

California Water Plan Update 2009

Tulare Lake Regional Report Overview & Outline

2009 Regional Workshops

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

INTEGRATED WATER MANAGEMENT



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Volume **3**
REGIONAL REPORTS

Public Review Draft

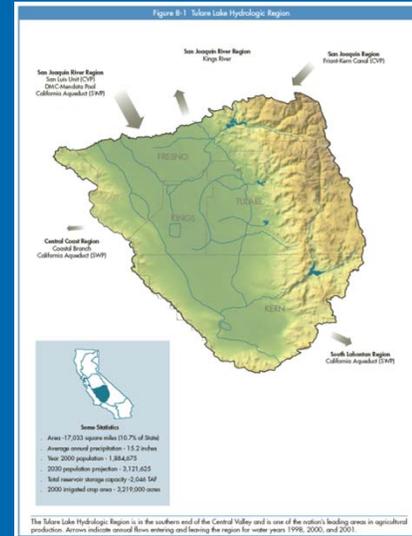
January 2009

Regional Report Outline

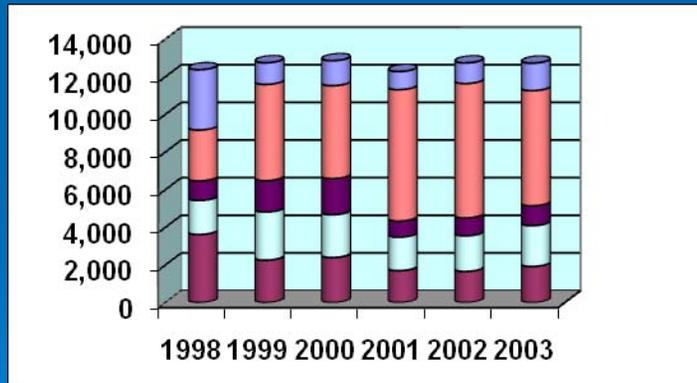
Setting



Relationship
with other
Regions



Current Water Conditions



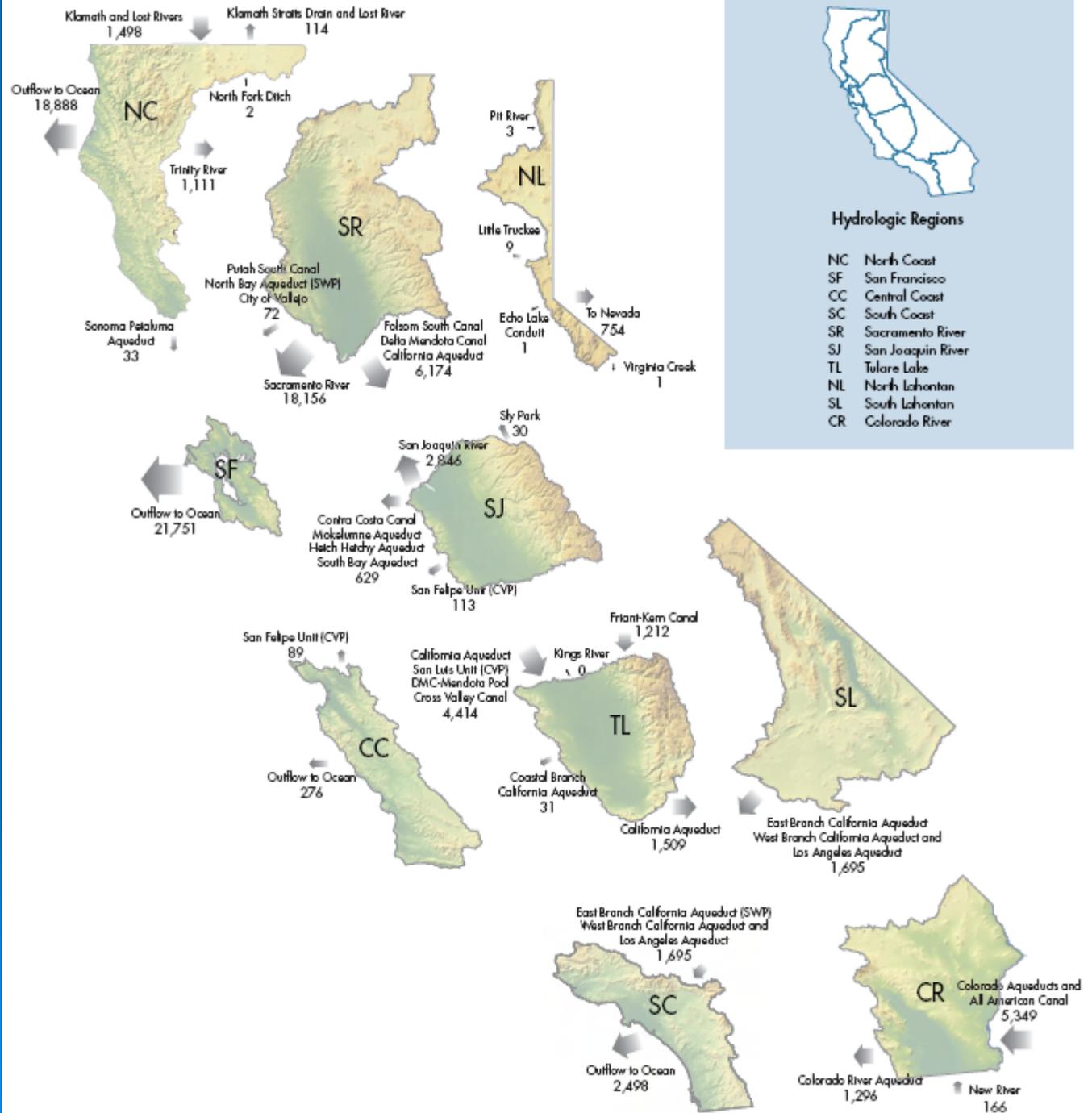
Regional
Planning &
Management

Selected References

