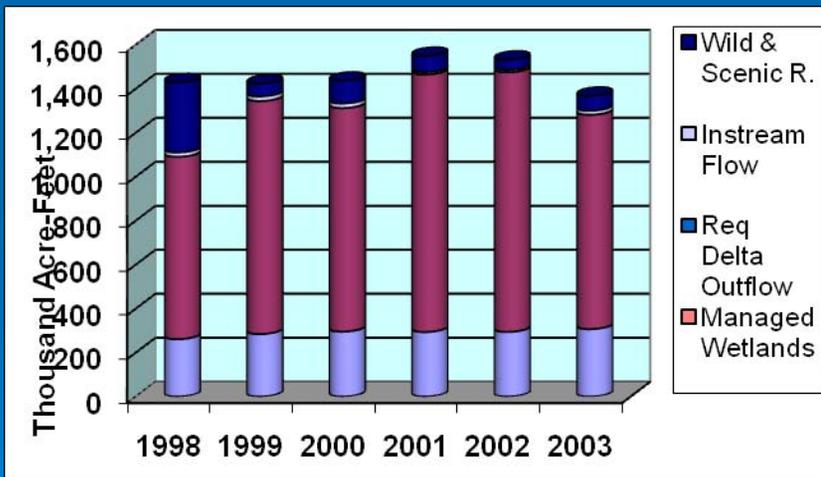
## Setting



## Relationship with other Regions



## Current Water Conditions



## Regional Planning & Management

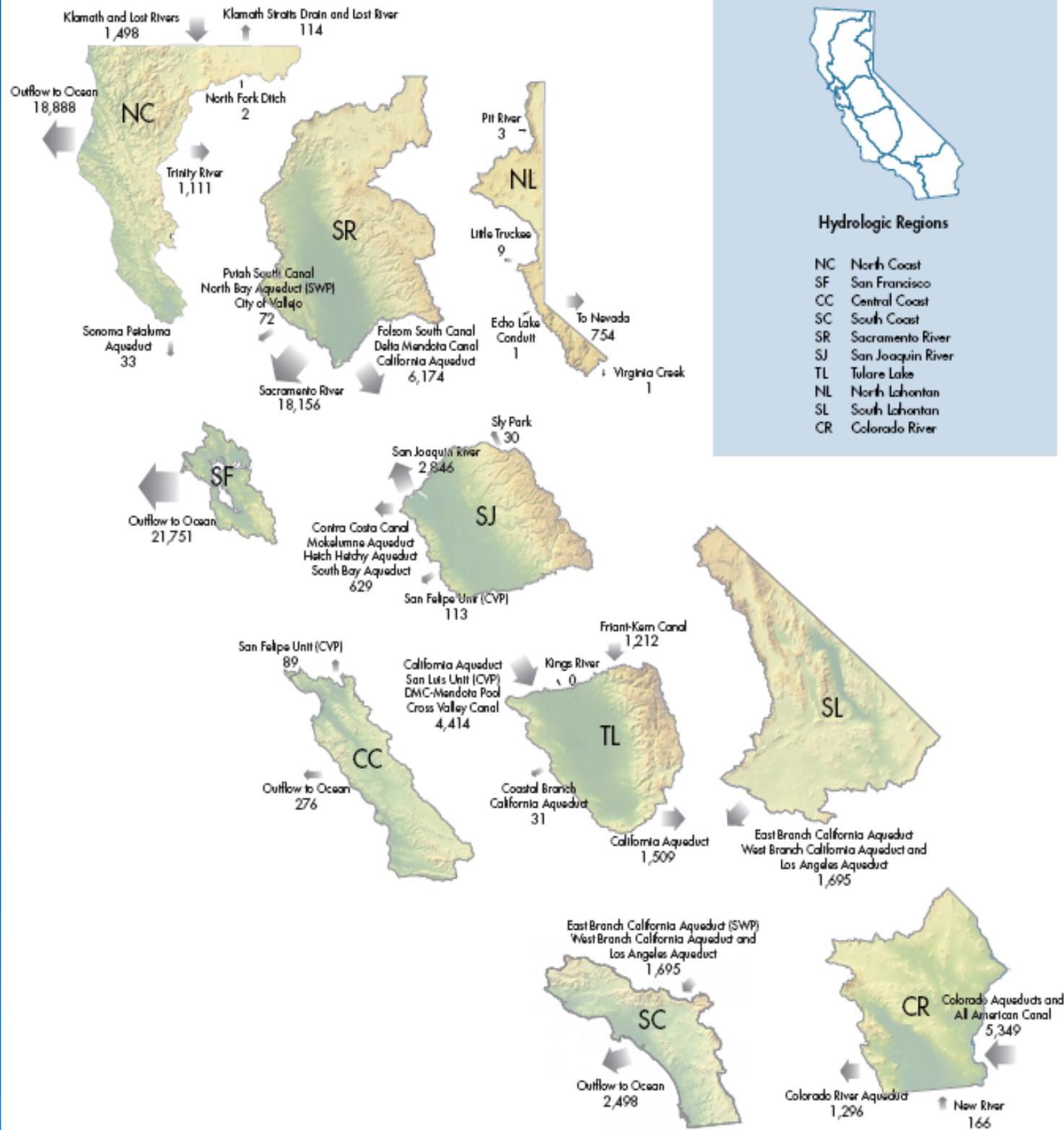
## Water Portfolios

## Selected References

## Looking to the Future

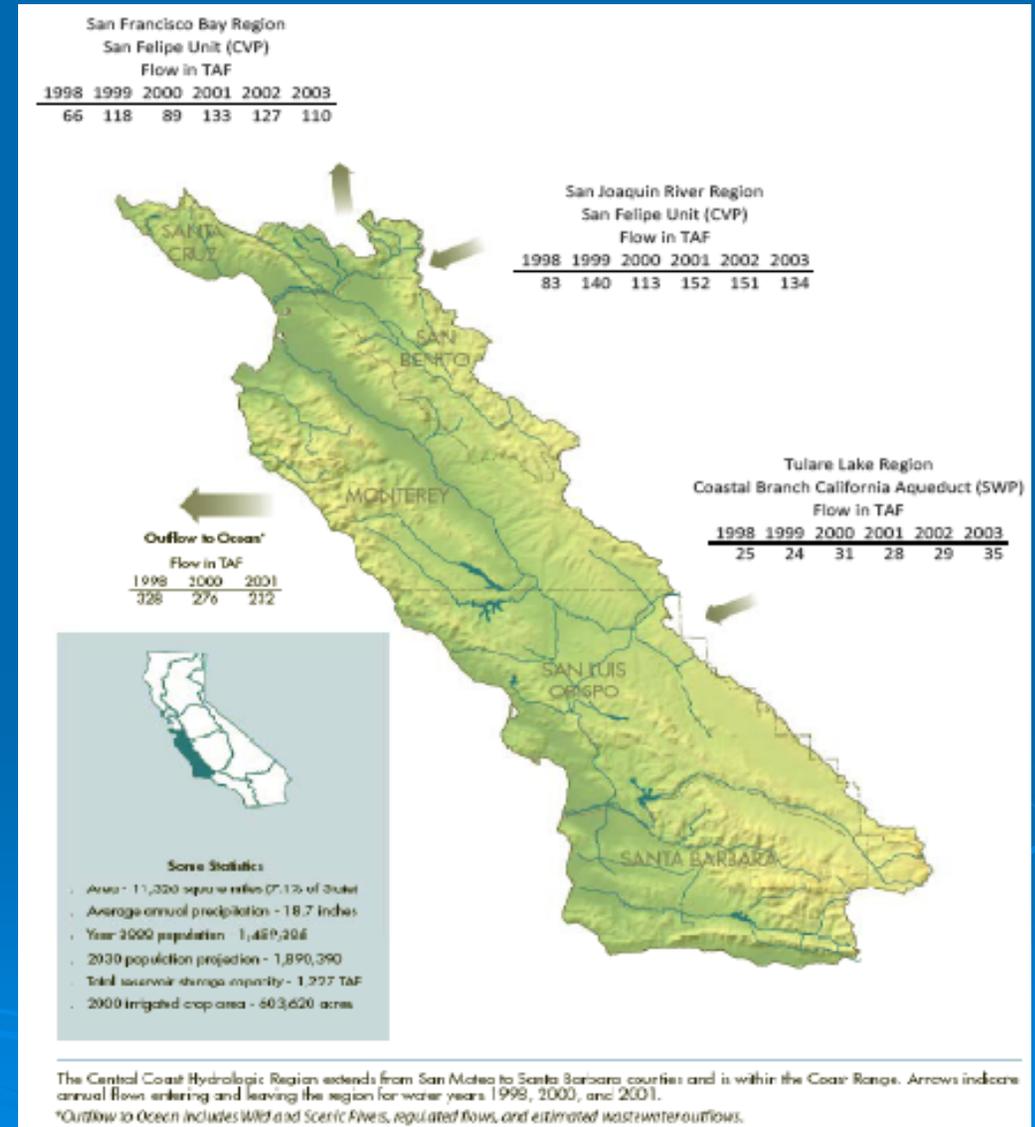


# Relationship to other Regions



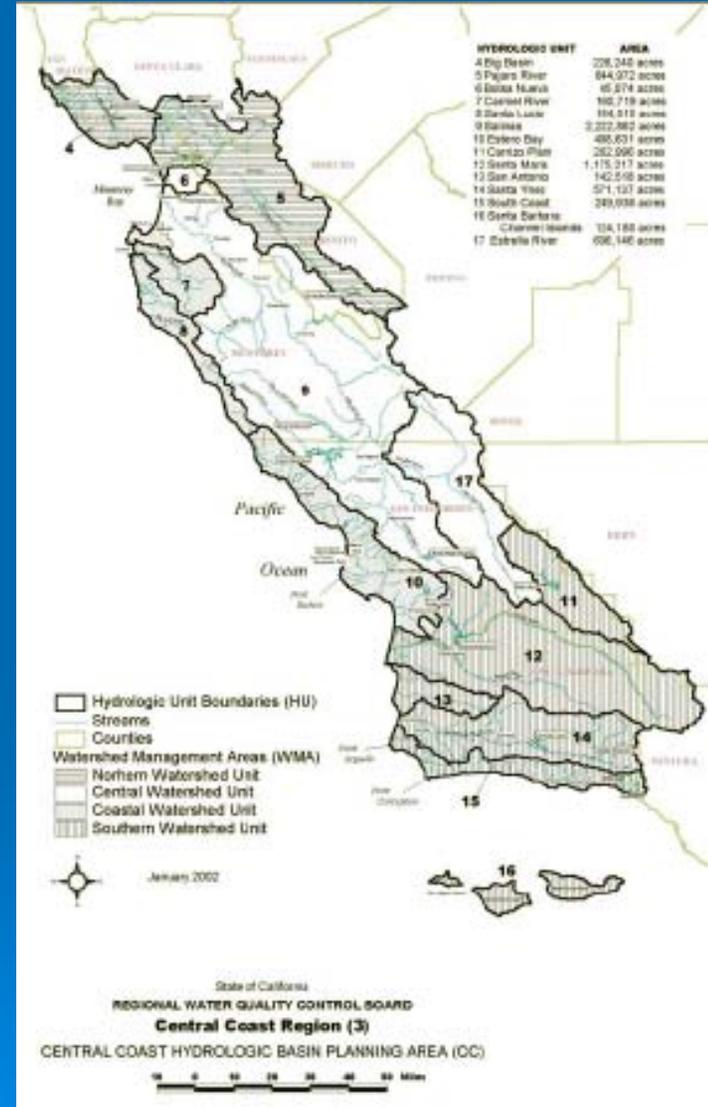
# Central Coast Setting

- The region includes all of Santa Cruz, Monterey, San Benito, San Luis Obispo and Santa Barbara counties and parts of San Mateo, Santa Clara, and Ventura counties.



# Central Coast Setting

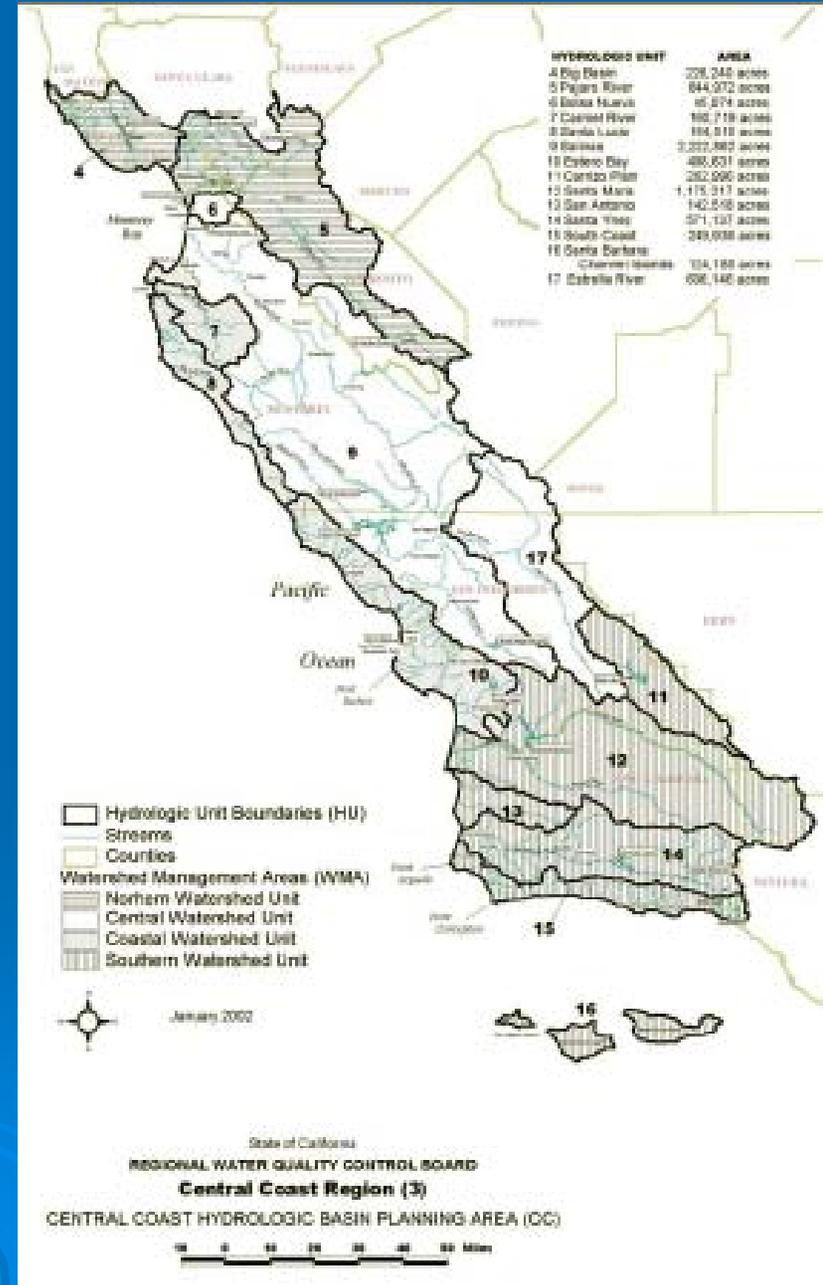
