



WATER FOR THE 21st CENTURY ECONOMY AND ENVIRONMENT

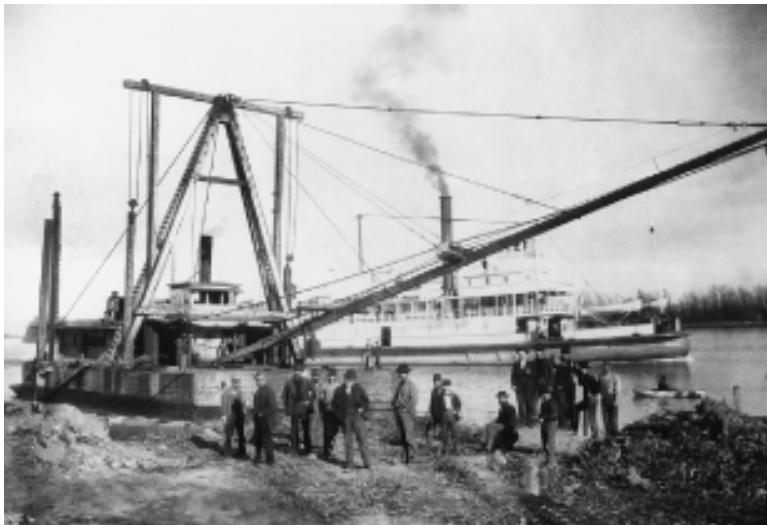
Santa Ana River Watershed Conference

April 11, 2013

Historical Context

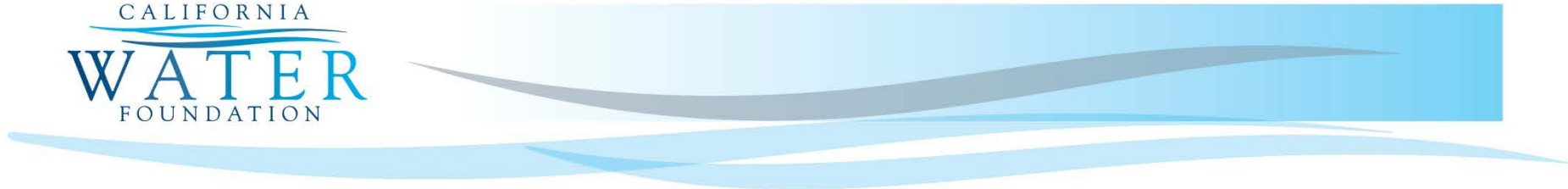
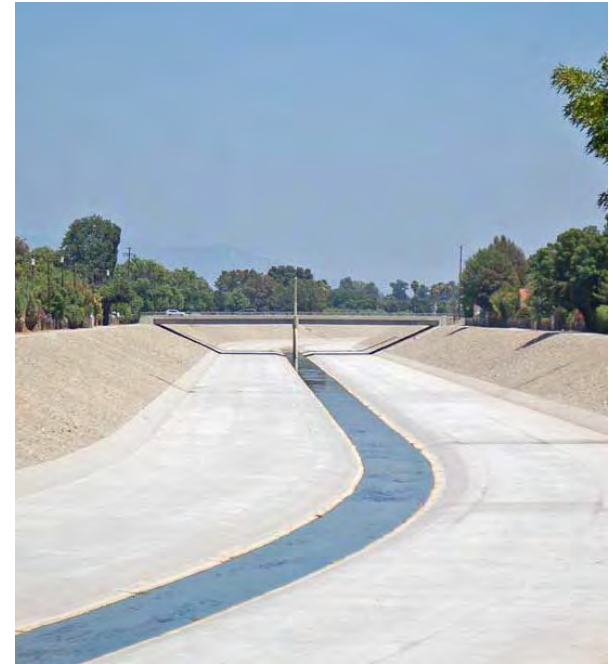


- Swamp and Overflow Act
- State and Central Valley Flood Systems
- Water System Development