Looking to
the Future

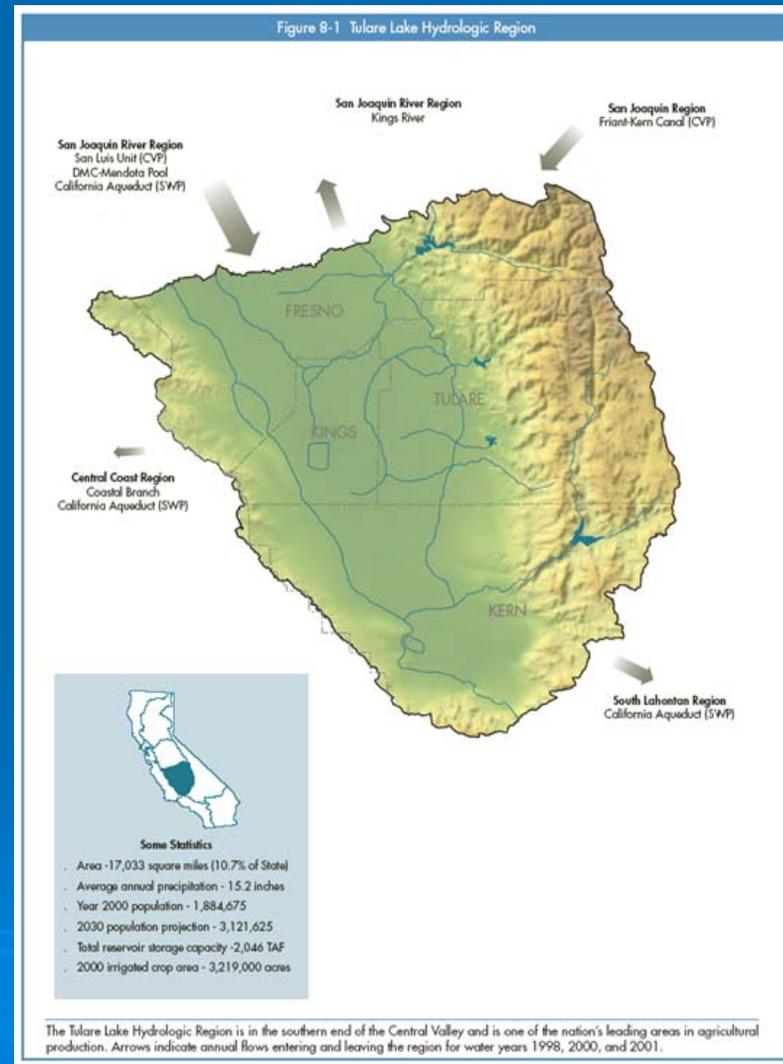


Relationship to other Regions



Tulare Lake Region

- 11 million acres, 11 % of State land area.
- Kings, Kaweah, Tule and Kern River watersheds and tributaries.
- 41% of water supply is from groundwater; 35% of state's groundwater use.

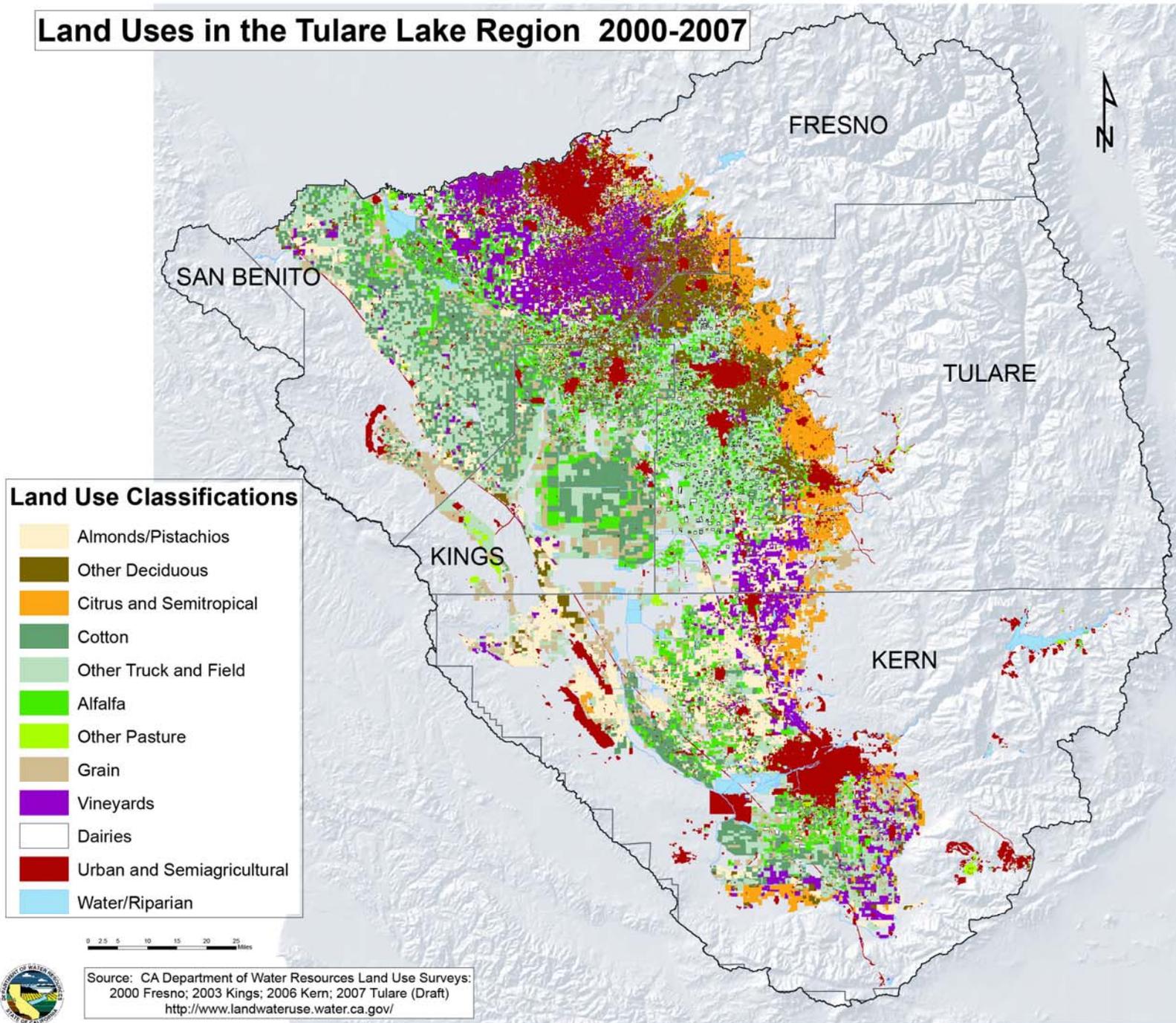


Tulare Lake Region

- The region includes all of Kings and Tulare counties and most of Fresno and Kern counties.
- 3 million irrigated acres.
- Conjunctive Use, Water Banking Important.
- Imported Water Supplies, SWP & CVP.