- The Central Coast region is divided into four watershed management areas (WMA) by the Water Resources Control Board: the Northern, Central, Coastal, and Southern.



# Regional Water Conditions

## ➤ Northern Watershed Management Area

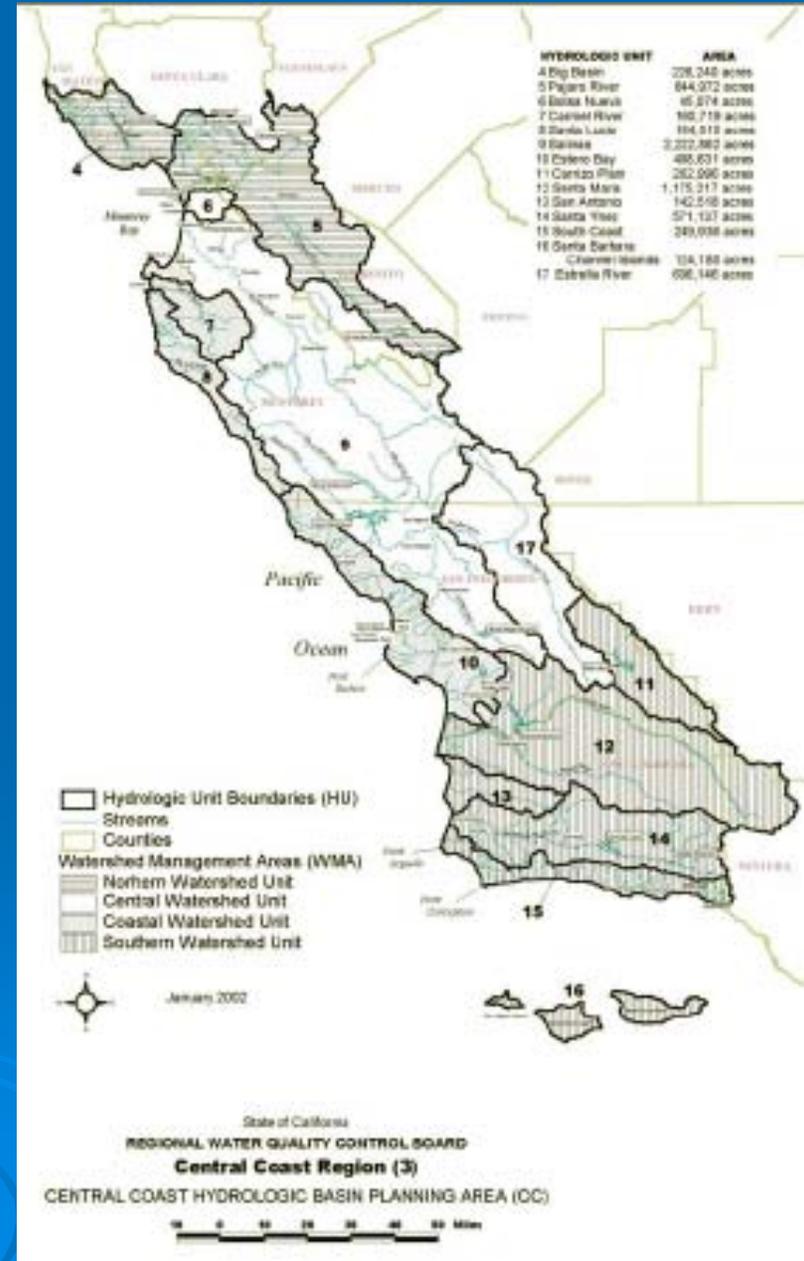
- Surface water from the San Lorenzo River watershed contributes to the supply for the City of Santa Cruz and for the communities of the San Lorenzo Valley
- Groundwater from the Santa Margarita Groundwater Basin provides the water supply for the Scotts Valley Water District and to the San Lorenzo Valley Water District
- Groundwater is the primary source of agricultural water supply at this time for the area