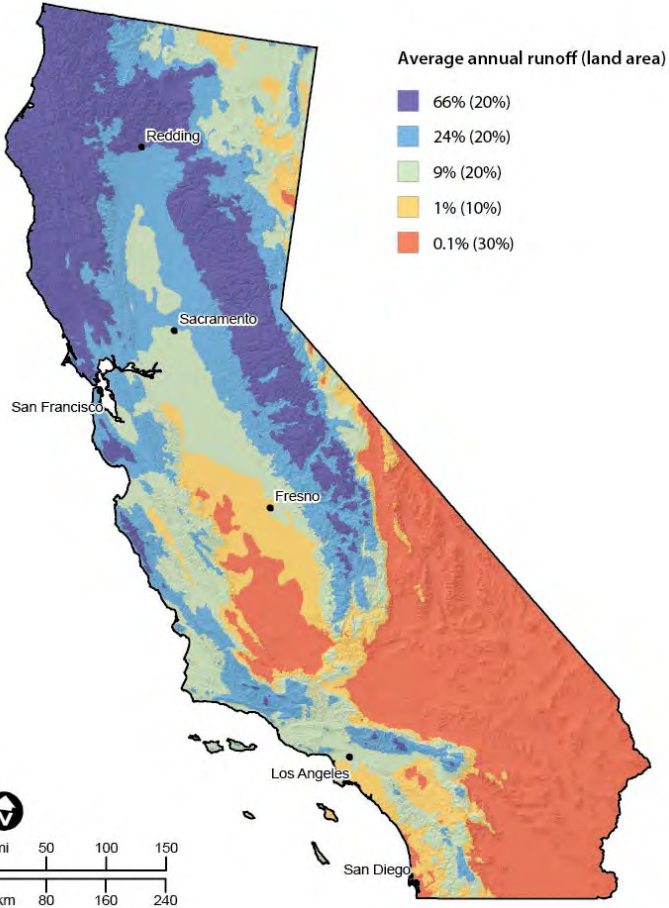


Historical Context

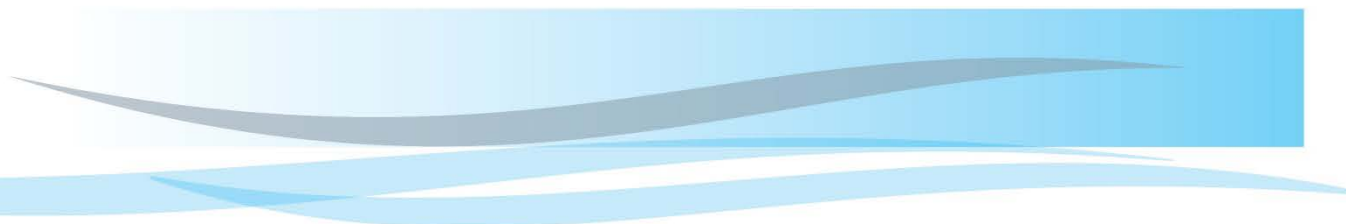
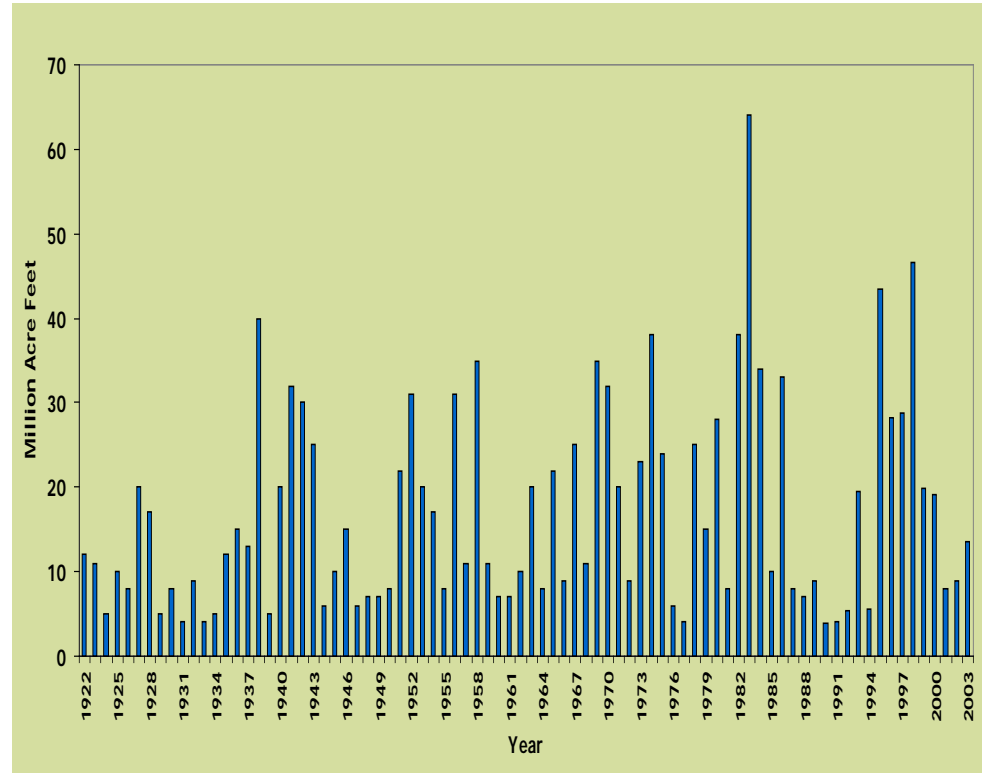
Adaptability?



