



EXTREME CLIMATE RISKS AND CALIFORNIA'S FUTURE





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Regional Water Collaboration to
Meet Climate Challenges



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Debbie Davis

Governor's Office of Planning and Research



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Martha Davis
Inland Empire Utilities District



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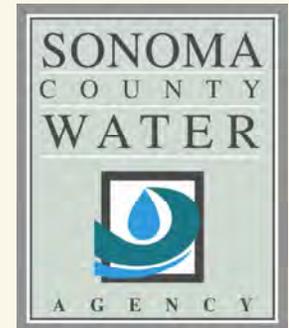


Regional Water Collaboration to Meet Climate Challenges

Grant Davis

General Manager, Sonoma County Water Agency

Sonoma County Water Agency Grant Davis, General Manager

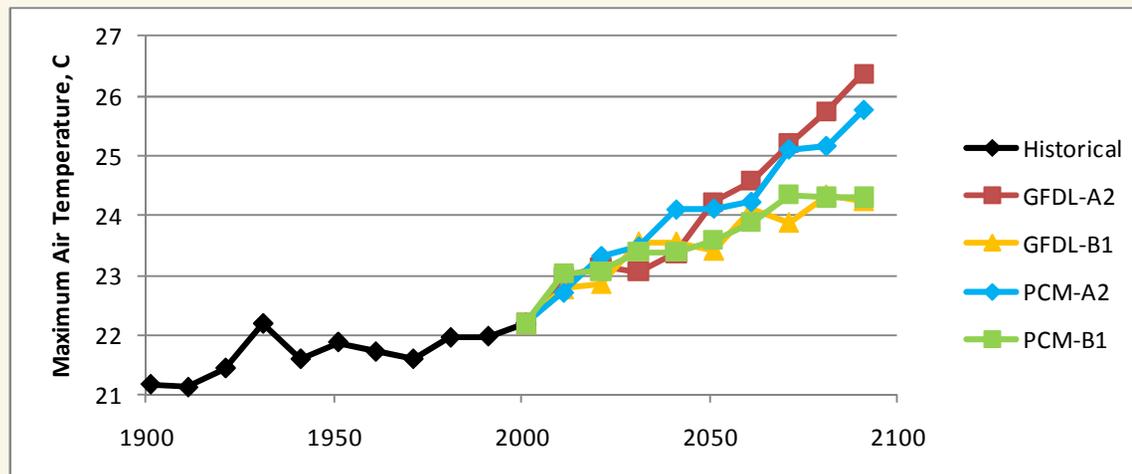
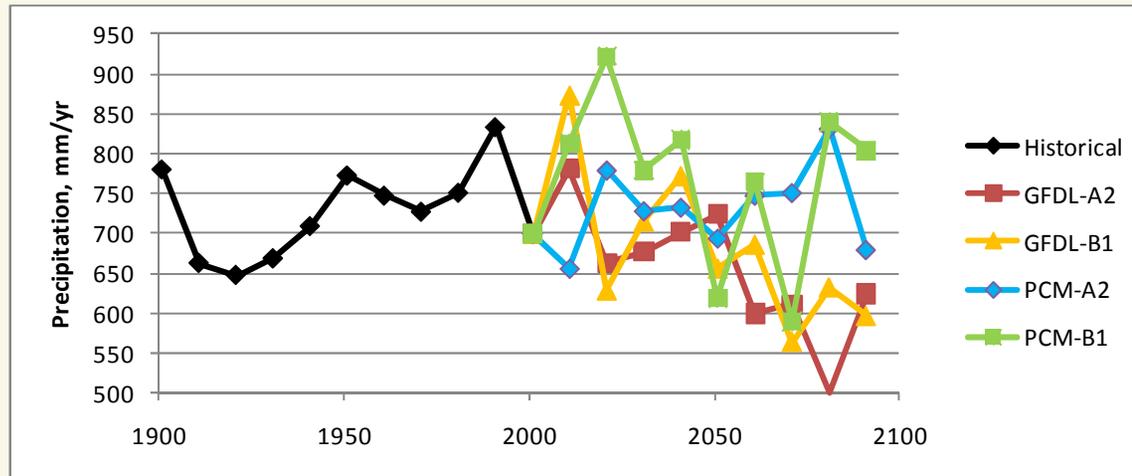