# Regional Water Conditions

## ➤ Central Watershed Management Area

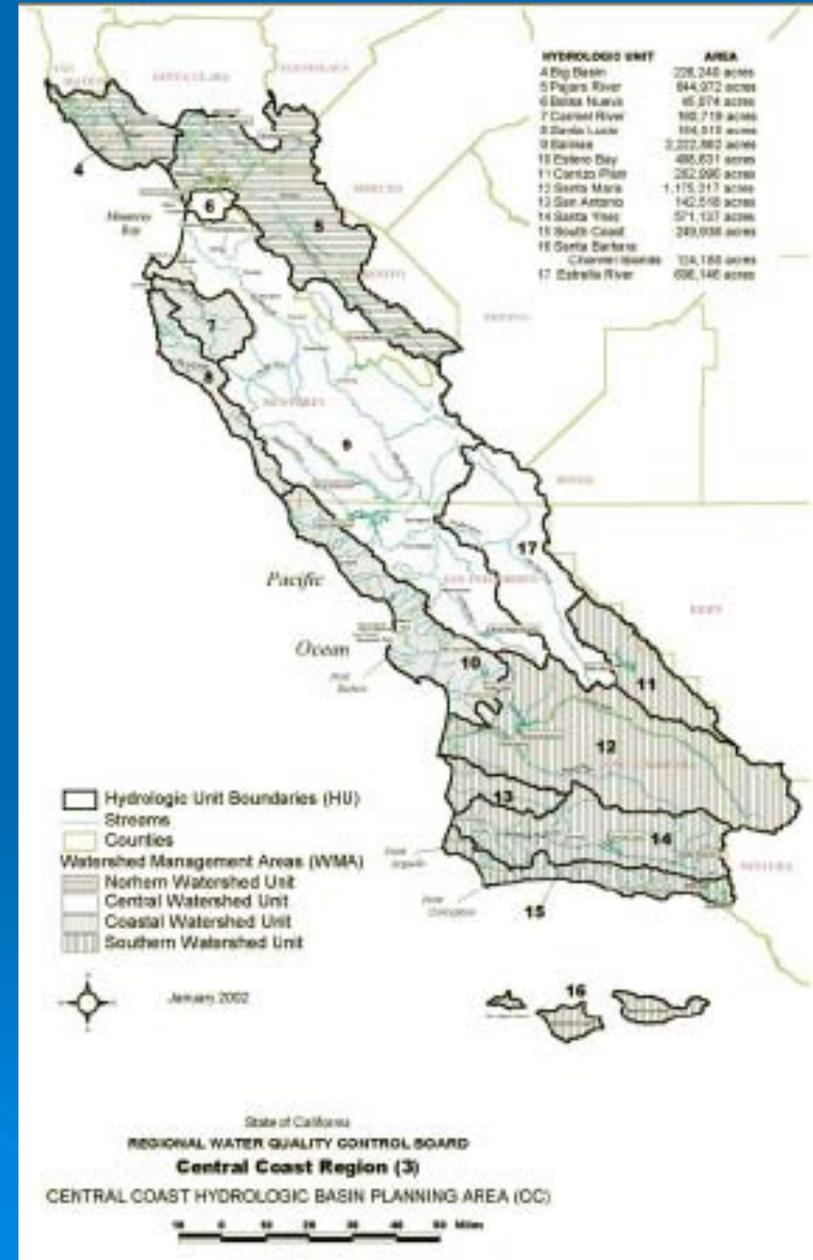
- The Monterey County Water Resources Agency releases water from the Nacimiento & San Antonio Reservoirs into the Salinas River and recharges the groundwater basin
- Current major water projects include the Salinas Valley Water Project and the Nacimiento Water Project.



# Regional Water Conditions

## ➤ Coastal Watershed Management Area

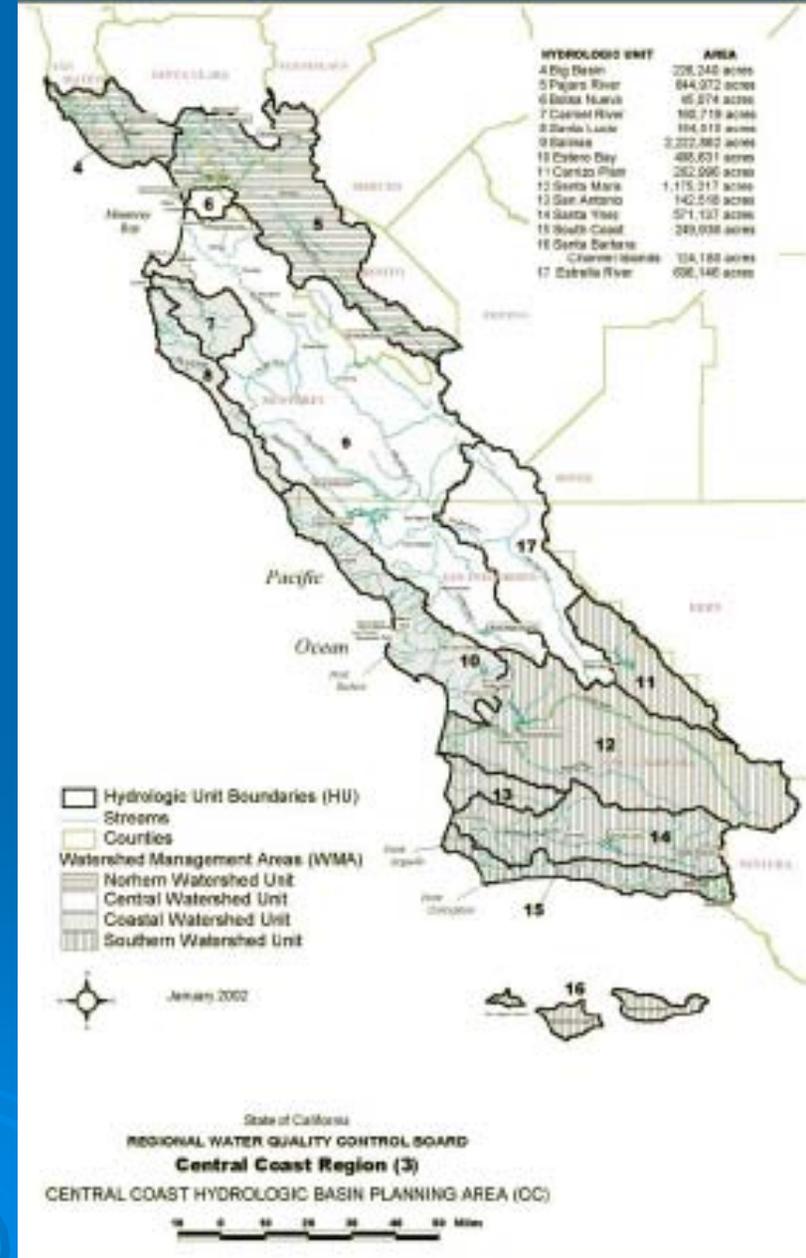
- Nearly all of the region's water supply comes from the Carmel River and groundwater in the Carmel Valley aquifer
- The remaining watersheds within the region do not currently provide municipal water supply from surface runoff, although groundwater recharge in these basins is an important source for municipal supply



# Regional Water Conditions

## ➤ Southern Watershed Management Area

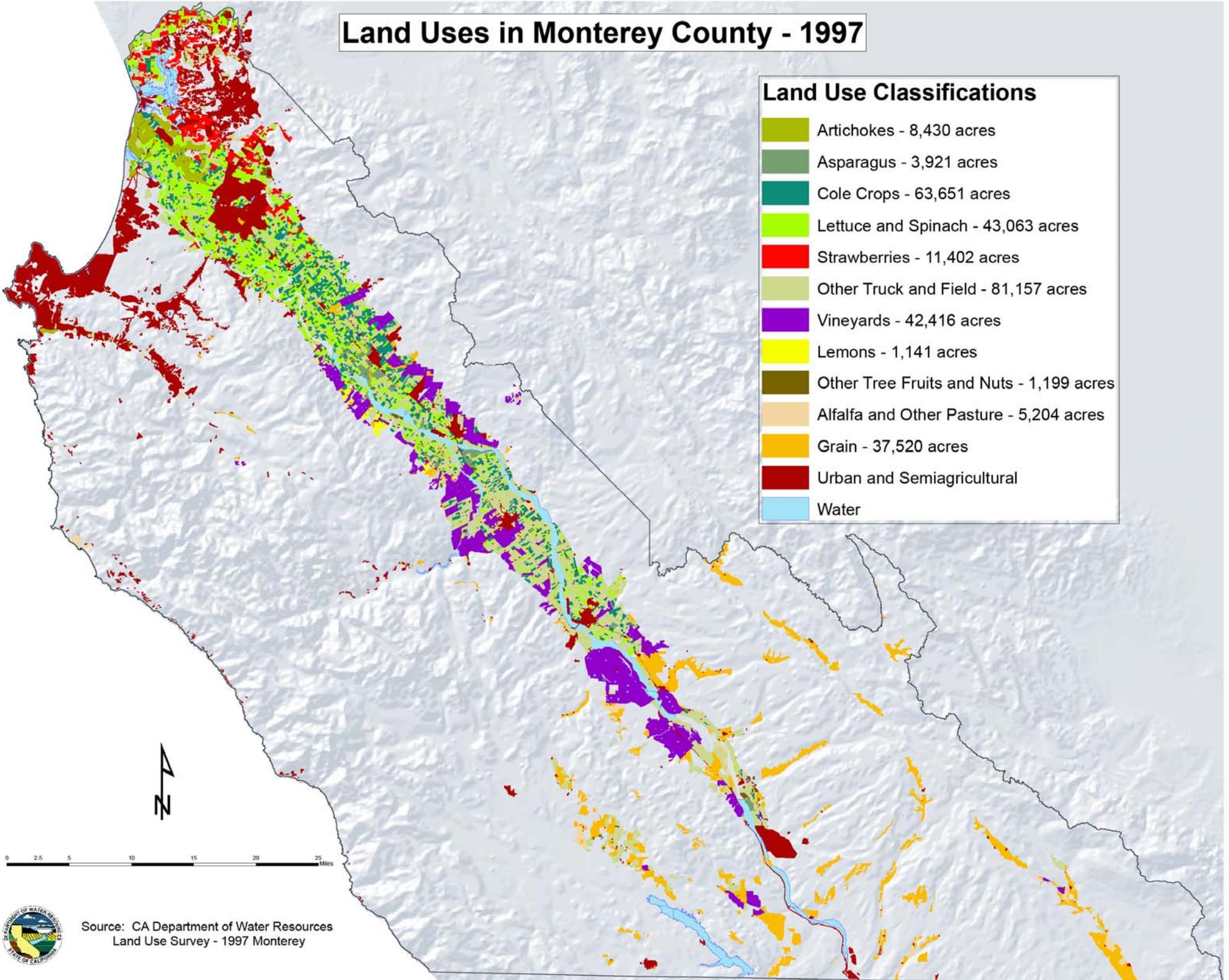
- Water supplies for the area include groundwater, surface water, imported State Water Project water, and recycled water
- The Santa Ynez River Basin is the primary source of water for about two-thirds of Santa Barbara County residents
- Lake Cachuma on the Santa Ynez River and Gibraltar Reservoir provide the majority of the south coast's water supply annually.
- Twitchell Reservoir on the Cuyama River is important to both the water supply and flood protection for the Santa Maria Valley