Water Variability and Use



*Yearly Total Delta Outflow
(Calendar Year)*



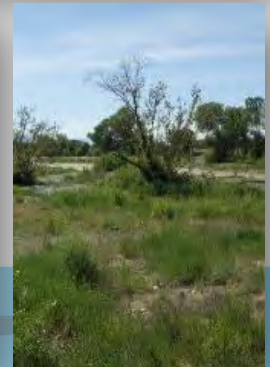
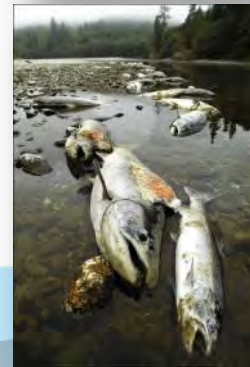
California Water Systems



- Fueled California economy
- All had unintended consequences
- All are less reliable today

Water System in Crisis

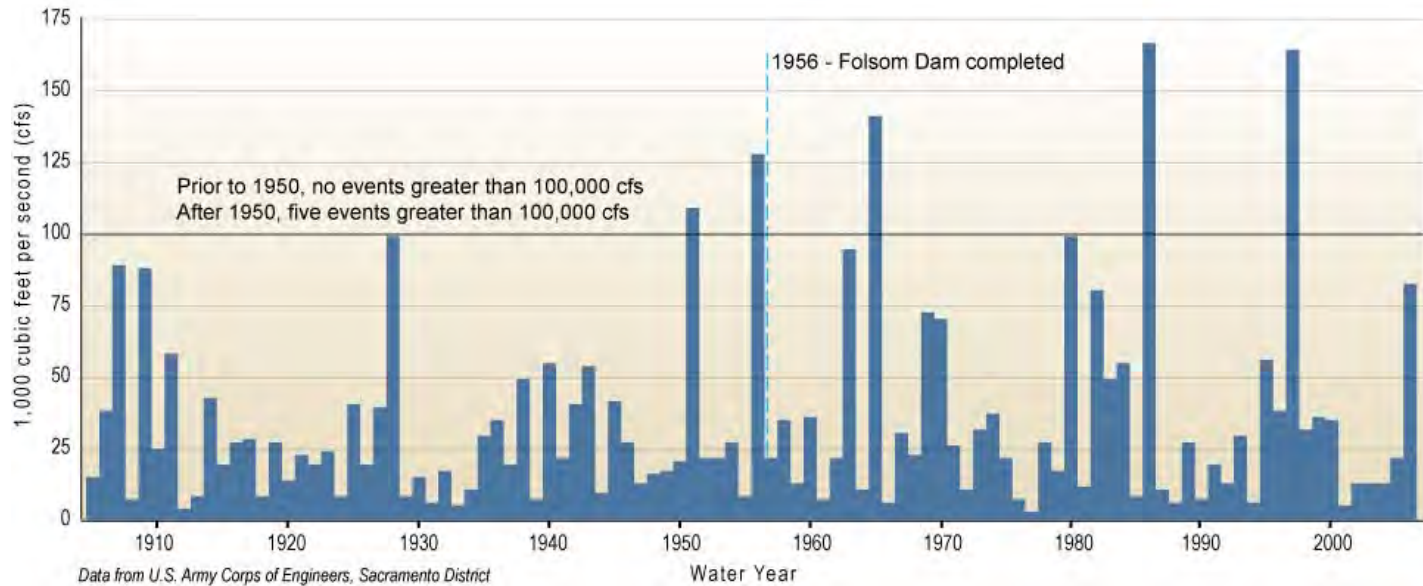
- Increasing population
- Aging infrastructure
- Groundwater overdraft
- Degraded ecosystems
- Increasing conflict
- Uncertainty due to climate change