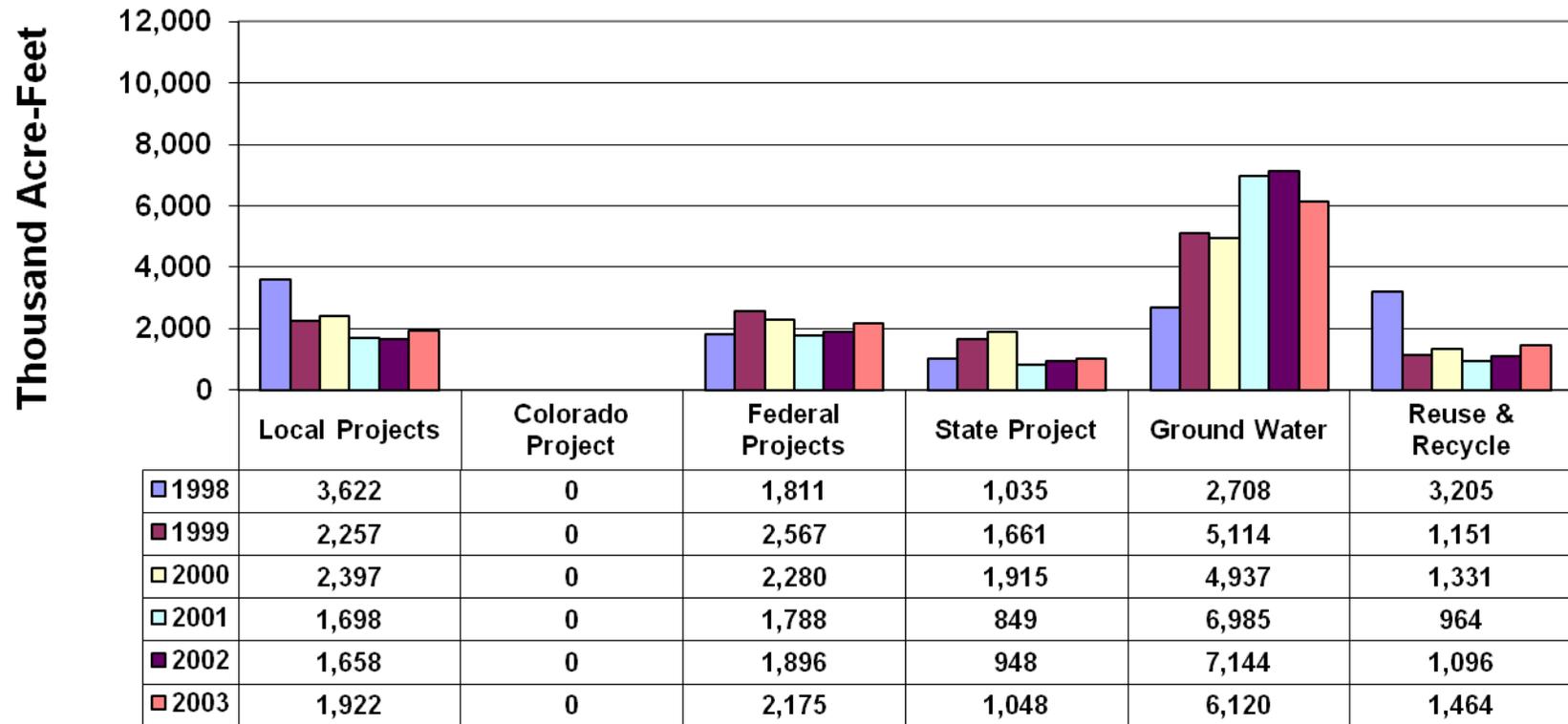
Land Uses in the Tulare Lake Region 2000-2007



- Kern NWR: 6,792 acres (ac)
- Pixley NWR: 310 ac
- Mendota WA: 11,410 ac
- Kern-Tulare County Private Gun & Duck Clubs: 2,463 ac

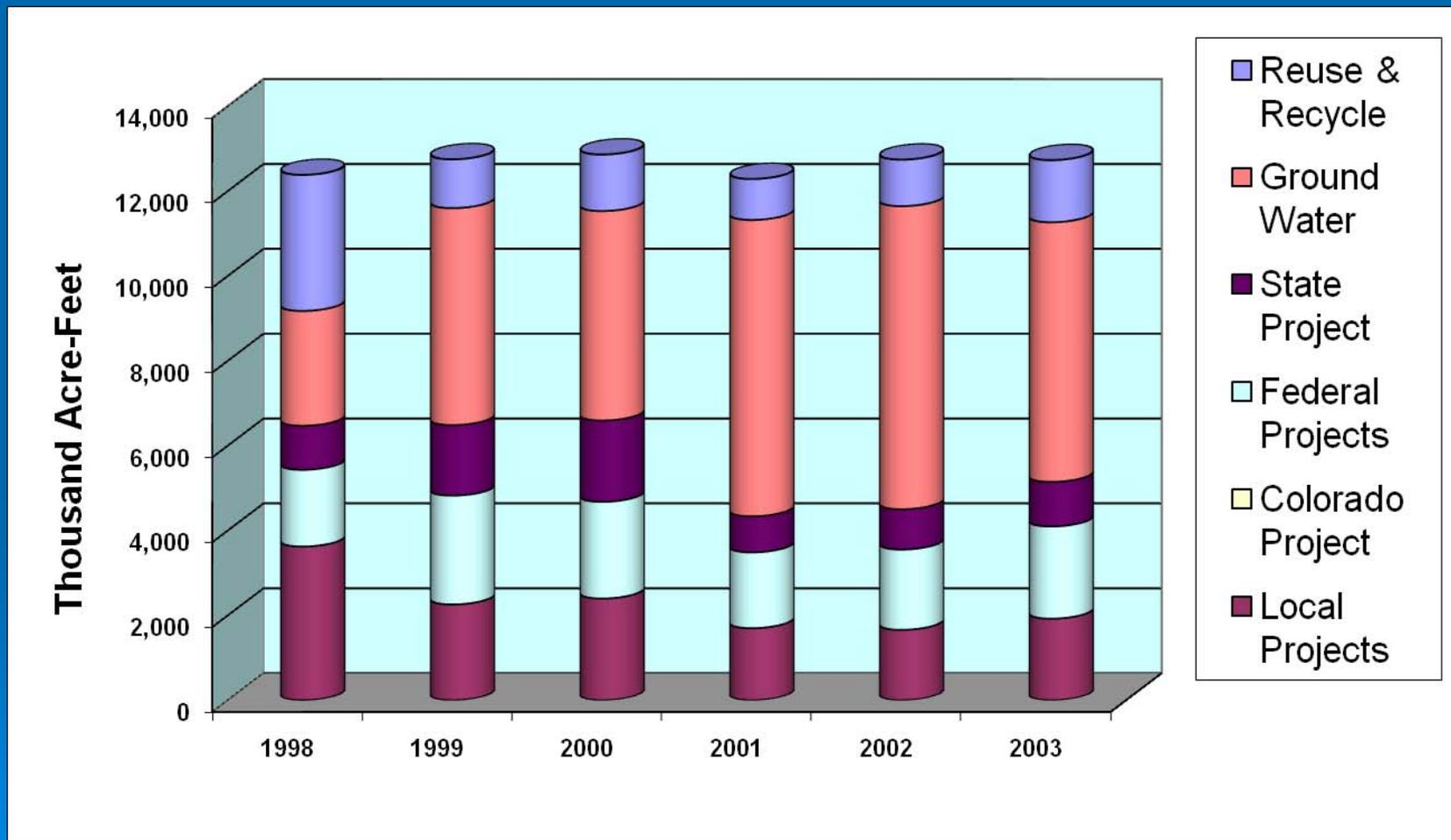
- Both Mendota WA & Kern NWR refuge received CVPIA supplies in 2005 (amount varies from year to year):
 - Mendota WA: 26,730 acre-feet (af)
 - Kern NWR: 19,900 af
- Pixley NWR & Kern Private Gun & Duck Clubs use groundwater.

