Healthy Watersheds California:

A New Approach to Water Security

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New Financial Mechanisms to Leverage Natural Infrastructure for Water Solutions

Laurie Wayburn, President

California's Water System Relies on Both Natural and Built Infrastructure

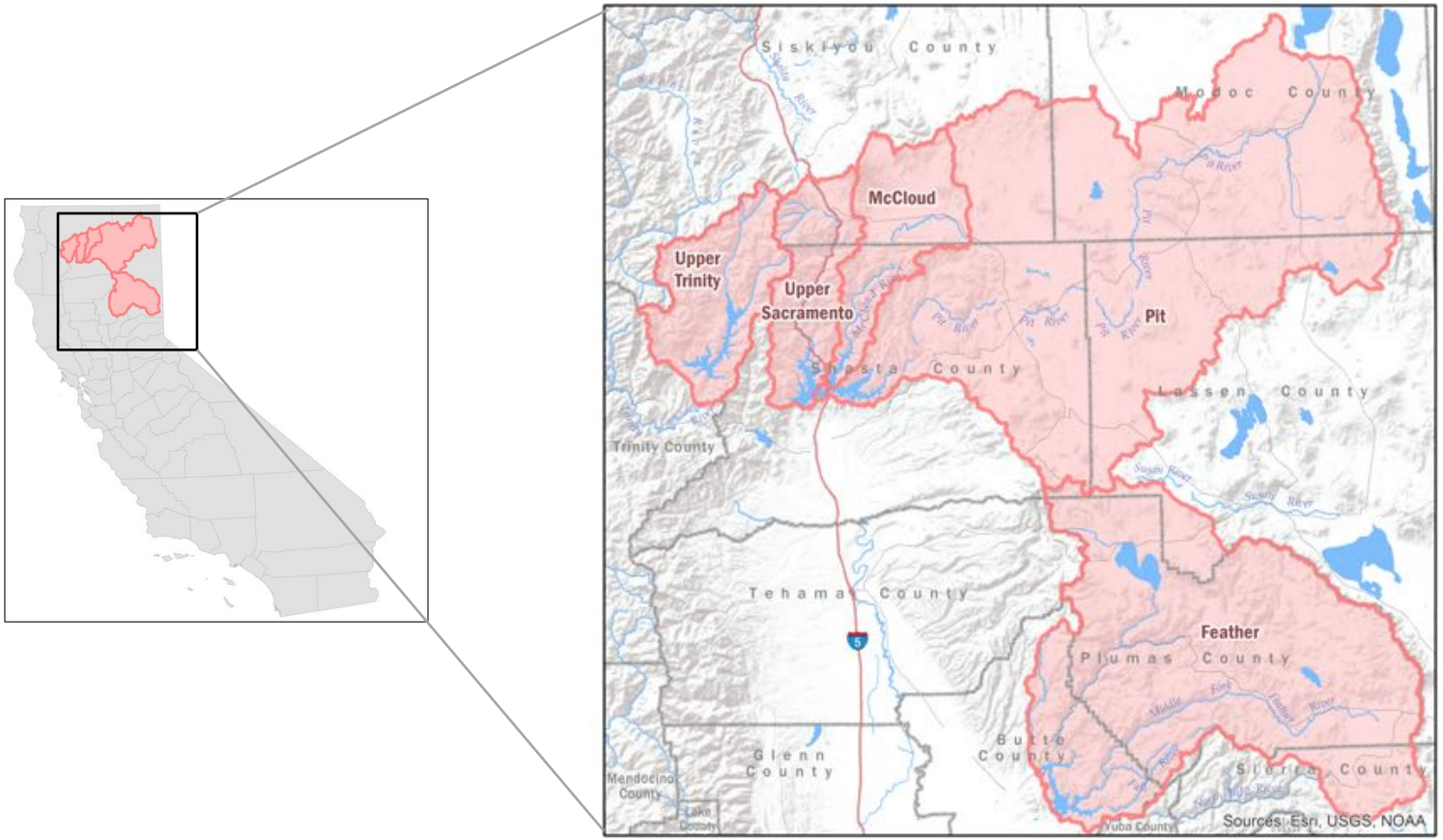
Five watersheds provide the vast majority of California's utilized water:

- 8M acres irrigated agriculture
- 48% of LA drinking water
- Drinking water for 25+ million people

As well as over 80% of freshwater to SF Bay

Watersheds Analyzed:

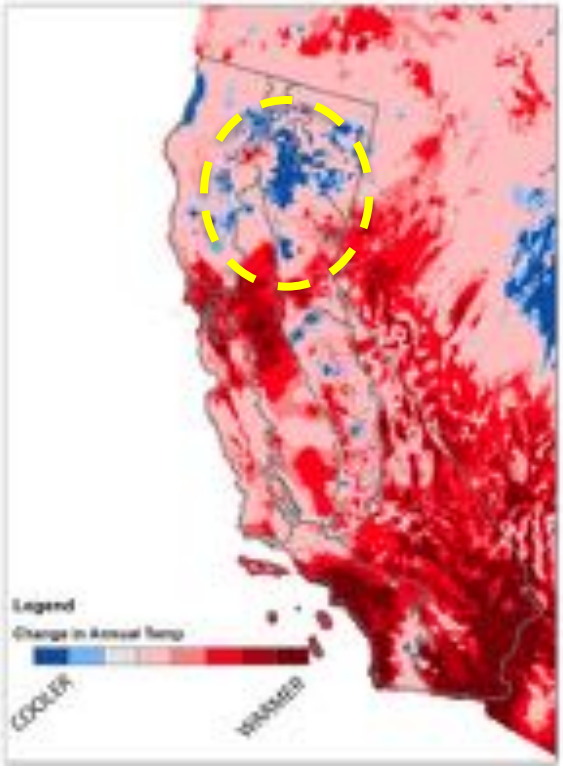
SWP; CVP main system feeders



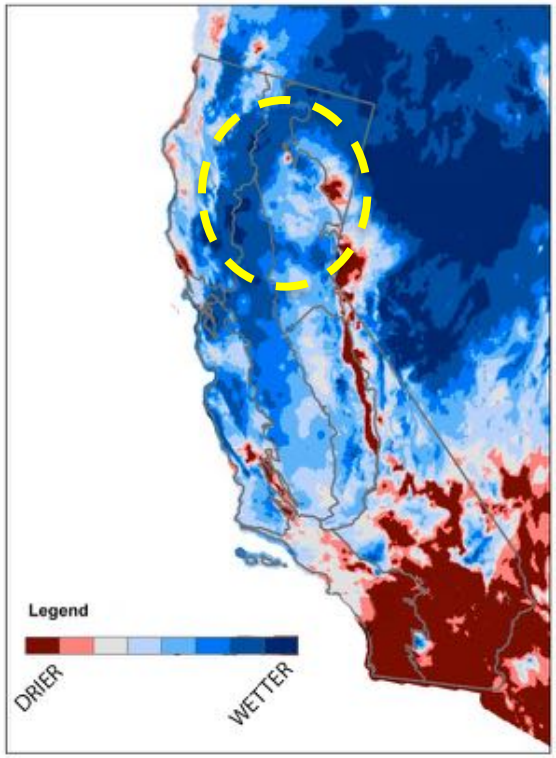
20th Century Climate Change in CA:

Projected to remain cooler & wetter than rest of California

Temperature Change:

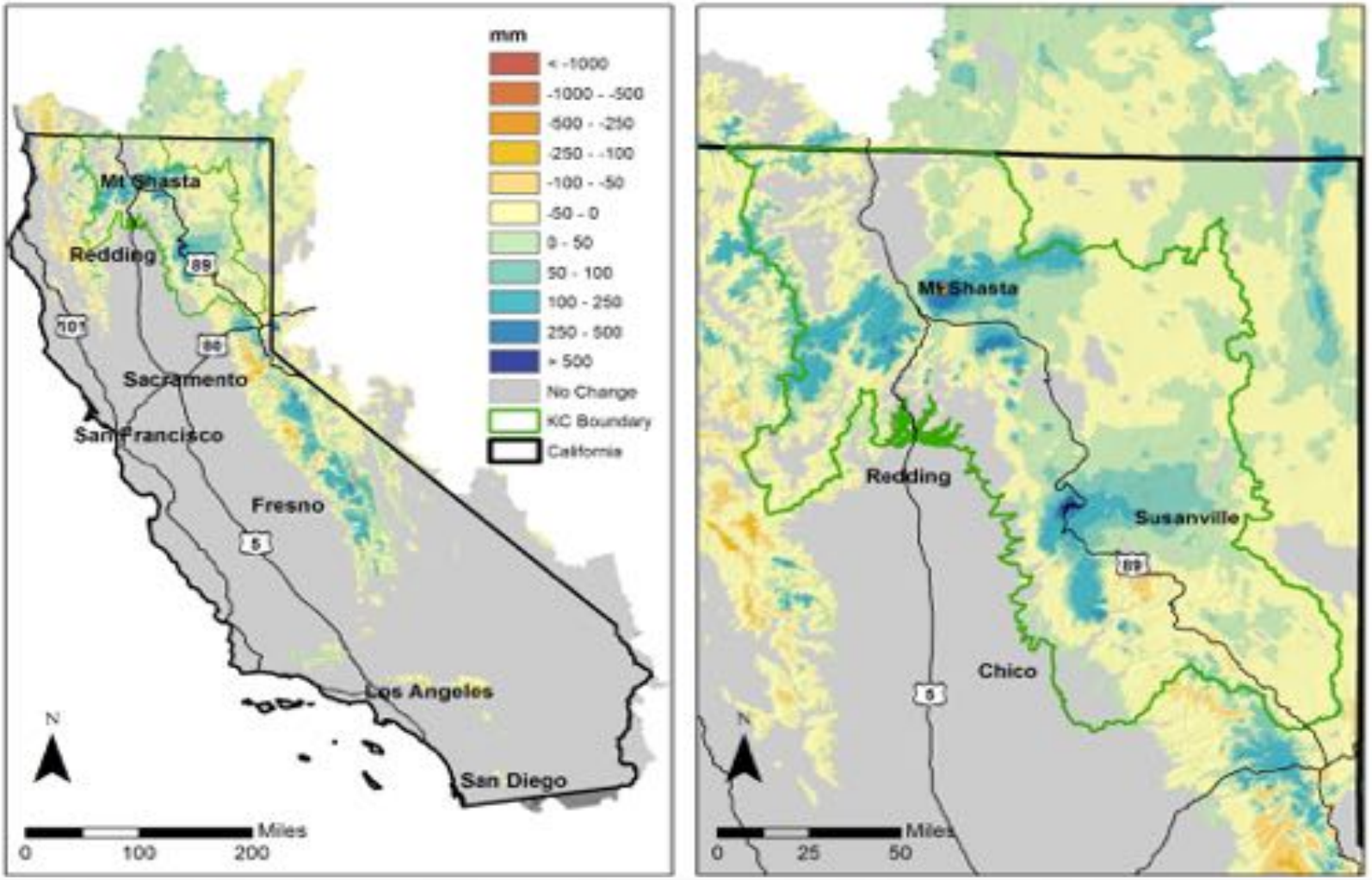


Precipitation Change:



Rappuciuolo, et al. 2014

April 1st Snowpack
1921-1950 to 1981-2010



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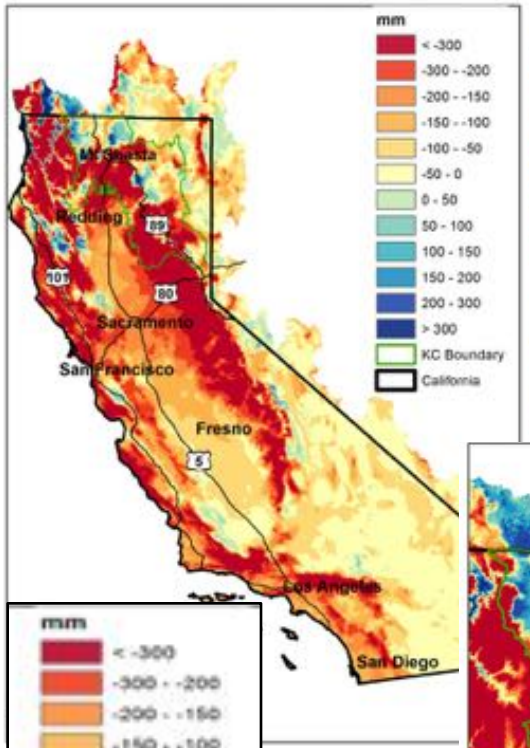
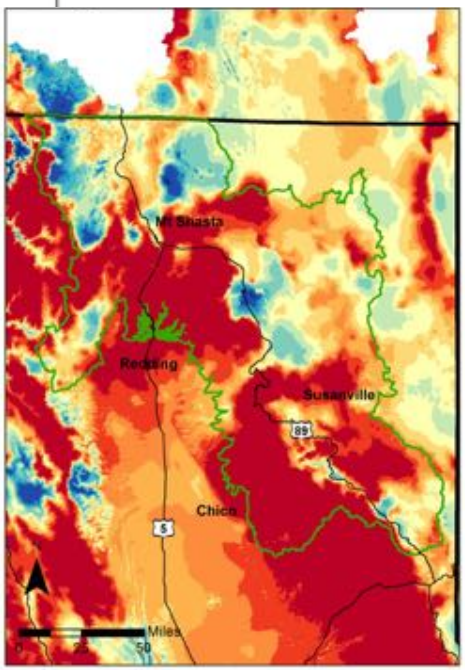
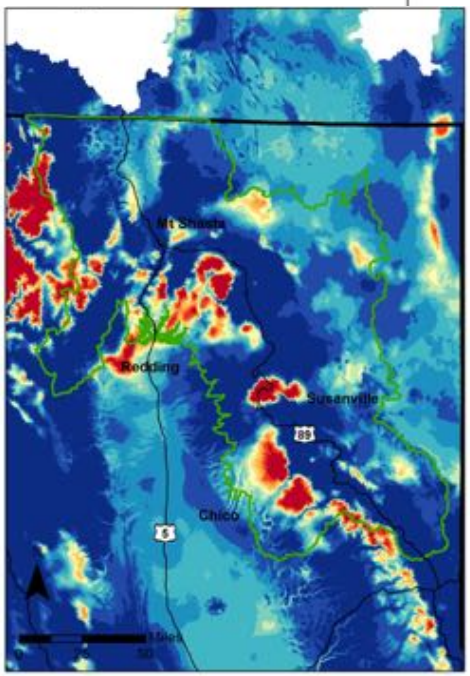
Annual Precipitation Change 1981-2010 to 2070-2099