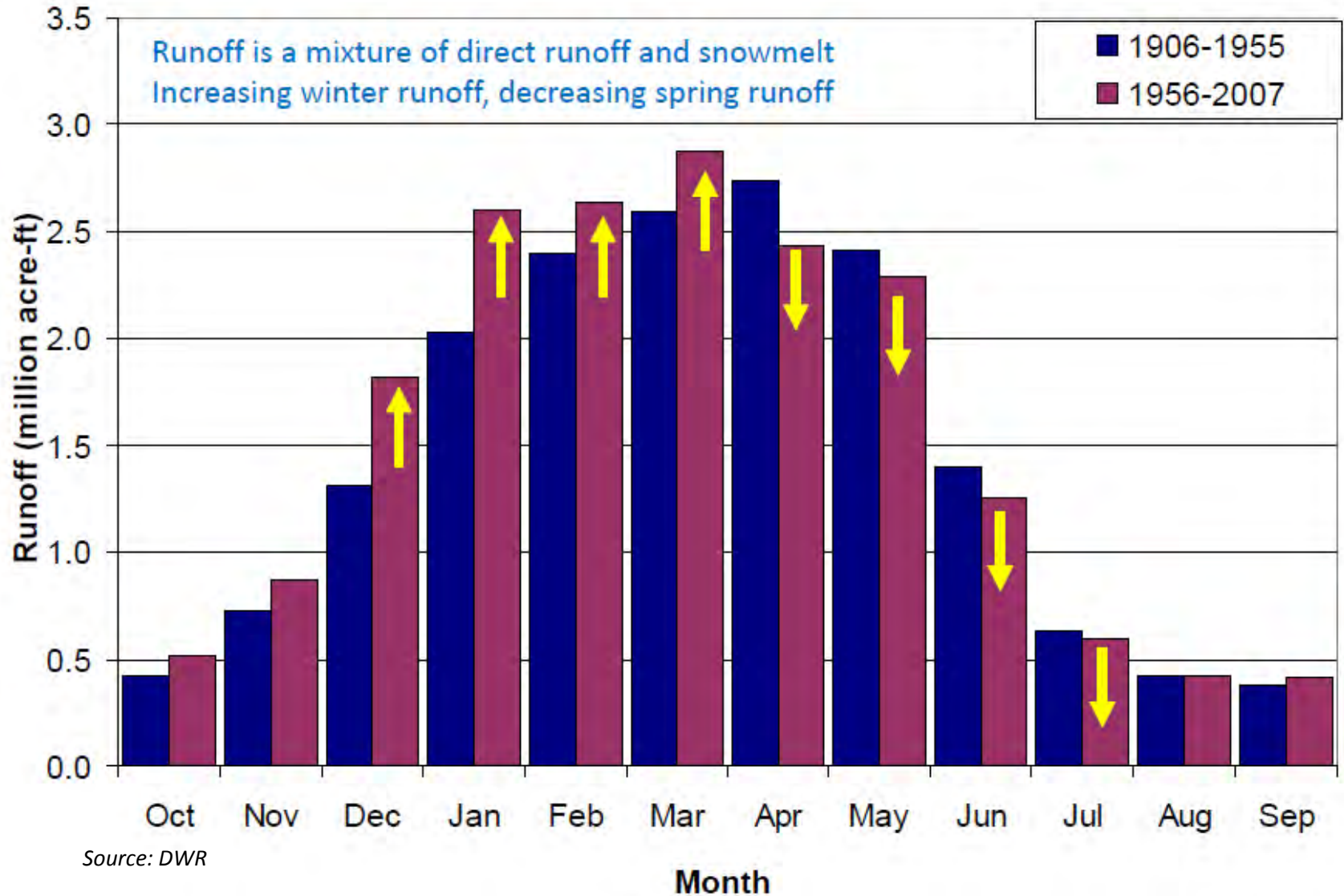
American River Runoff Annual Maximum 3-Day Flow



The five highest floods on record of the American River have occurred since 1950.



Monthly Average Runoff of Sacramento River System



Australian 'Big Dry' in CA?

