

# CALIFORNIA STATE ASSOCIATION OF COUNTIES

## Long-term Challenges for Forest Health

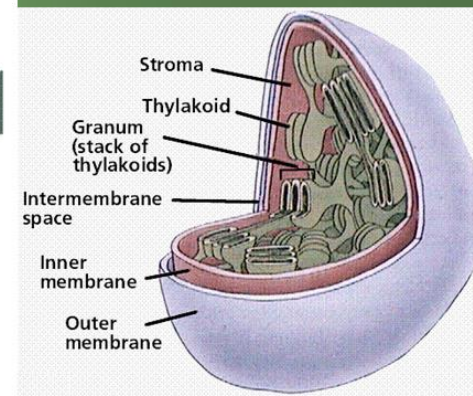
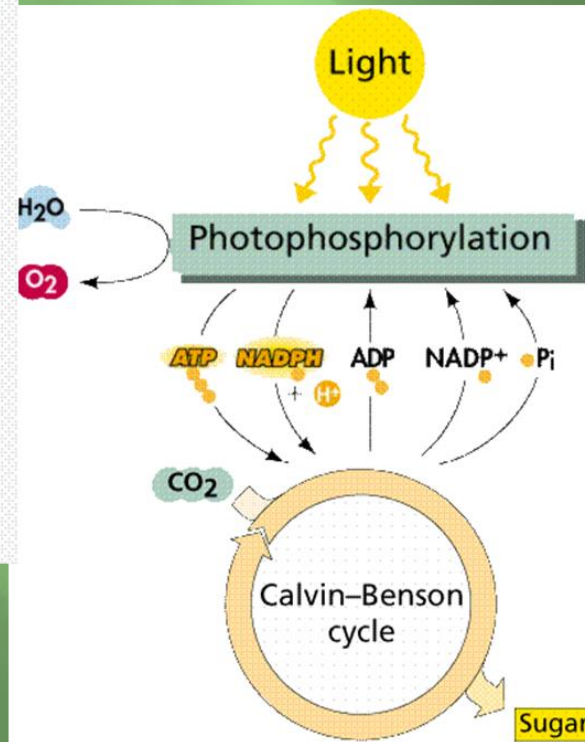
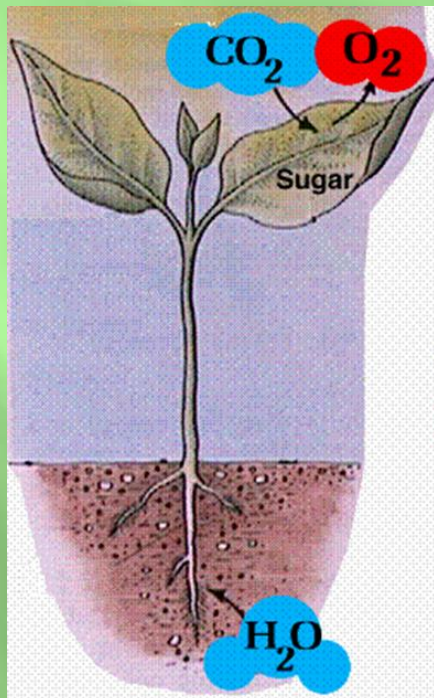


Rim Fire looking at Hetch Hetchy 2013

# FOREST HEALTH



six molecules of water plus six molecules of carbon dioxide produce one molecule of sugar plus six molecules of oxygen



# FOREST HEALTH

There are too many trees!!.



And the problem is growing.

