

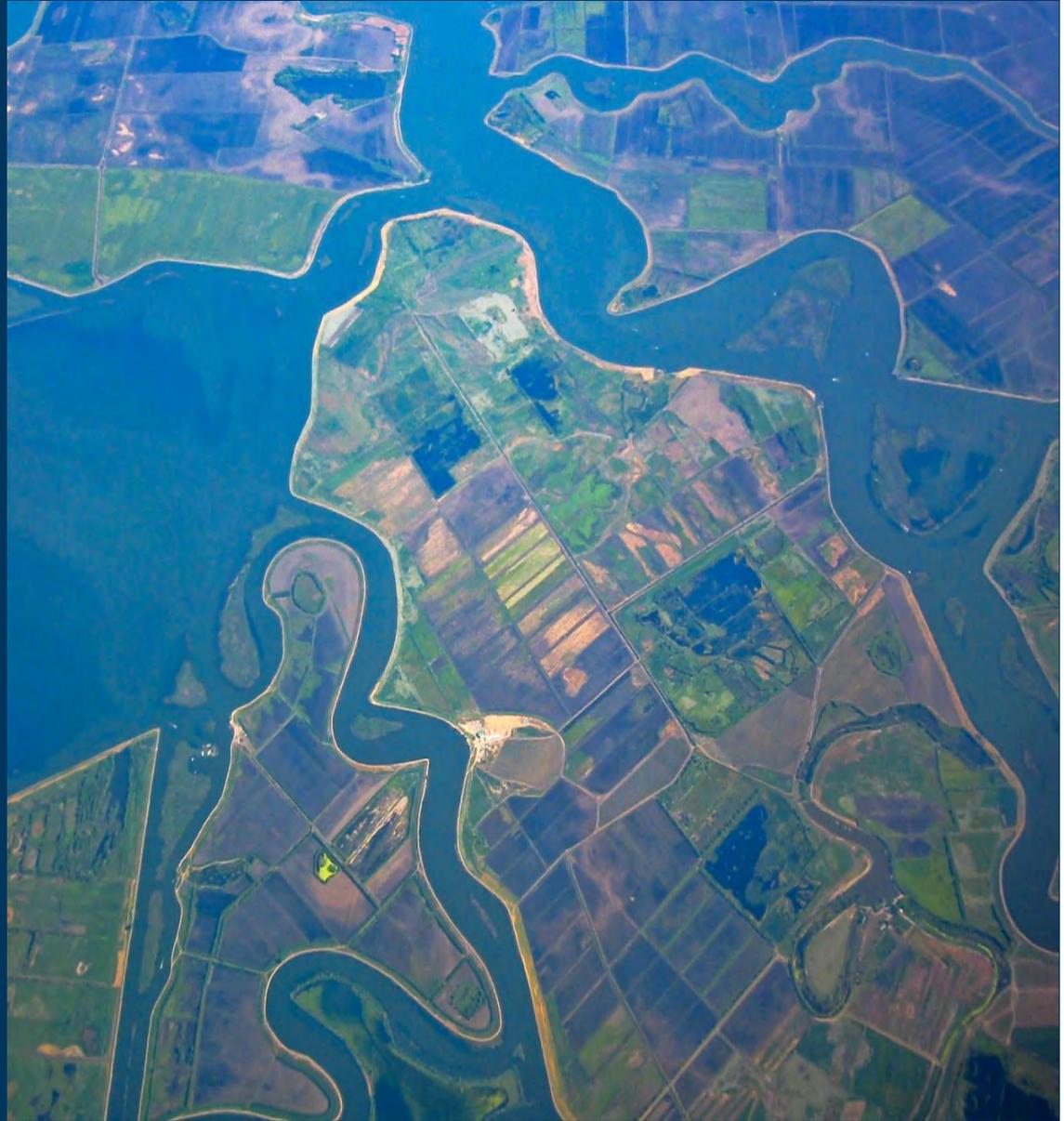


# Looking to the Source: Water and the Sierra Nevada

David Edelson, Sierra Nevada Project Director

March 12, 2014

- “The Delta is ... a major source of the state’s water supply” -- Public Policy Institute of California.
- “The Delta: A Water Source for Most Californians”  
– web site, **The Nature Conservancy of California**



# Find Your Drinking Water:

www.conserveca.org/what\_you\_can\_do/



Help Conserve California  18k

Search the Site

- [What We Do](#)
- [Blog & Multimedia](#)
- [What You Can Do](#)
- [Donate Now](#)

## Find Your Drinking Water Source

Enter a California City or Zip

Think you know your drinking water?

