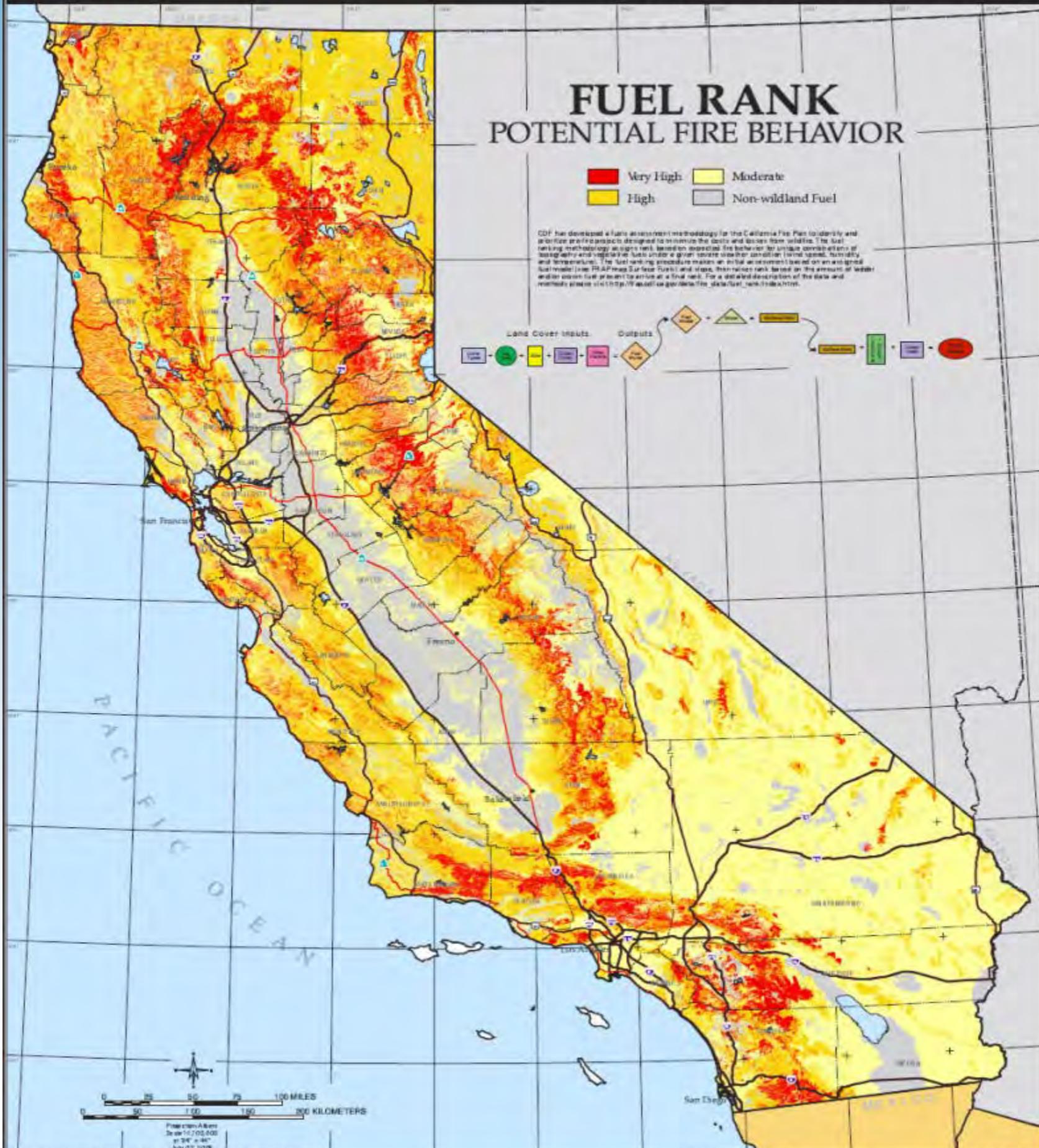
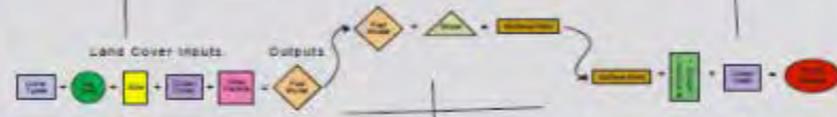