grant.davis@scwa.ca.gov

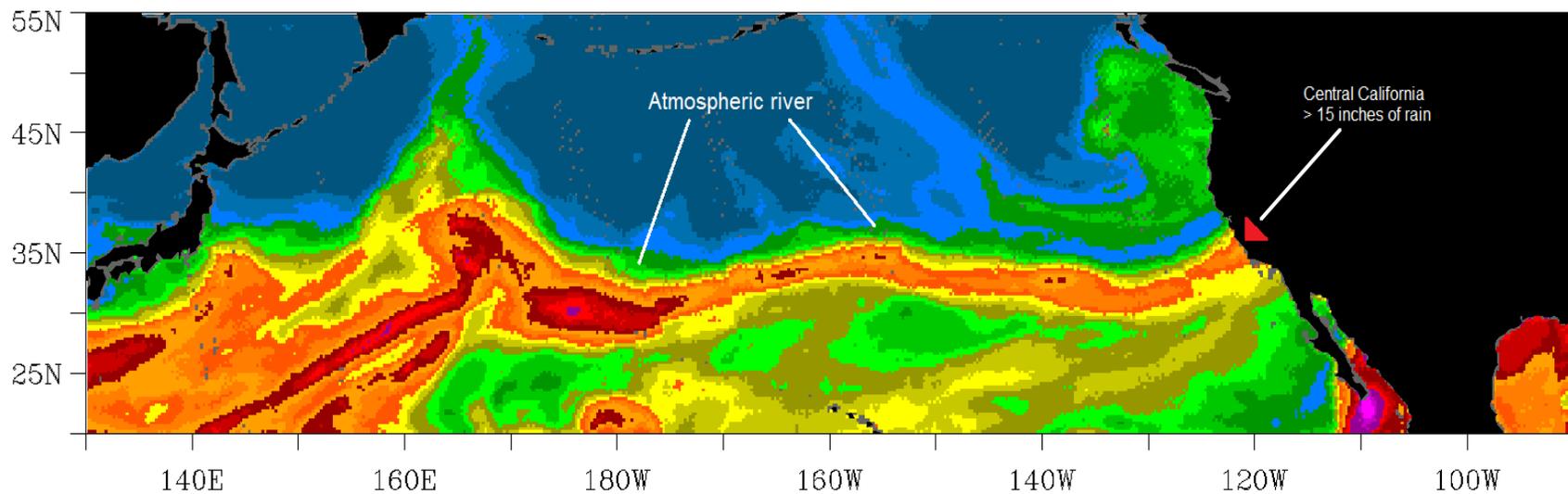
Russian River Watershed



Climate for the Russian River Basin: Current and Future Conditions



Atmospheric Rivers – Intense Rainfall in Specific Locations



NOAA/OAR/NWS Hydrometeorology Testbed, (Ralph and Dettinger, 2011)

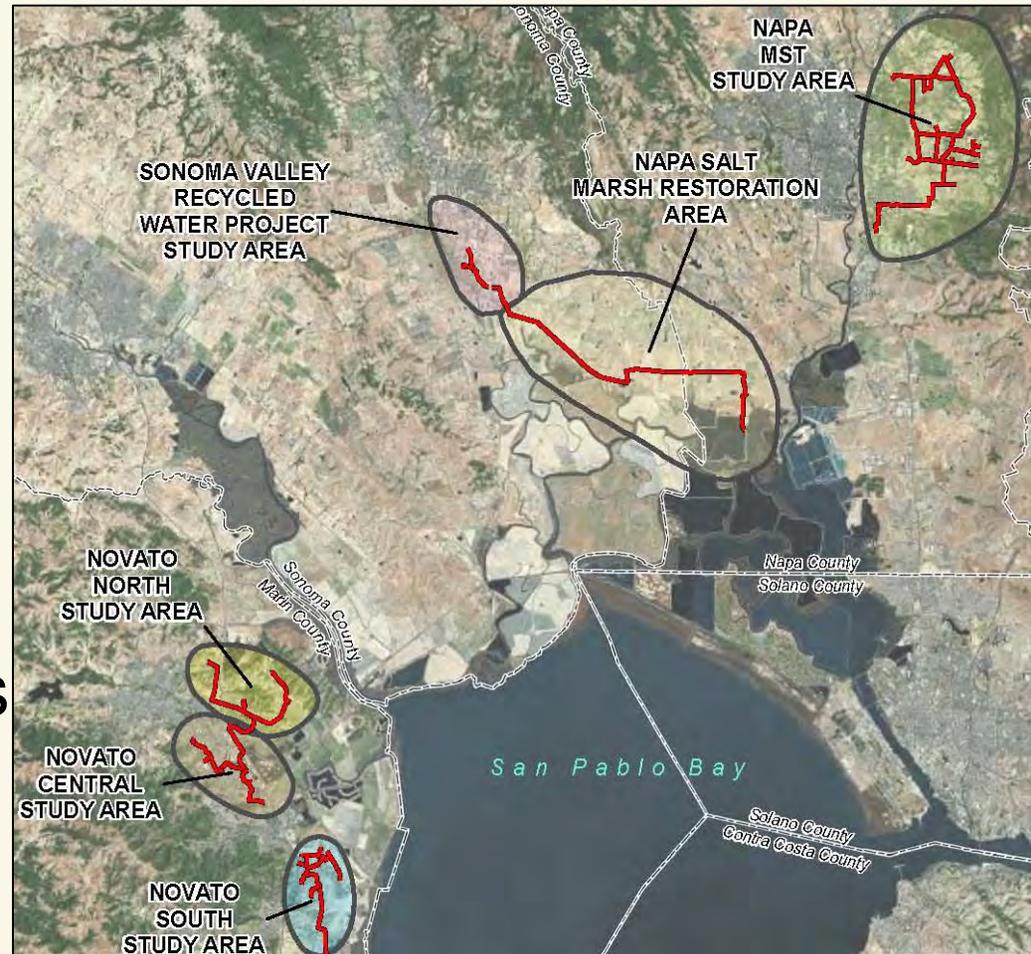
Adaptation Alternatives

- Revise river flow requirements to protect wildlife
- Re-operate reservoirs to improve management
- Manage groundwater
- Recycle water
- Use water efficiently

Adaptation requires regional solutions that integrate water supply, flood protection, sanitation, fisheries and agricultural needs.