Tulare Lake Region Water Supplies for 1998 to 2003 Water Years

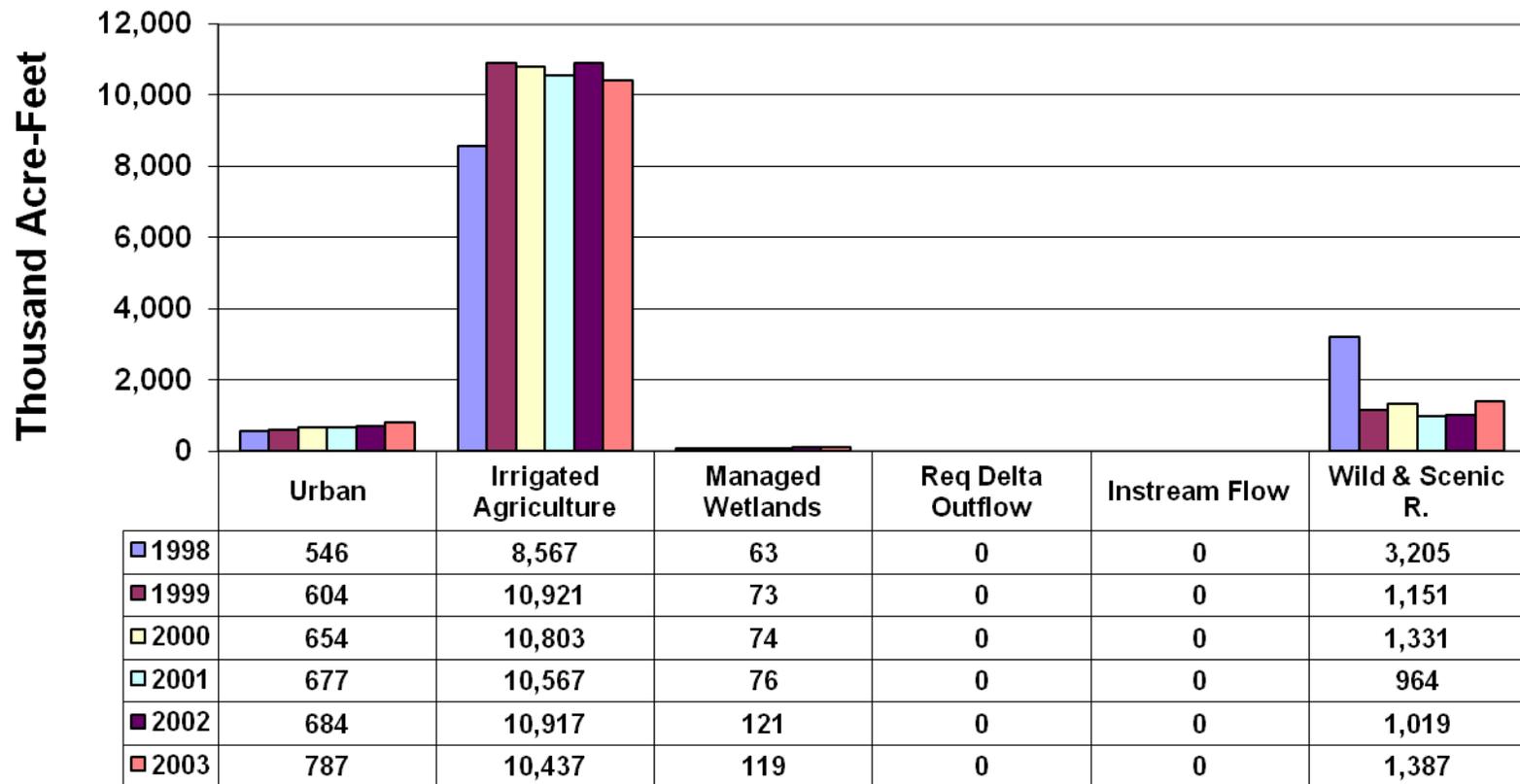


Tulare Lake Region Water Years 1998 to 2003