# Land Uses in Monterey County - 1997

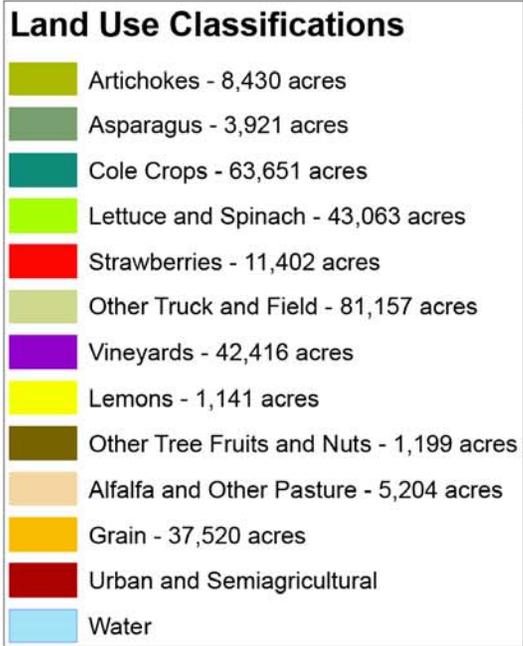
## Land Use Classifications

	Artichokes - 8,430 acres
	Asparagus - 3,921 acres
	Cole Crops - 63,651 acres
	Lettuce and Spinach - 43,063 acres
	Strawberries - 11,402 acres
	Other Truck and Field - 81,157 acres
	Vineyards - 42,416 acres
	Lemons - 1,141 acres
	Other Tree Fruits and Nuts - 1,199 acres
	Alfalfa and Other Pasture - 5,204 acres
	Grain - 37,520 acres
	Urban and Semiagricultural
	Water



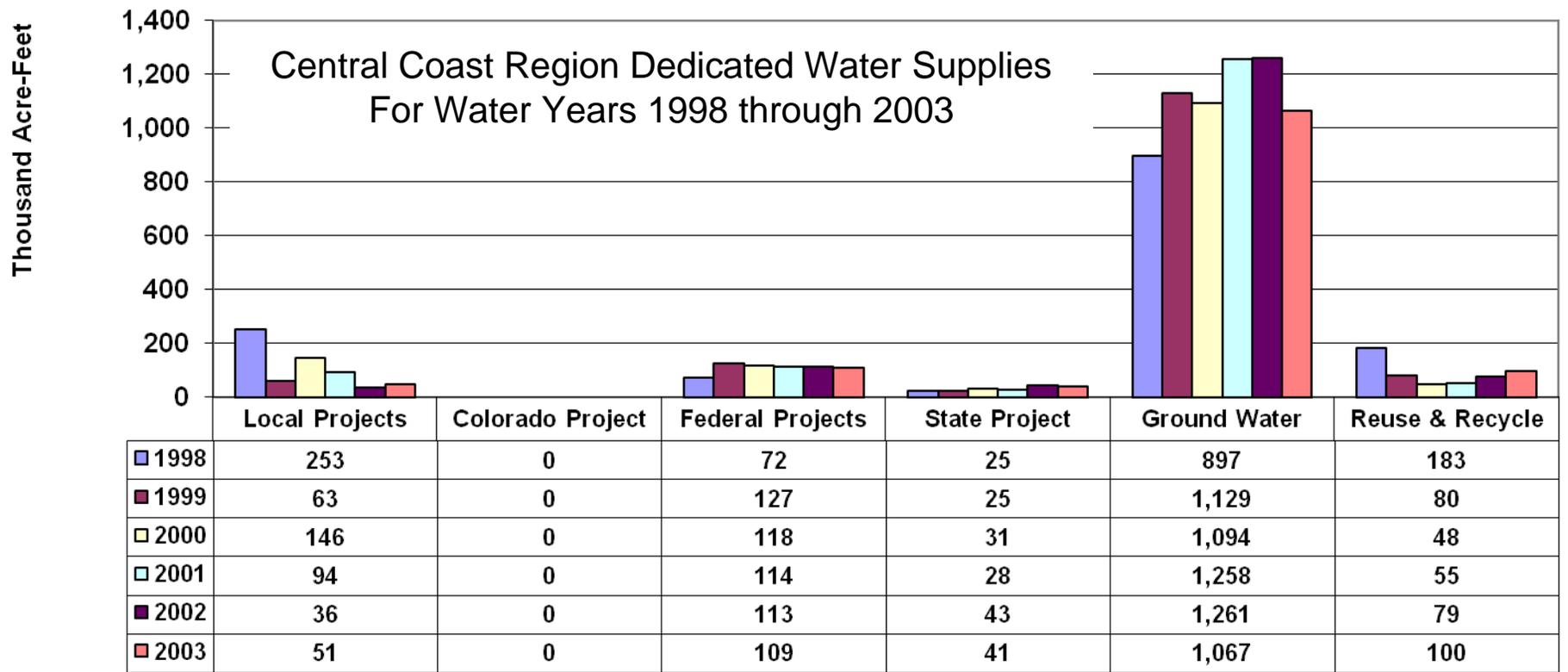
Source: CA Department of Water Resources  
Land Use Survey - 1997 Monterey

# Land Uses in Santa Barbara and San Luis Obispo Counties - 1996

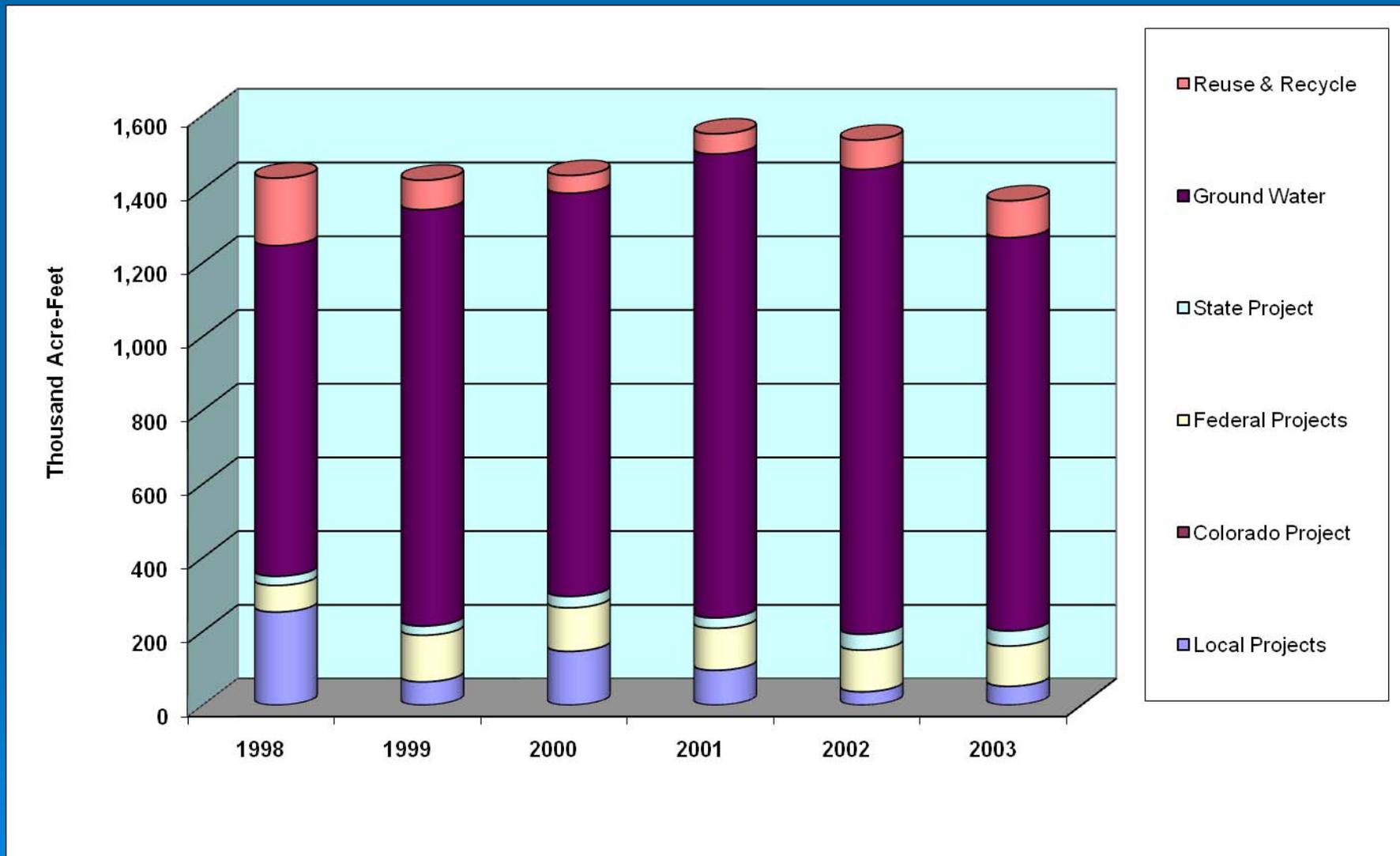


Source: CA Department of Water Resources  
Land Use Survey - 1996 South Central Coast

