

# Agenda Item X

## Mokelumne Avoided Cost Analysis

Presented by:  
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# **MOKELUMNE AVOIDED COST ANALYSIS**



**OPPORTUNITIES TO ENHANCE FOREST HEALTH AND WATER SUSTAINABILITY**

# Partners

## Core Team:

- Sierra Nevada Conservancy
- US Forest Service Region 5
- The Nature Conservancy
- Sustainable Conservation
- Environmental Defense Fund

## Steering and Technical Teams:

- East Bay Municipal Utility District
- Pacific Gas & Electric
- El Dorado National Forest
- Stanislaus National Forest
- Bureau of Land Management
- Sierra Pacific Industries
- Native Tribe
- Foothill Conservancy
- Department of Water Resources
- CALFIRE
- Local Fire Districts
- Amador & Calaveras Counties



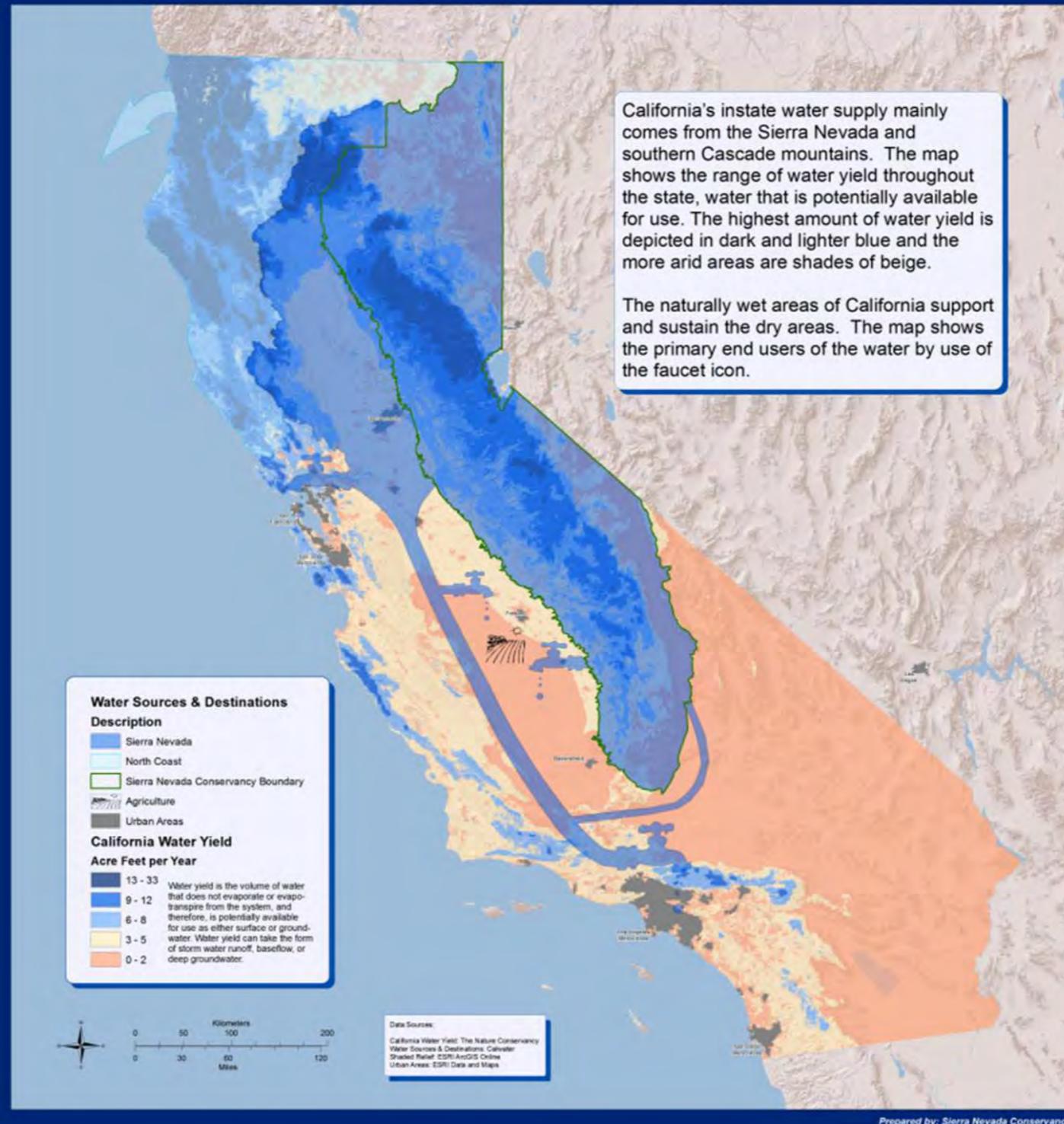
Credit: Mathew Grimm/EDF

# What are Ecosystem Services?

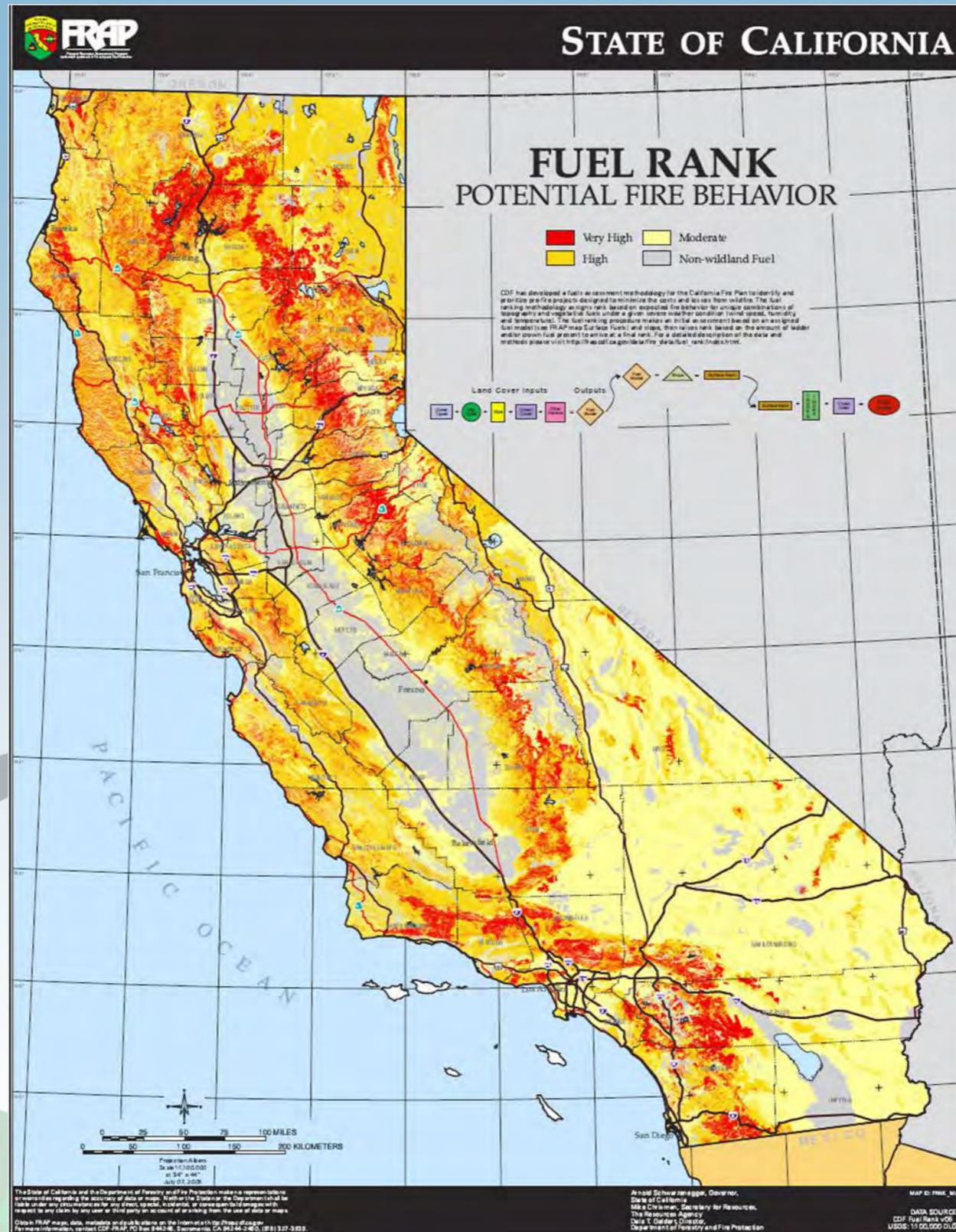
- Nature's values or nature's benefits
- Human benefits from resources and processes that are supplied by natural ecosystems
- Products like clean drinking water
- Compensating land managers for managing their land in a way that benefits the larger community