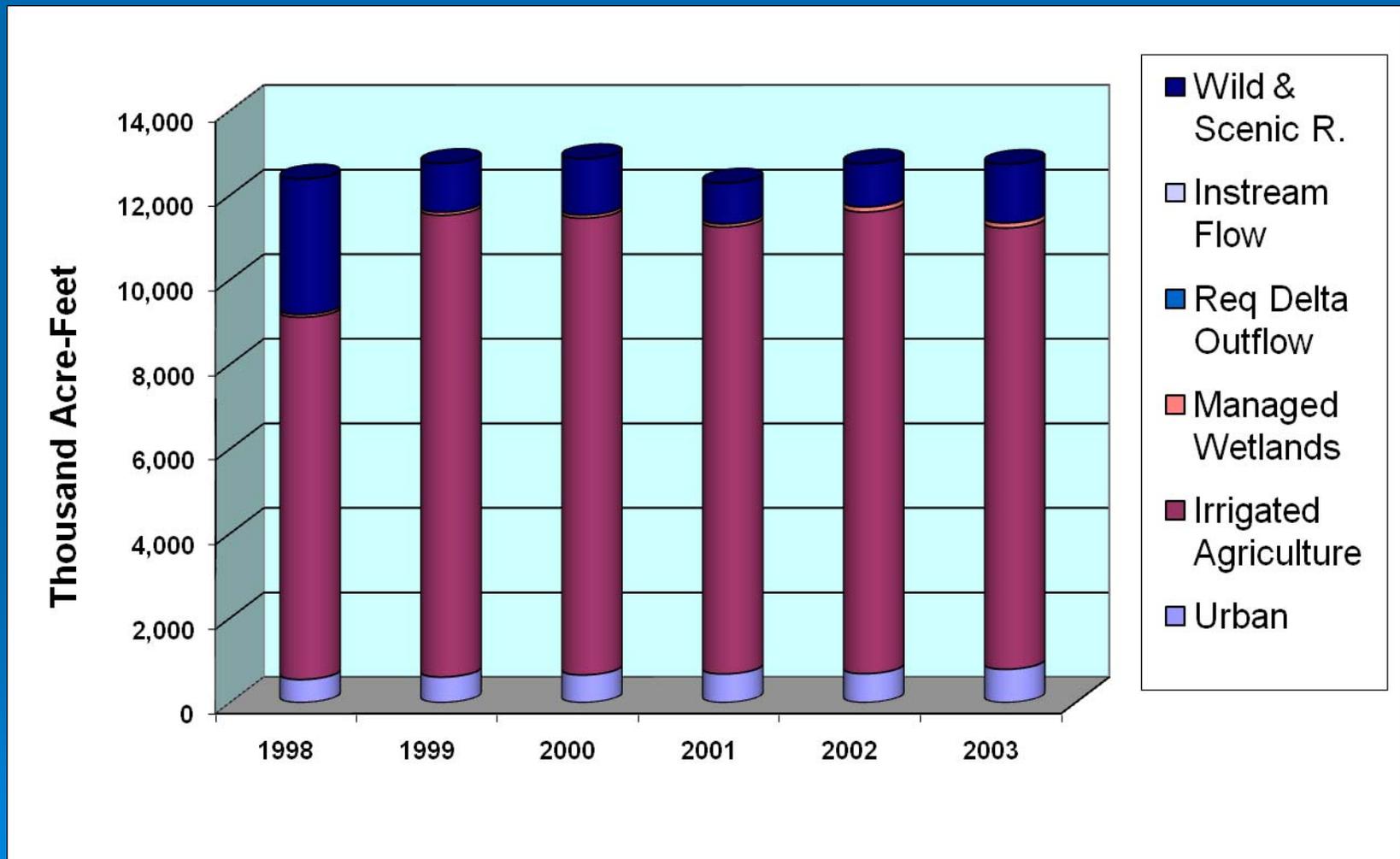
Water Supplies



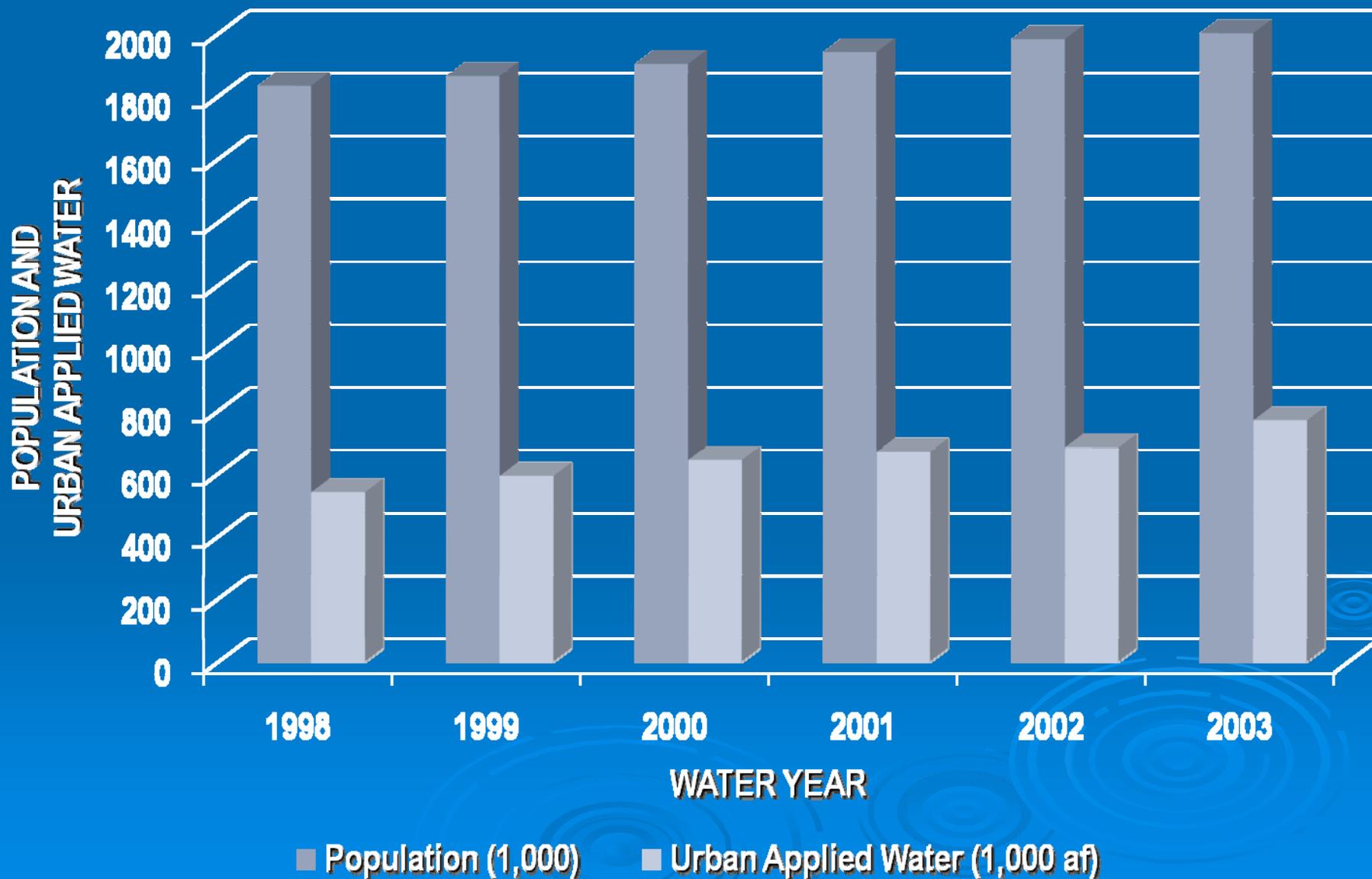
Tulare Lake Region Applied Water Uses for 1998 to 2003 Water Years



