

Water and the Sierra Nevada





Overview

- ❖ The Sierra Nevada provides drinking water to a majority of Californians and western Nevadans
- ❖ The Sierra's water values are threatened by many factors, including high intensity wildfire and climate change.
- ❖ Investments in Sierra forest and meadow restoration are necessary to protect the Sierra's water

Investing in Sierra Watersheds Has Multiple Water Benefits

- ❖ Forest thinning can reduce the risk of high-severity wildfire risk and related sedimentation
- ❖ Meadow restoration can increase summer base flows
- ❖ Forest and riparian restoration can decrease stream temperatures
- ❖ Road restoration can reduce sedimentation

Perazzo Meadows: Plug and Pond Restoration

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Forest Thinning: Before



- ❖ Over a century of fire suppression
- ❖ Overly dense stands of small trees
- ❖ Significant risk of uncharacteristic, severe wildfire
- ❖ High risk of major sedimentation events

Forest Thinning: After



Payments for Watershed Services

- ❖ Latin America Water Funds
- ❖ Denver: Forests to Faucets
- ❖ Santa Fe Water Fund
- ❖ Independence Lake, Sierra Nevada

Mokelumne Environmental Benefits Program

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Mokelumne Environmental Benefits Program

- ❖ Quantifying environmental and economic benefits of watershed restoration
- ❖ Analyzing avoided costs of watershed investment
- ❖ Promoting triple bottom line of environment, economy, community
- ❖ Establishing a rigorous credit program

Mokelumne Environmental Benefits Program



- ❖ Sierra Nevada Conservancy
- ❖ Environmental Defense Fund
- ❖ Sustainable Conservation
- ❖ U.S. Forest Service
- ❖ East Bay Municipal Utility District
- ❖ Amador Calaveras Consensus Group
- ❖ Many other stakeholders and partners

Sierra Nevada Ecosystem Services

- Pollination
- Carbon Sequestration
- Water quality
- Water quantity and timing
- Commodity production
- Biodiversity
- Recreation
- Cultural and non-use

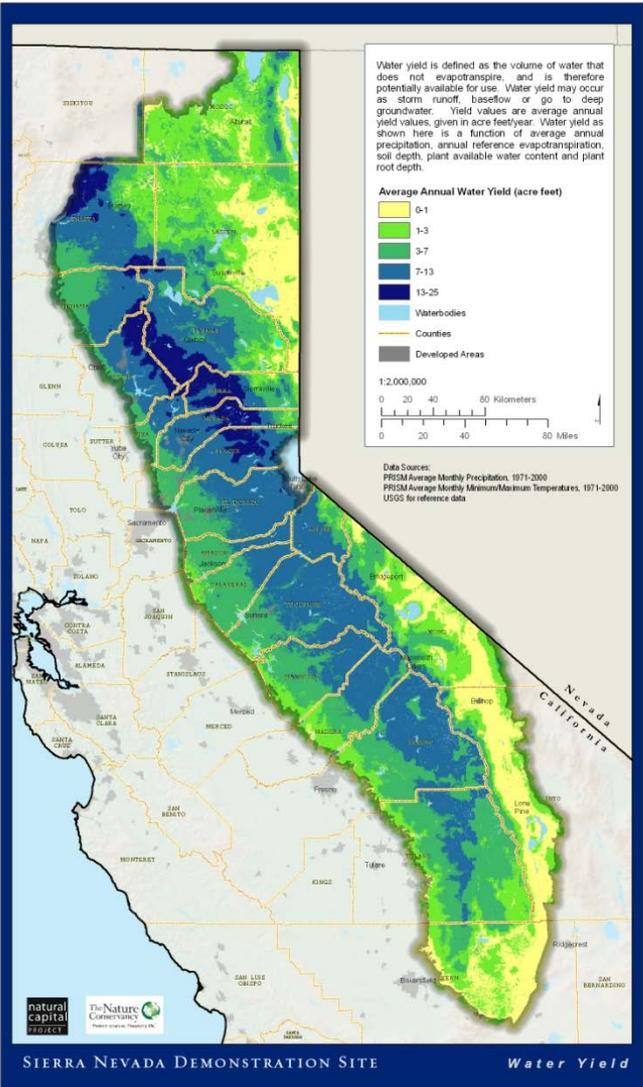


The Natural Capital Project

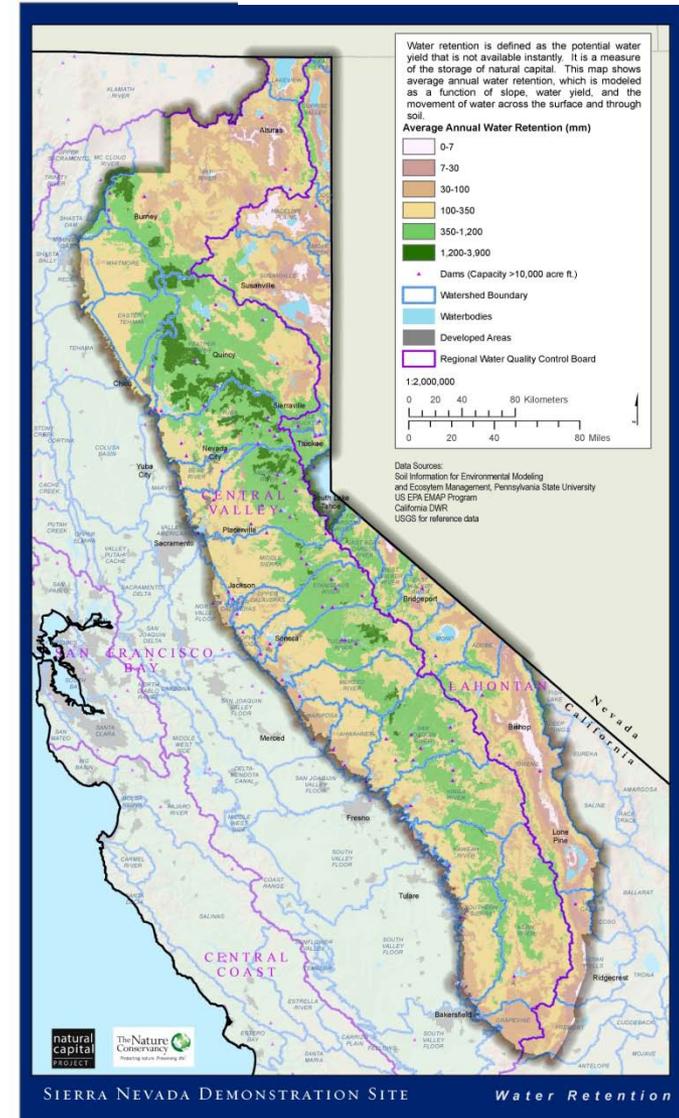
- ❖ Incorporate multiple ecosystem services into natural resource decisions
- ❖ First step toward quantifying values provided by natural systems to assess trade-offs
- ❖ InVEST: GIS tools that allow mapping of bundled ecosystem services driven by land use scenarios, currently limited in complexity

Water related services – Sierra scale

Yield



Retention



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