FUEL RANK POTENTIAL FIRE BEHAVIOR

- Very High
- High
- Moderate
- Non-wildland Fuel

CDP has developed a fuel assessment methodology for the California Fire Plan to identify and prioritize areas for fire management designed to minimize the costs and losses from wildfires. The fuel ranking methodology assigns rank based on predicted fire behavior for unique combinations of topography and vegetation fuels under a given climate scenario (wind speed, humidity and temperature). The fuel ranking procedure makes an initial assessment based on an assigned fuel model (see FRAP map Surface Fuels) and slope, then ranks rank based on the amount of ladder and/or crown fuel present to arrive at a final rank. For a detailed description of the data and methodology please visit http://frap.cdpr.ca.gov/data/the_data/fuel_rank.html.

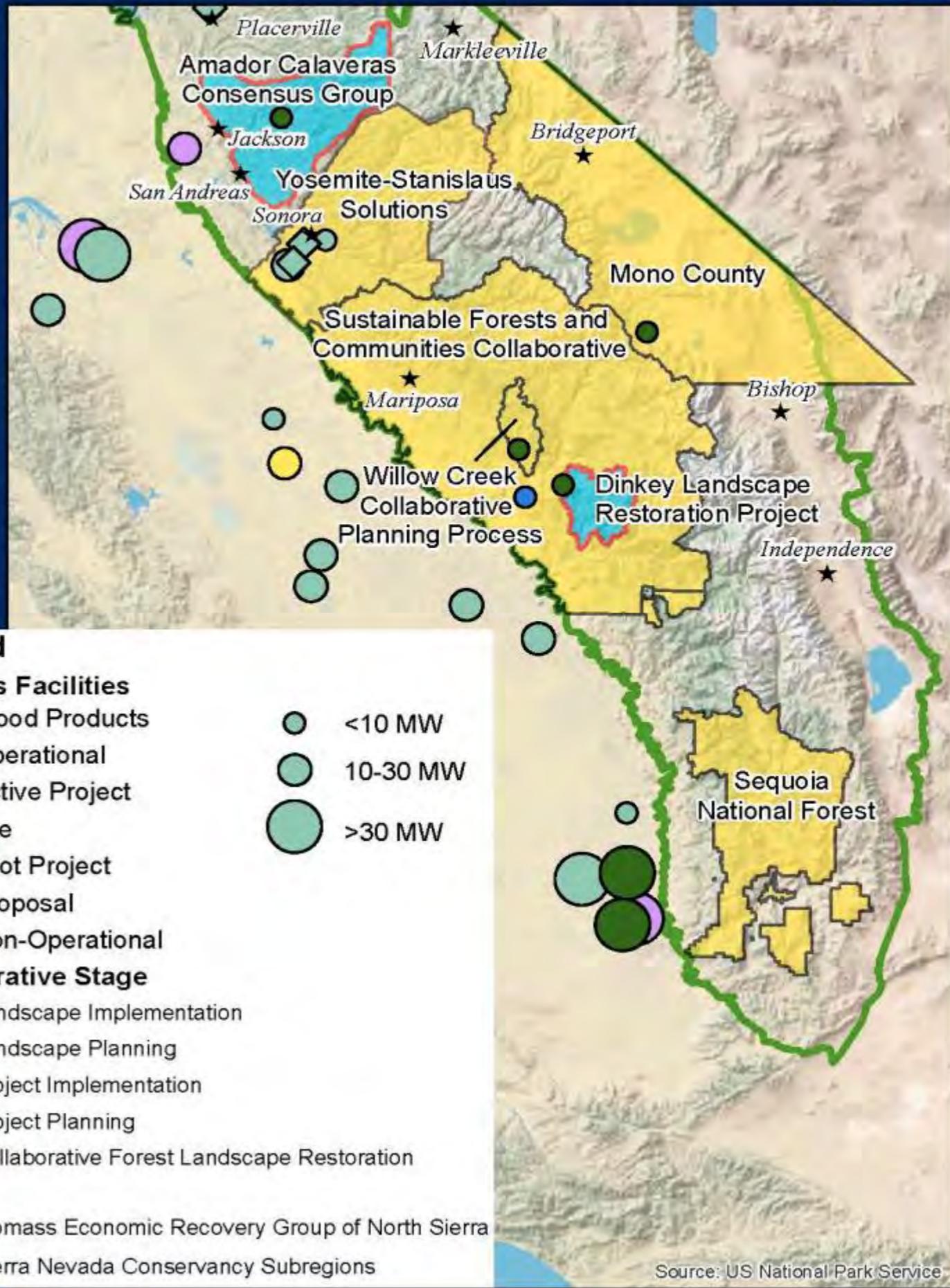
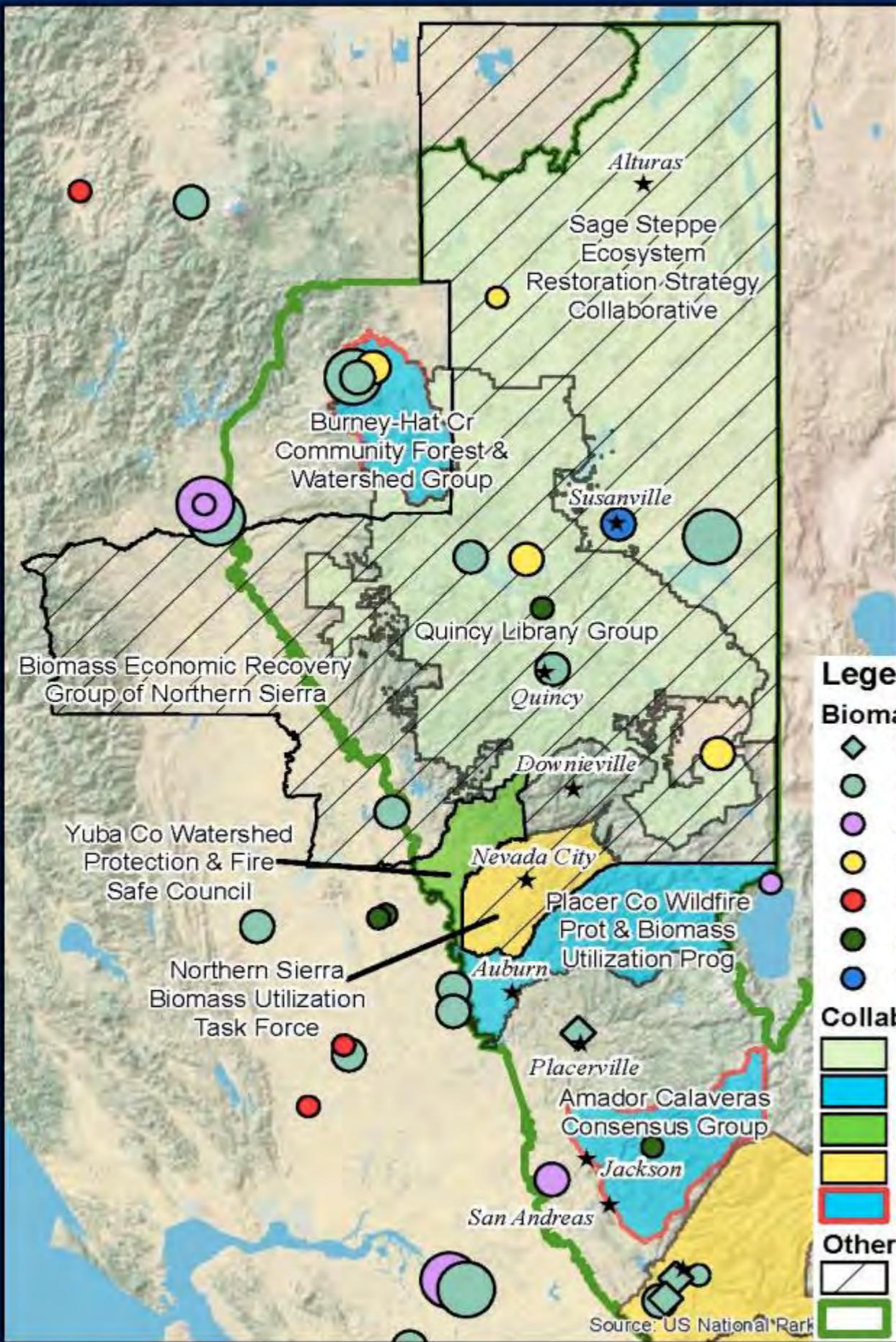


The State of California and the Department of Forestry and Fire Protection make no representation as to the accuracy of data or maps. It is the user's responsibility to ensure that all data is taken under any circumstances for any direct, indirect, incidental, or consequential damages or to request to any user or third party an account of or arising from the use of data or maps.

