Healthy Watersheds California:

A New Approach to Water Security

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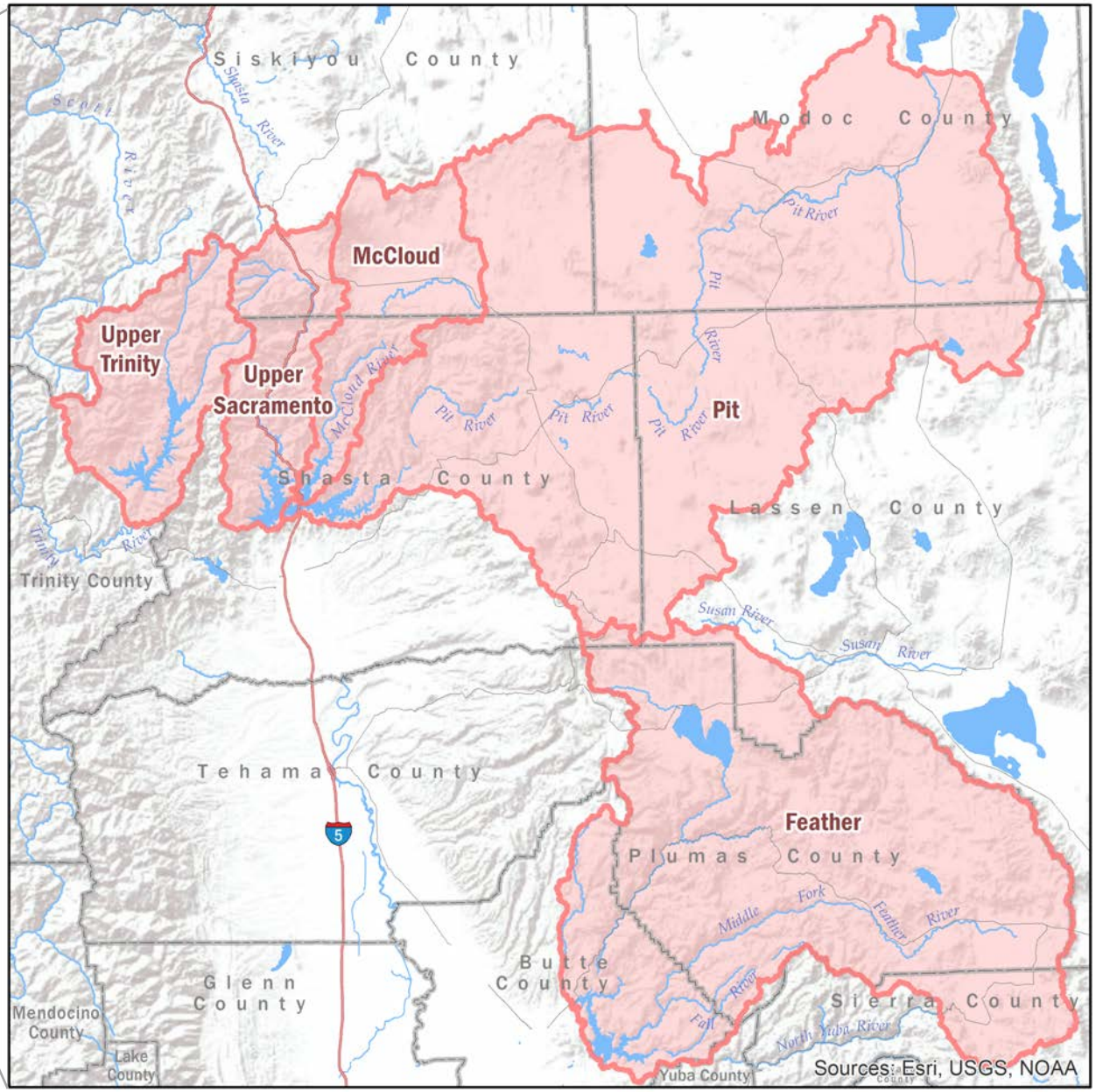
Private Forests. Public Treasures.

California's water system relies on both natural and built infrastructure

Five watersheds provide 80% of reservoir supply:

- 8M acres irrigated agriculture
- 40% of LA drinking water
- Drinking water for 25+ million people