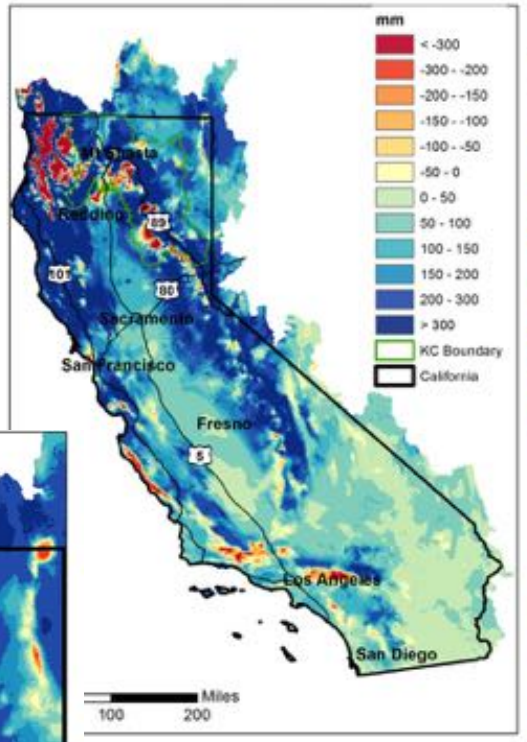


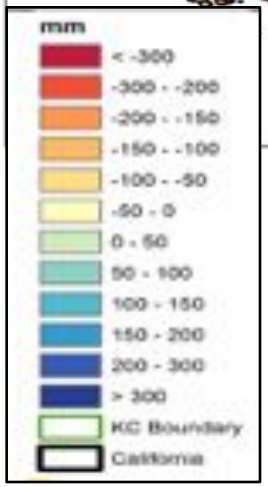
MIROC ESM RCP 8.5



CNRM RCP 8.5







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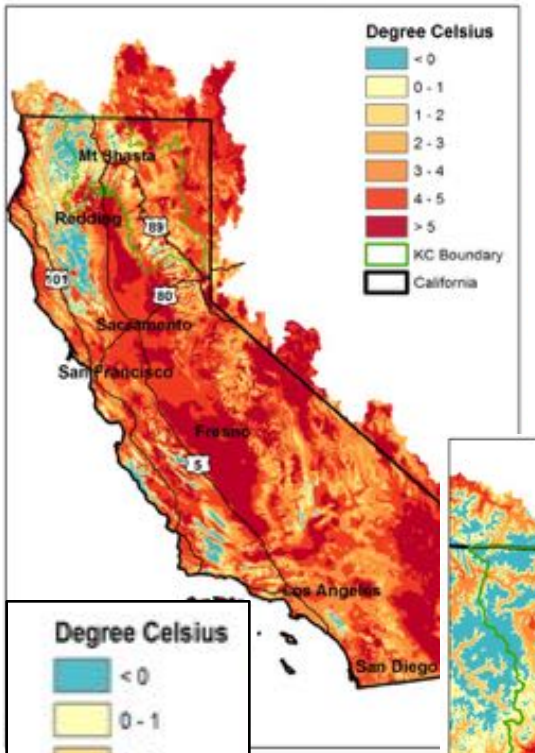
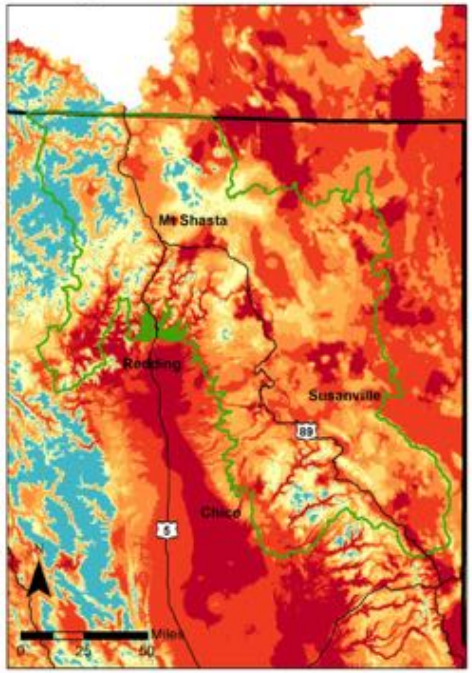
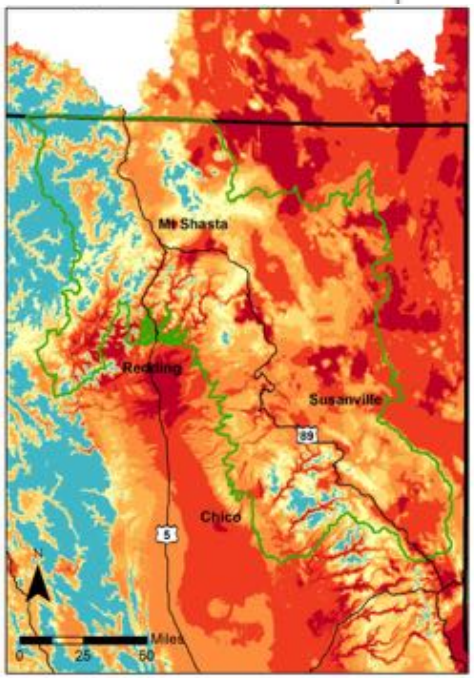
Minimum Annual Temperature Change 1981-2010 to 2070-2099