Arnold Schwarzenegger, Governor
 Dave Cortese, State Assembly Member
 Mike Chenier, Secretary for Resources, The Resources Agency
 Dale T. Gilder, Director, Department of Forestry and Fire Protection

MAP ID: FRANK_MAP
 DATA SOURCES:
 CDF Fuel Rank v08_2
 UTM: 11 00,000 UTM

Sierra Nevada Local Forest Collaboratives and Biomass Energy Facilities



Legend

Biomass Facilities

- ◆ Wood Products
- Operational
- Active Project
- Idle
- Pilot Project
- Proposal
- Non-Operational

Capacity Legend:

- <10 MW
- 10-30 MW
- >30 MW

Collaborative Stage

- Landscape Implementation
- Landscape Planning
- Project Implementation
- Project Planning
- Collaborative Forest Landscape Restoration

Other

- ▨ Biomass Economic Recovery Group of North Sierra
- Sierra Nevada Conservancy Subregions

Source: US National Park Service

Source: US National Park Service

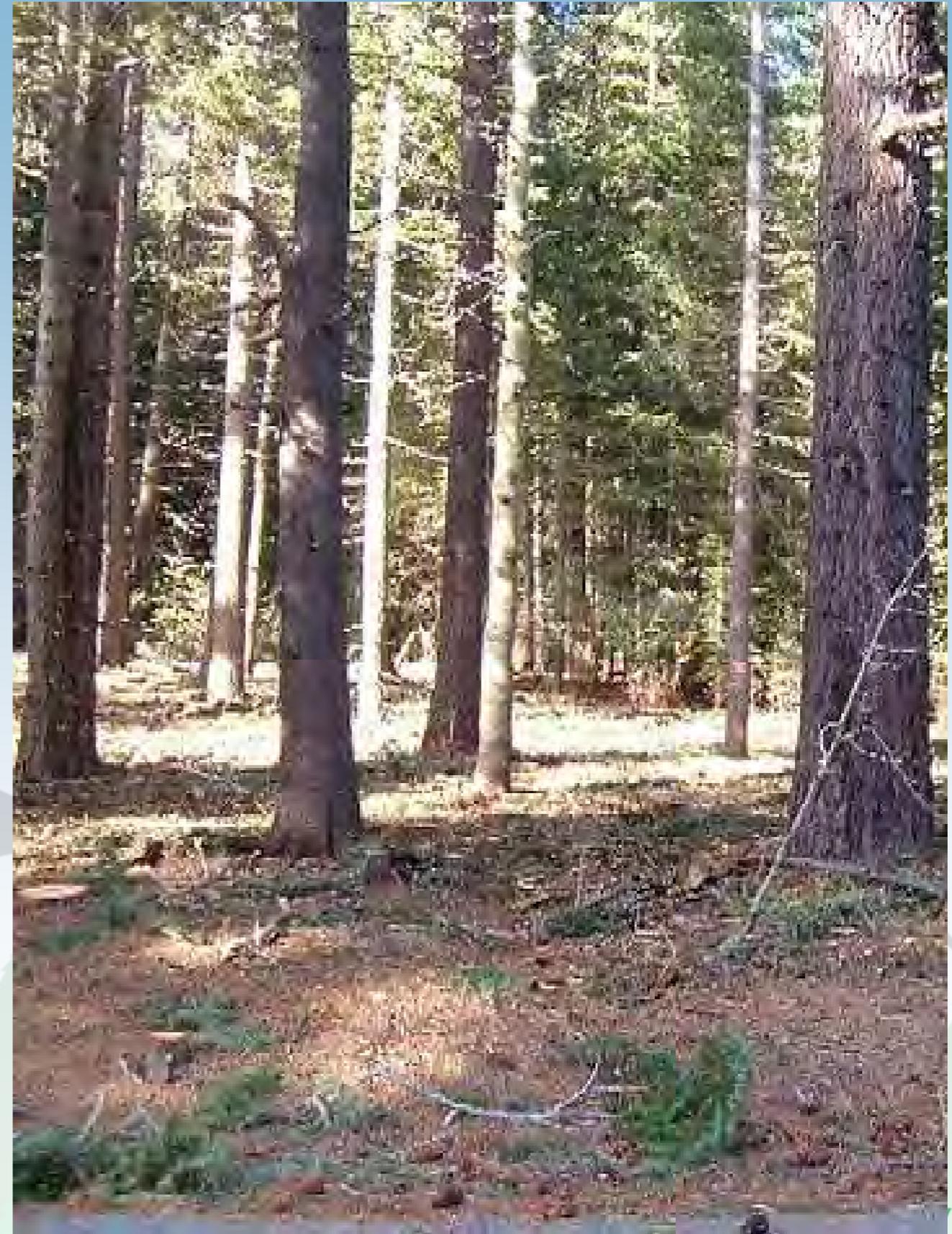
Advantages of Biomass Power Generation

- Provides baseload renewable energy (24/7) on a cost effective basis.
- Numerous societal benefits:
 - Supports hazardous fuels reduction and healthy forests
 - Provides employment (4.9 jobs/MW)
 - Greenhouse gas reduction displacing fossil fuels
 - Reduces waste material destined for landfills
 - Net improvement in air quality

Merced, CA – 0.5 MW



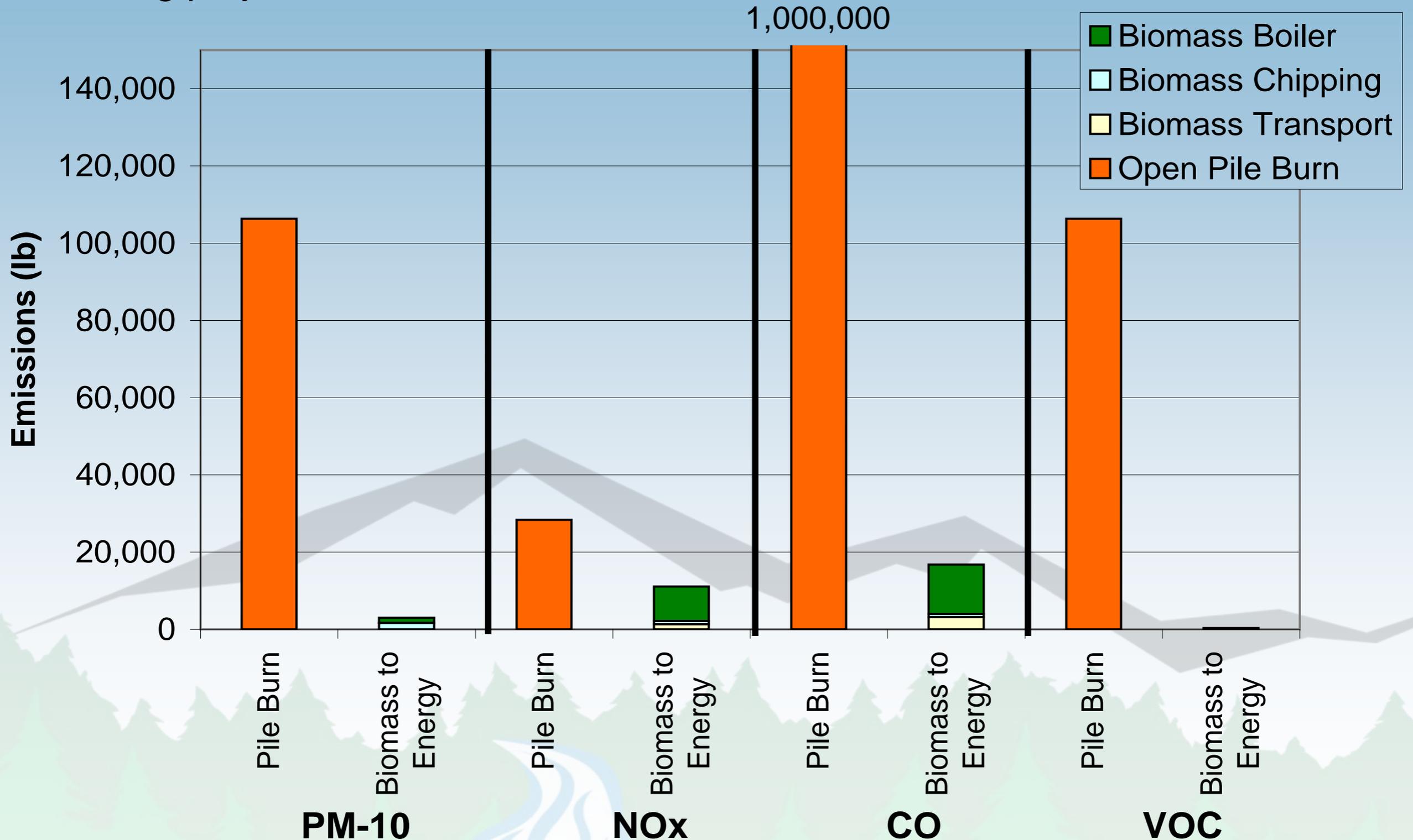
Untreated and Treated





Air Quality Benefits

Results from biomass energy project that processed 6,800 BDT biomass from thinning project on U.S.F.S. Tahoe National Forest American River District