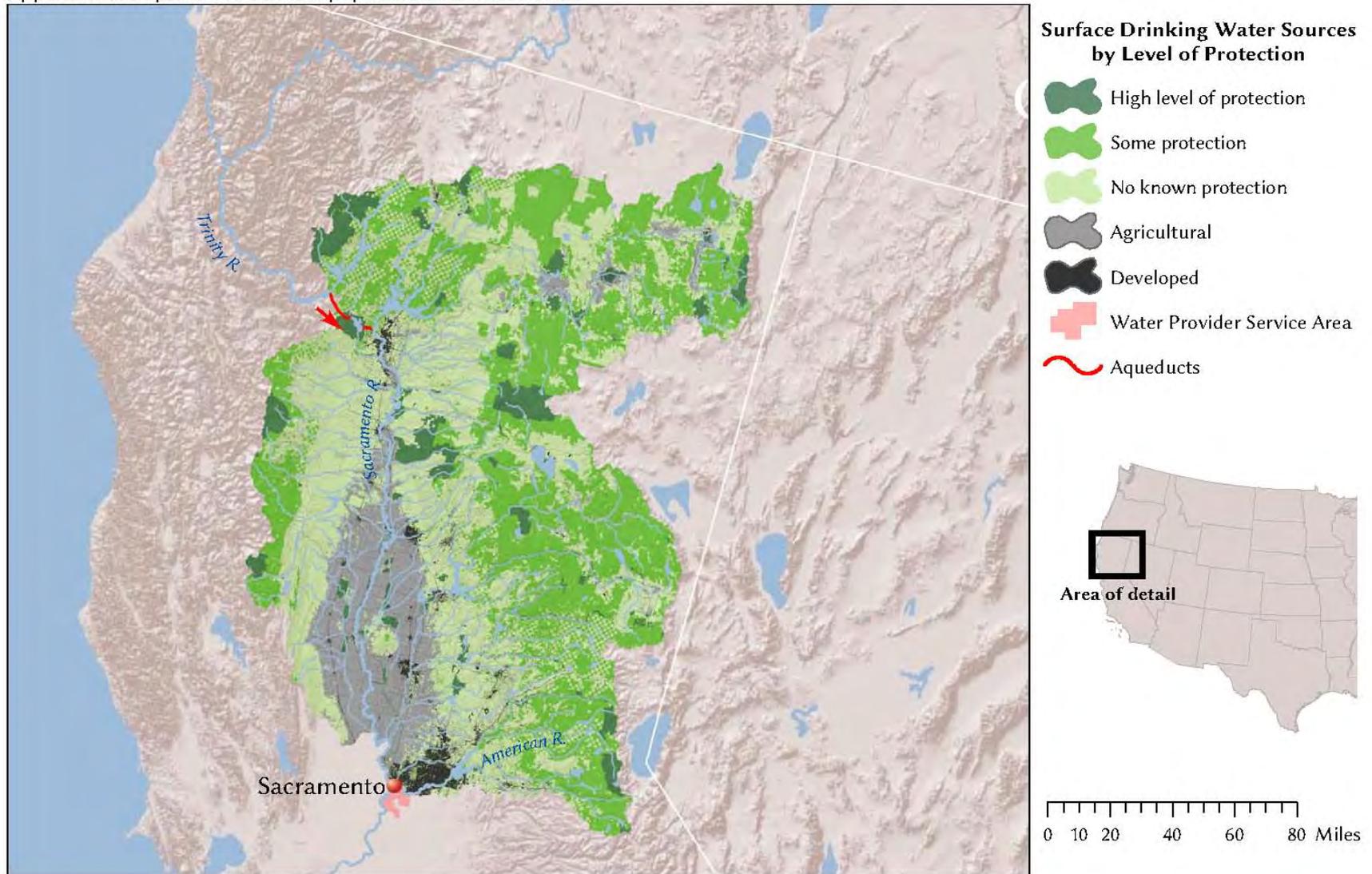


Type in your city or zip and hit enter to find out.