# HISTORIC DISTURBANCE REGIME



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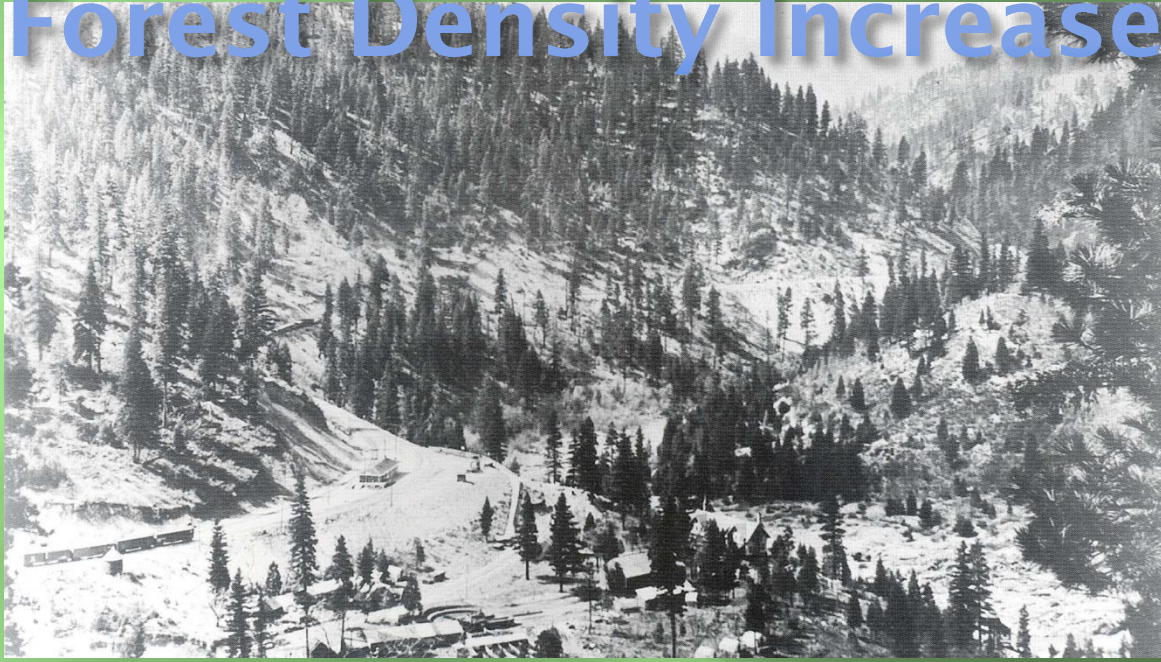