Biomass Working Group

State

- California Energy Commission
- California Public Utility Commission
- Natural Resources Agency
- Department of Forestry and Fire Protection
- Sierra Nevada Conservancy
- Placer County
- UC Berkeley

Federal

- U.S. Forest Service

Technical Expertise/Industry

- TSS Consultants
- Miramar Environmental (PG&E representative)
- The Collins Company
- California Forestry Association

Non-Governmental

- Sierra Institute
- The Nature Conservancy
- Sierra Forest Legacy
- Northern Sierra Partnership
- Hayfork Watershed Center
- Pacific Forest Trust
- National Forest Foundation
- Sierra Business Council



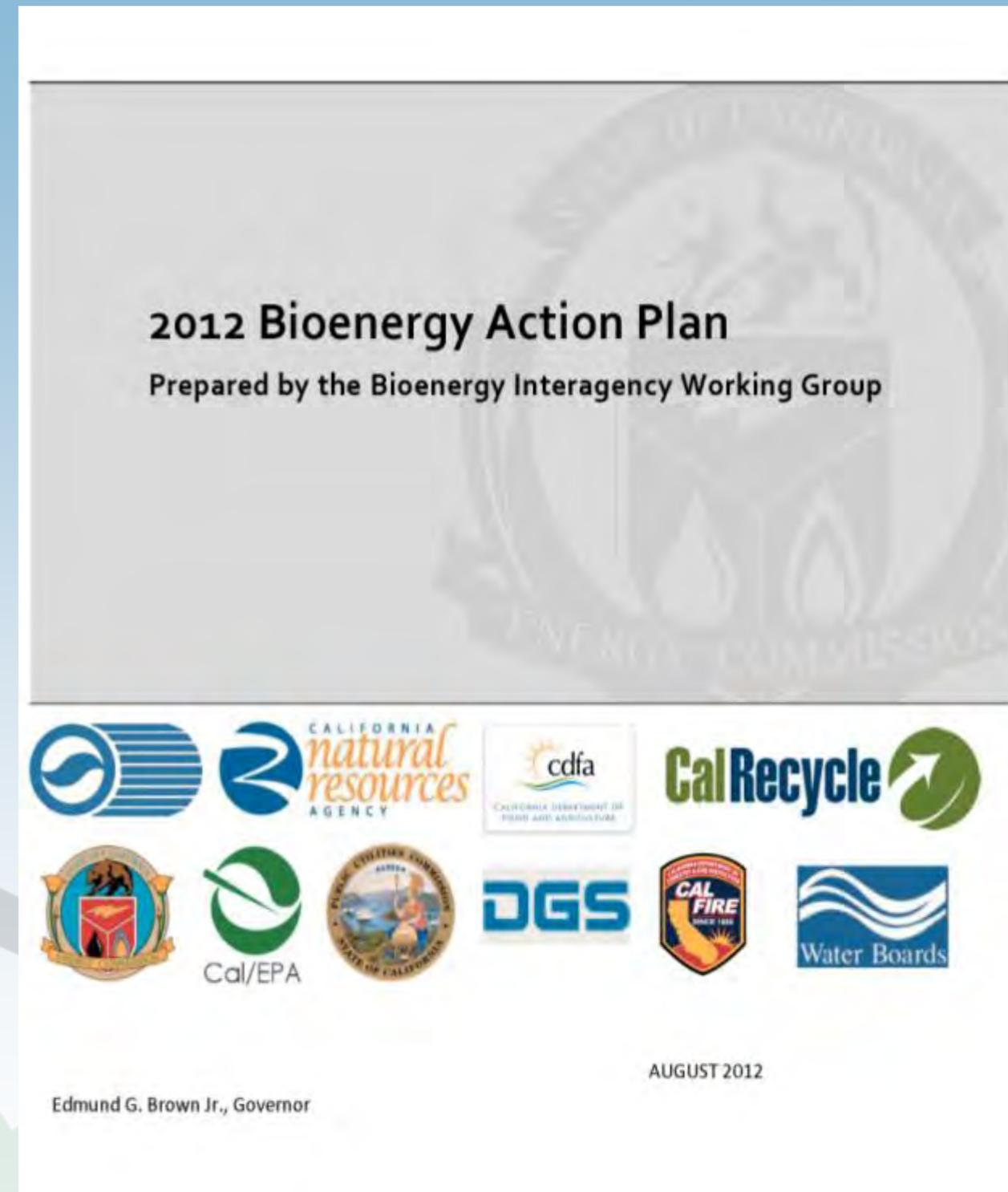
California Bioenergy Action Plan

- Identifies barriers to developing bioenergy in California and strategies to address those challenges;
- Assigns actions and deadlines to state agencies to meet the governor's goals regarding bioenergy;
- Plan will achieve the following goals:
 - Increase environmentally and economically sustainable energy production from organic waste;
 - Encourage development of diverse bioenergy technologies that increase local electricity generation;
 - Create jobs and stimulate economic development; and,
 - Reduce fire danger, improve air and water quality, and reduce waste.

California Bioenergy Action Plan

SNC and other agencies are called to assist in **developing woody biomass bioenergy demonstration projects by:**