Regional Water Reuse North Bay Water Reuse Authority

- 3,800 acre-feet per year
- 46 miles of pipeline
- Up to 1,700 acre-feet for ecosystems

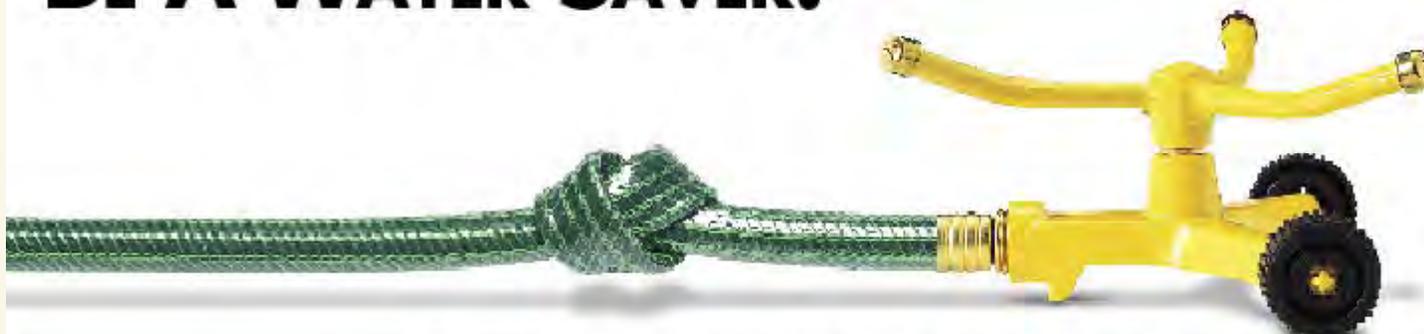


Adaptation Challenges

- Long range planning
- Infrastructure financing
- Regional collaboration
- Protecting endangered fish
- Providing for overlooked communities

A strong Federal/State/Local partnership will be essential to meeting these challenges.

BE A WATER SAVER.



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Coordinating Across the Region Sierra Water Workgroup

Elizabeth Mansfield
Sierra Water Workgroup

Sierra Water Workgroup Stakeholders

Integrated Regional Water Management Groups (11)

Upper Pitt River Watershed

Upper Feather River Watershed

Yuba River

Cosumnes, American, Bear and Yuba
Tahoe-Sierra

Tuolumne/Stanislaus

Inyo-Mono

Tahoe Sierra

Mokelumne Amador Calaveras

Yosemite Mariposa

Madera

Southern Sierra

Regional Organizations:

Sierra Nevada Alliance

Sierra Business Council

American Rivers

Mountain Counties Water
Resource Association

California Tahoe Conservancy

Sierra Nevada Conservancy

Department of Water Resources

Department of Fish & Game

Regional Council of Rural Counties

U.S. Forest Service

Sierra Water Workgroup Objectives

The group addresses water issues of concern to the Sierra by:

- Coordinating amongst local and regional water plans;
- Exchanging information and tools for water and watershed management amongst stakeholders in the region;
- Serving as an information source regarding state and federal water policy issues for local governments, nonprofits, and other stakeholders;
- Advocating for Sierra water issues in state and federal legislative and administrative forums; and
- Raising the profile of the Sierra to increase private, state and federal funding opportunities;



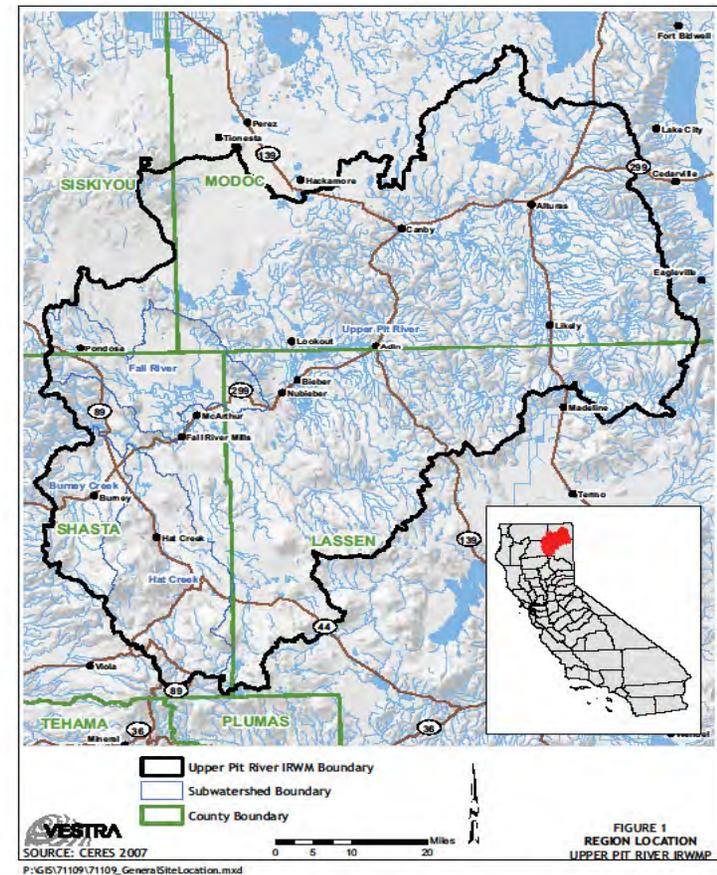
Upper Pit River IRWM Region

Coordination: TAC to assess climate vulnerabilities on a regional basis with VIC model (strong Federal/State representation)