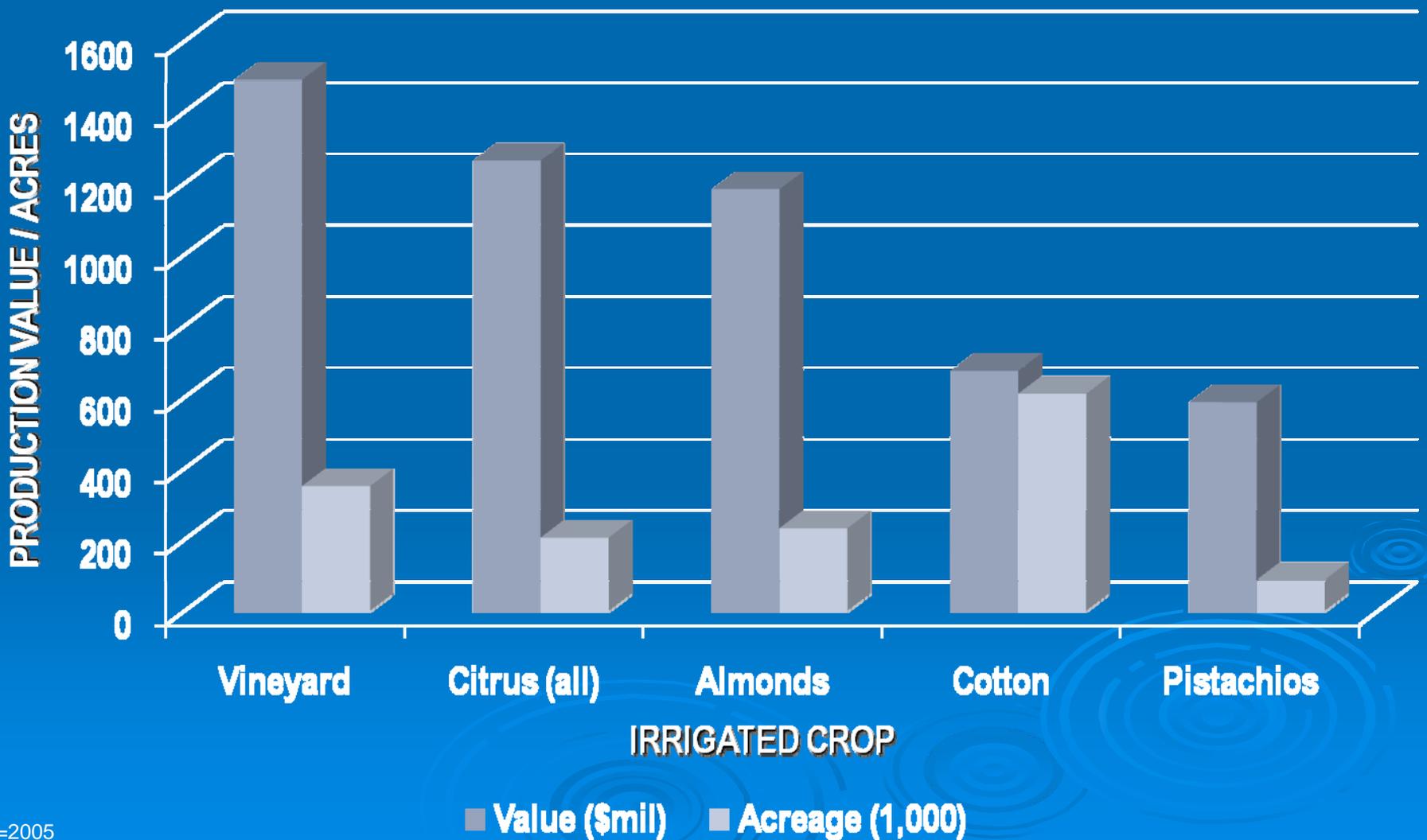
Tulare Lake Region Water Years 1998 through 2003 Applied Water Uses



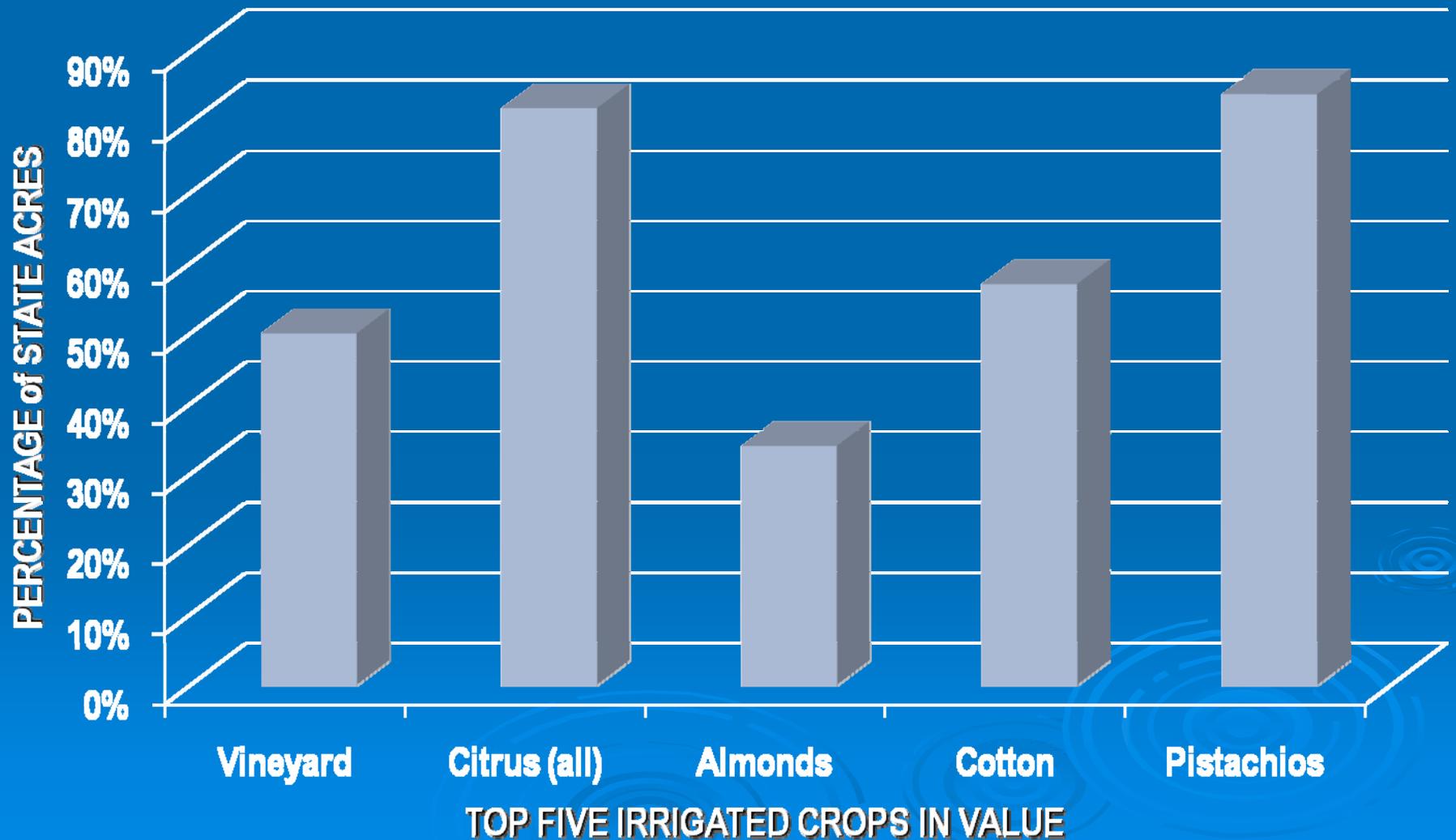
URBAN POPULATION AND APPLIED WATER 1998 - 2003