Watersheds Analyzed: SWP; CVP main system feeders



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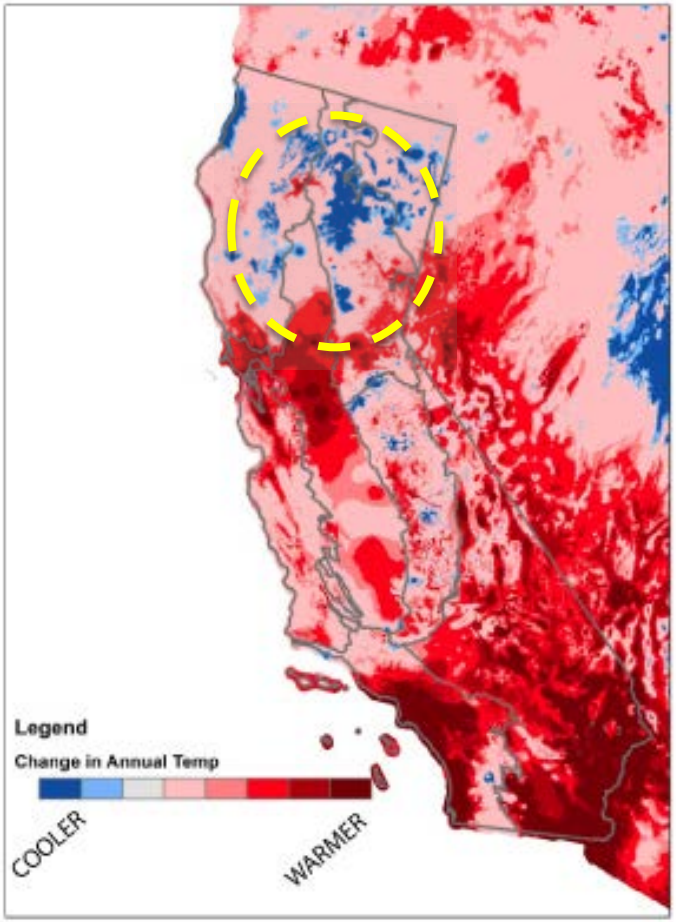
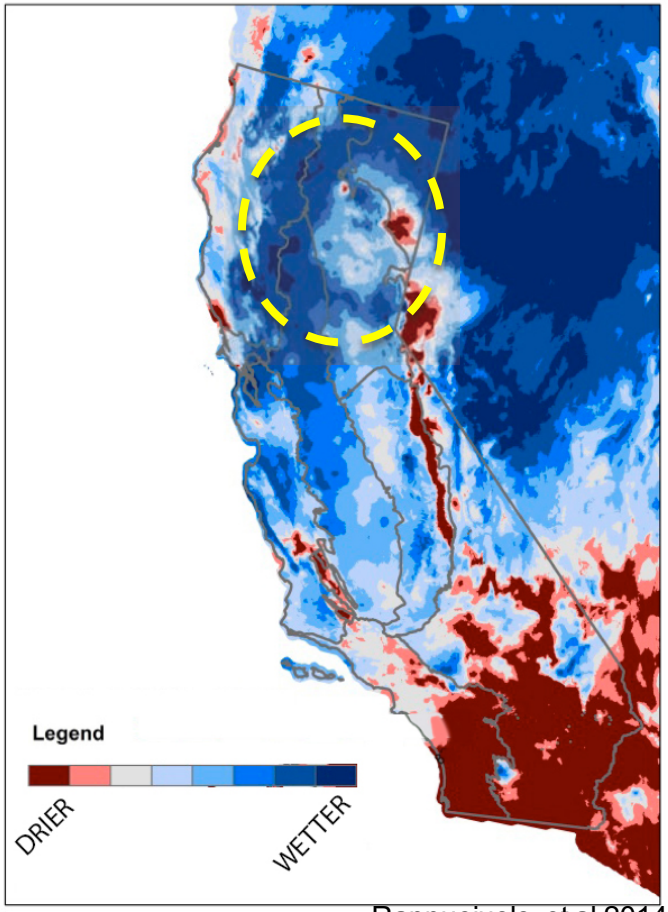
20th Century Climate Change in CA

Temperature Change:



Precipitation Change:

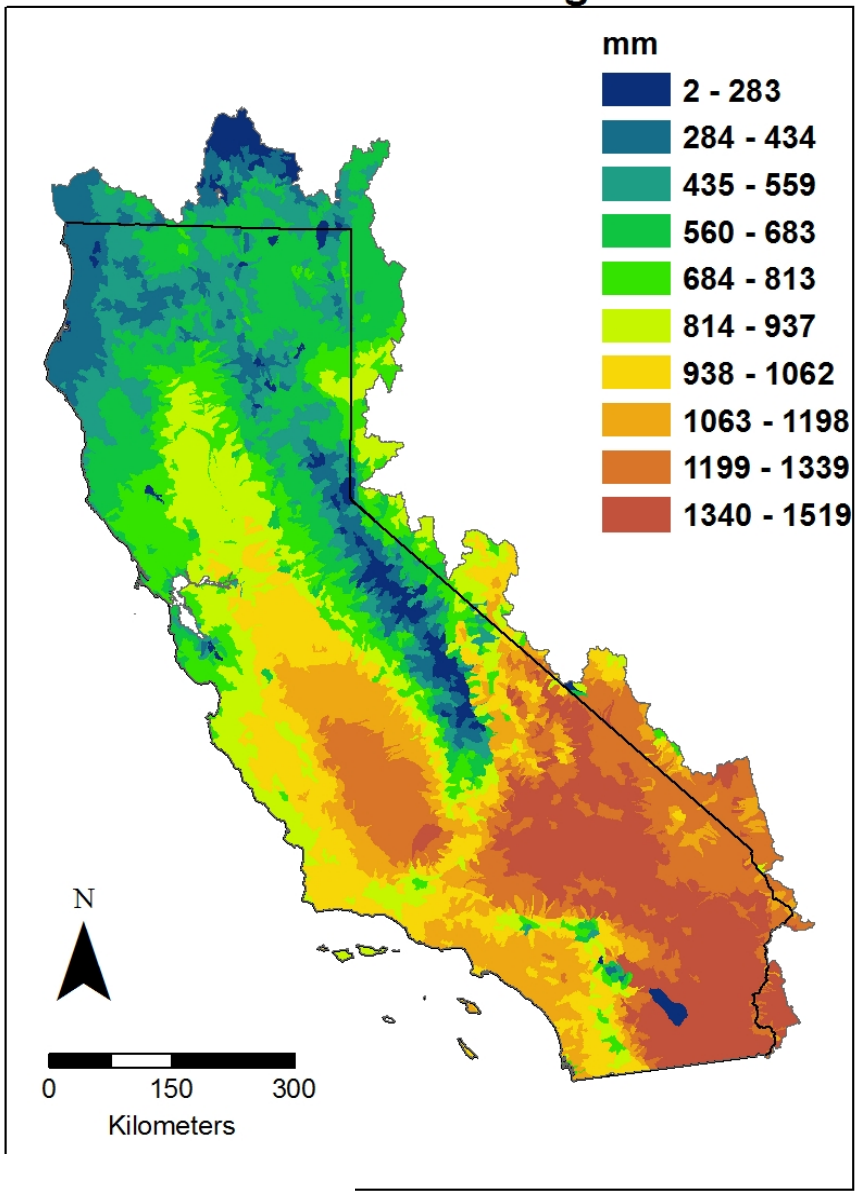


Rappuciuolo, et al 2014

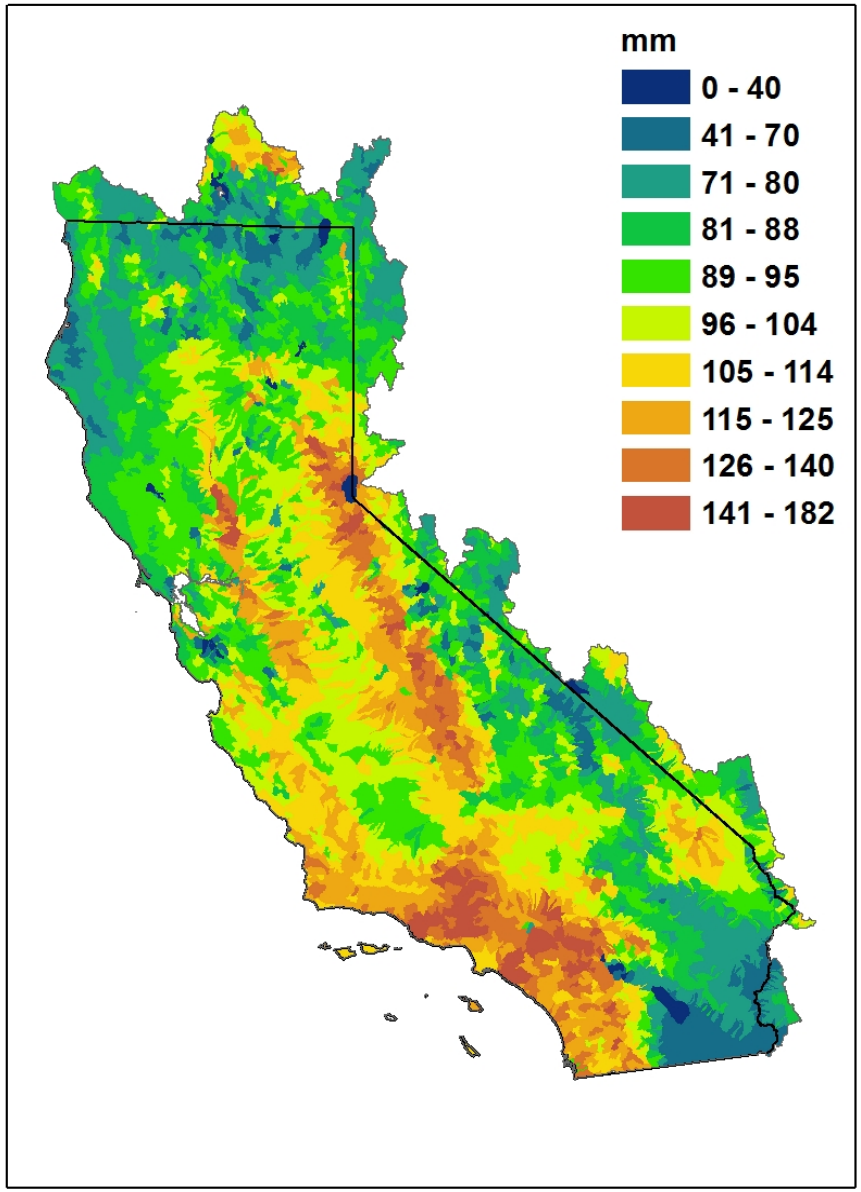
Projected to remain cooler & wetter than rest of California