Planning: Initial stages of regional planning approach in coordination with U.C. San Diego

Projects: Early in the process, no specific project identified

Challenge: Differing views and opinions on climate change



Contact: *Katie Burdick*, Executive Director
katie@burdico.net

Upper Feather River IRWM Region

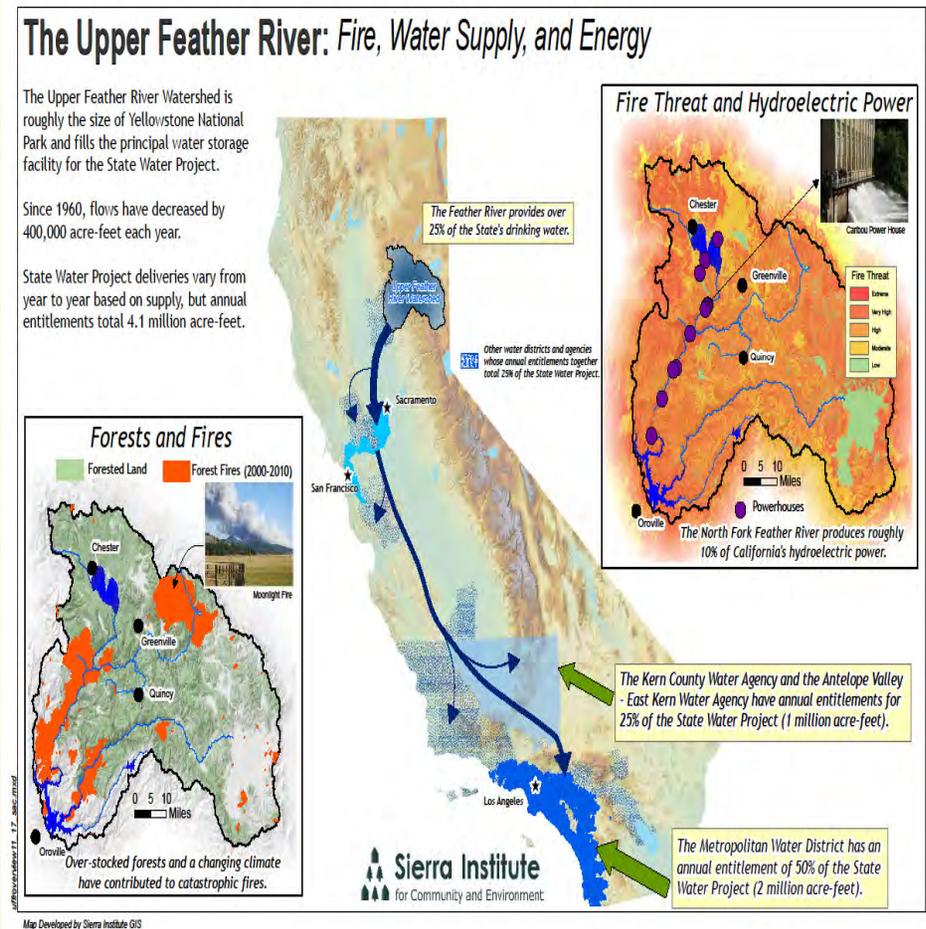
Coordination: General Plan integration with water elements, agriculture and forest management

Planning: Updating 2005 Plan with components of the Counties Climate Action Plan

Projects: Meadow restoration and forest management projects

Challenge: Addressing climate adaptation with land use owners and local government/water agencies, need more collaboration