LEADING FIVE CROPS IN VALUE WITH HARVESTED ACREAGE, TULARE LAKE REGION



PERCENTAGE CROP ACREAGE OF TOTAL STATE ACREAGE OF FIVE CROPS TULARE LAKE REGION



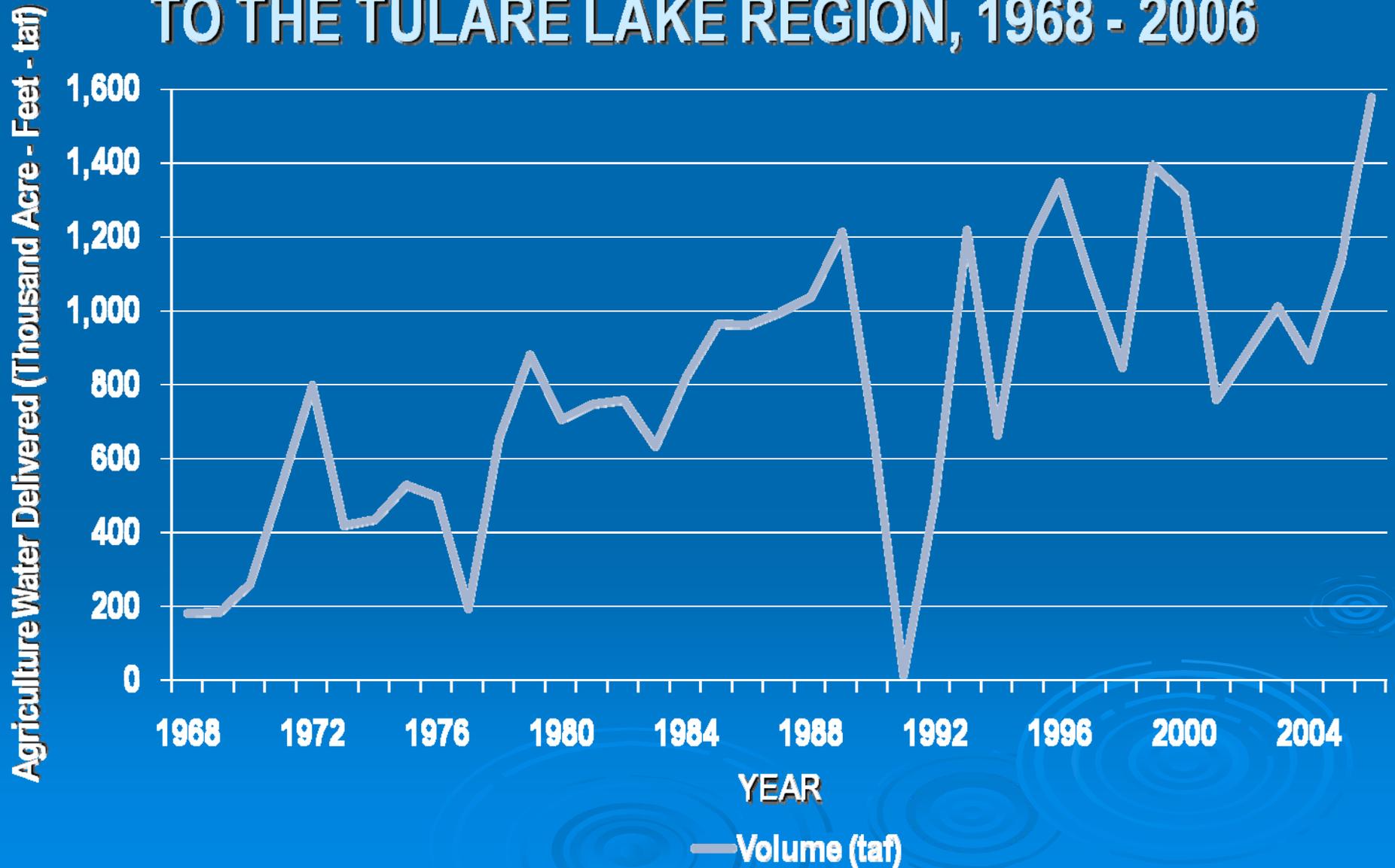
COUNTY RANKING OF AGRICULTURAL PRODUCTION IN CALIFORNIA

County Total Value and Rank in California

County	Value (\$1,000)	Leading Commodities
Fresno	4,640,166	Grapes, Almonds, Milk, Tomatoes, Cattle and Calves
Tulare	4,360,854	Milk, Oranges, Cattle and Calves, Grapes, Alfalfa Hay and Silage
Kern	3,546,925	Almonds and By-products, Grapes, Milk, Citrus, Pistachios
Monterey	3,273,000	Lettuce, Strawberries, Wine Grapes, Spinach, Broccoli
Merced	2,388,058	Milk, Chickens, Almond Meats, Cattle and Calves, Sweet Potatoes
Stanislaus	1,977,596	Milk, Almonds, Cattle and Calves, Chickens, Walnuts
San Joaquin	1,743,294	Milk, Grapes, Almond Meats, Tomatoes, English Walnuts
San Diego	1,531,307	Foliage Plants, Woody Ornamentals, Avocados, Bedding Plants
Kings	1,407,091	Milk, Cotton, Cattle and Calves, Pistachios, Alfalfa
Imperial	1,286,066	Cattle, Alfalfa, Leaf and Head Lettuce, Carrots, Livestock

STATE WATER PROJECT AGRICULTURAL DELIVERIES

TO THE TULARE LAKE REGION, 1968 - 2006



Tulare Lake Region IRWM Plans

➤ Currently four formalized Integrated Regional Water Management Plans in the Tulare Lake Region.

- Westside
- Upper Kings
- Poso Creek
- Kaweah Delta



IWRM Plan Highlights

- **Increasing Water Supply Reliability**
 - **Conjunctive Water Management**
 - Combining surface water storage and groundwater storage (groundwater banking).
- **Integrated Flood Management**
 - **Flood Control and Water Detention**
 - Storm water protection and groundwater recharge (control, capture and pond).



Conjunctive Water Management (Groundwater Banking)



Integrated Floodwater Management
(Control, Capture and Pond)

Regional Challenges

➤ Water Supply Reliability -The Delta

- Delta Vision

➤ Water Quality

- High-salinity groundwater
- Nutrients and microbes

➤ Poor Drainage In Western SJ Valley

➤ Groundwater , Sustainability

➤ Environmental Water Supply

- Fish flows and habitat
- SJR Settlement/Restoration

Poor Drainage in the Western SJV

- The Bureau of Reclamation signed the Record of Decision for the San Luis Drainage Feature Re-evaluation Environmental Impact Statement.
- Under the selected alternative, a total of 194,000 acres would be retired. The alternative also includes:
 - drainage reduction measures,
 - collector systems,
 - drainage water reuse facilities,
 - treatment systems,
 - evaporation ponds, and
 - mitigation measures.

San Joaquin River Settlement

“To restore and maintain fish populations in good condition in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally-reproducing and self-sustaining populations of salmon and other fish as well as 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 by December 31, 2025.”