- Updating research on quantifying the benefits of bioenergy and identify areas of additional research.
- Coordinating the Biomass Working Group.
- Refining criteria for 'community-scale' projects, and identify candidate projects.
- Developing screening criteria to help local agencies determine the applicability of biomass technologies to their communities.
- Seeking funding for research on biomass technology and development of demonstration projects.



Senate Bill 1122

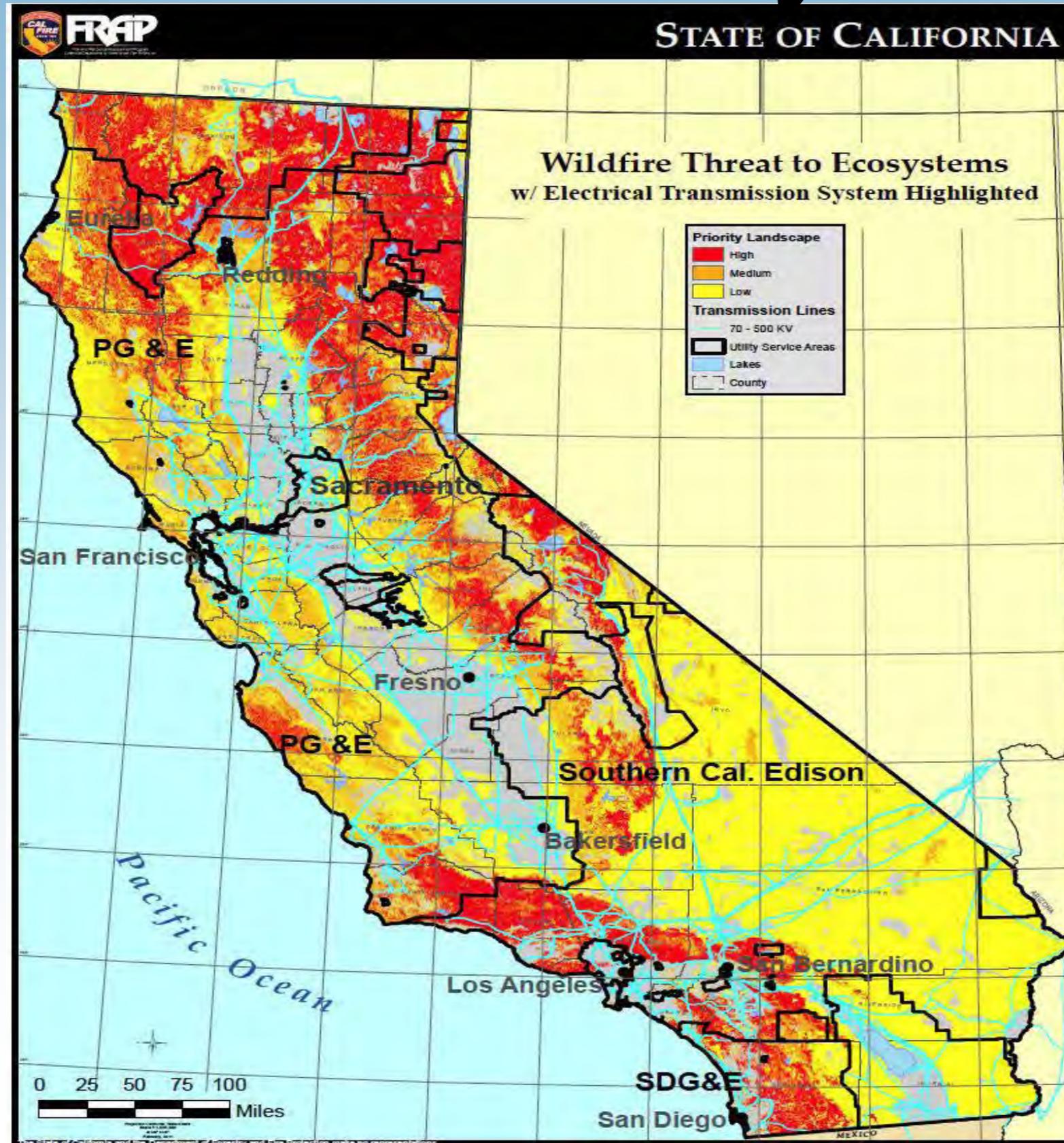
- Bill requires California Public Utilities Commission (CPUC) to direct electrical corporations to procure at least 250 megawatts of capacity from *new* bioenergy projects.
- 50 MW of the 250 MW are required to come from byproducts of sustainable forest management. An emphasis is placed on areas that have been defined as Fire Threat Treatment Zones by CALFIRE.
- Only facilities that are 3 MW or less can be counted toward the 250 MW requirement.
- Facilities will also count toward meeting the electrical corporation's renewables portfolio standard.
- Tariff payments will be determined by the market price of a kWh of electricity as determined by the CPUC.
- In his signing notice, the Governor urged relevant government agencies to advise the CPUC on bioenergy projects that could negatively impact air quality.