\$500 Billion Total negative economic impact

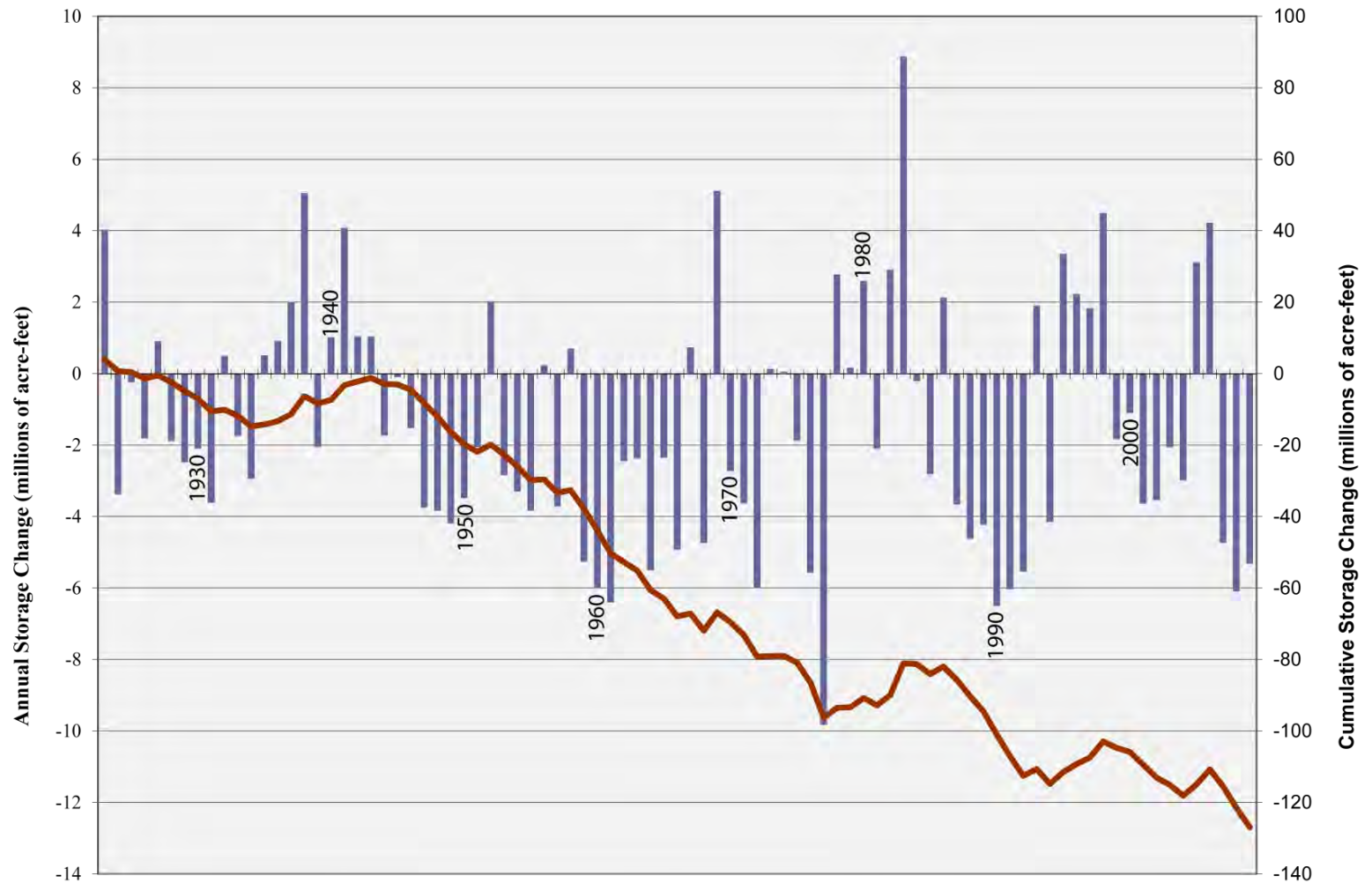
1.6 Percent Reduction in GDP growth

114,000 Jobs lost

30 Percent Reduced agricultural output



Change in Groundwater Storage for the Central Valley



Source:
RMC analysis of C2V5IM historical simulation results, 2012.