# Water Source

## California's Sierra Nevada - Your Source of Water



# Fire: Current Conditions



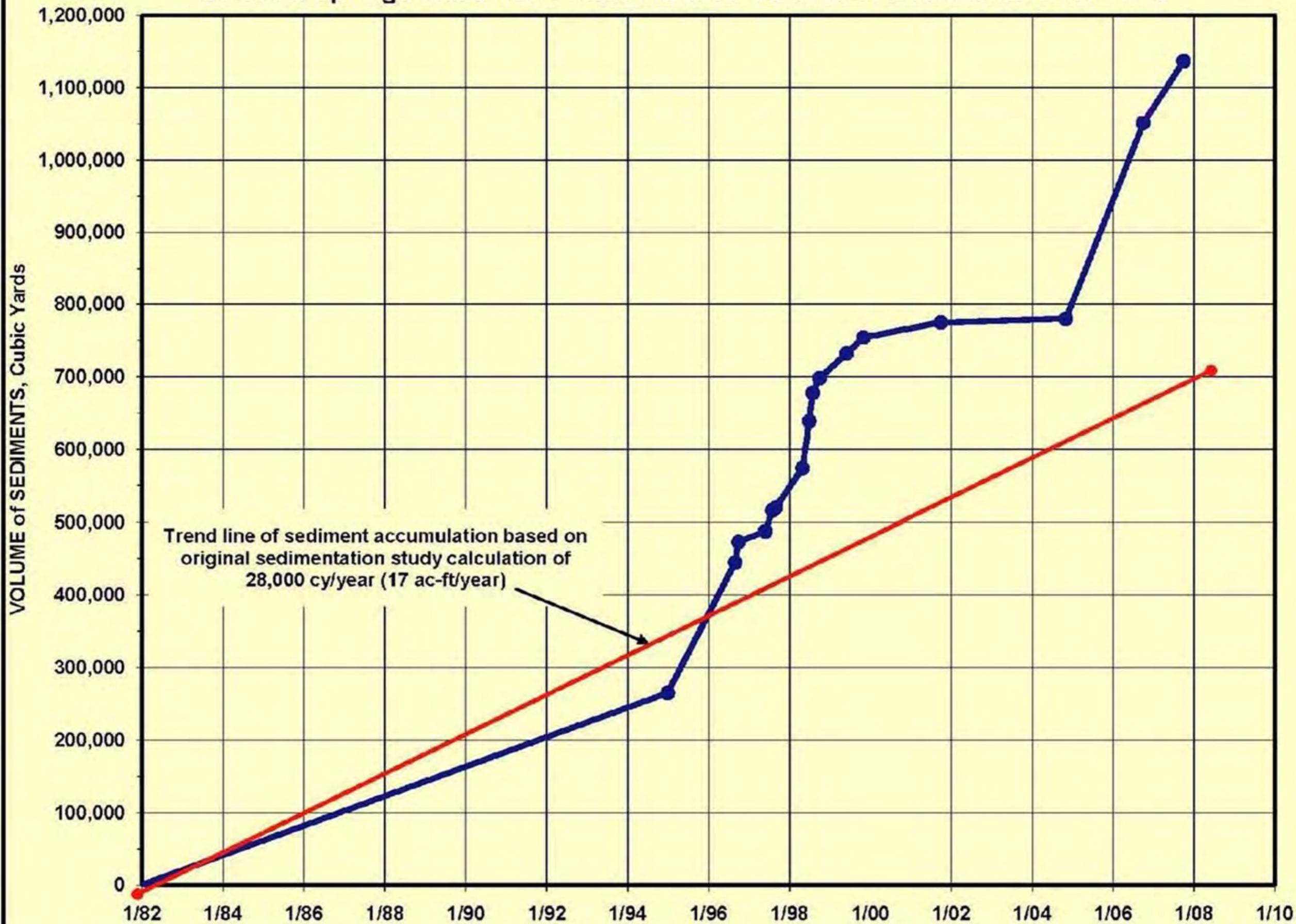
# Denver, Colorado

Over \$145 million in costs since 1996 and 2002 fires

- \$30 million dredge primary reservoir
- \$42 million + fire suppression costs
- \$37 million restoration costs
- \$39 million destroyed structures

# Strontia Springs Reservoir Sedimentation

## Strontia Springs Reservoir - Accumulated Volume of Sediments Over Time





# Denver, Colorado

Led to a 5 year partnership with the U.S. Forest Service to restore 38,000 acres

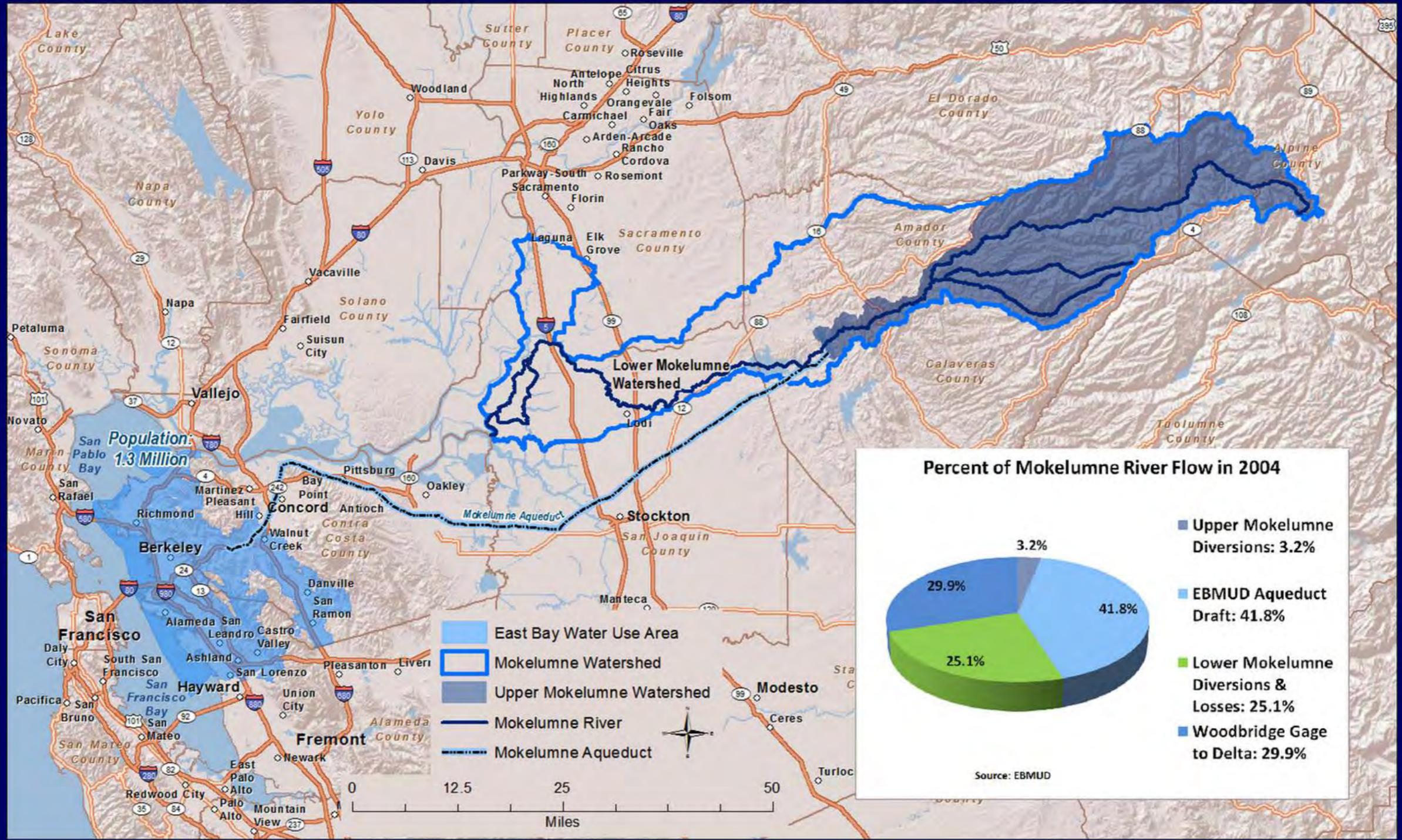
- Each partner is contributing \$16 million
- Each Denver Water customer pays \$27 in additional costs over 5 years to pay for the restoration