Photo © StockPhotoFree.com/Flickr via Creative Commons

Challenge your friends to take the quiz

Share the water map



## Surface Drinking Water Sources for Sacramento, CA

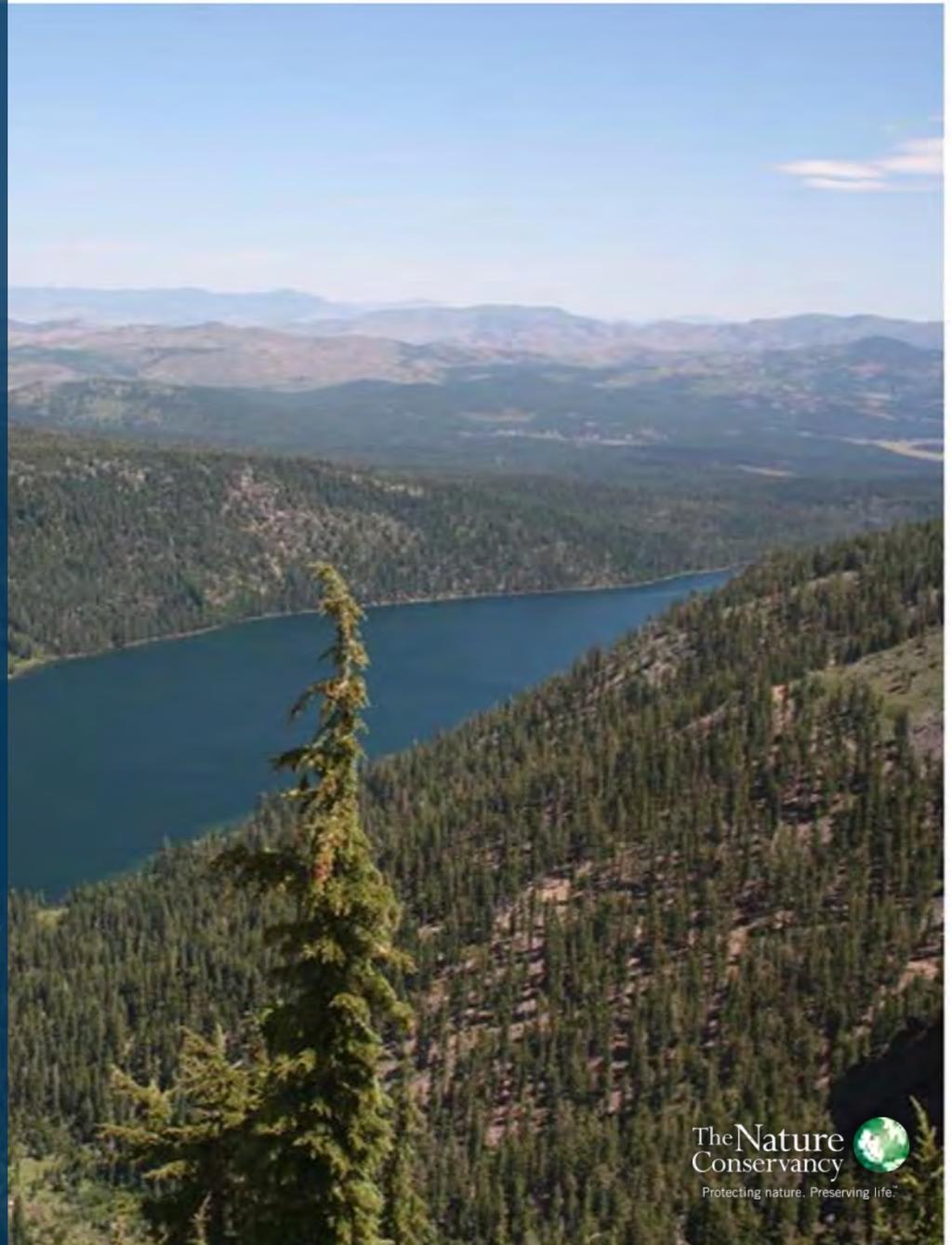
Map produced for The Nature Conservancy (TNC) 2012. TNC uses the most current and complete data available. GIS data and product accuracy may vary.

Areas delineated as having "No known protection" may include water district lands and easements on private lands.

Using GIS products for purposes other than those for which they were intended may yield inaccurate or misleading results.