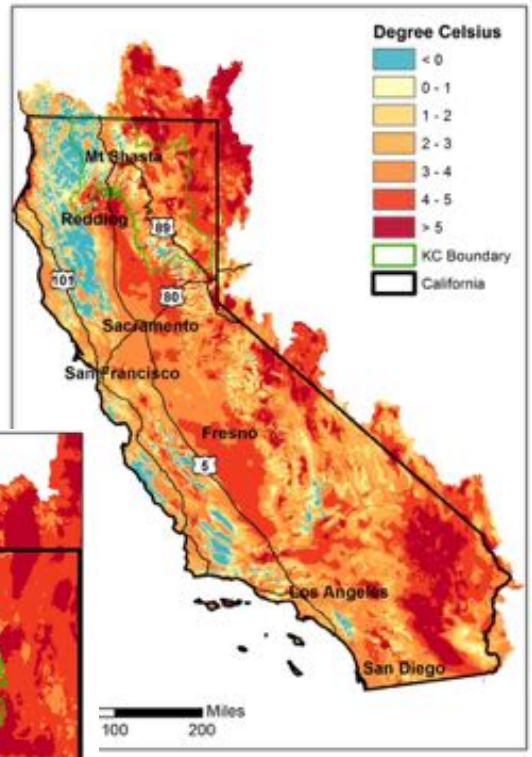


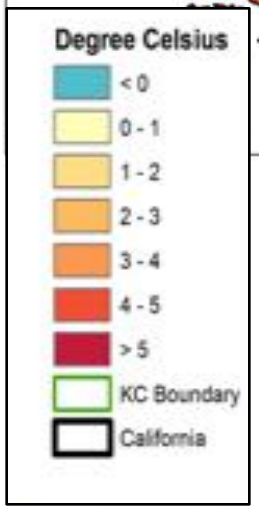
MIROC ESM RCP 8.5



CNRM RCP 8.5







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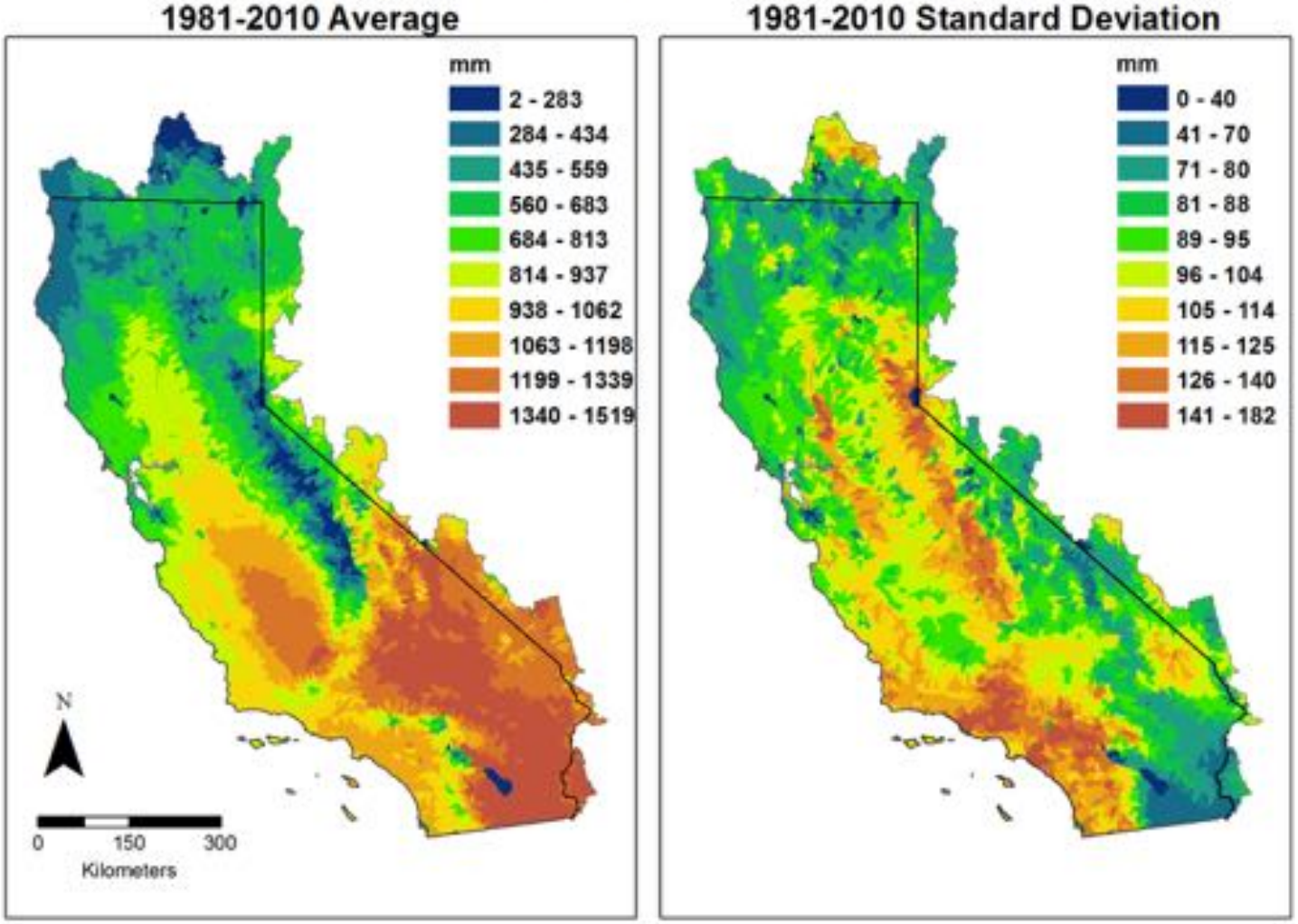
Climatic Water Deficit



California's Natural Water Infrastructure

Problem:

- Sub-optimal watershed health threatens water supply, timing, and reliability
- Water policy and financing focuses on built infrastructure
- Funding for watershed conservation and restoration is insufficient and inconsistent

Solution:

- New, innovative, cost effective financing model for comprehensive watershed restoration and conservation

Result:

- ***Enhanced water security (and reasonable expectations of quantity) for California in an era of drought and climate change***

Fundamental Problems

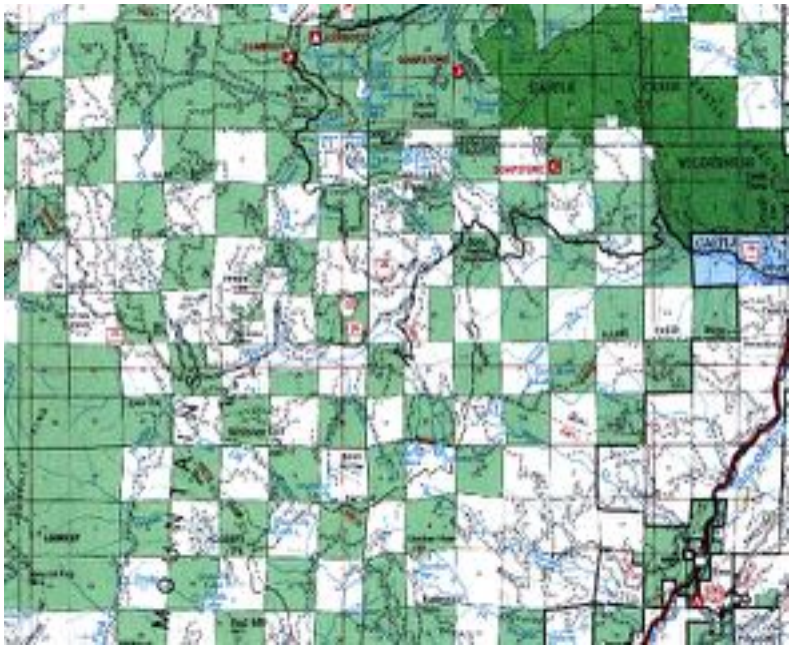
- Overly dense, even, closed canopy forests
- Loss of wet and dry meadow “sponges”
- Fragmentation
- Changed flow regimes
- Fire impacts intensified