Annual Storage Change

Cumulative Storage Change

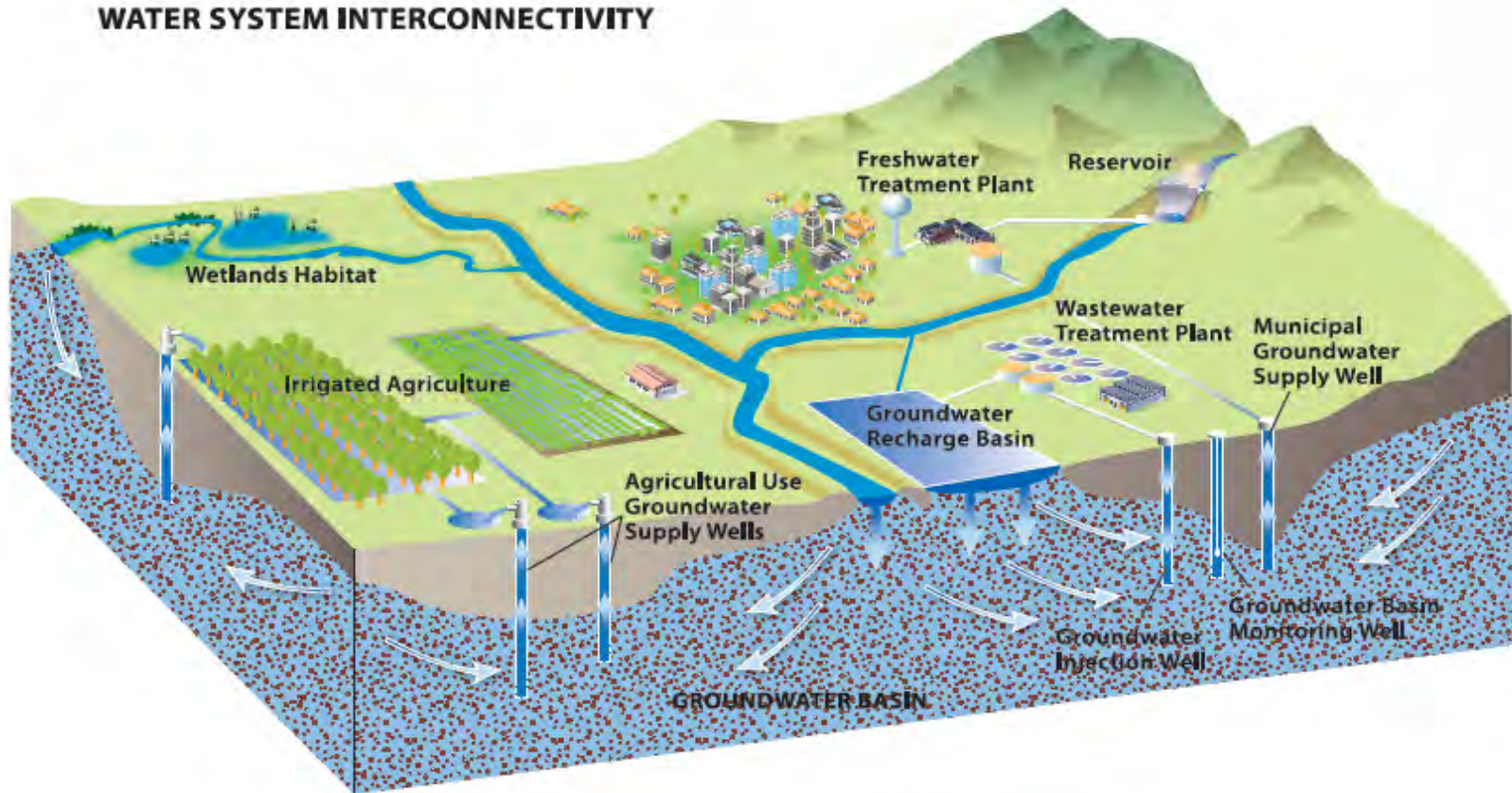
Solving California's Water Crisis

- No single strategy can meet all needs
- Integrated, diverse strategies contribute to sustainable solutions
- Water management actions and issues are interconnected
- Manage water as a natural resource



Integrated Water Management

WATER SYSTEM INTERCONNECTIVITY



California Water Foundation

Achieving sustainable water management through:

1. Integrated Water Management
2. Groundwater Management
3. Urban Water Use Efficiency
4. Agricultural Water Use Efficiency
5. Stormwater Capture
6. Recycled Water
7. Reservoir Reoperation
8. Flood Management