# HISTORIC DISTURBANCE REGIME



# Forest Density Increases

North  
Fork of  
the  
Feather  
River,  
Plumas  
County



1919



1993



# Forest Density Increases

1919



Coldstream  
Valley from  
Horseshoe  
Bend,  
Northwest  
of Lake  
Tahoe

1993



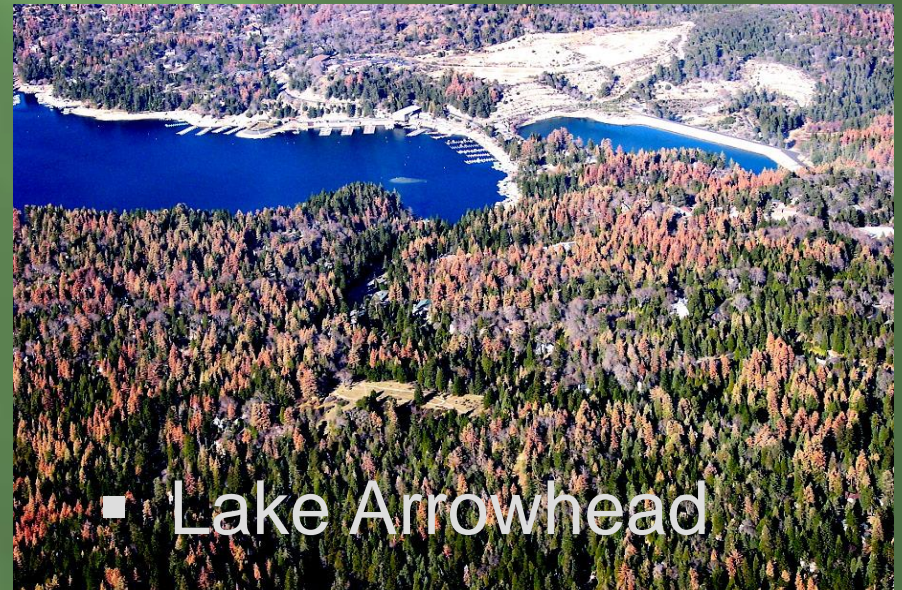
# Forest Densification



# CONSEQUENCES

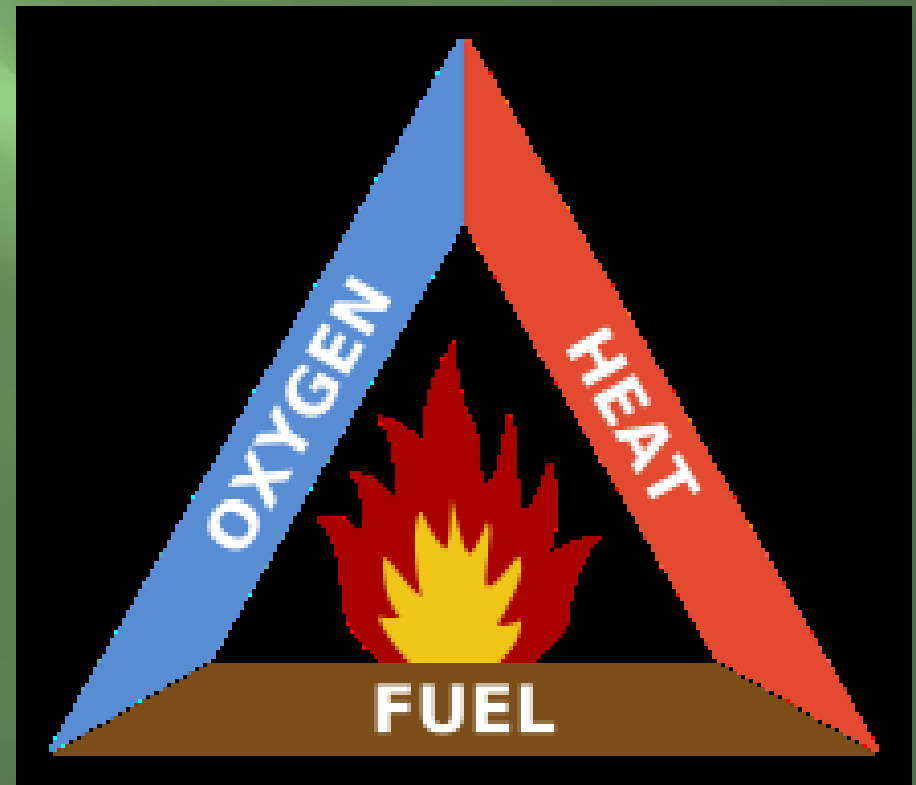
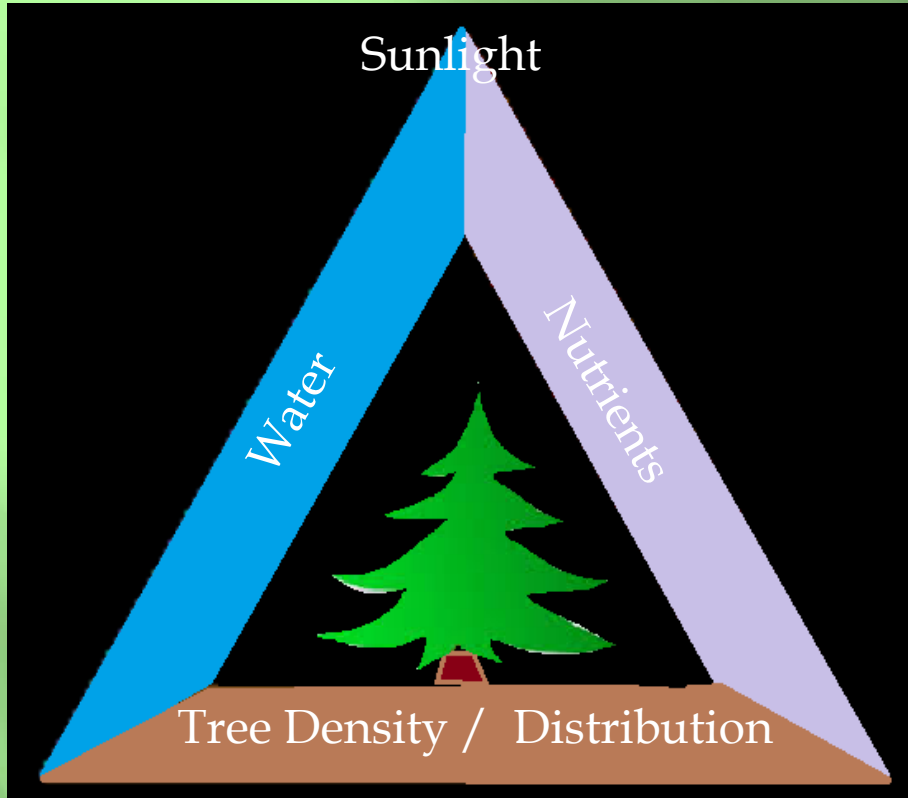