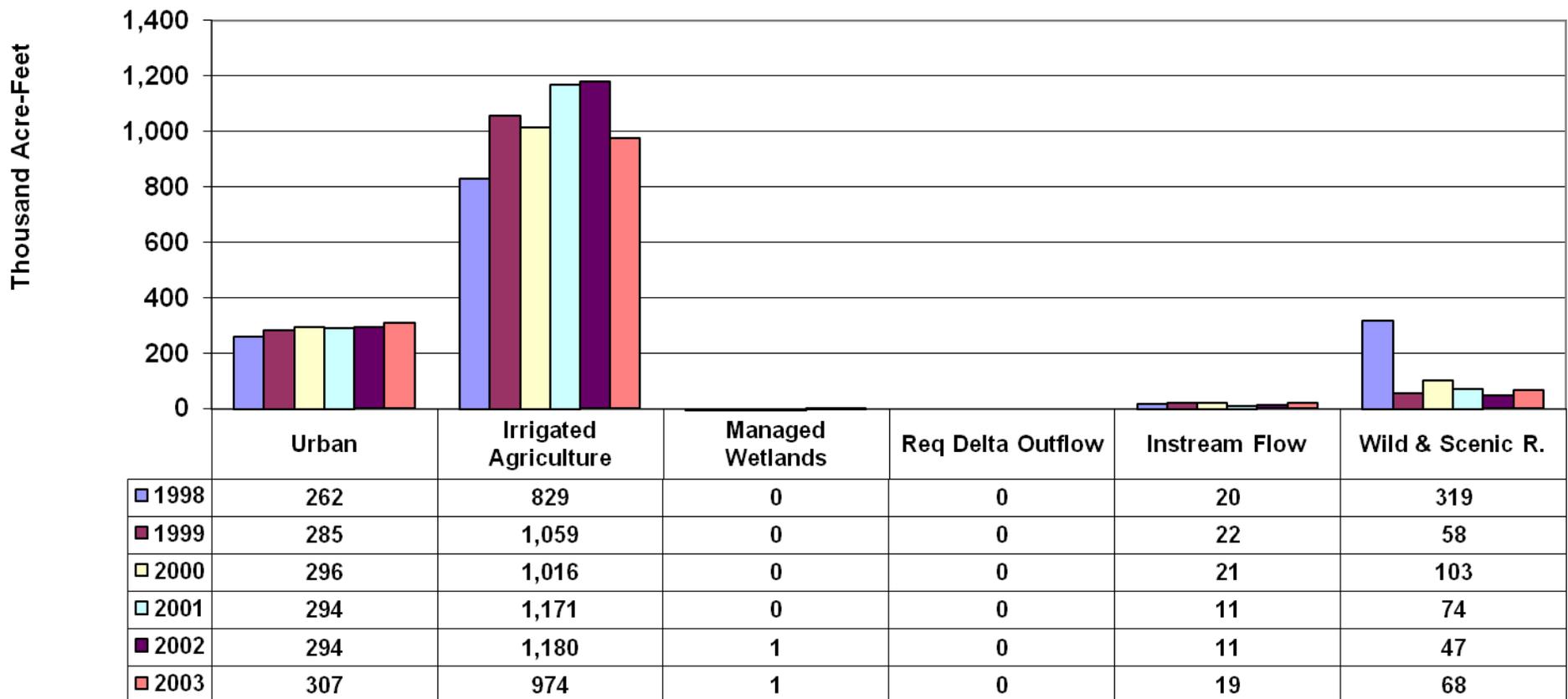
# Central Coast Region Water Conditions



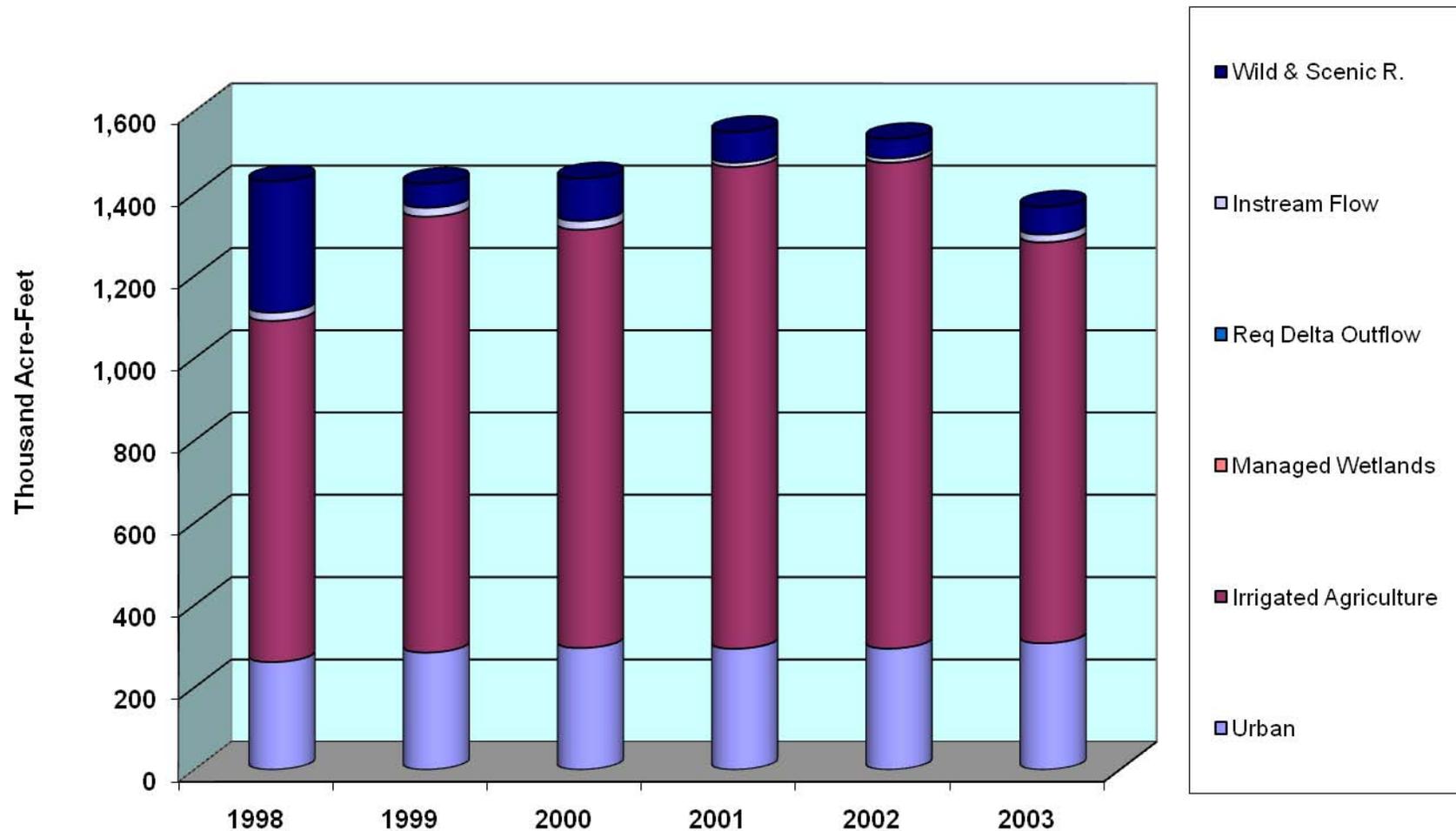
# Central Coast Region Dedicated Water Supplies For Water Years 1998 through 2003



# Central Coast Region Applied Water Uses For Water Years 1998 through 2003



# Central Coast Region Applied Water Uses For Water Years 1998 through 2003



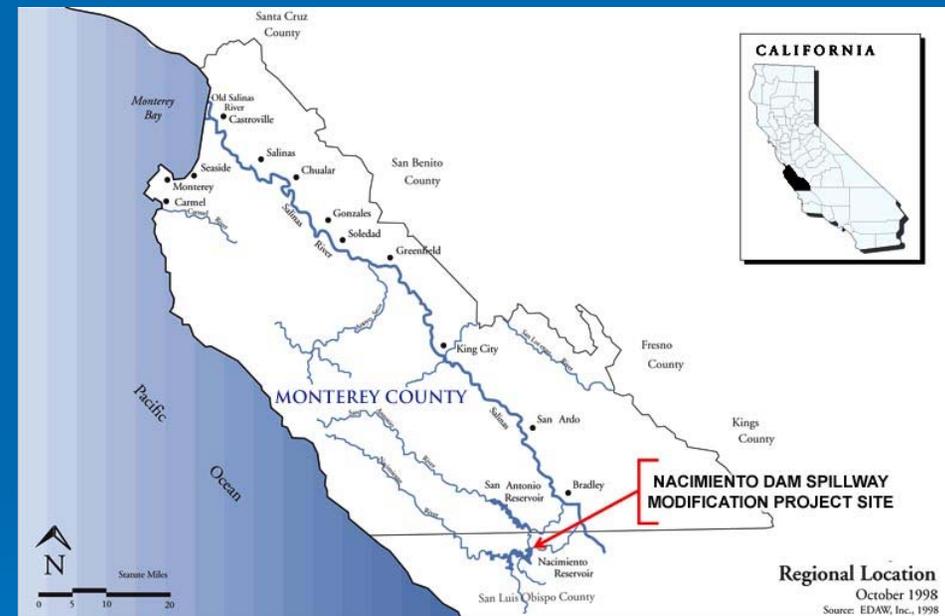
# Central Coast Regional Water Planning & Management

## PROPOSITION 84 Integrated Regional Water Management Program Central Coast Funding Area



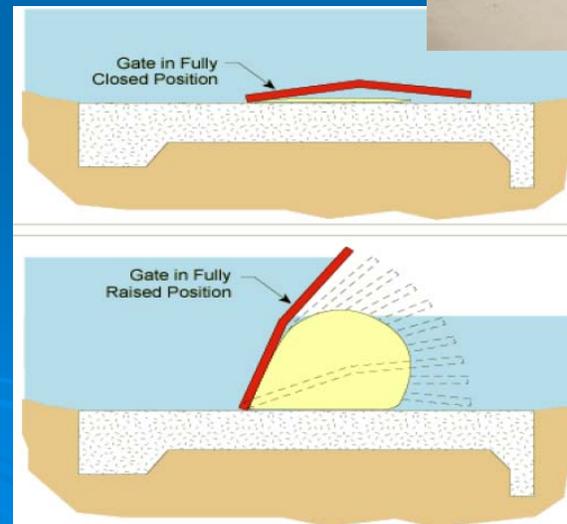
# Salinas Valley Water Project - Functional Equivalent of Monterey Co.– Salinas Valley IRWMP

- Stop seawater intrusion
- Avert a maximum flood event at Nacimiento Dam
- Recharge the Salinas River Basin
- Keep water management in local hands, fund it equitably, and ensure future water supplies.
- [http://www.mcwra.co.monterey.ca.us/welcome\\_swvp\\_n.htm](http://www.mcwra.co.monterey.ca.us/welcome_swvp_n.htm)