Climatic Water Deficit

1981-2010 Average



1981-2010 Standard Deviation



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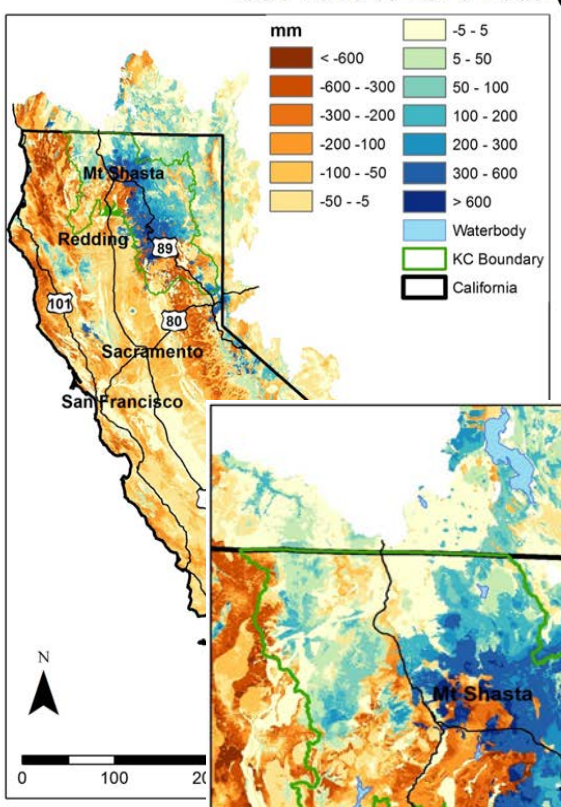
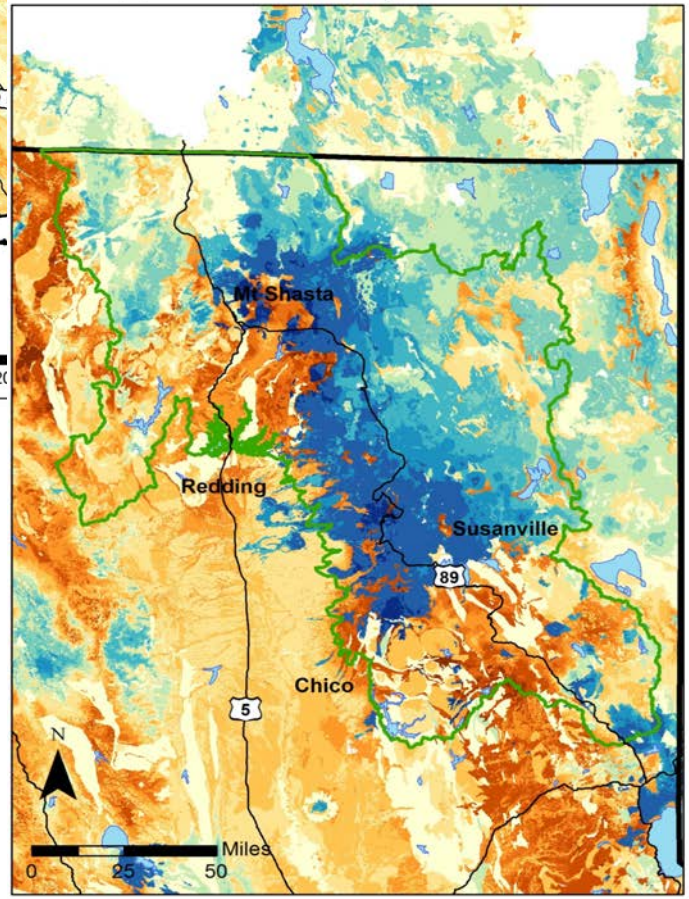
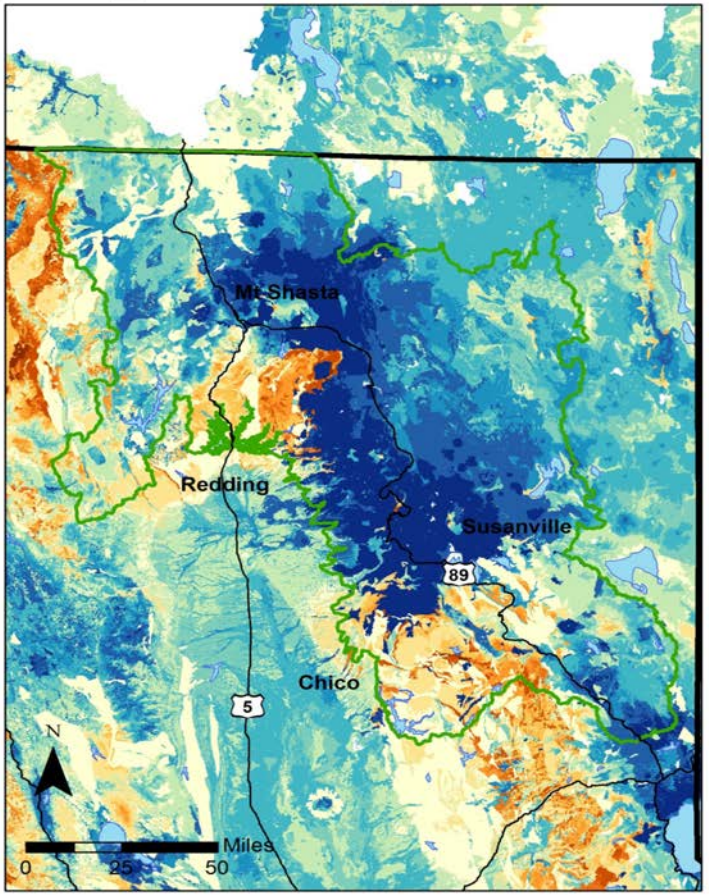
Recharge Change 1981-2010 to 2070-2099