Contact: *Randy Wilson*, Plumas County
RandyWilson@countyofplumas.com



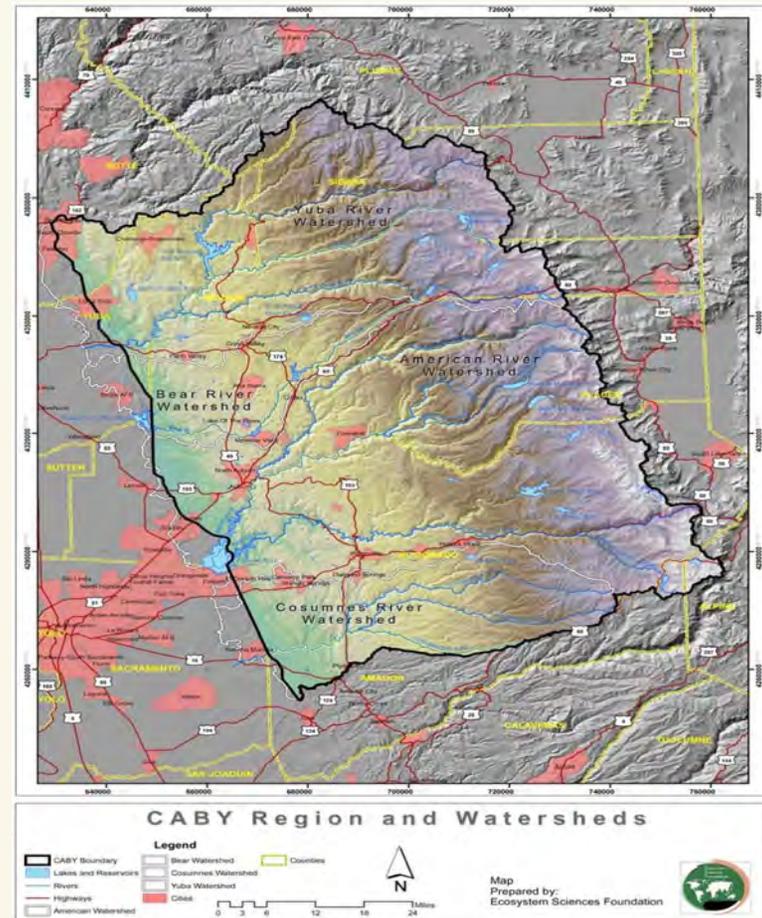
CABY IRWM Region

Coordination: TAC to assess climate vulnerabilities with VIC model (includes local water agencies)

Planning: Stakeholder group to address climate impacts on land use/water nexus, specifically habitat connectivity (local government /water agencies)

Projects: Using climate criteria for project evaluation & discussion of alternate projects

Challenge: Funding for modeling/data collection



Contact: *Katie Burdick*, Executive Director
katie@burdico.net

Tuolumne/Stanislaus IRWM Region

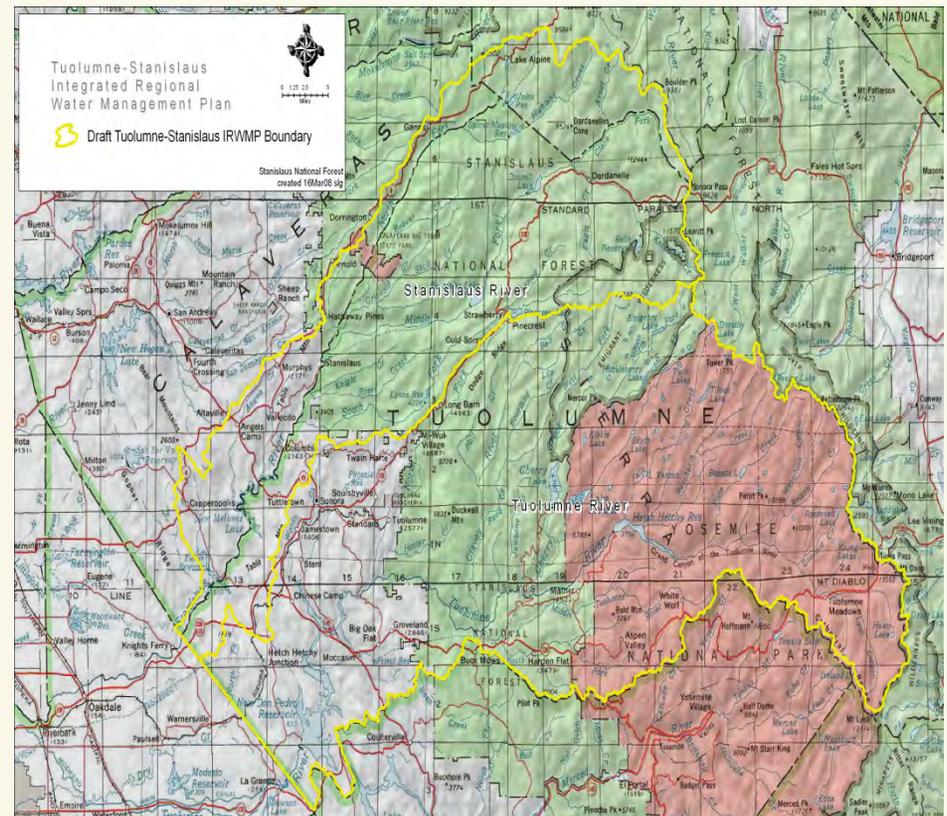
Coordination: Climate vulnerabilities will be addressed through the IRWMP, which includes local land use and water agencies

Planning: Approach will utilize agreed upon planning objectives and modeling to address climate change and advise management actions

Projects: Conservation projects and policies to ensure efficient use of water

Challenge: Consensus structure, DAC Region

Contact: *Pete Kampa*, Tuolumne PUD
pkampa@tuolumneutilities.com
John Mills, sixbit@sonnet.com