■ Lake Tahoe



■ Lake Arrowhead

# THE CURE



# THE CURE



# THE CURE



# THE CURE



# THE CURE





# BIOMASS FACILITIES ARE A CRITICAL COMPONENT OF MANAGING FOREST HEALTH

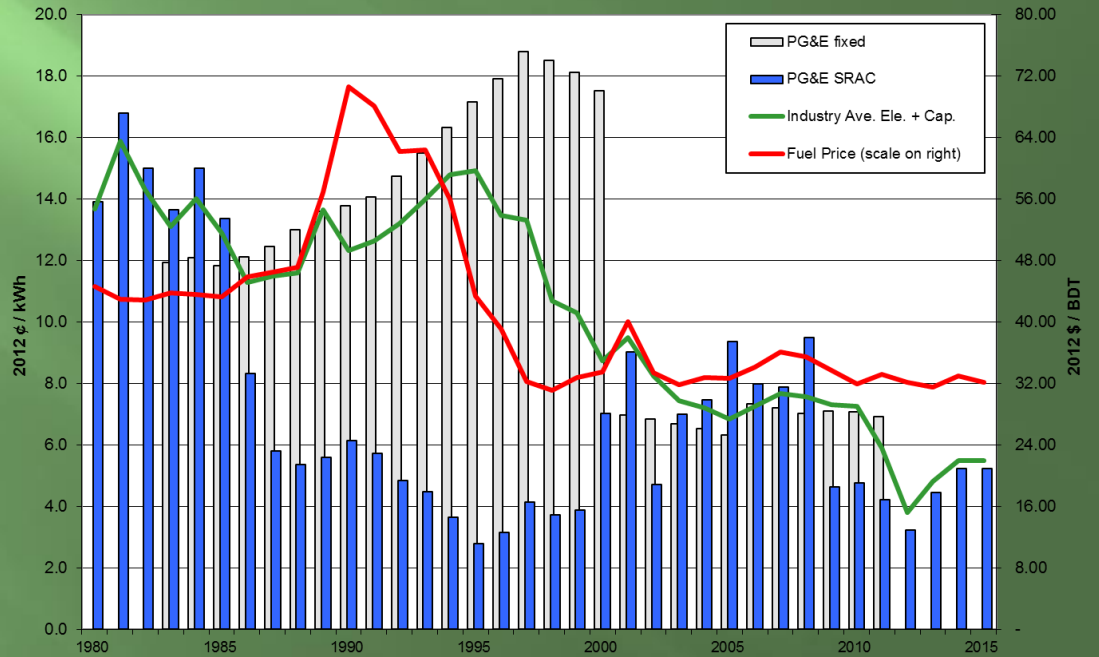
## BIOMASS ENERGY: Producing Renewable Energy, While Lowering the Risk of Wildfire and Reducing Greenhouse Gases



Source: State of California, FRAP (Map); California Forestry Association (1/7/16)