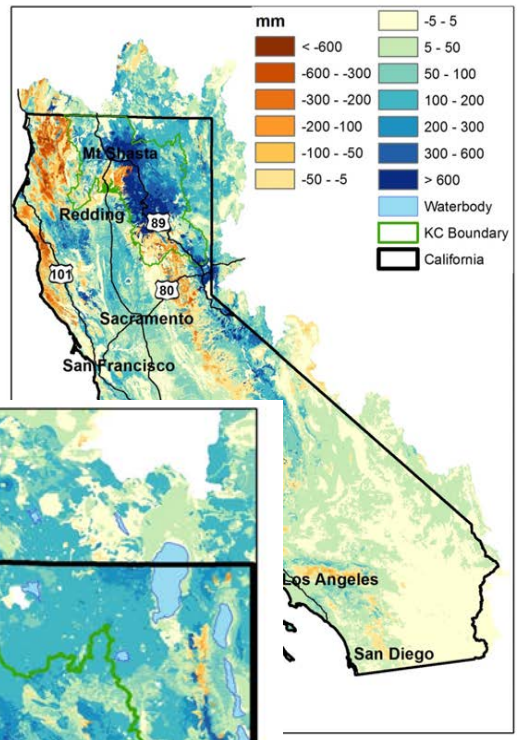


MIROC ESM RCP 8.5



CNRM RCP 8.5





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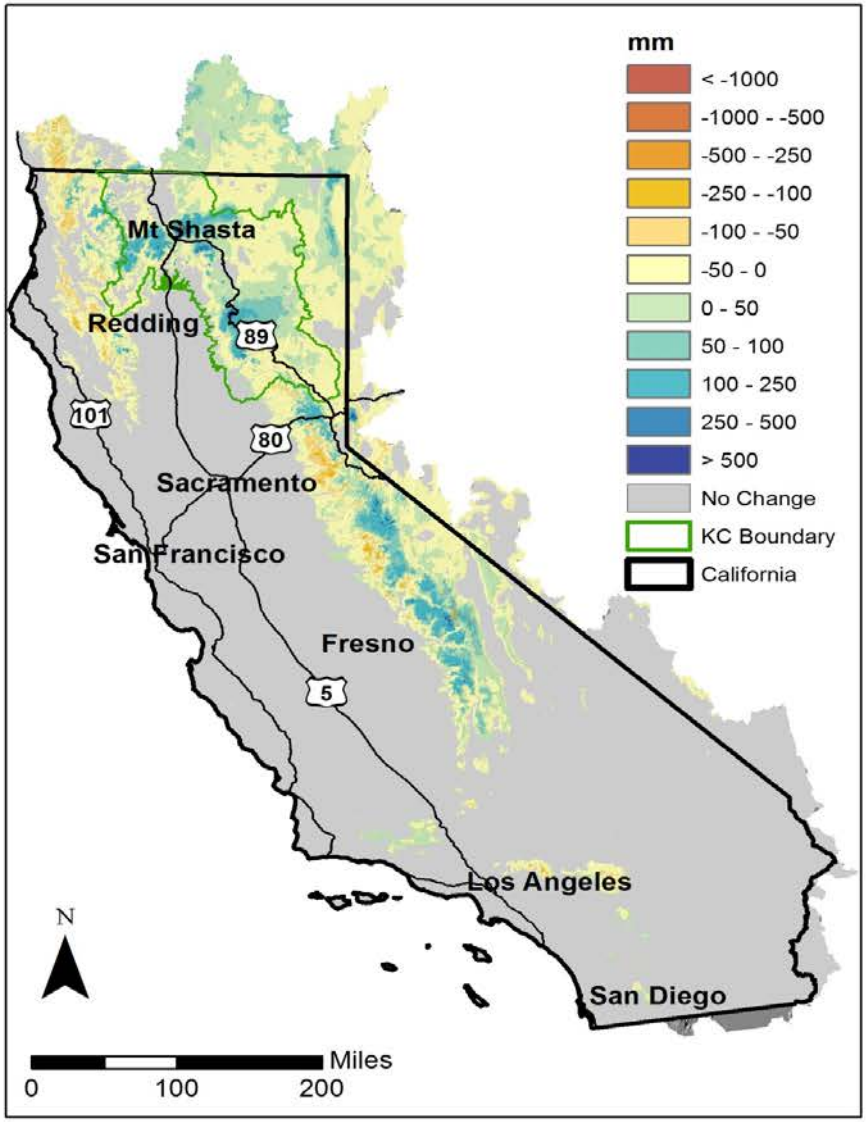
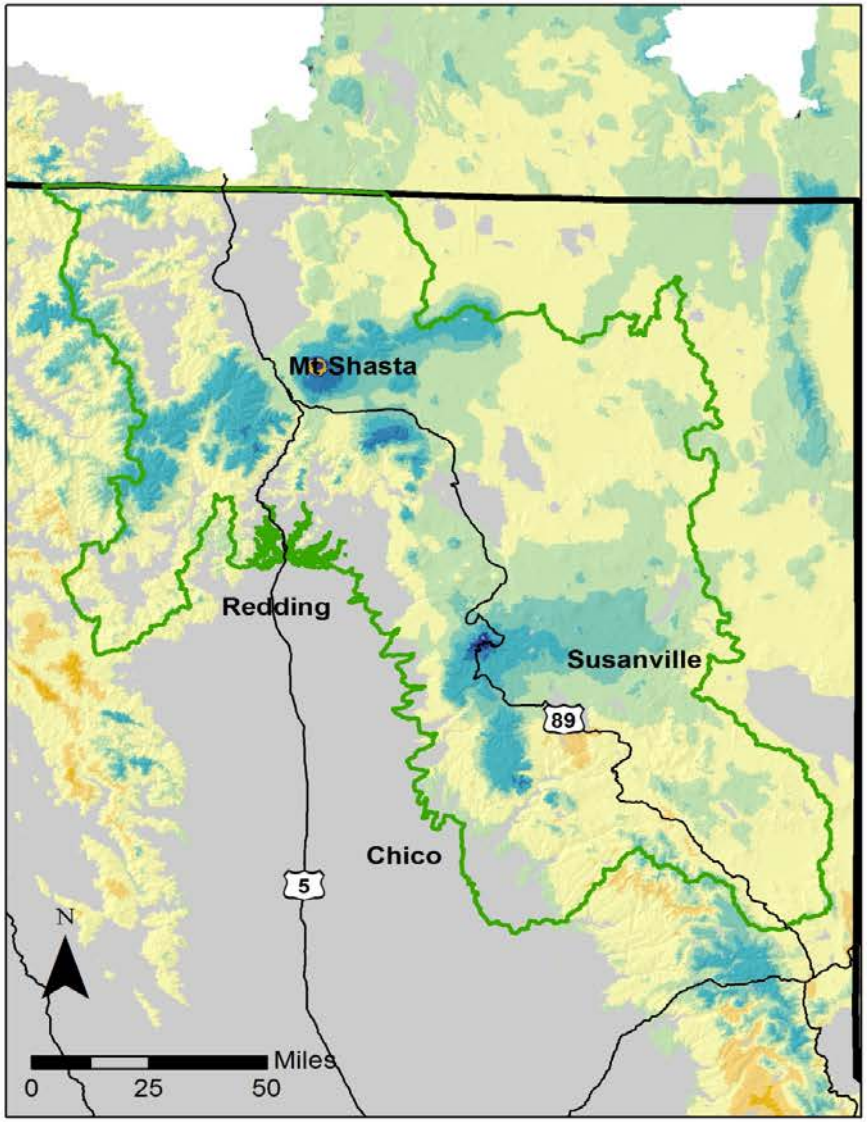
April 1st Snowpack
1921-1950 to 1981-2010