Tahoe Sierra IRWM Region

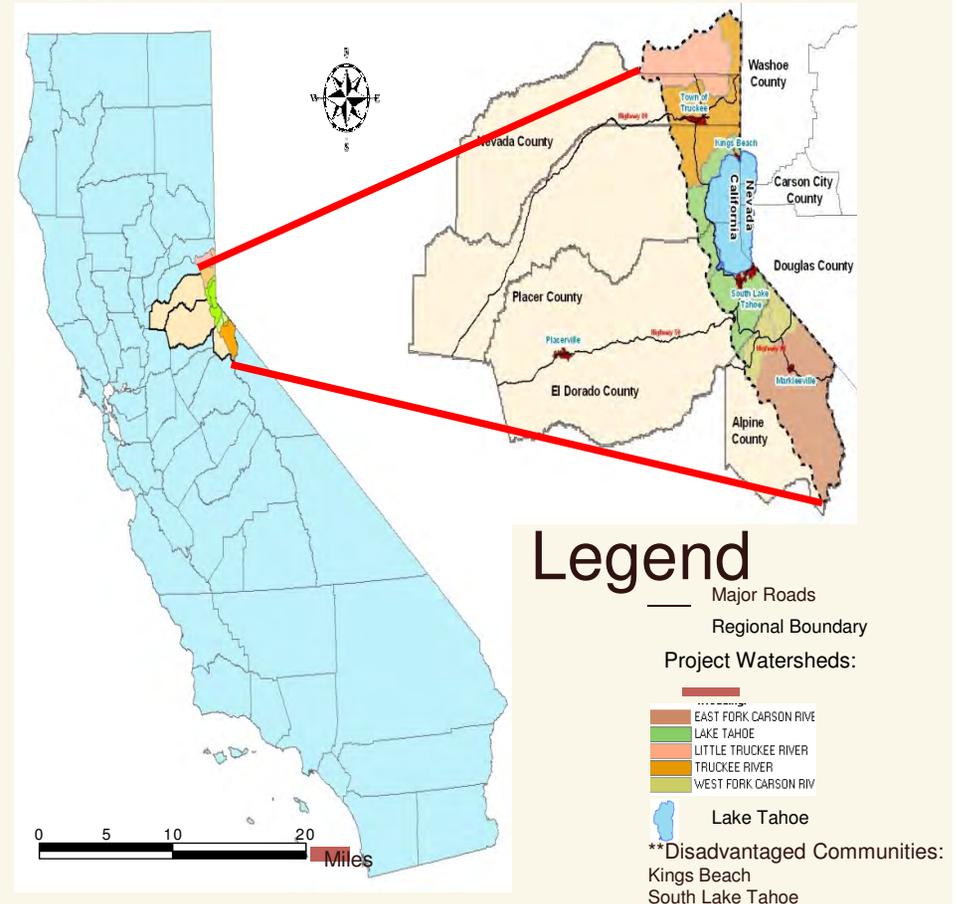
Coordination: Climate vulnerabilities assessment will be addressed through the IRWMG, which includes local land use and water agencies

Planning: Gathering existing data; identifying gaps, assessing current projects

Projects: Identifying new projects to address climate adaptation

Challenge: Lack of integration with existing studies; funding

Contact: *Lynn Nolan*, South Tahoe PUD
lnolan@stpuud.dst.ca.us



Yosemite-Mariposa IRWM Region

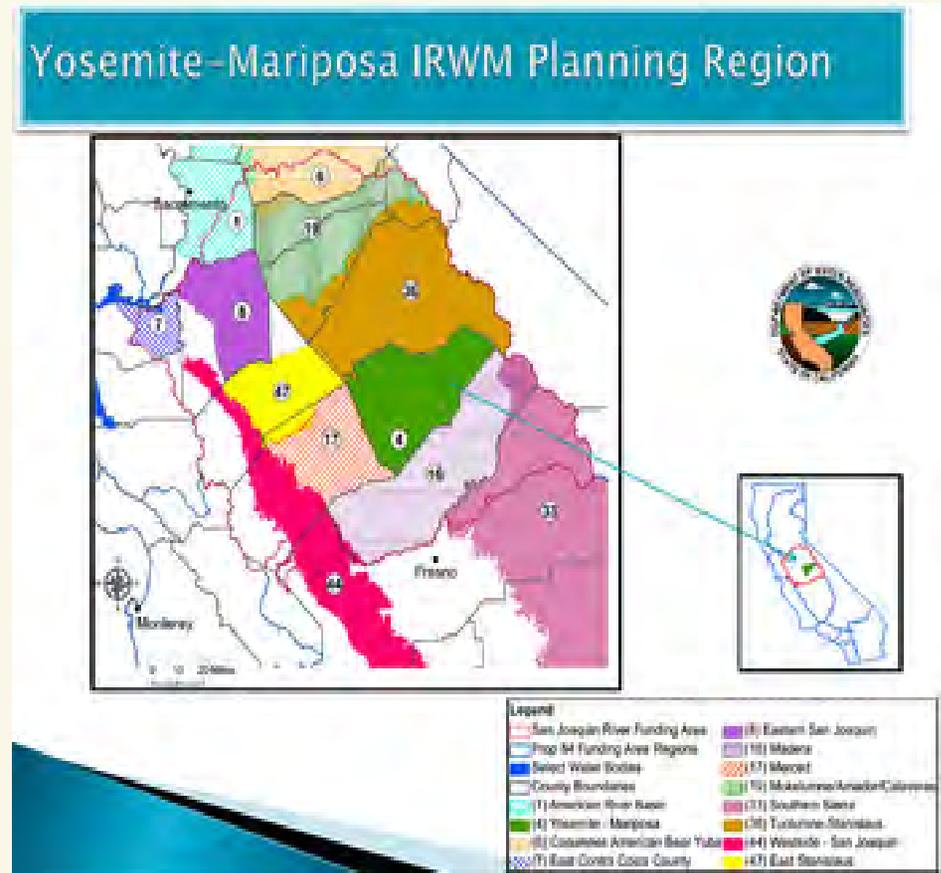
Coordination: Climate vulnerabilities will be addressed through the IRWMMG.