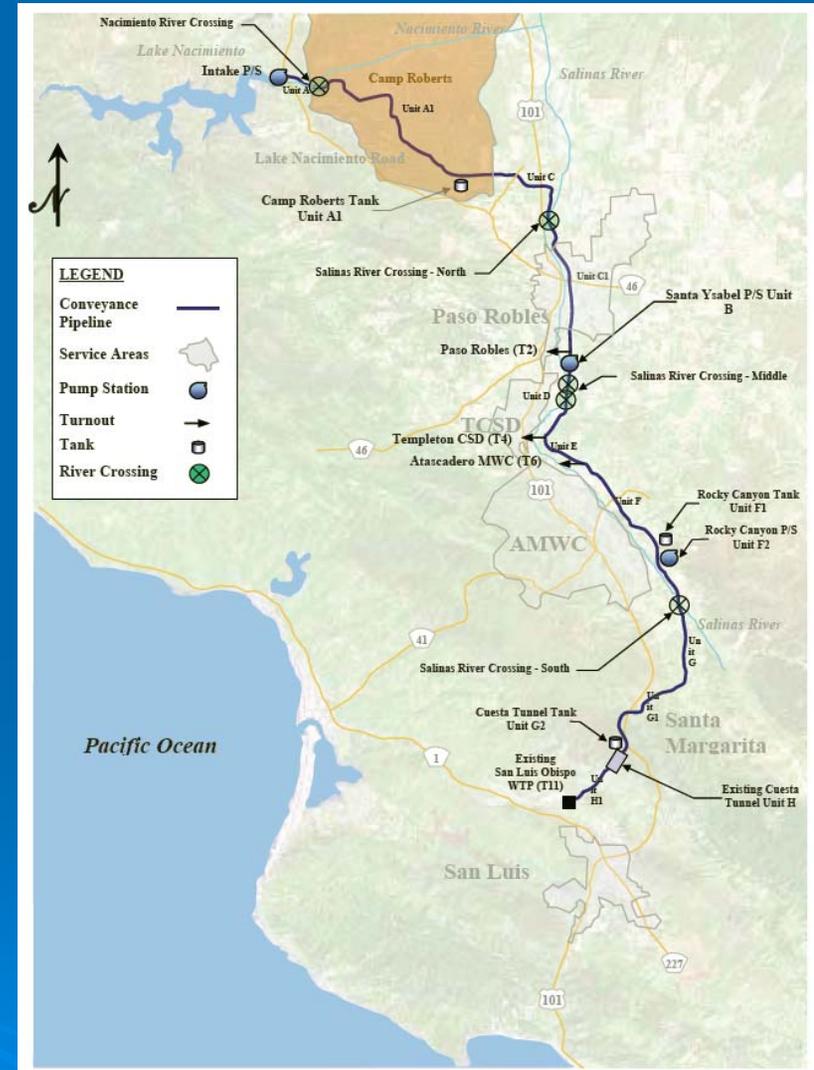
# Project Components

- Modification to the Nacimiento Dam spillway
  - enlargement of the spillway and installation of a rubber spillway gate at the dam
- Reoperation of Reservoirs
- Salinas River Recharge, Conveyance, Diversion and Distribution
  - Another rubber dam
- This is a sister project to...



# Nacimiento Water Project

- In 1959, San Luis Obispo County secured the rights to 17,500 acre-feet of water per year from Lake Nacimiento from Monterey Co.
- The San Luis Obispo County Flood Control and Water Conservation District, in conjunction with five local entities:



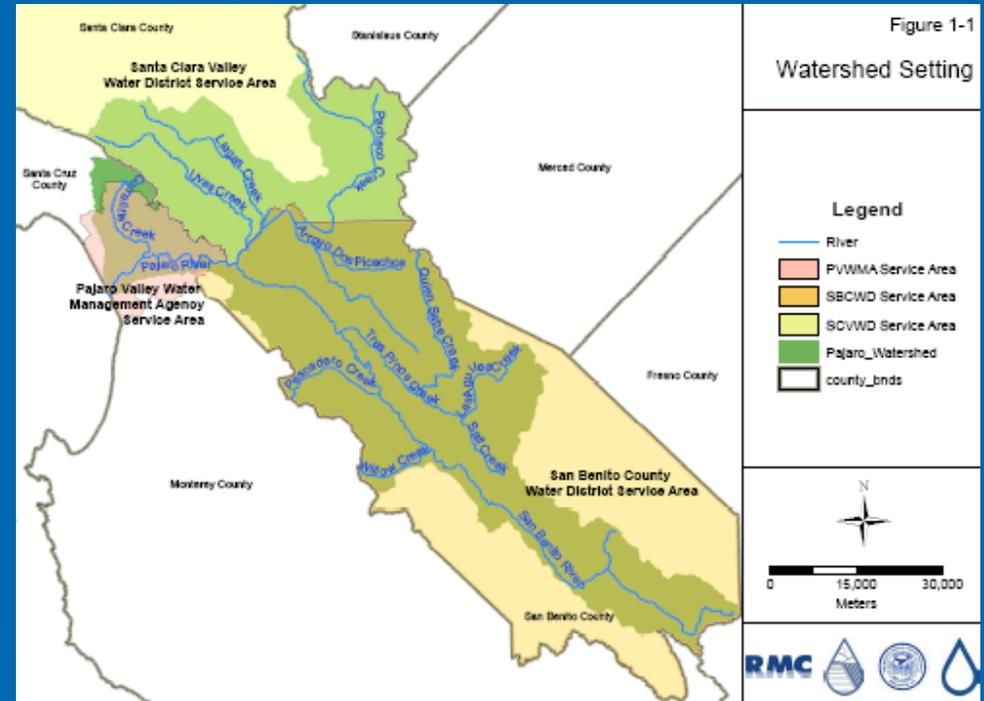
# Project Components

- Development of an intake and pump station at Lake Nacimiento,
- 45 mile transmission pipeline,
- Three storage tanks, two intermediate pump stations,
- Supervisory Control and Data Acquisition (SCADA) and Project control system
- <http://www.slocounty.ca.gov/PW/NacWP.htm>



# PAJARO RIVER WATERSHED IRWM PLAN

- Is a collaborative effort by the Pajaro Valley Water Management Agency (PVWMA), San Benito County Water District (SBCWD), and Santa Clara Valley Water District (SCVWD)



# Participating Agencies

- Pajaro Valley Water Management Agency - CVP contractor that plans to connect to the San Felipe Division facilities in the future.
- The San Benito County Water District – CVP contractor connected to San Felipe Division
- Santa Clara Valley Water District is a CVP (San Felipe Division) and State Water Project (SWP) contractor (South Bay Aqueduct)
- The three agencies formed the Pajaro River Watershed Collaborative to develop/implement IRWM plans/projects

# Water Management Programs

## ➤ Conjunctive Water Supply Management

- Chesbro, Hernandez, Pacheco, etc reservoir reoperation
- CVP & non-CVP water transfers and banking

## ➤ Water Supply/Salt Management

- Groundwater and surface water blending
- Groundwater Demineralization

## ➤ Agricultural Water Quality

- Nitrate Management Program
- Stream and Watershed Protection Program

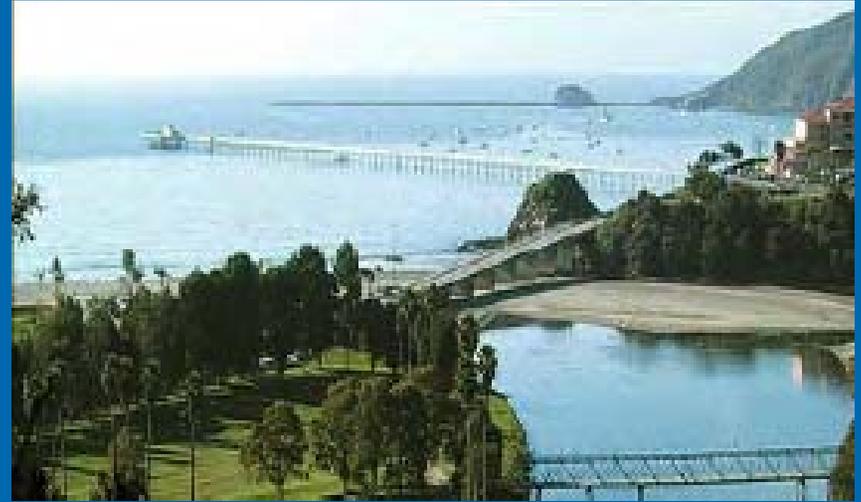
## ➤ Pajaro River Flood Protection

- Levee Reconstruction Project
- Restoration of the Upper Pajaro River Floodplain

[http://www.pvwma.dst.ca.us/project\\_planning/projects\\_irwmp.shtml](http://www.pvwma.dst.ca.us/project_planning/projects_irwmp.shtml)

# SAN LUIS OBISPO COUNTY IRWM PLAN

Is a collaborative effort being led by the San Luis Obispo County Flood Control and Water Conservation District (District), in coordination with the twenty four (24) agencies that make up the Water Resources Advisory Committee (WRAC)  
<http://www.slocountywater.org/site/index.htm>