Sources: Protected Areas Database of the U.S. 2010, USGS National Hydrography Dataset, National Land Cover Database 2006, and the website(s) of the utilities provider(s).

- The Sierra Nevada is a primary source of California's water
- Our water supply depends upon healthy Sierra watersheds
- Investing in Sierra watersheds can help safeguard and enhance California's water supply



The inviting openness of the Sierra woods is one of their most distinguishing characteristics. ...

...enabling one to find a way nearly everywhere, along sunny colonnades and through openings that have a smooth, parklike surface.

—John Muir, *The Mountains of California* (1894)







**San Francisco Chronicle**

**Yosemite fire shows water resources at risk**

**Los Angeles Times**

Cost of battling massive Rim fire hits \$100 million

**San Jose Mercury News**

BAY AREA NEWS GROUP

**Rim fire: Disaster shows need to invest in Sierra forests and California's water supply**

# Healthy Sierra Watersheds and California's Water Supply



Forest Fuels Reduction



Meadow Restoration

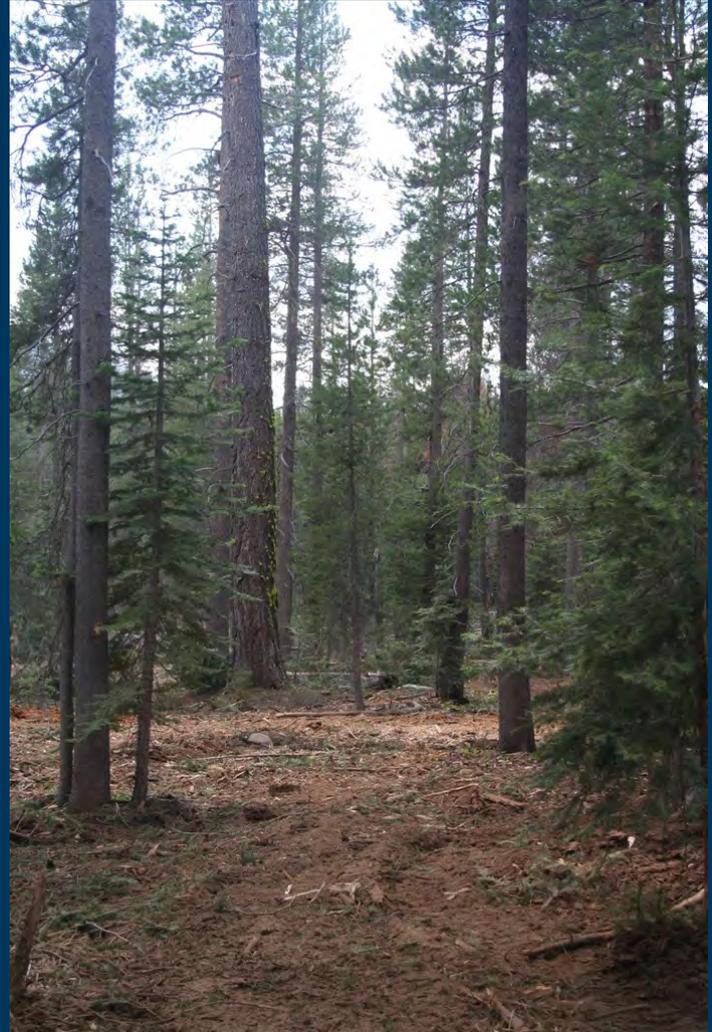


Land Conservation

# Independence Lake Preserve



Before



After