Water Management Opportunities

- **Water Use Efficiency** – 5.0 MAF
 - Urban efficiency – 2.1 MAF
 - Agricultural efficiency – 0.6 MAF
 - Reuse and recycling – 1.5 MAF
 - Stormwater capture - 0.8 MAF
- **Conjunctive management and groundwater storage** – 1.0 MAF

*CWF solutions
could provide
California with
an additional 6
MAF of water
each year*

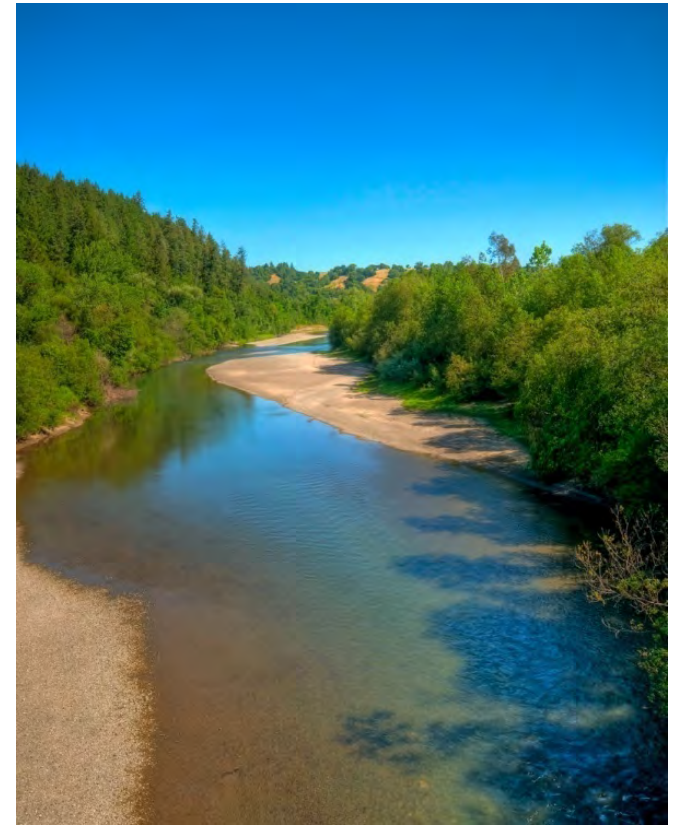
Sustainability

- Resilient ecosystems
- Diverse and adaptable water supply
- Stable funding and investment
- Meet current and future economic and ecosystem water needs



Future of Sustainable Water Management

- Significant opportunities exist, but new approaches are needed
- Investment in innovative new technologies
- New policies that modernize regulation and management
- Some are already paving the way with innovative solutions



Regional Investment Strategy

- Invest in regional solutions
- Test new innovative tools and technologies
- Create partnerships with progressive water agencies
- Promote benefits to a broader audience



Sustainable Water Management Profile

- Method for regional water managers to better understand their water supply risk and guide investment decisions
- Using quantifiable indicators, assess the level of a region's water management sustainability
- Promote actions, investment and improvement over time

Sustainable Water Management Profile

- Develop and pilot test the new tool with Sonoma County Water Agency
- Learn and refine the tool
- Improve water management in Sonoma county
- Promote and apply in other regions
- Engage private sector



WaterSmart Software

New Tools to Encourage Conservation

- One-year pilot project with EBMUD
- Studies what effect personalized consumer education has on reducing water use
- Water use reports, developed by WaterSmart Software
- Provides comparisons to similar users and recommends tips to conserve water



EBMUD

Home Water Report
Account Number: 51038100001 See More Online: www.ebmud.com/mywater
Report Period: 03/08/12-05/08/12 Registration Code: CHEA33

Your WaterScore

Hi, Louise! Thanks for paying attention to your home water use.

Great

YOU 5,236 gal
Efficient Neighbors 5,984 gal
Average Neighbors 6,076 gal

Gallons of water used in the last two months

Congratulations! Your household is one of the most water-efficient homes in the EBMUD service area. Keep up the great work.

Have questions or changes? Contact us.