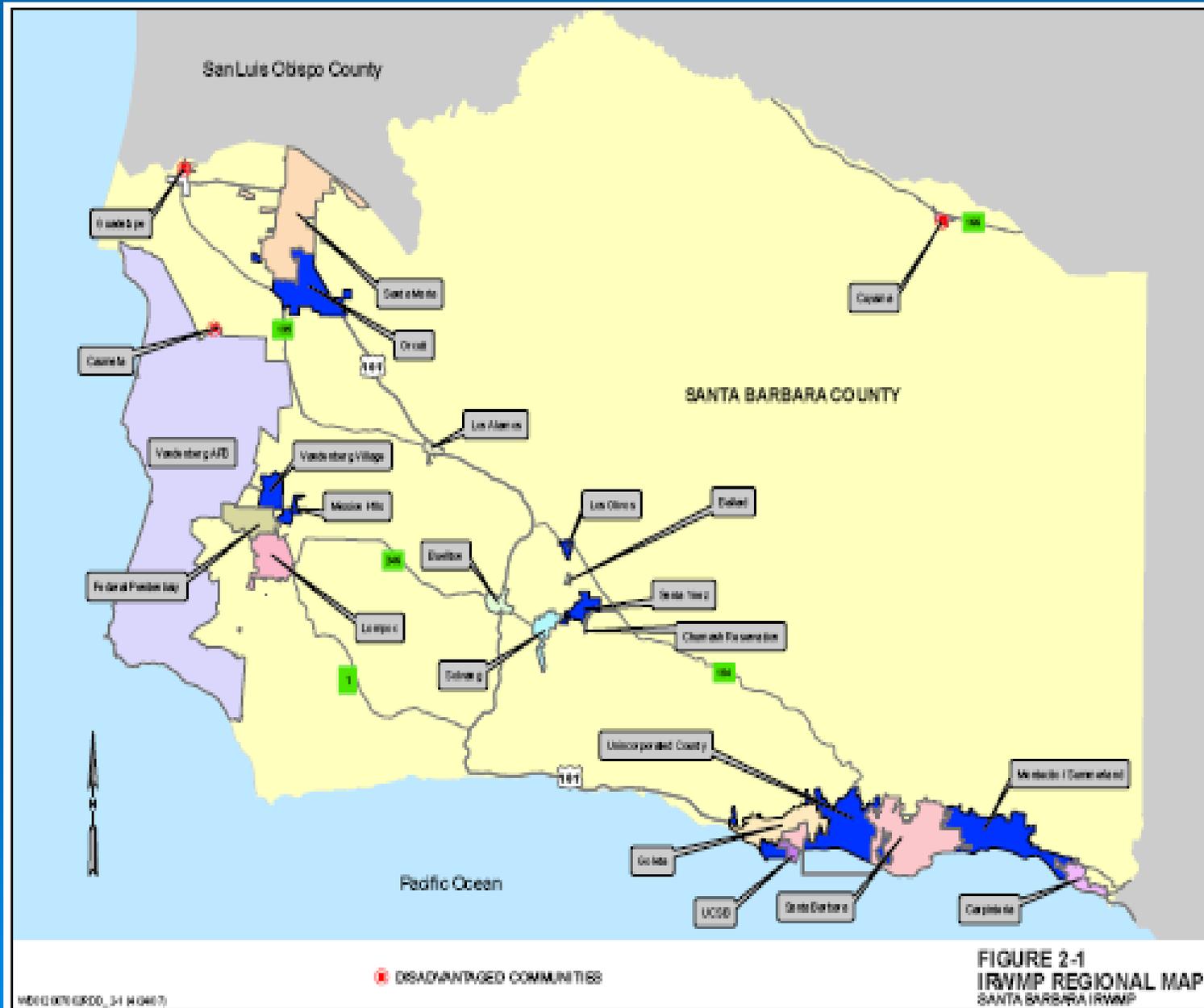
# Five Goals/Programs

- Water Quality
- Water Supply
- Ecosystem Preservation and Restoration
- Groundwater Monitoring and Management
- Flood Protection

# Priority Projects

- **Water Quality**
  - Los Osos Community Wastewater Project
- **Water Supply**
  - Nacimiento Water Project
- **Ecosystem Preservation and Restoration**
  - Morro Bay Estuary Comprehensive Conservation and Management Plan
- **Groundwater Monitoring and Management**
  - Chorro and Morro Groundwater Basin Management Plans
- **Flood Protection**
  - Flood Control Zone 1/1A Waterway Management Program

# SANTA BARBARA COUNTY IRWM PLAN



# Cooperating Partners

<http://www.countyofsb.org/pwd/water/irwmp.htm#full>

Cachuma Conservation and Release Board	Goleta Sanitary District
Cachuma Operation and Maintenance Board	Goleta Water District
Carpinteria Sanitary District	Goleta West Sanitary District
Carpinteria Valley Water District	La Cumbre Mutual Water Company
Casmalia Community Services District	Los Alamos Community Services District
Central Coast Water Authority	Mission Hills Community Services District
City of Buellton	Montecito Sanitary District
City of Carpinteria	Montecito Water District
City of Guadalupe	Santa Barbara County
City of Lompoc	Santa Maria Valley Water Conservation District
City of Santa Barbara	Santa Ynez River Water Conservation District
City of Santa Maria	Santa Ynez River Water Conservation District
City of Solvang	Improvement District No. 1
Cuyama Community Services District	Summerland Sanitary District
Golden State Water Company	Vandenberg Village Community Services District

# Key Water Issues

- The need to replace, rehabilitate, or upgrade aging infrastructure
- Risk of illness from inadequate drinking water and pollution from wastewater
- Water supply reliability
- The need to operate and maintain water and wastewater systems in a manner that minimizes impacts to sensitive habitats and species and complies with federal, state, and local regulatory requirements
- Overdrafted groundwater basins in North County
- Water quality impairments in both groundwater and surface water bodies
- Potential harm to people and property from flooding
- The need for emergency planning to address potential impacts to water and wastewater facilities from floods, earthquakes, and fires, as well as planning for (and responding to) periodic droughts

# High Priority Projects

- Santa Maria River/Oso Flaco, Santa Ynez River, and South Coast Beaches TMDLs Watershed Working Groups
- Regional Water Conservation Rebates, Incentives, and Promotion
- Cuyama Wastewater Treatment Plant Effluent Disposal Project
- Cuyama Water Tower Repair Project
- Jalama Beach County Park Septic System Improvements
- Casmalia Water System Improvements Project
- Guadalupe Wastewater Treatment Plant Reuse Improvements Project

# Regional Challenges

- Los Osos Community Wastewater Project - In 1983 the Central Coast Regional Water Quality Control Board established a wastewater prohibition zone in the coastal community of Los Osos, located on the southern boundary of Morro Bay National Estuary.
- Recovery Planning under Environmental Species Act - Coho Recovery Strategy
- Flood Management has identified challenges that include:
  - A lack of topographical maps based on digital elevation model data limits the precision to which floodplain boundaries can be delineated.
  - Increased development promises to enlarge the area of impervious surfaces, which will require upgraded infrastructure that can convey larger floodflows.
  - Future flood control infrastructure is still designed to contain current 100-year floodflow stages, despite climate change and increased development threatening to increase 100-year floodflow stages.

# Accomplishments

- Hazard Mitigation Plans for San Luis Obispo, Monterey, Santa Barbara, and Ventura Counties
- Watsonville Sloughs Integrated Watershed Restoration Program
- Santa Clara Valley Water District, South County Regional Wastewater Authority, Gilroy, and Morgan Hill are partners in the South County Recycled Water Program
- Four Recycled Water Distribution System Extensions in the Scotts Valley Area
- Abandoned Well Destruction Program, Northern Santa Cruz County

# Desalination Projects/Proposals

- City of Santa Cruz: 2.5 MGD
- Monterey Bay Project Proposals
  - California American Water Company: 12 MGD
  - Monterey Peninsula Water Management District: 8 MGD
  - Pajaro-Sunny Mesa/Poseidon: 25 MGD
- City of Sand City: 0.3 MGD
- Marina Coast Water District: 0.3 MGD
- Cambria Community Services District/Department of the Army: 0.5 MGD
- Arroyo Grande/Grover Beach/Oceano Community Services District: 2 MGD

1 MGD produces ~ 1,000 Acre-ft/Yr

# Climate Change

- Watersheds more susceptible to wildfires
  - With less total rainfall and higher mean annual temperatures
- Increase flood velocity
  - loss of vegetative cover would lower capacity and interception rate
- Sea level rise
  - Seawater intrusion into groundwater basins will be exacerbated
  - Floods from tidal surges would become more frequent as the ocean moves further inland and closer to residences and businesses.

# Seawater Intrusion

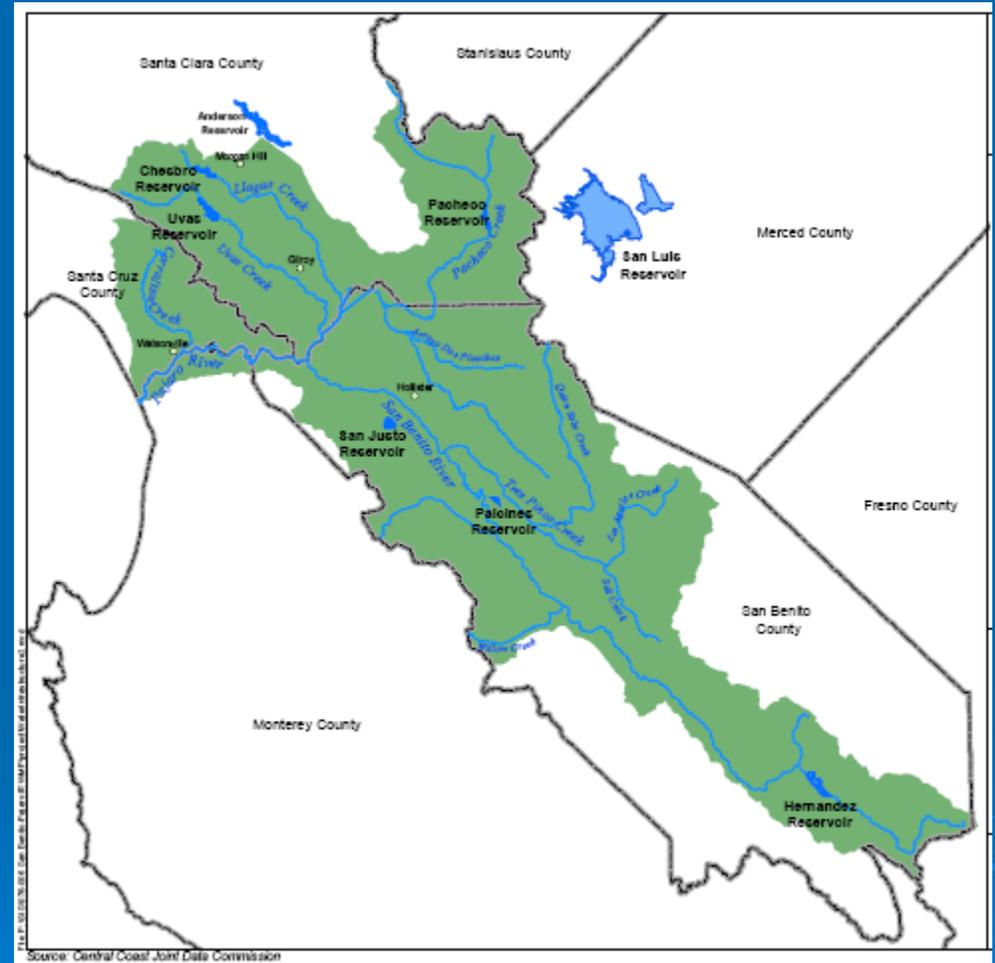
- It was first documented in 1933 in northern Salinas Valley
- Seasonal groundwater withdrawals for agriculture in Santa Cruz, Monterey, and San Luis Obispo counties contribute to Seawater intrusion
- In Los Osos, the wall of seawater intrusion has been estimated to be migrating inland at a rate of 100 feet per year
- Santa Barbara and areas near Santa Maria have experienced signs of seawater intrusion but, at this time, do not pose a threat to drinking water supplies

Invasive  
Species-  
Quagga/Zebra  
Mussels



# Impacts of Mussel Invasion

- Quagga Mussels discovered in Lake Mead (2007) and 20 Southern California reservoirs.
- Lake Casitas in Ventura County closed to private boaters
- Zebra Mussel found in San Justo Reservoir near Hollister in San Benito County in January 2008.
- San Justo receives water from San Luis Reservoir. SLR sends water down the CA Aqueduct.
- San Justo Reservoir was completely closed to public boating.