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California's Natural Water Infrastructure

Problem:

- Sub-optimal watershed health threatens water supply
- Water policy and financing focuses on built infrastructure
- Funding for watershed conservation and restoration is insufficient, 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
- (Cultural inertia)

Solution: Restore more water-rich forests

Solution: Restore wet meadows and degraded streams

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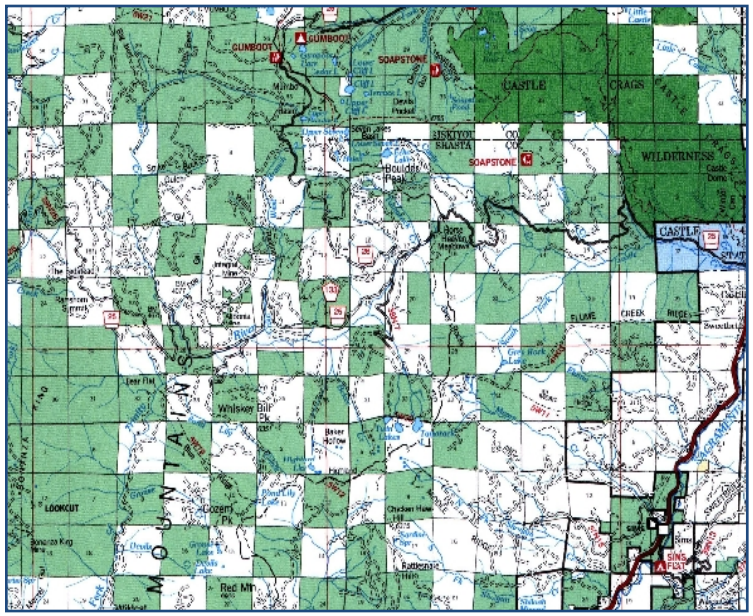
Solution: Keep watersheds whole

Solution: Promote restoration across ownerships, public and private



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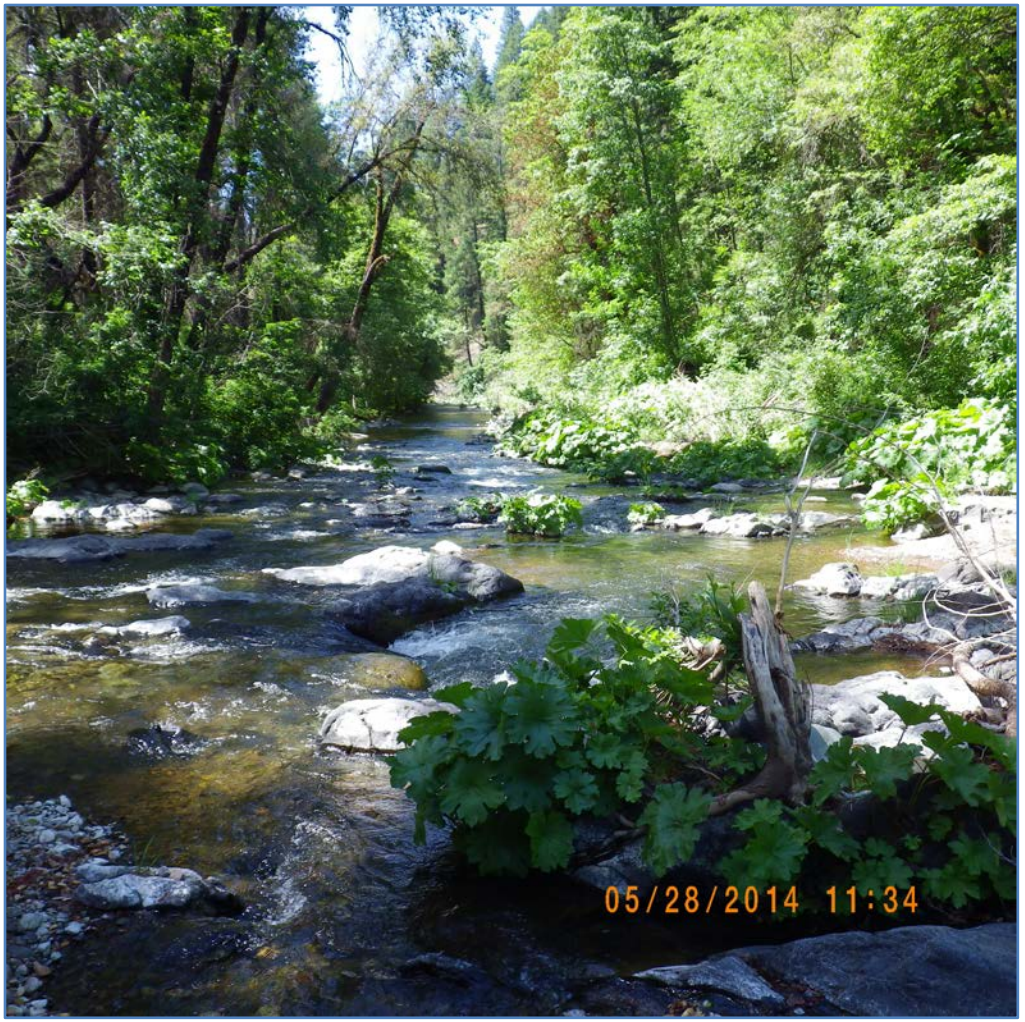
Promote Resiliency