Regional Accomplishments

- Agricultural Water Use Efficiency
 - Agriculture water management plans
 - Public outreach and training
- Urban Water Use Efficiency
 - Urban water management plans
 - Memorandum of Understanding
- Numerous Groundwater Management Plans
- Implementation of New Technologies
- Cross Valley Canal Expansion
- Lake Kaweah Enlargement Project

Looking to the Future

- Kern County Water Agency
Conjunctive Management Program
- Water Agency Exchanges and Transfers
- Kern County Water Agency Environmental Water
Account Sales
- Optimization of Water Conveyance Systems
- Inter-regional Water Storage
- Drought Supply Agreements
- IRWMP

Regional Response Strategy

Example - Upper Kings River IRWMP

➤ Reduce Water Demand

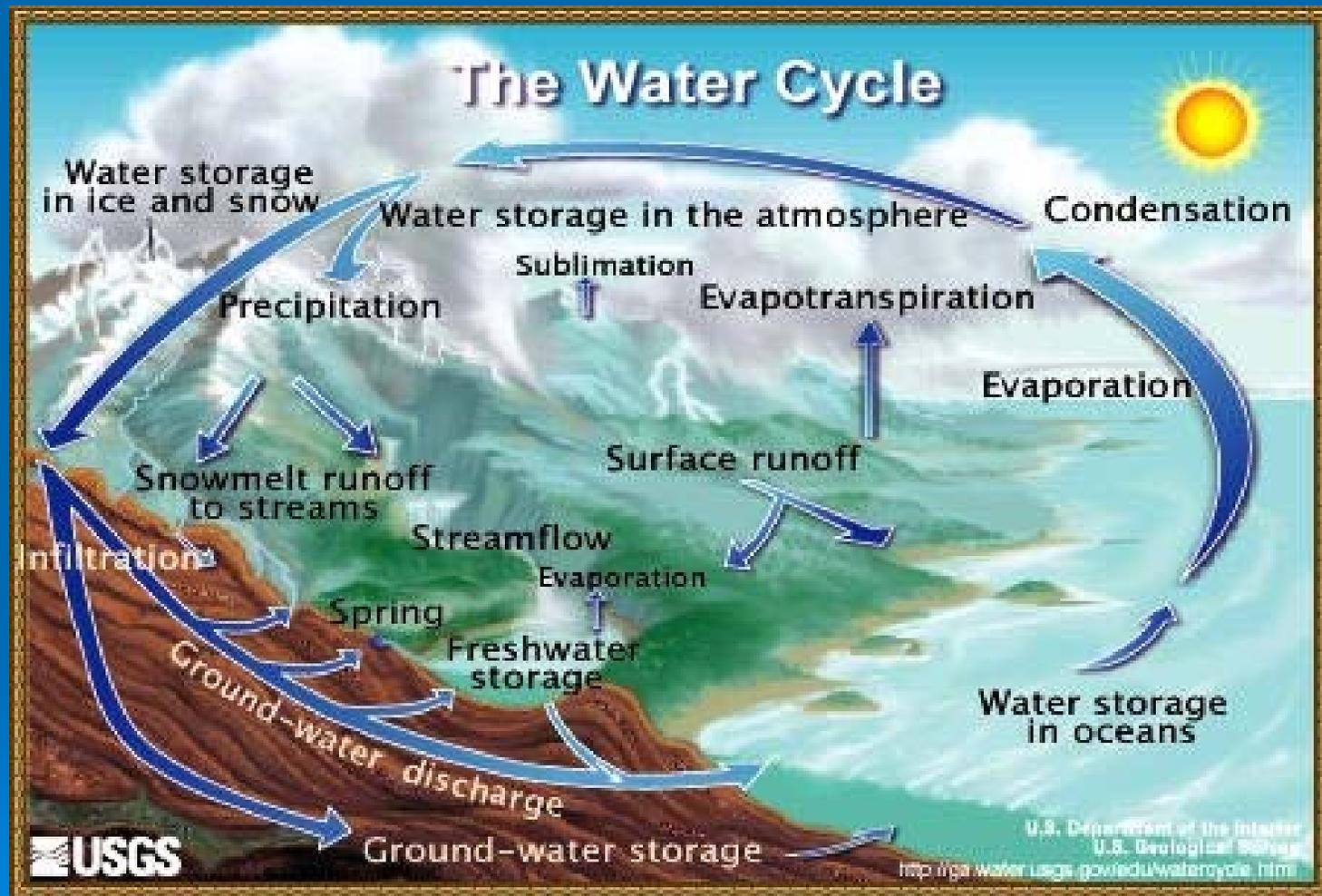
- Increase agricultural water use efficiency.
 - Mobile irrigation labs

➤ Improve Water Quality

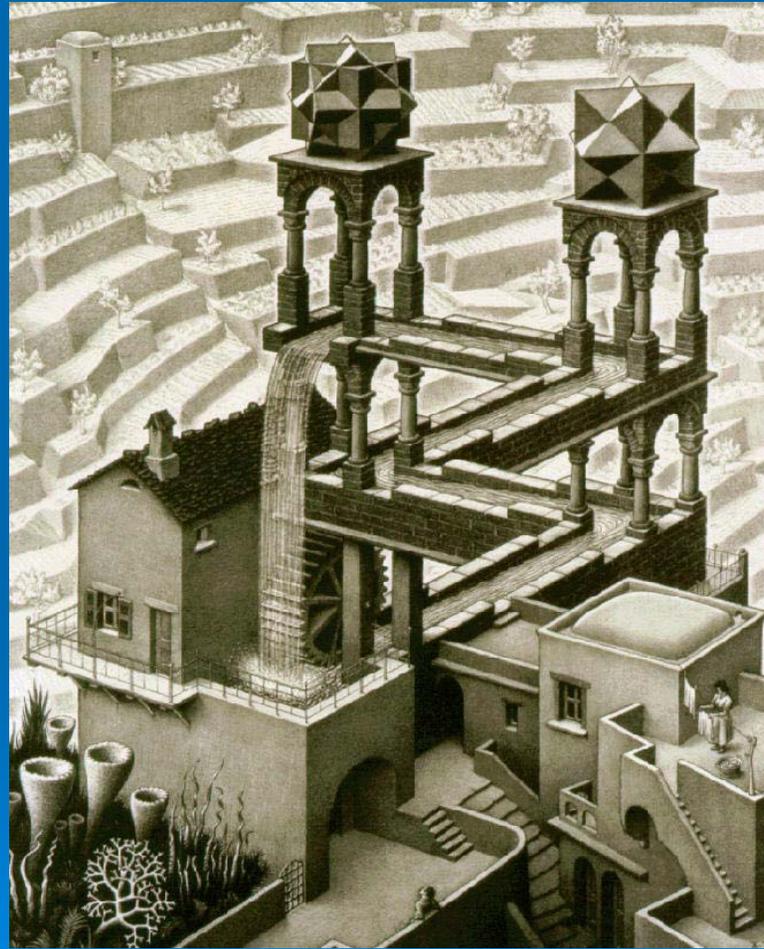
➤ Resource Stewardship

- Ecosystem protection and improvement
 - Kings River Fisheries Management Program

Looks Familiar



Solution to Our Water Supply Problems



Agenda Item 10

Resource Management Strategies

Tulare 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

Regional Response Strategy

Example - Upper Kings River IRWMP

➤ Reduce Water Demand

- Increase agricultural water use efficiency.
 - Mobile irrigation labs

➤ Improve Water Quality

➤ Resource Stewardship

- Ecosystem protection and improvement
 - Kings River Fisheries Management Program

Regional Report Contact Information

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