Planning: Initial stages of regional planning, watershed lands are shared with federal agencies (Yosemite Nat'l Park, BLM, Forest Service) and private entities

Projects: enhancement and protection of upper watershed forests and meadow systems

Challenge: Funding, views and opinions on climate change

Contact: *Pat Garcia*, Mariposa RCD
mcrd@sti.net



Southern Sierra IRWM Region

Coordination: Working with Tulare Basin, includes 7 IRWM groups. Climate change subcommittee to coordinate approaches

Planning: In the early stages of assessing vulnerability to climate change

Projects: Kaweah River pilot project, others are also being identified

Challenge: Flooding impacts and reduction of water supply



Contact: *Kathy Wood*, Tulare Basin
kwoodmcloughlin@gmail.com

SWWG Future Actions

- Summit Discussion
 - Coordination on planning efforts/DAC challenges
 - Climate adaptation criteria and evaluation
 - Regional projects that cross IRWM boundaries
 - Sierra-wide climate change modeling



SWWG Summary

- Climate change will have a significant impact on the Sierra Region
- Many Sierra IRWM groups are in the initial stages of planning
- Funding and DAC's are challenges
- Coordination and integration of activities is key to region-wide success





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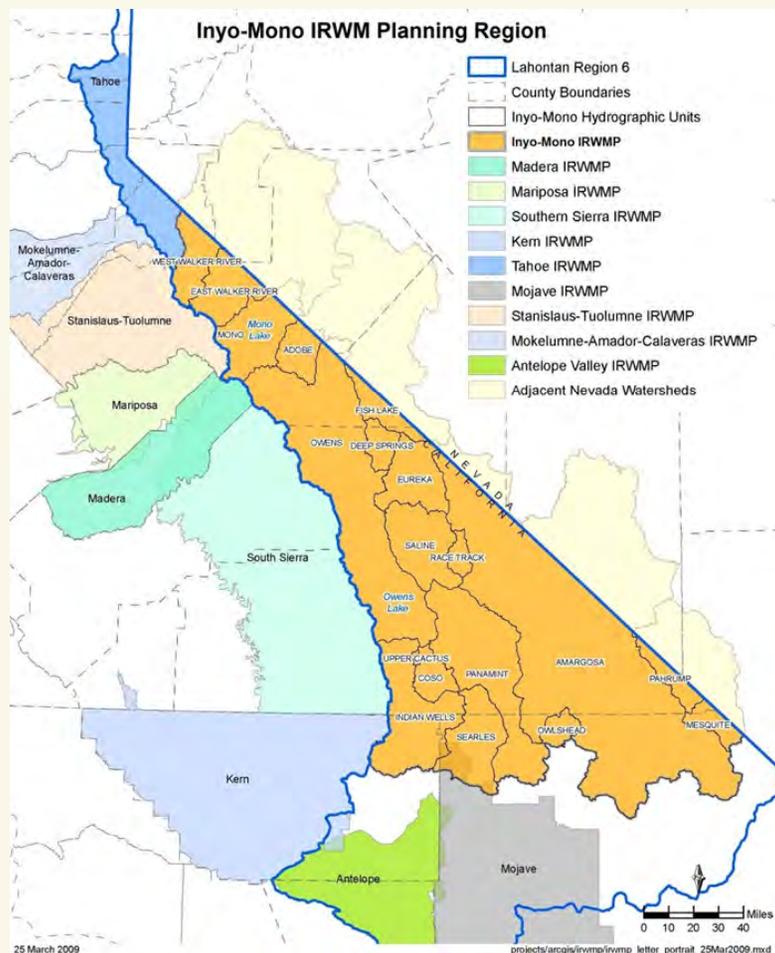




Regional Water Collaboration

Mark Drew
California Trout

Inyo-Mono IRWMP background: The Region



- ~11% of the state
- ~ 50% of Lahontan funding region
- Headwaters for local and City of LA water users
- Long history of water conflicts

Inyo-Mono IRWMP background: The Places



Water is key to local and distant livelihoods!

Inyo-Mono IRWMP background: The People



Inyo-Mono IRWMP background:

The timeline

2008

Launching of Inyo-Mono regional effort
Memorandum of Understanding: *100%
consensus decision making process!*

Launch outreach effort in earnest

2009

Region Acceptance Process application
and approval

Continued outreach

2010

Planning Grant Application submitted
First Inyo-Mono IRWM Plan completed and
submitted

State Water Plan Revision 2013

Continued outreach

2011 & 2012

Round 1 Implementation funds 7 projects

@, \$1.1 million

*DWR Climate Change Handbook
involvement*

State Water Plan Revision 2013

DAC Pilot Project

Round 2 Planning Grant

Continued outreach

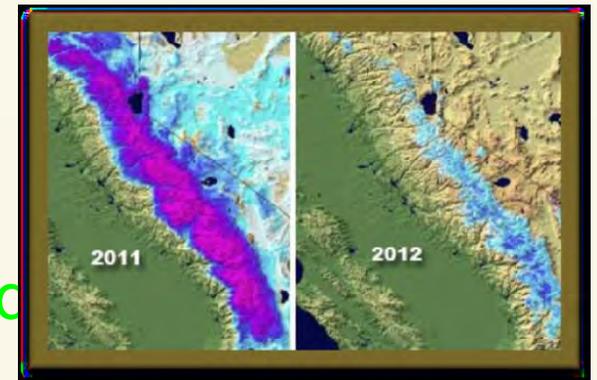
Building the foundation to integrate climate variability into the Inyo-Mono IRWM Program