# Independence Lake Preserve



Not thinned

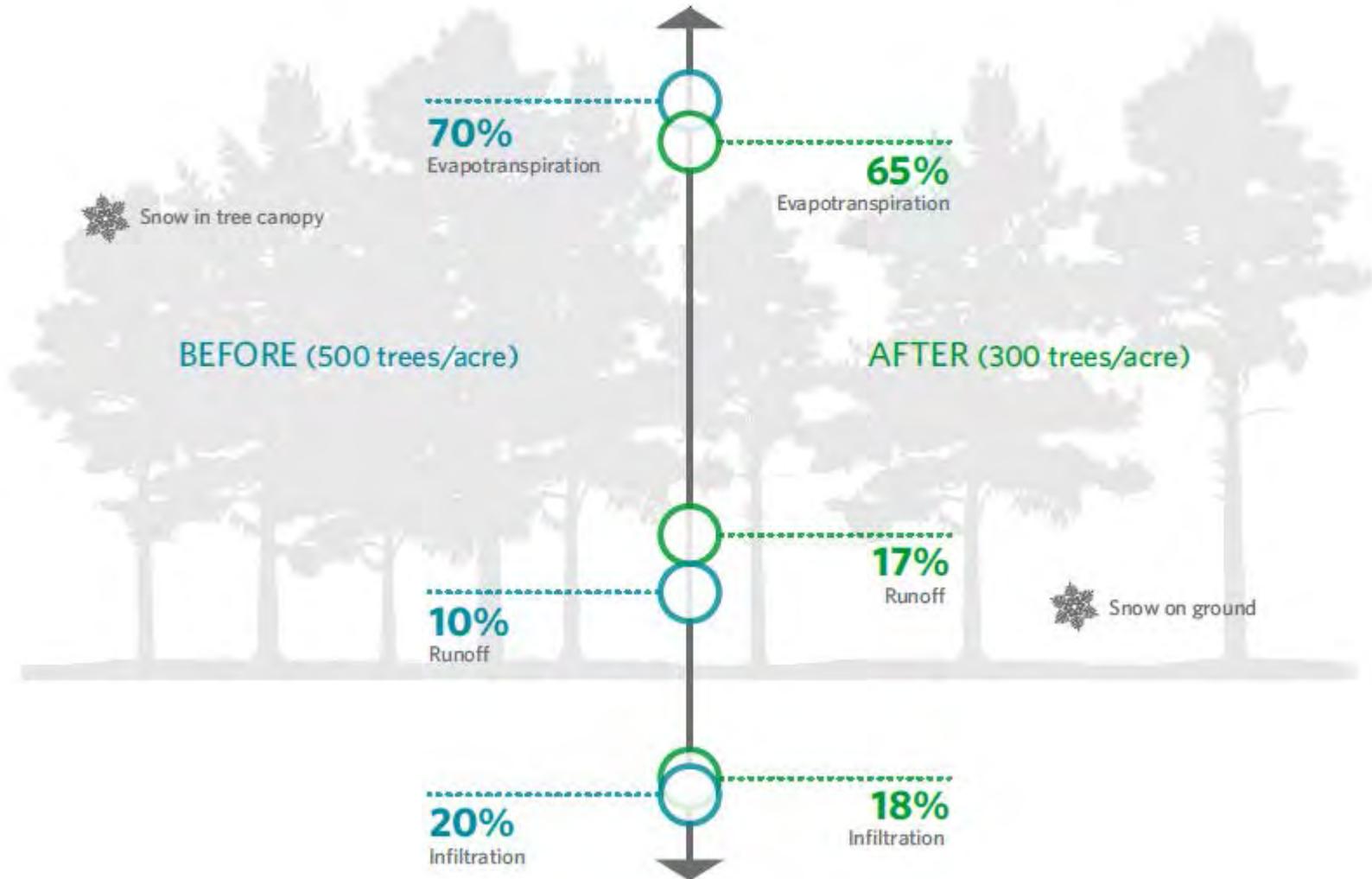


Thinned

February 2014

# FOREST THINNING AND WATER YIELD

## Forest Thinning

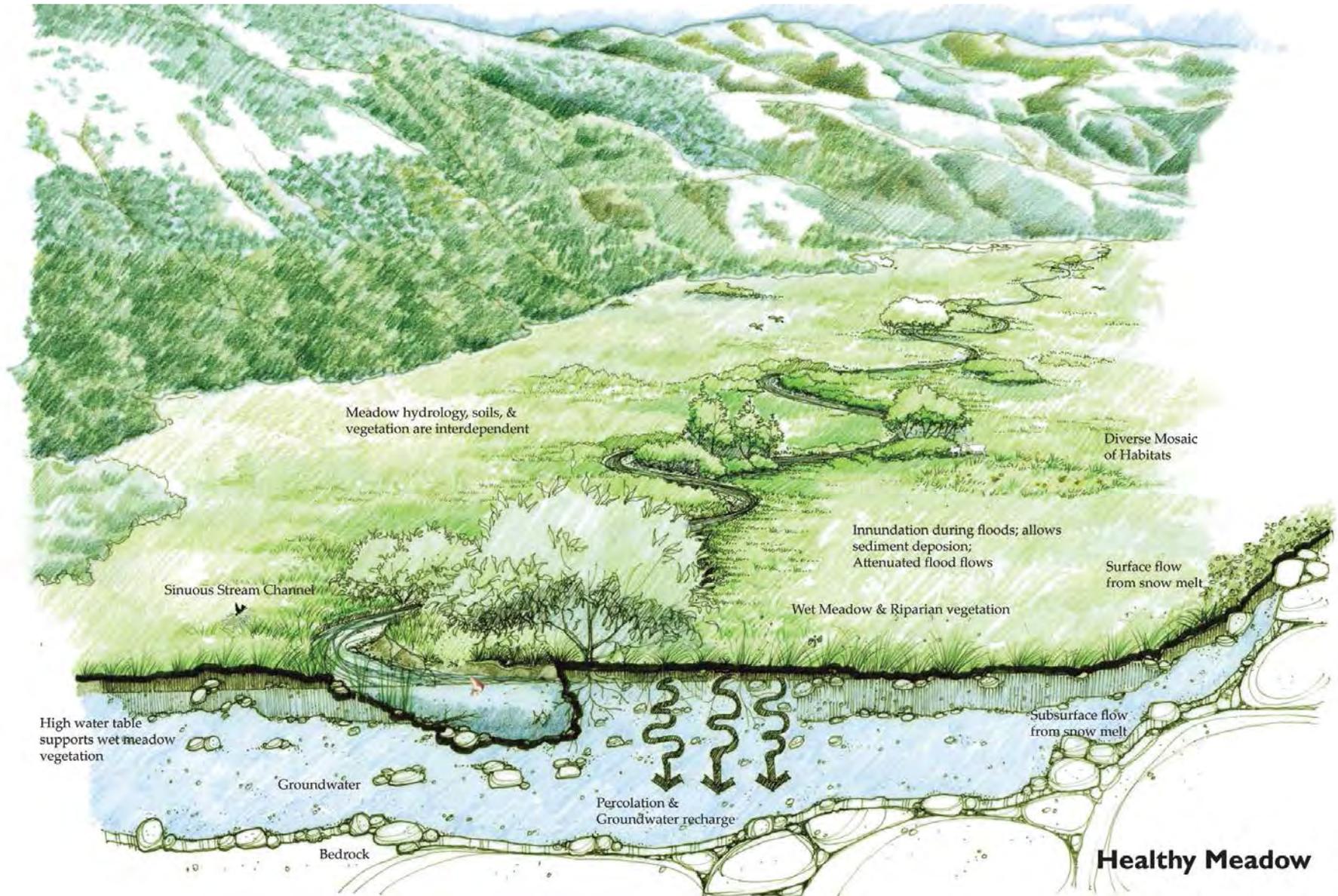


# FOREST THINNING AND POST-FIRE EROSION

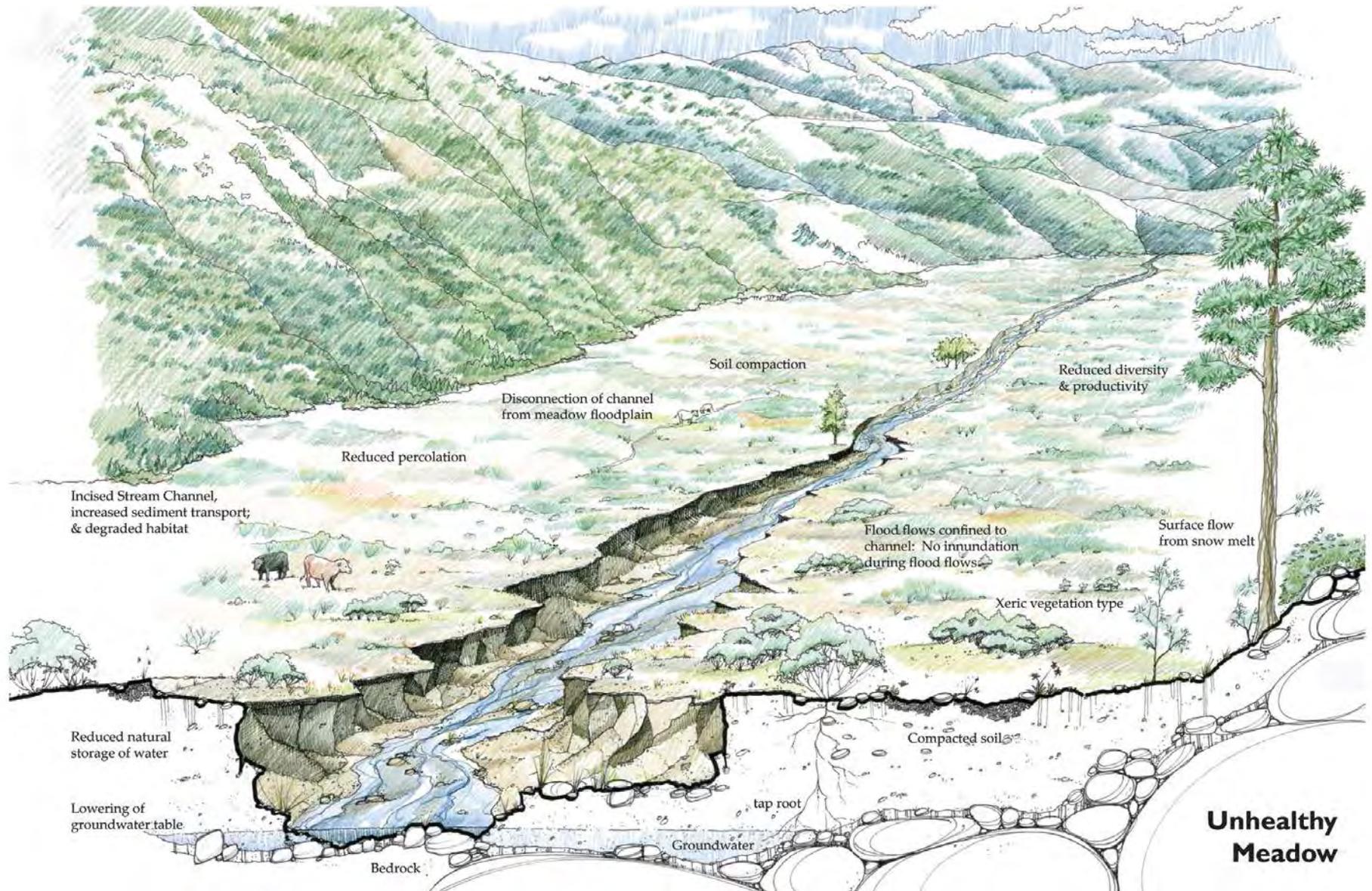


Erosion following the Hayman Fire, CO  
\$36 million in reservoir dredging  
Denver Water put the cost on water users bill