Ask Us Got water questions?
The East Bay Municipal Utility District can help.
CALL 1-866-40-EBMUD
EMAIL wtrcsrv@ebmud.com
ONLINE www.ebmud.com/mywater

3 Suggestions For You

WaterSmart Home Survey Kit
EBMUD's kit takes you step-by-step through your home and landscape:

1. Locate leaks (dye tablets included)
2. Measure flow rates (flow bag included)
3. Evaluate water use.
4. Achieve savings!

Receive free devices w/ returned survey.
Order your kit today:
Call 1-866-40-EBMUD

Stop a Leaking Toilet
Did you know a silent toilet leak could waste up to 7,000 gallons of water per month?
To check for leaks, put food coloring in the tank. Do not flush. Check the toilet bowl ten minutes later. If you see color in the bowl, the tank has a leak - most likely from a worn flapper valve.
Check today. It's quick, easy, and can save you a bundle.

Take a WaterSmart Shower
Enjoy your shower the WaterSmart way. Turn off the water while you shampoo or soap up. Turn it back on when you're ready to rinse.
Save about 11,000 gallons of water per year when 2 people do this.
See more quick tips online.

Contact us: 1-866-40-EBMUD or www.ebmud.com/mywater or wtrcsrv@ebmud.com

Knaggs Ranch

New Approaches to Flood Management

- Loss of habitat caused fish populations decline, increased conflicts
- Goal is to show flood control, farming, and fish benefit from the same projects



PROJECT LOCATION:

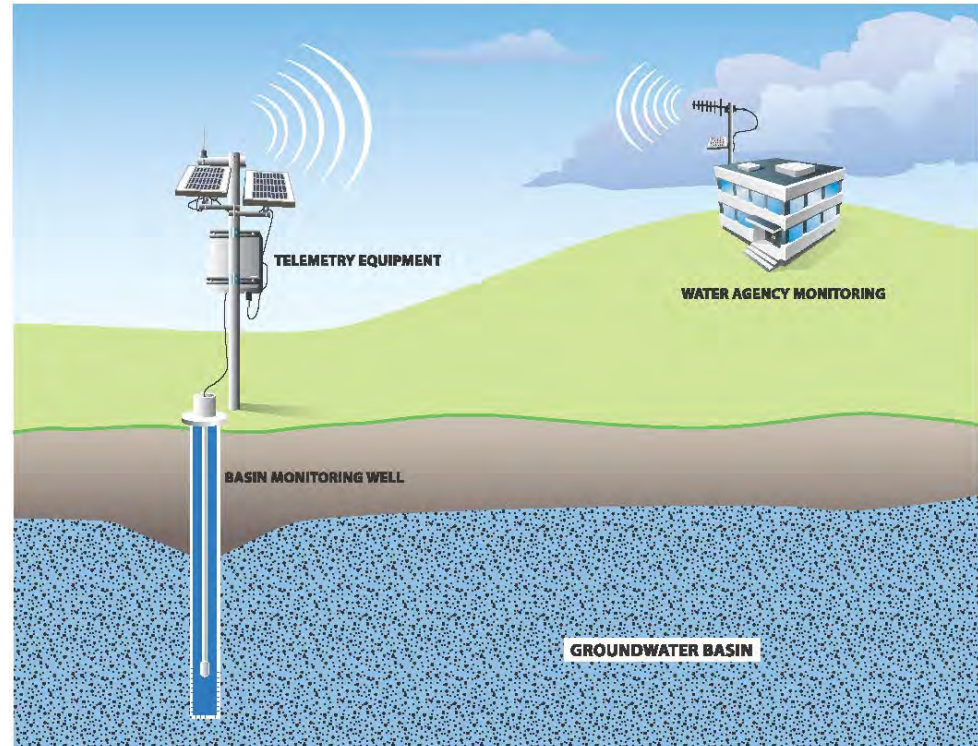


Knaggs Ranch, Yolo Bypass
Sacramento, CA

Kings River Conservation District

Satellite Telemetry Project Provides Data for Better Groundwater Management

- Utilizes a Satellite Internet Telemetry system to monitor groundwater basin
- Units remit real-time daily readings via satellite to KRCD
- Provides continuous, long-term data to monitor trends in the basin



Kings River Conservation District

Satellite Telemetry Project Provides Data for Better Groundwater Management

- Must adapt to changing weather patterns: more extreme floods and droughts
- To deal with volatility, water managers need more frequent and more accurate data
- KRCD could serve as model for other CA agencies





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integration and innovation**