Solution: Restore More Water-rich Forests

Solution: Restore Wet Meadows and Degraded Streams

Solution: Keep Watersheds Whole

Solution: Promote Restoration Across Ownerships, Public and Private

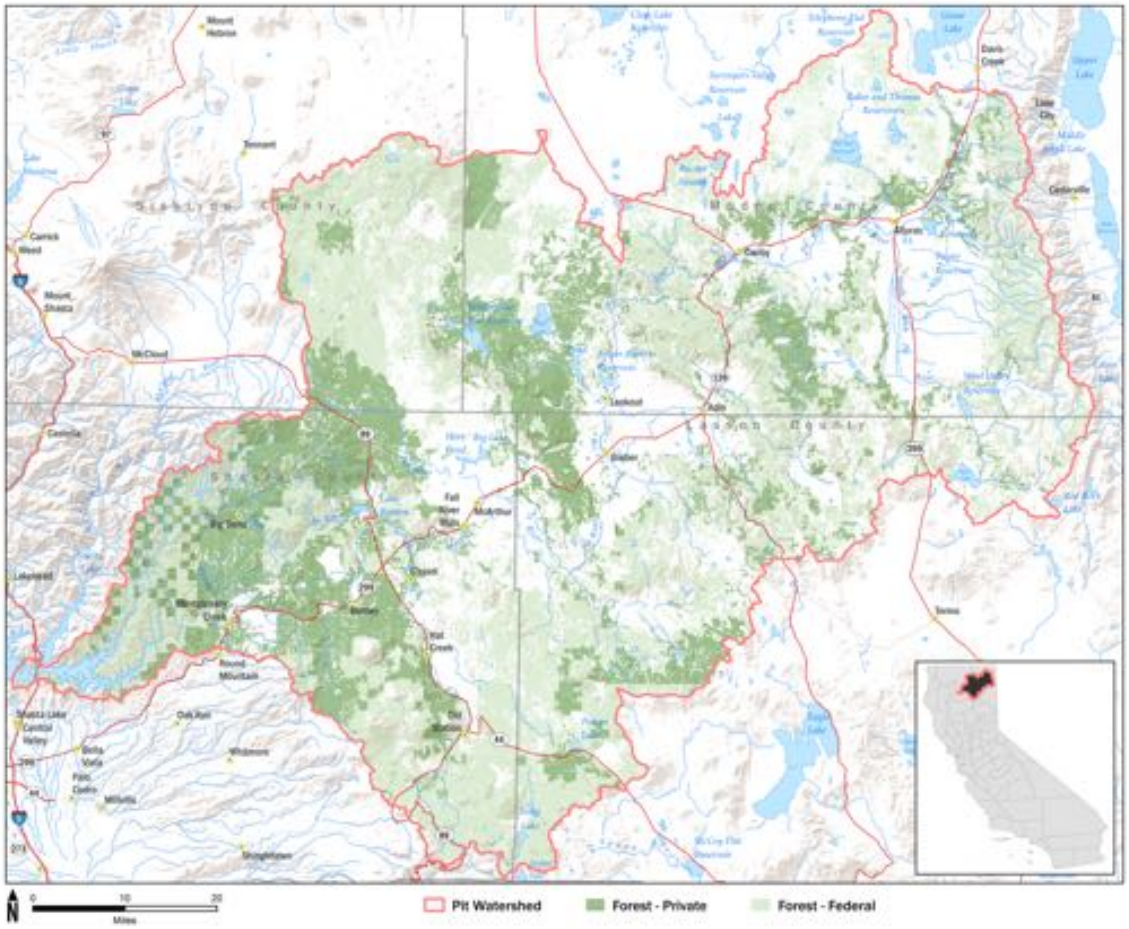


Solution: Promote Resiliency

Spring 2013

Squaw Creek May 2014

Example of Analysis – Pit Watershed



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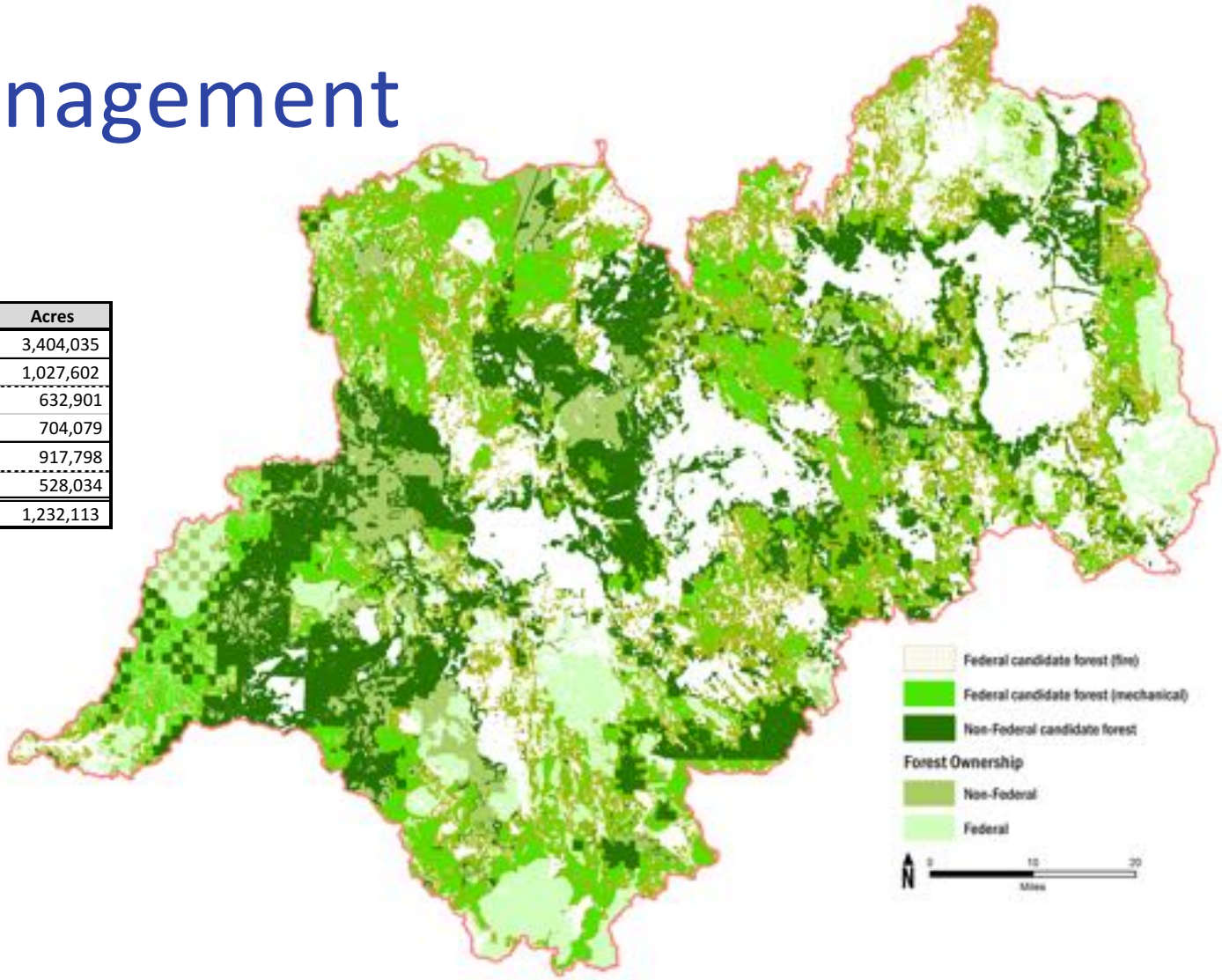
Forest Management

Results

Pit Watershed	Acres
Total Watershed	3,404,035
Federal Forestland	1,027,602
Candidate Sites for Mechanical Operations	632,901
Candidate Sites for Restoration via Prescribed Fire	704,079
Non-Federal Forestland	917,798
Candidate Sites for Restoration	528,034
All Candidate Sites for Restoration	1,232,113