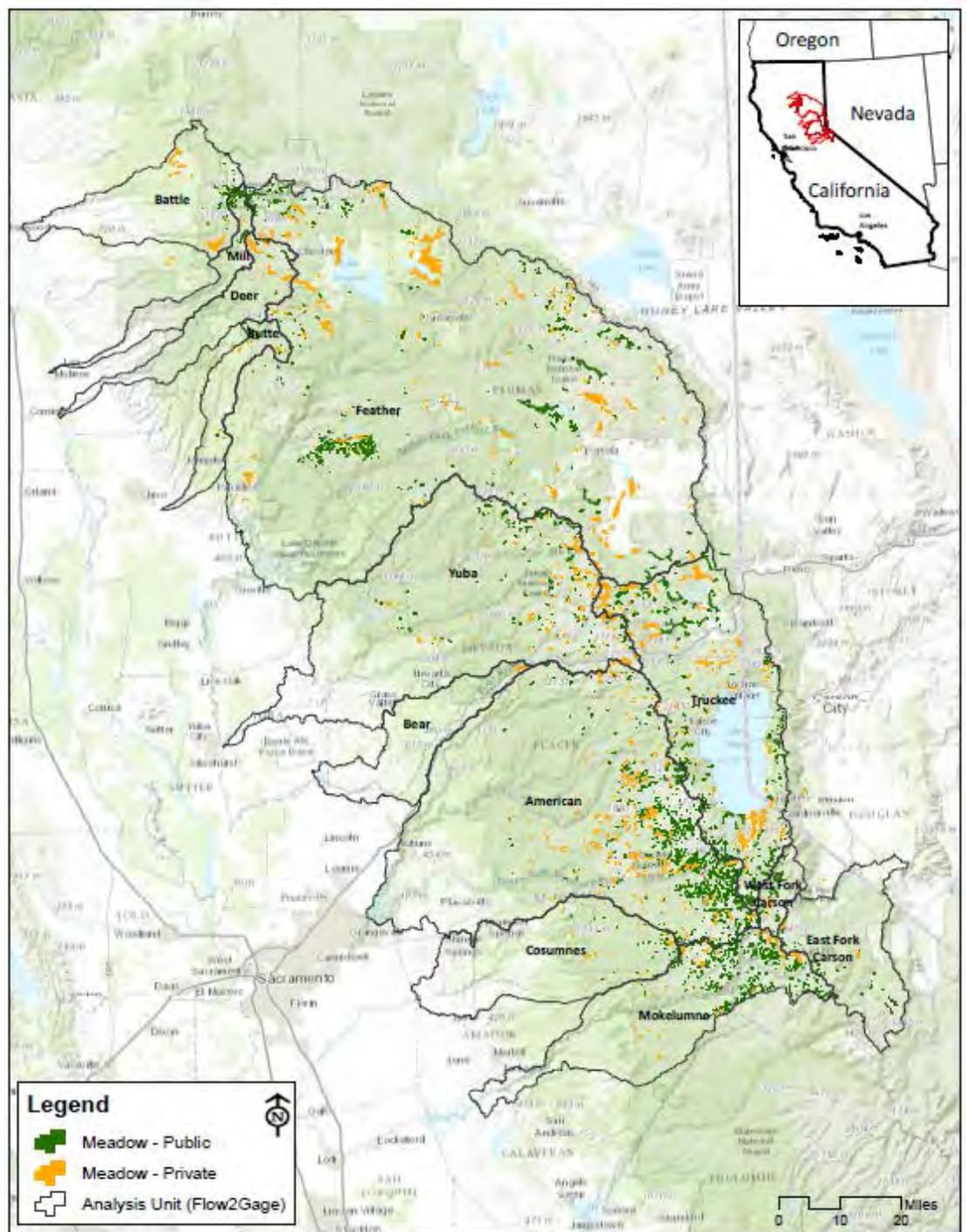
# MEADOW RESTORATION AND WATER



# MEADOW RESTORATION AND WATER



# Meadows in the Northern Sierra



# Water Benefits from Restoration and Conservation



**Forest Restoration**



**Land Conservation**



**Meadow Restoration**

**0.1-0.4 AF/acre  
increase**

**0.01-0.6 AF/acre  
increase**

**0.5-0.7 AF/acre  
shift in timing**

1 Acre Foot (AF) = 325,851 gallons

# Mokelumne Watershed Environmental Benefits Program



Sustainable Conservation



EDF  
ENVIRONMENTAL  
DEFENSE FUND™  
Finding the ways that work



SIERRA NEVADA  
CONSERVANCY



The Nature  
Conservancy  
Protecting nature. Preserving life.™



FOREST SERVICE  
U.S.  
DEPARTMENT OF AGRICULTURE



Environmental  
Incentives

<b>Costs</b>		
Fuel Treatments	\$68,000,000 <sup>1</sup>	\$68,000,000
<b>Benefits</b>	<b>Low</b>	<b>High</b>
Structures Saved	\$32,000,000	\$45,600,000
Avoided Fire Cleanup	\$22,500,000	\$22,500,000
Carbon Sequestered	\$19,000,000	\$71,000,000
Merchantable Timber from Treatment	\$14,000,000	\$27,000,000
Avoided Suppression	\$12,500,000	\$20,800,000
Biomass from Treatments	\$12,000,000	\$21,000,000
Avoided Road Repairs and Reconstruction	\$8,600,000	\$8,600,000
Transmission Lines Saved	\$1,600,000	\$1,600,000
Avoided Sediment for Utilities (electricity and water supply)	TBD	TBD
Timber Saved	\$1,200,000	\$3,130,000
<b>Total Benefits</b>		

# Carbon and Climate Benefits of Healthy Watersheds

- Restored Meadows Sequester More Carbon than Degraded Meadows
- Water Timing Benefits from Restored Meadows Can Mitigate Climate Change Impacts
- Thinned Forests are More Resilient to Megafires that Can Release Enormous Amounts of GHGs





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