# Santa Fé, New Mexico

- Estimated cost to retain the restored forest condition is estimated at \$4.3 million, an average of \$200,000 per year
- The estimated cost of a 7,000 acre fire is \$22 million
- Customers pay about \$6.50 more per year, per household

# Mokelumne Water Distribution

## Mokelumne Water Distribution

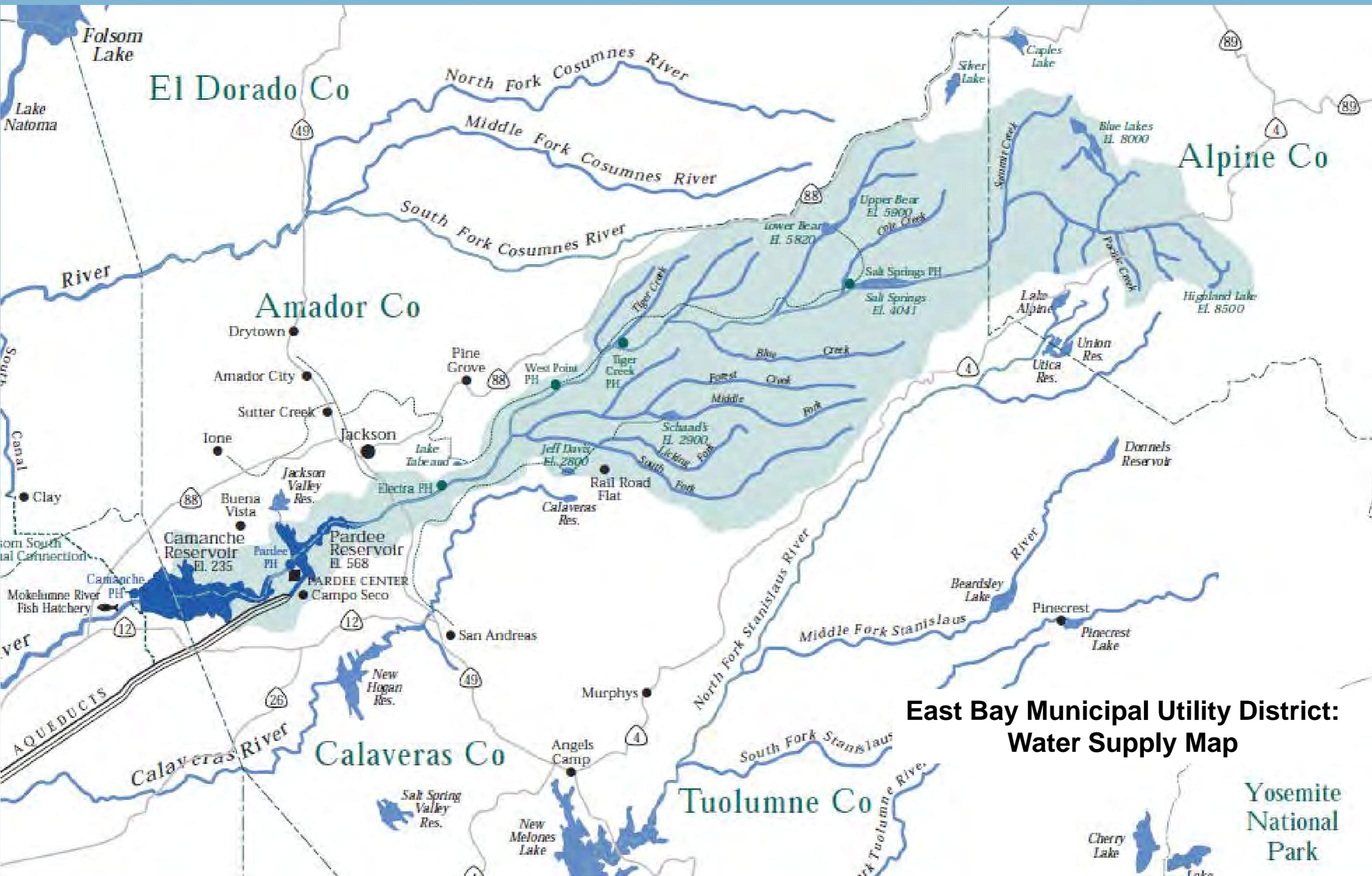