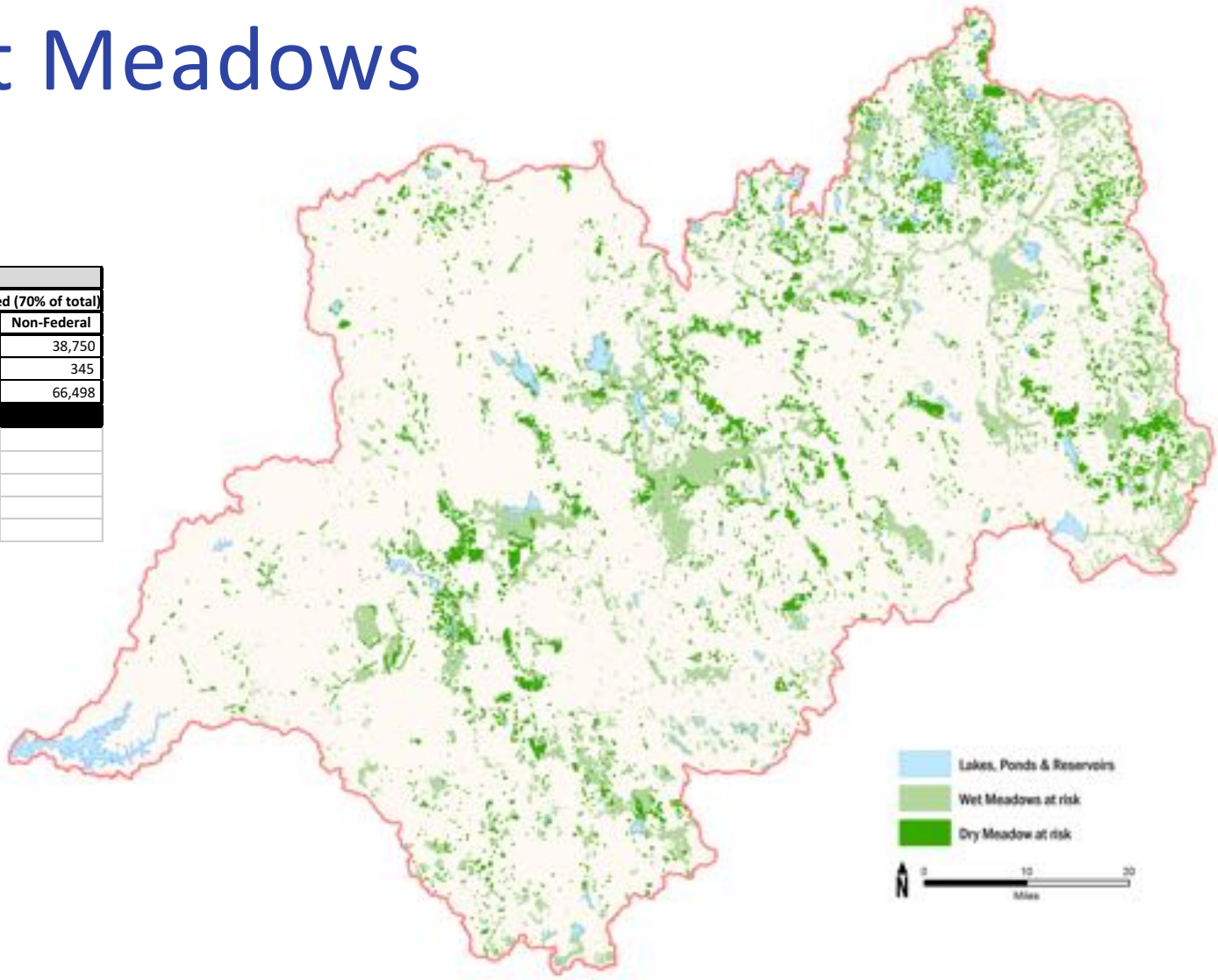


Dry & Wet Meadows

Results

Pit Watershed				
	Total Acres		Restoration Need (70% of total)	
	Federal	Non-Federal	Federal	Non-Federal
Dry Meadows	58,980	55,357	41,286	38,750
Aspen	4,123	493	2,886	345
Wet Meadows	51,176	94,997	35,824	66,498

Road/Trails in Wet Meadows		
	Miles	
	Federal	Non-Federal
Roads (unpaved)	136	153
Trails	-	-



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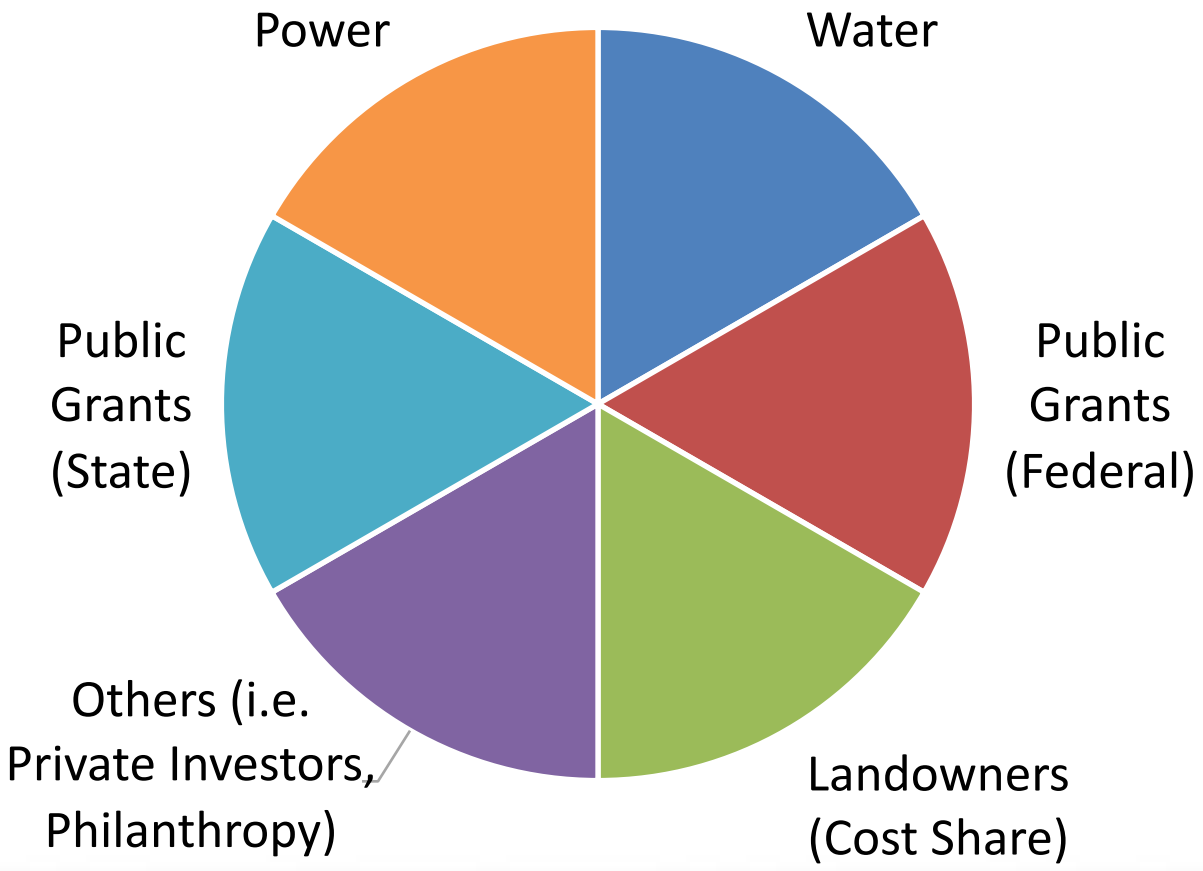
“Concession” Infrastructure Financing Model: Capture Cost in Price of Water, Hydro-power, Major Beneficiaries

- WIFIA; EPA Water Finance office (SDW, CDW)
- Treasury Revenue Bonds
- Impact Investors, Philanthropy
- Partner with public grants to leverage impact
- Comprehensive watershed by watershed plan of work, with timeline, funding, transparency

Developing a Fair System of "Beneficiary Pays"



Where We Are Now, Next Steps

- Policy framework: AB 2480
- Technical analysis of work
- Financing analyses
- Discussions with major beneficiaries

Thank You!

These slides were created to accompany a presentation. They do not include full documentation of sources, data samples, methods and interpretations.

To avoid misinterpretations, please contact:
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