# 2009 Drought Survey

## ➤ Northern Santa Cruz County & Carmel Valley

- Increases in well drilling
- Decreases in building activity

## ➤ Salinas Valley

- A trend for more shallow wells near the river

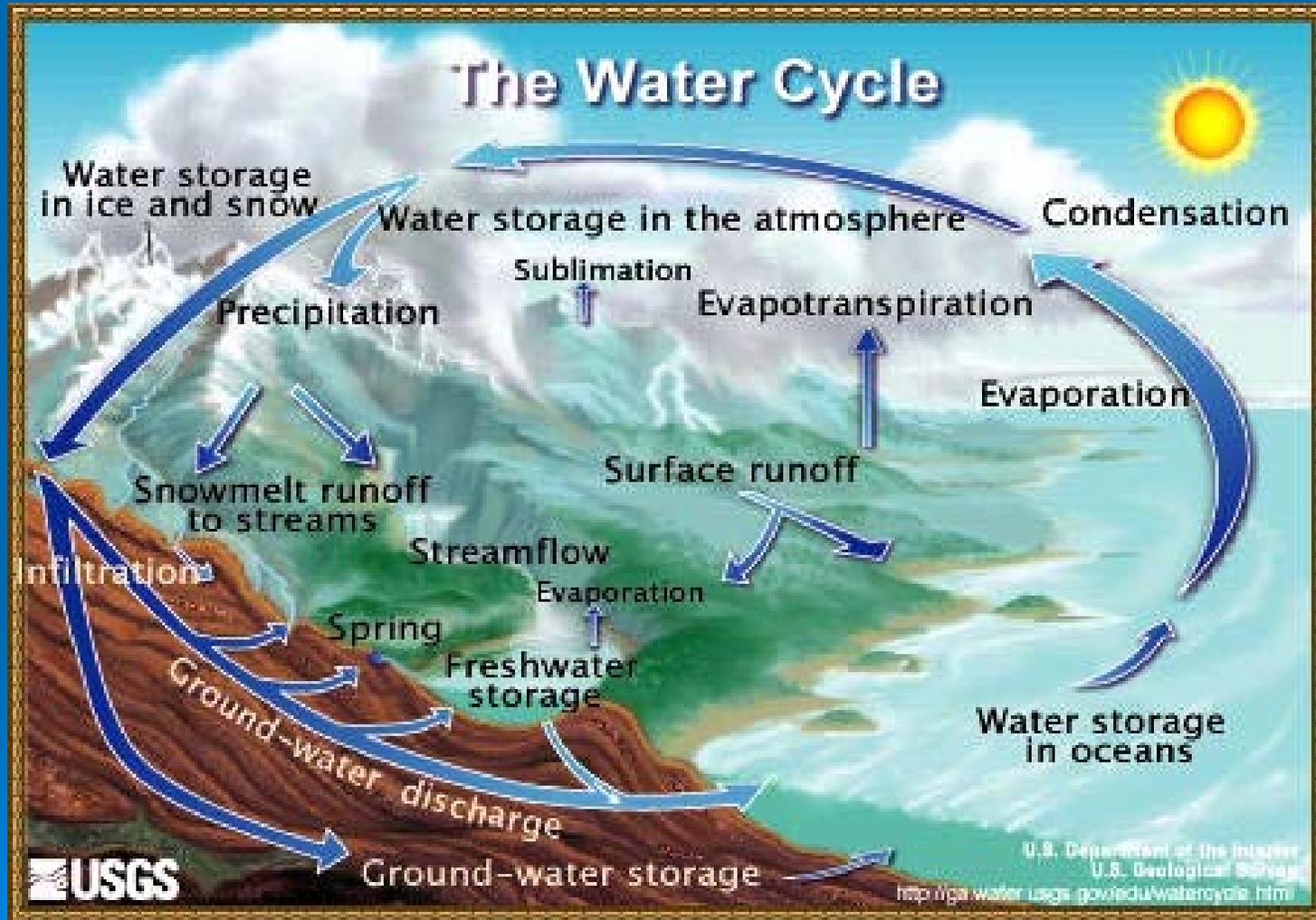
## ➤ Groundwater Quality

- No specific drought related groundwater quality issues have been seen; potential additional seawater intrusion

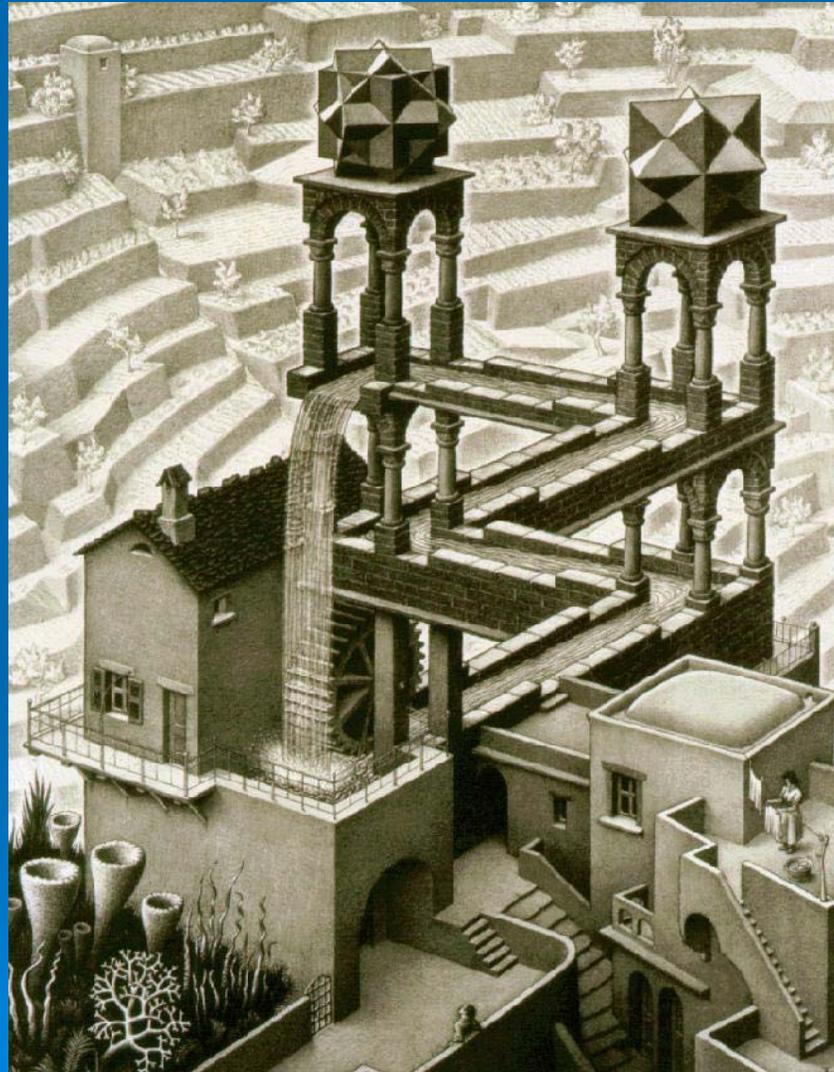
# References

- DWR's IRWMP website
  - [http://www.grantsloans.water.ca.gov/grants/implementation/prop84/integregio\\_fundingarea.cfm](http://www.grantsloans.water.ca.gov/grants/implementation/prop84/integregio_fundingarea.cfm)
- San Luis Obispo County IRWMP
  - <http://www.slocountywater.org/site/index.htm>
- Santa Barbara County IRWMP
  - <http://www.countyofsb.org/pwd/water/irwmp.htm>
- Pajaro River Watershed IRWMP
  - [http://www.pvwma.dst.ca.us/project\\_planning/projects\\_irwmp.shtml](http://www.pvwma.dst.ca.us/project_planning/projects_irwmp.shtml)
- Salinas Valley Water Project
  - [http://www.mcwra.co.monterey.ca.us/welcome\\_svwpp\\_n.htm](http://www.mcwra.co.monterey.ca.us/welcome_svwpp_n.htm)
- Nacimiento Water Project
  - <http://www.slocounty.ca.gov/PW/NacWP.htm>
- DWR's Water Plan Meeting Materials website
  - <http://www.waterplan.water.ca.gov/materials/index.cfm>
- DWR's Drought website
  - <http://www.water.ca.gov/drought/>

# Looks Familiar



# Solution to Our Water Supply Problems



**Agenda Item 10**  
Resource Management Strategies  
Central Coast Region



# 27 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

# Some Examples

- The IRWMPs in the region include a mix of 20+ resource management strategies. See Table 4-4 of the Central Coast Regional Report.
- Monterey Bay Plan B Desalination and Aquifer storage and recovery proposals
- Santa Cruz/Soquel Creek WD sea water desalination-groundwater management combination
- Nacimiento/San Antonio Reoperation
- Nacimiento Reservoir pipeline to SLO

# More examples

- Pajaro River Watershed IRWM
  - CVP water transfers and banking
  - Watershed protection and nitrate management
- SLO County - Los Osos Wastewater Project
- Morro Bay Estuary Comprehensive Conservation and Management Plan
- Chorro and Morro Groundwater Basin Management Plan

# Regional Report Contact Information

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