Spring 2013



Squaw Creek May 2014

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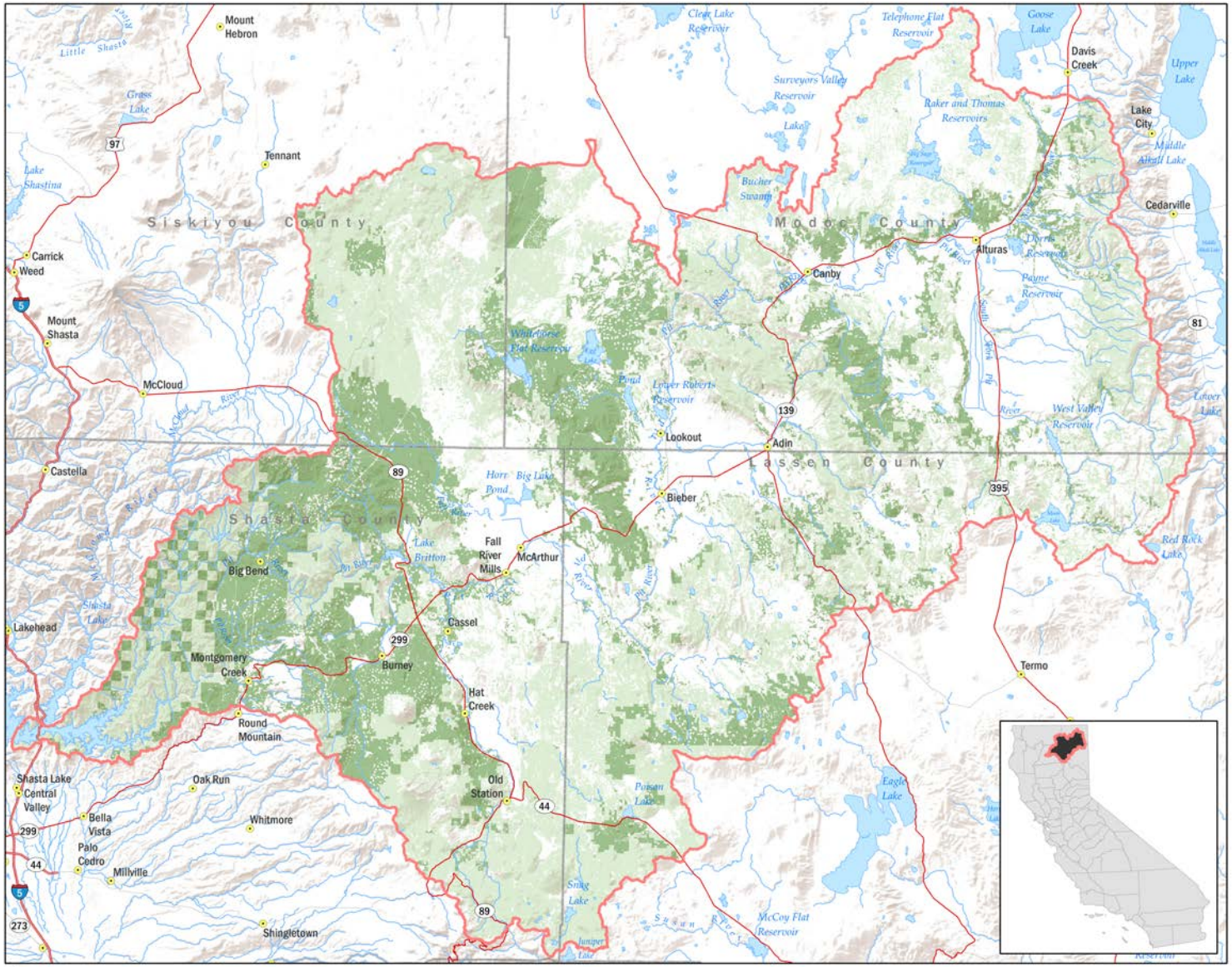
Example of analysis – Pit Watershed



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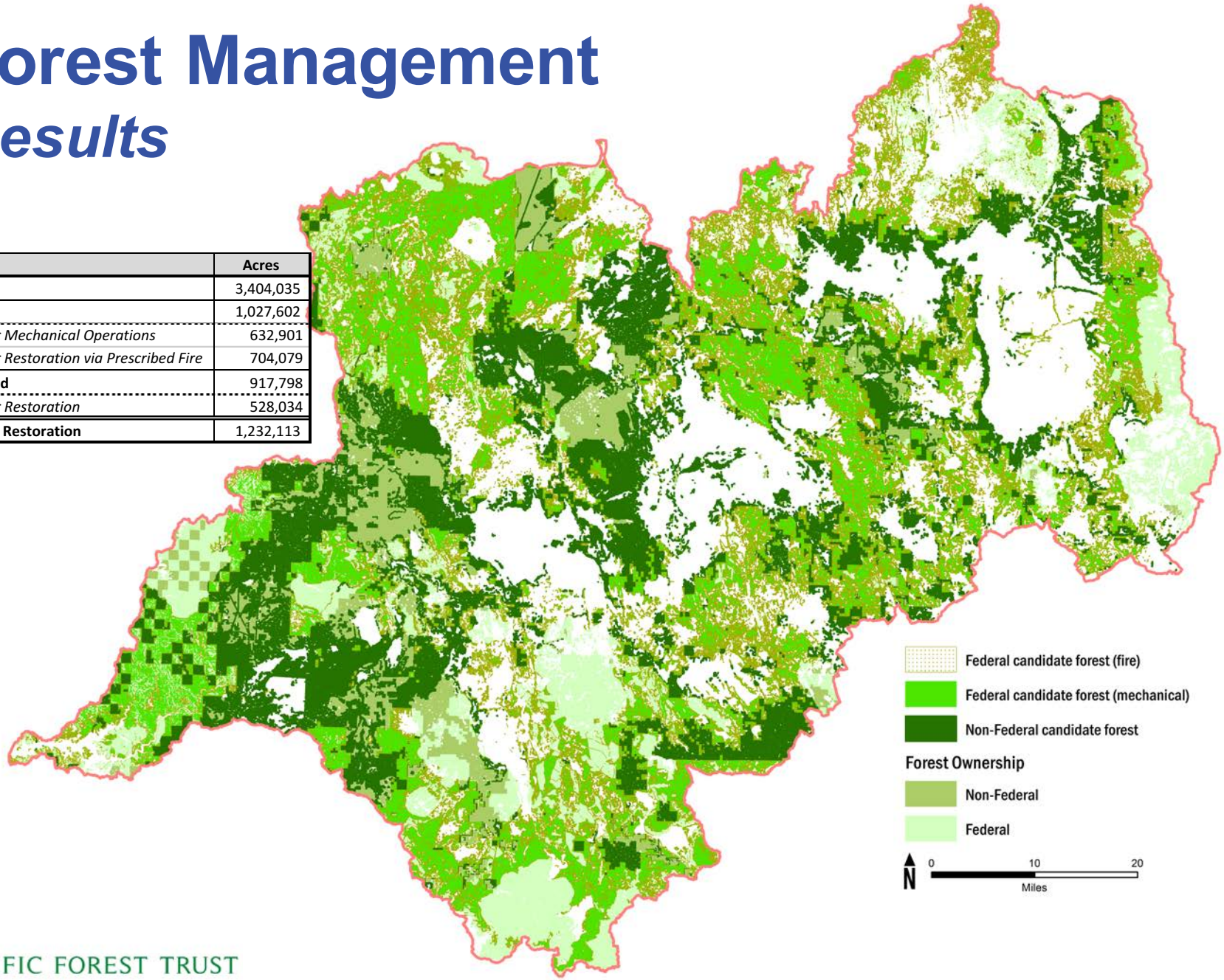
Forest Management
Results