Credit: Mathew Grimm/EDF



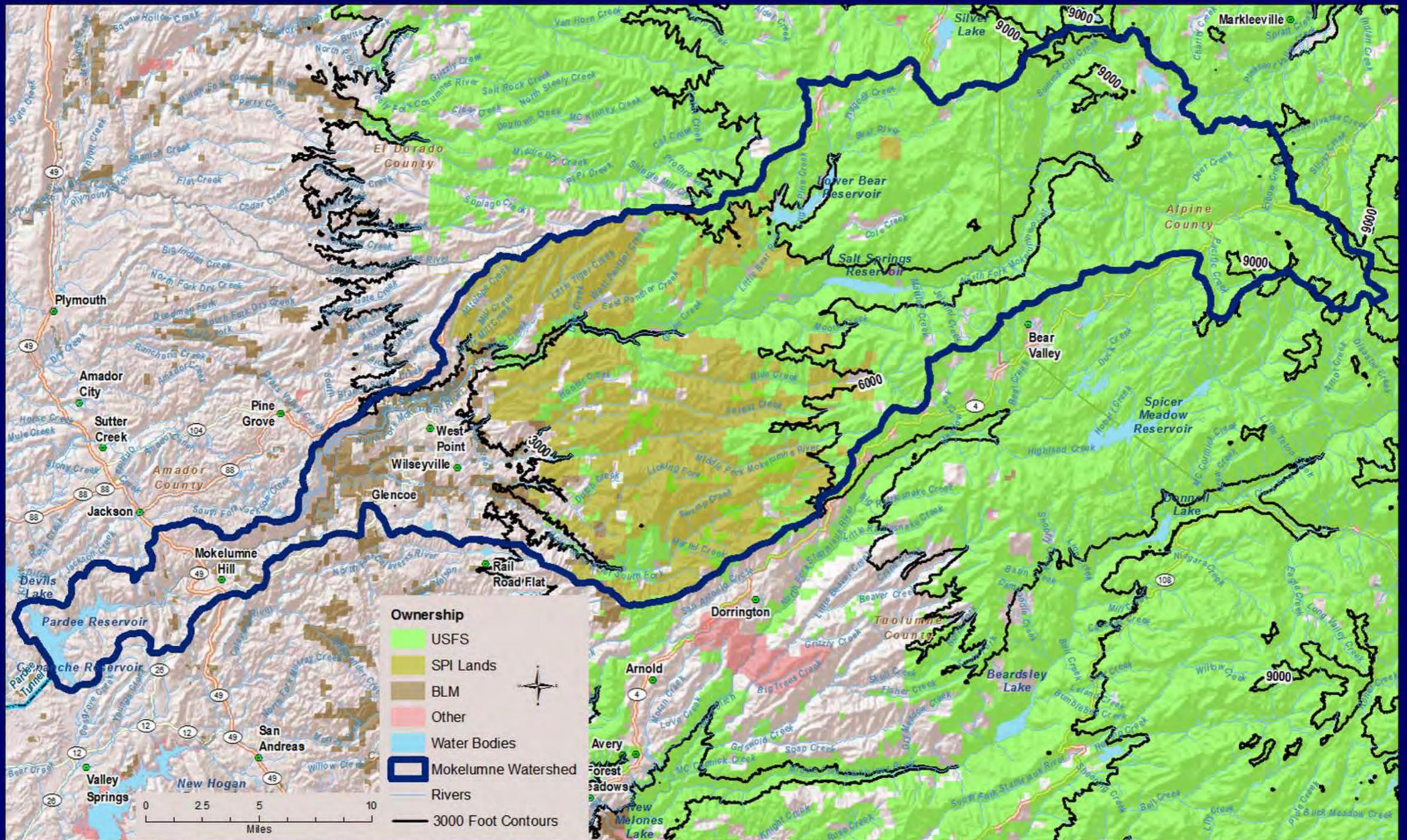
**Credit: Mathew Grimm/EDF**



**East Bay Municipal Utility District:  
Water Supply Map**

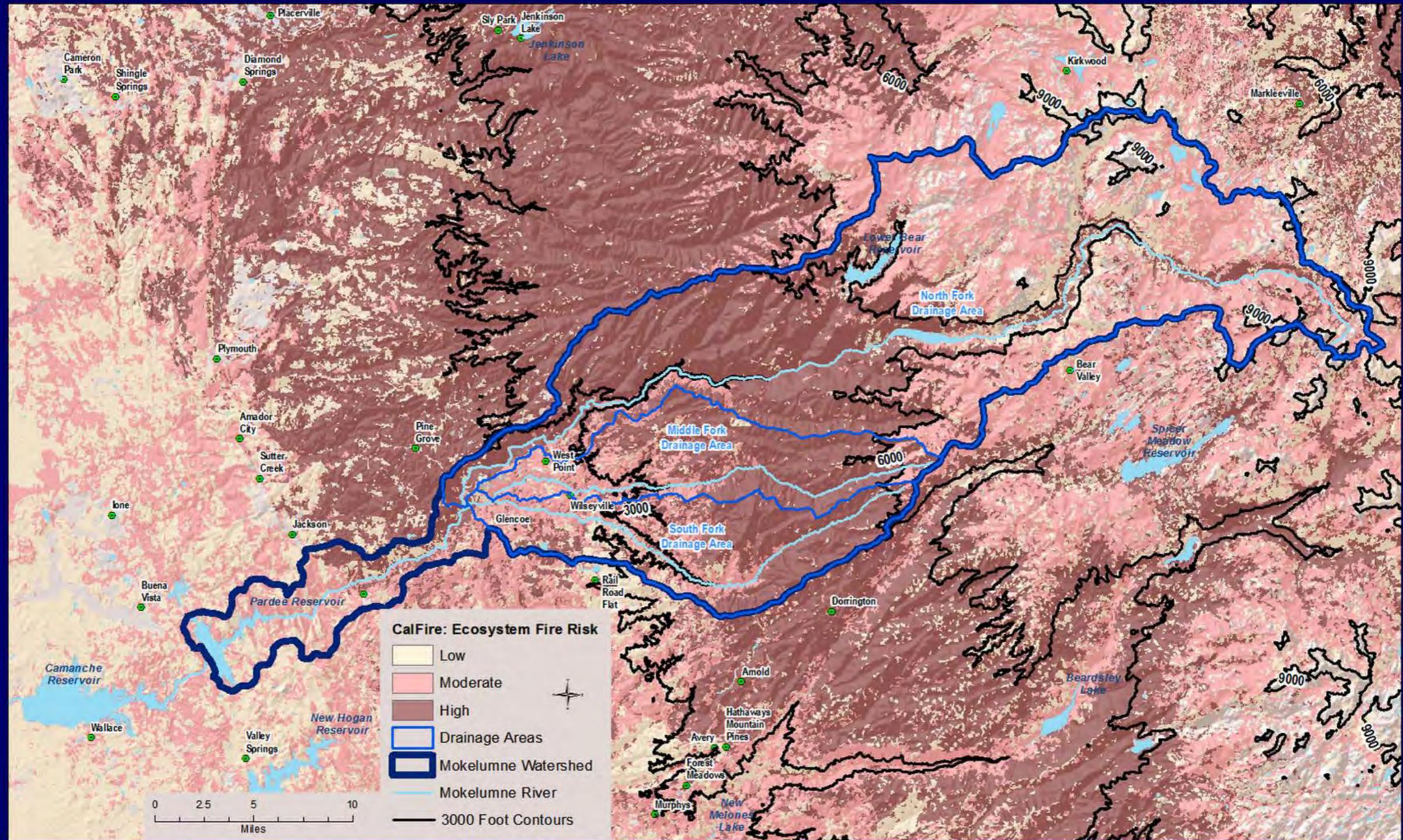
# Ownership

## Mokelumne Watershed Land Ownership



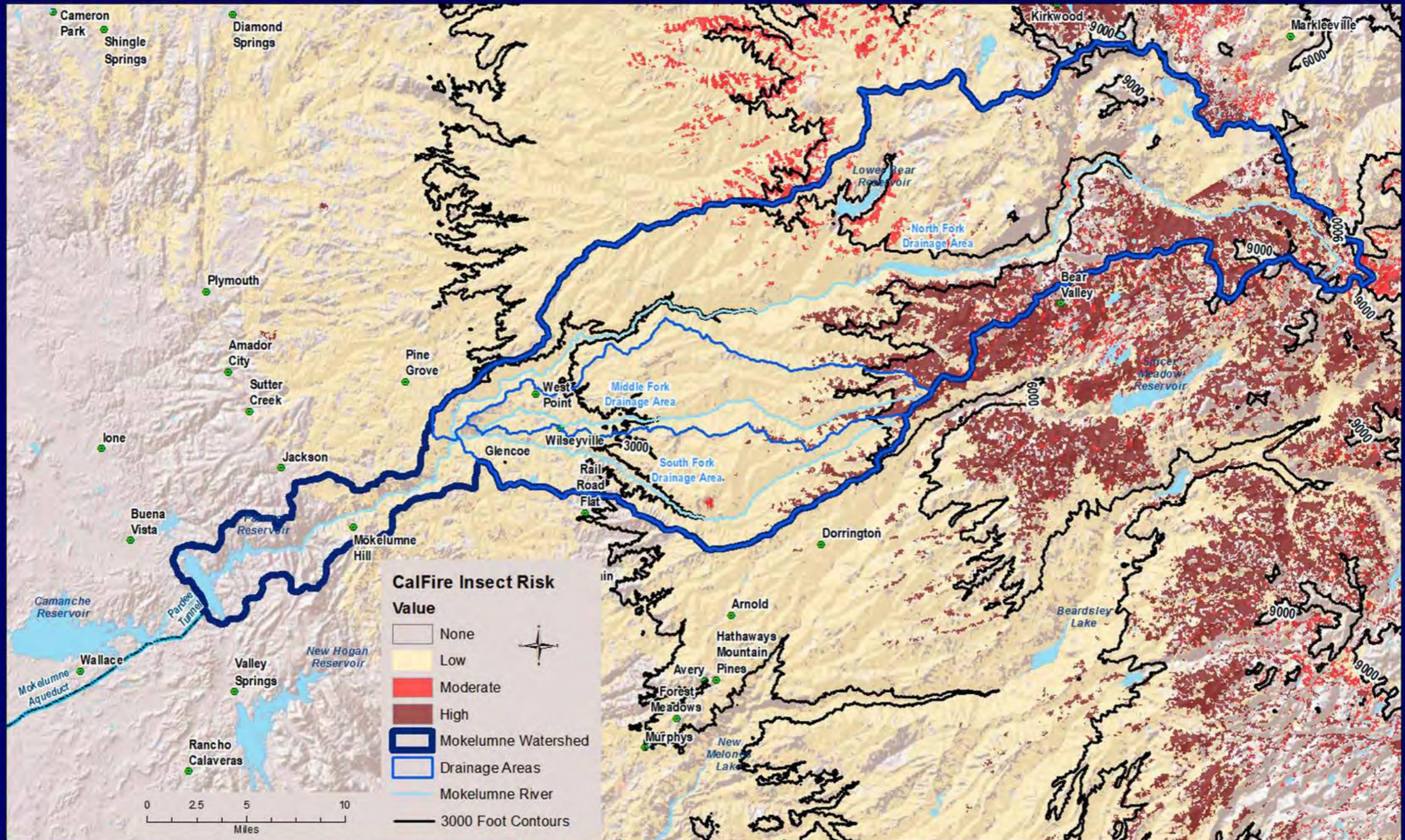