- ❖ Communicate with local town and county representatives
- ❖ Engage stakeholders:
 - ❖ > 50 outreach meetings
 - ❖ ~ 40 regular RWMG meetings
- ❖ Ensure “buy in” of decision making process/governance



Integrating Climate Variability into the Inyo-Mono IRWM Program

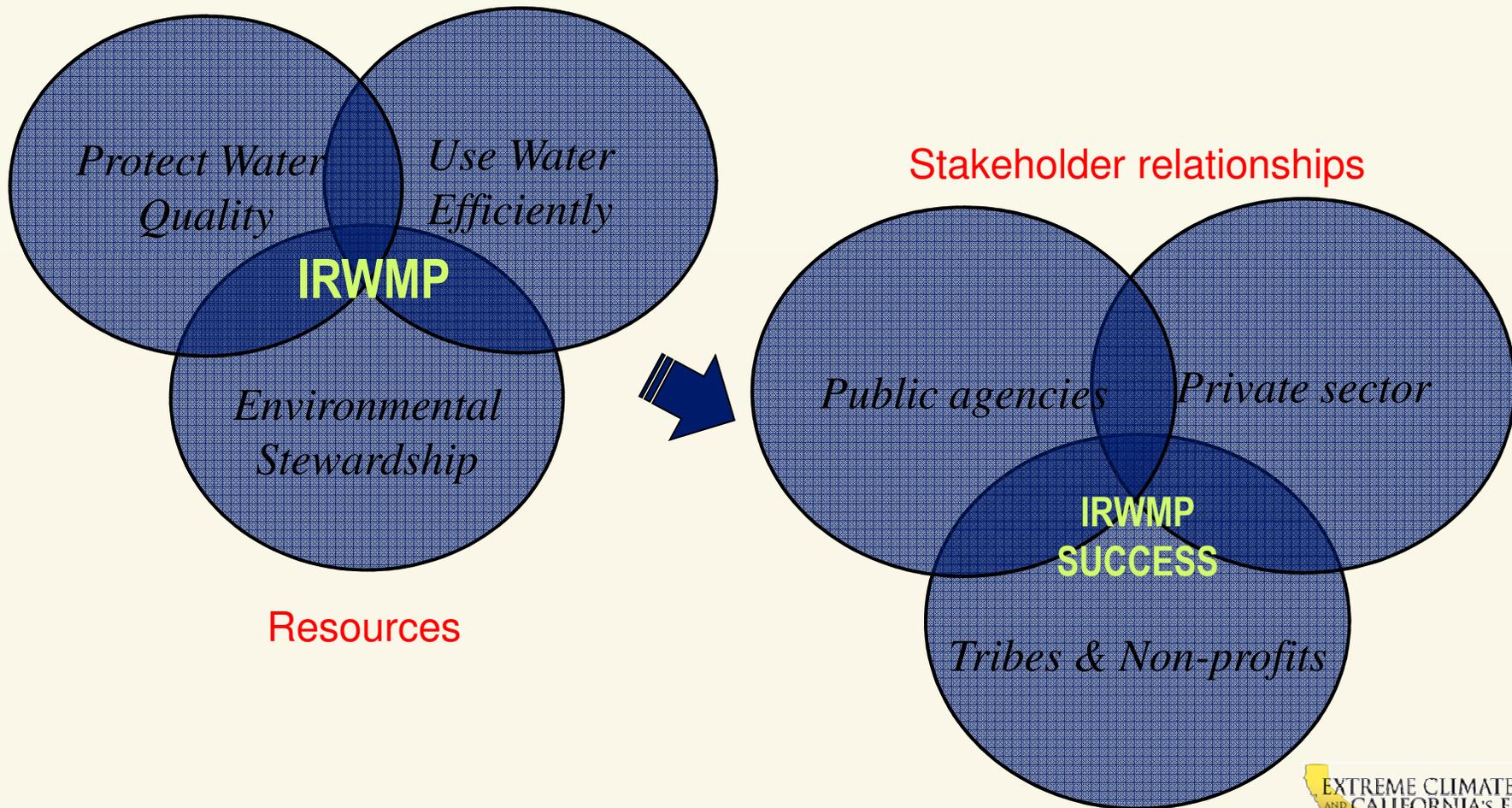
- ❖ Capitalize on local expertise
- ❖ Get involved with extra curricula endeavors
 - ❖ Regional and/or state-wide opportunities
 - ❖ Primary or secondary research
- ❖ Gap analysis
 - ❖ What are the existing data
 - ❖ What tools/models exist/are being used
 - ❖ Identify and secure appropriate tools
- ❖ Vulnerabilities assessment
- ❖ GHG accounting
- ❖ Scenarios analyses-WEAP



Lessons learned

- ❖ Create a vision and commitment for your region
- ❖ Insure transparency in all processes (Brown Act can help)
- ❖ Promote a sense of equity
- ❖ Take necessary time to respond to all concerns
- ❖ Sit in the drivers seat when possible

IRWM Programs are as much about managing relationships as managing resources!





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