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



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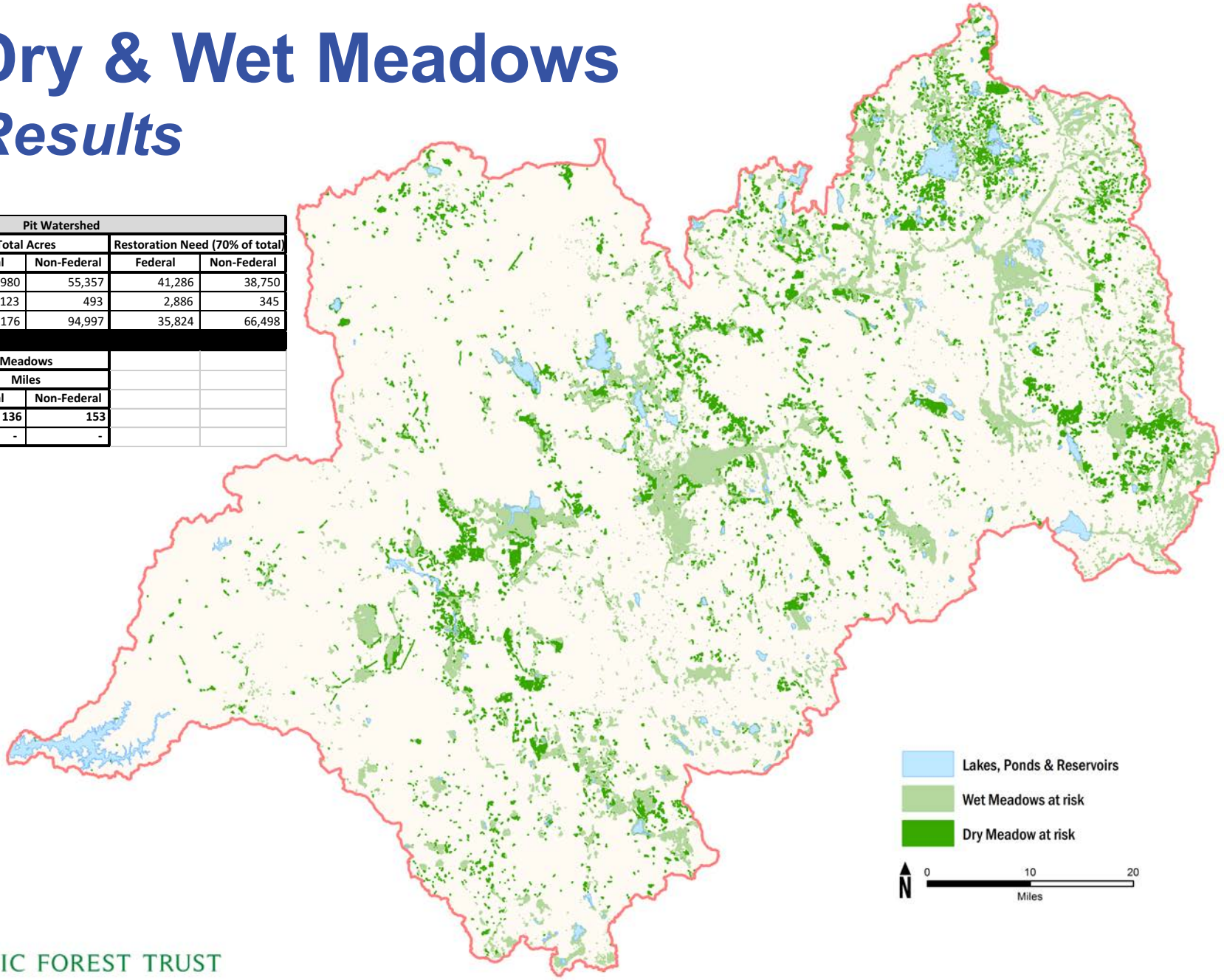
Dry & Wet Meadows

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”-Financing Model: capture cost in price of water, hydro-power

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

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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