# Fire: Current Conditions

## Mokelumne Watershed Fire Risk

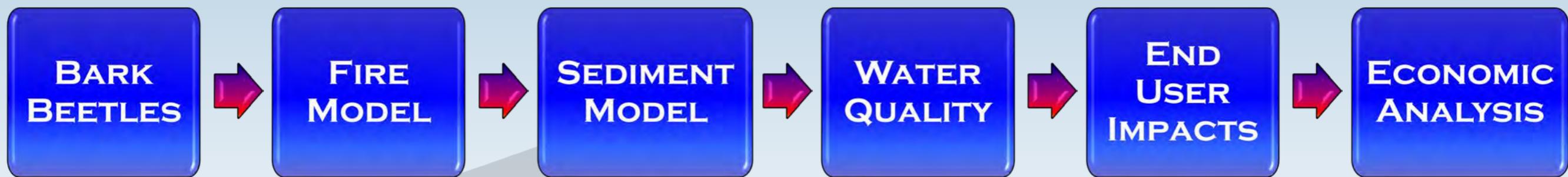


# Current Conditions: Insects

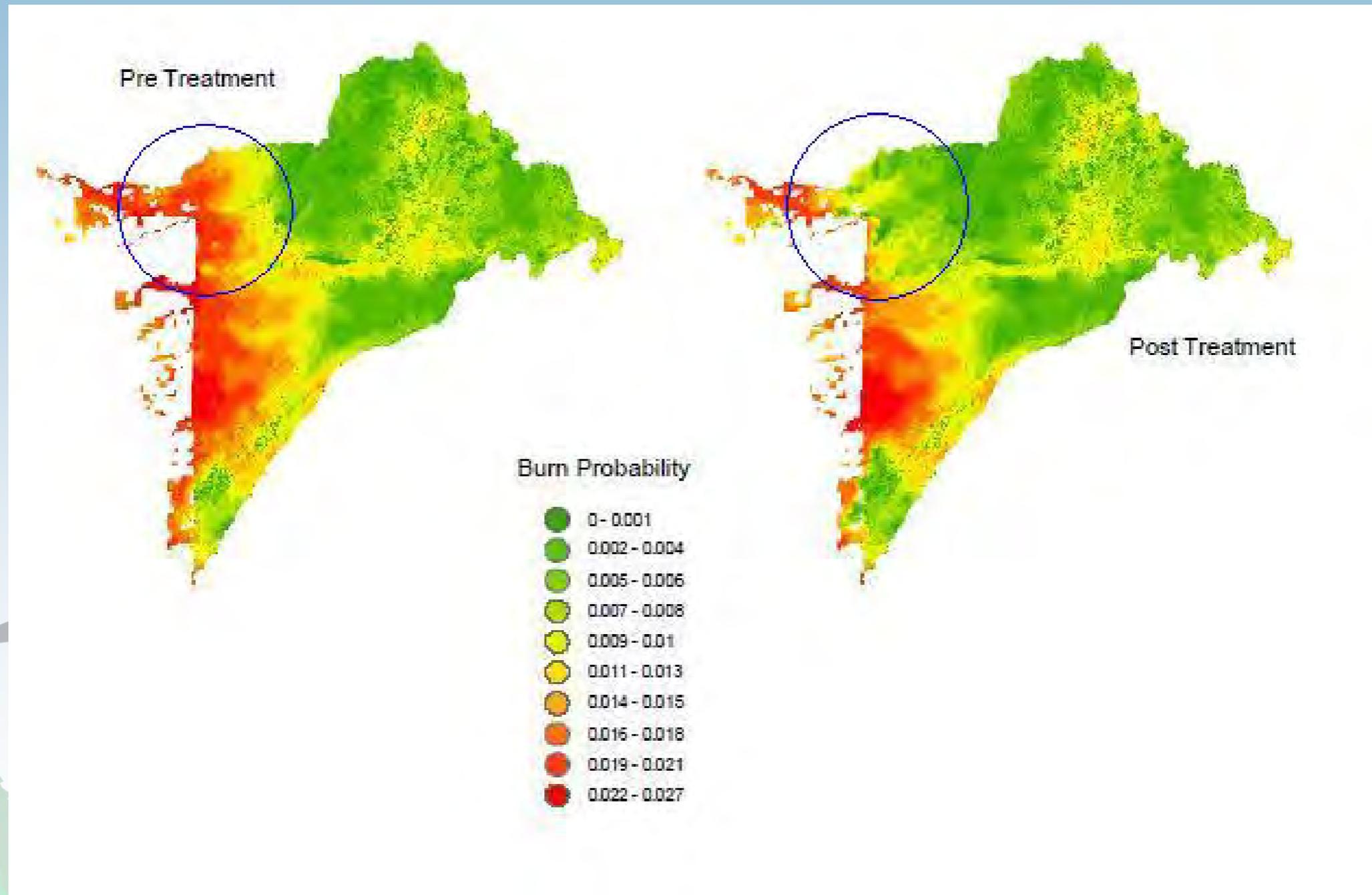
## Mokelumne Watershed Insect Risk



# Model Flowchart

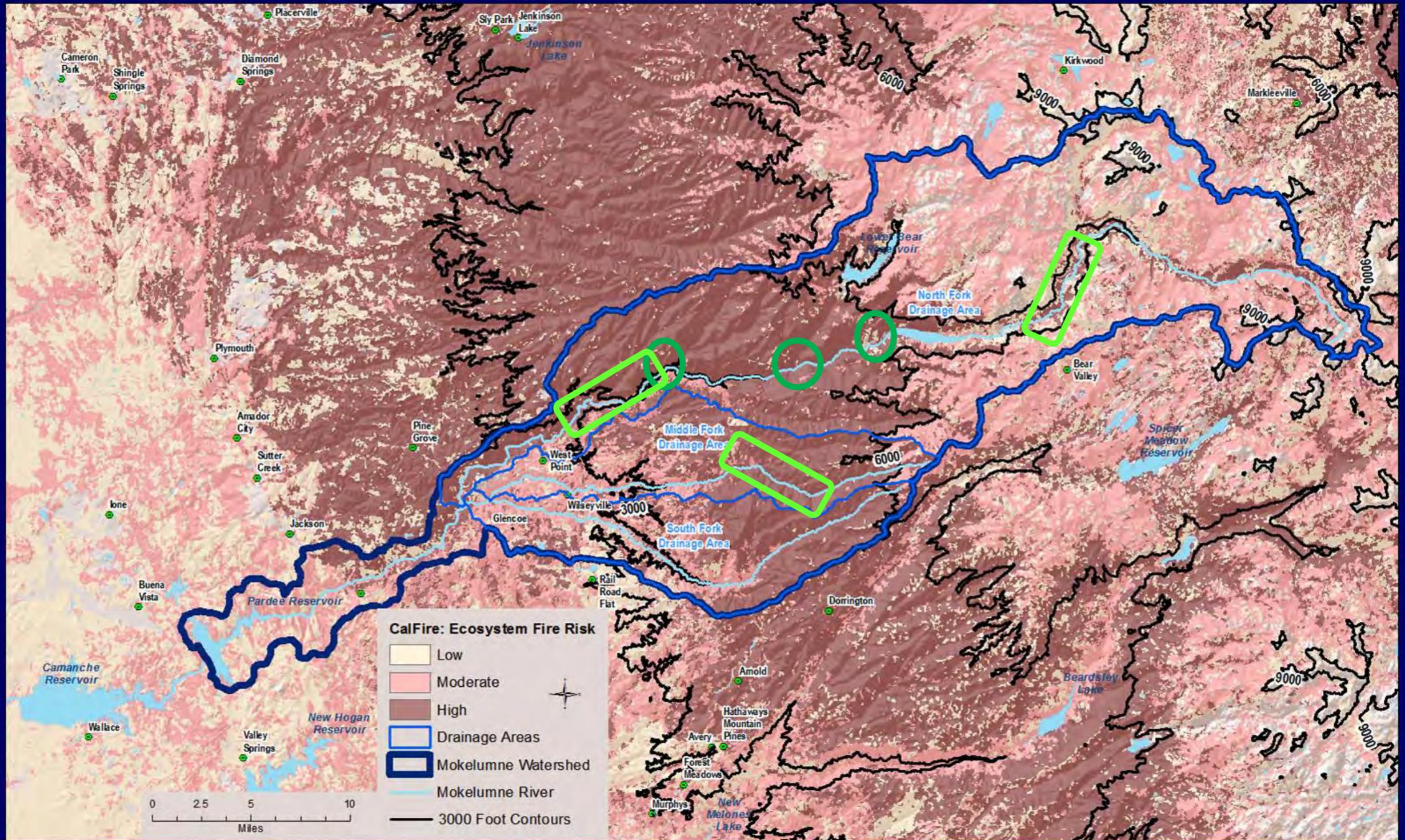


# Cornerstone FSIM Model



# Locating High-Priority Areas

## Mokelumne Watershed Fire Risk



# Costs to Avoid

- Fire suppression
- Restoration and revegetation
- Destroyed water and power infrastructure
- Dredge reservoirs and channels
- Fire igniter liabilities
- Destroyed structures (homes, etc.)

# Project Funding Status

<b>Total estimated cost of Phase 1:</b>	<b>\$217,000</b>
<b>Funds secured 2011:</b>	<b>\$87,000 (SNC/FS)</b>
<b>Funds secured 2012:</b>	<b>\$130,000 (SNC/FS/TNC)</b>

# Estimated In-Kind Funding

<b>Federal</b>	<b>\$271,400</b>
<b>Non-Federal</b>	<b>\$400,700</b>
<b>Total</b>	<b>\$672,100</b>

Core, technical, and steering committee participant time over 18 months

# Project Schedule

- December 2012 – Draft Analysis
- February 2013 – Final Analysis
- June 2013 – Negotiate Agreements