The Importance of SB 1122

- Supports multiple policy and strategic plans
 - Community based distributed energy
 - Creation of markets for woody biomass from hazardous fuels reduction
 - 50 Mw of distributed energy will utilize approximately 400,000 (BDT) of forest biomass
 - Support treatment of approximately 30,750 acres per year
 - Synergies relative to identified transmission grid hot spots/Fire Threat Treatment Areas



Wildfire Threat & Transmission System



Electric Program Investment Charge (EPIC)

- EPIC provides funding for applied research and development, technology demonstration and deployment, and market facilitation for clean energy technologies and approaches for the benefit of ratepayers
- Funds are provided by Investor Owned Utilities and the Public Utilities Commission
- \$26 million have been set aside for the next three years for bioenergy projects and activities related to technology demonstration and deployment

Active/Potential Projects

SPONSOR	LOCATION	SCALE
Placer County	Truckee, California	2 MW
North Fork Community Development Council	North Fork, California	1 MW
Calaveras Healthy Impact Products Solutions, Inc.	Wilseyville, California	2 MW
Indian Valley Community Service District	Greenville, California	3 MW
CDF Parlin Fork Conservation Camp	Fort Bragg, California	1 MW
Yuba County Watershed Protection & Fire Safe Council	Marysville, California	3 MW
Eastside Biomass Project	Mammoth Lakes, California	1 MW
Dinkey Collaborative/Southern California Edison	Shaver Lake, California	1 MW
Unity Forest Products	Yuba City, California	1 MW
	TOTAL	15 MW

North Fork Project

- North Fork Community Development Council owns the site.
- 1 MW project being considered at North Fork, California.
- New plant construction cost = \$4 to \$5 million.
- Consumes about 23 BDT/day (about 1BDT/MW/hour burn rate).
- Biomass transported about 30 miles (maybe farther).
- Delivered biomass fuel cost at \$45 to \$60 per BDT
- Average electrical energy production cost ~ \$0.14 - \$0.16/kWh
- Operational date: 2014



Placer County – Cabin Creek

- 2 MW facility near Truckee
- Includes a demonstration of heating capabilities for the building and for melting snow from roofs, driveways, and sidewalks
- EIR comment period closed in September
- Placer County has received \$2.5 in grants for project development, environmental review, and construction
- Operational date: winter 2014-2015



SNC Bioenergy Team

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- Nic Enstice
- Elissa Brown
- Mike Chapel
- Research Assistant