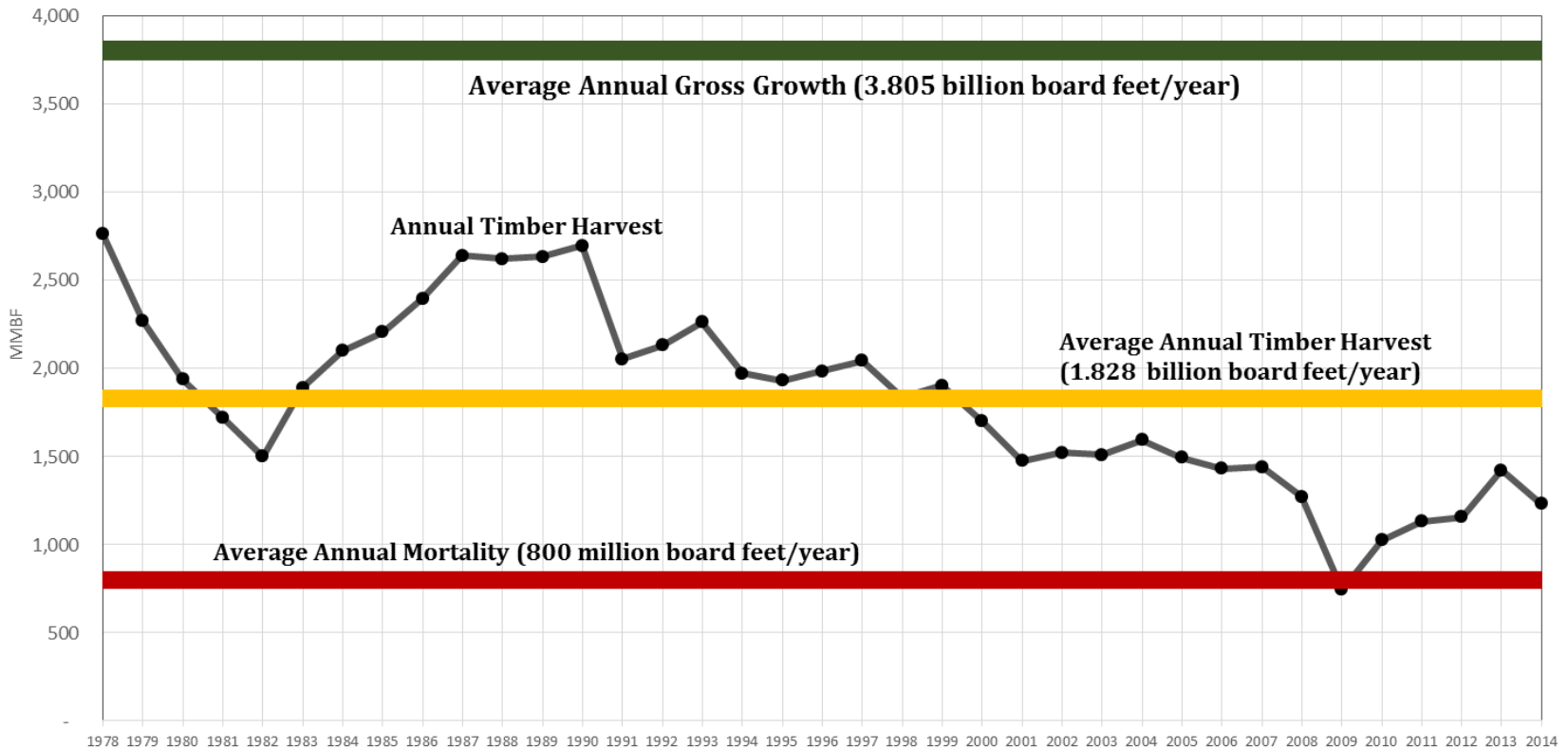
Approximately 30 miles radius: A rough representation of an economic haul distance without additional incentives to process and transport biomass waste from agricultural, industrial and in-woods sources.

## California Wholesale Electricity and Biomass Fuels Prices



# GROWTH: MORTALITY; HARVEST

Private Industrial and Non-Industrial Timberland Growth, Harvest, Mortality

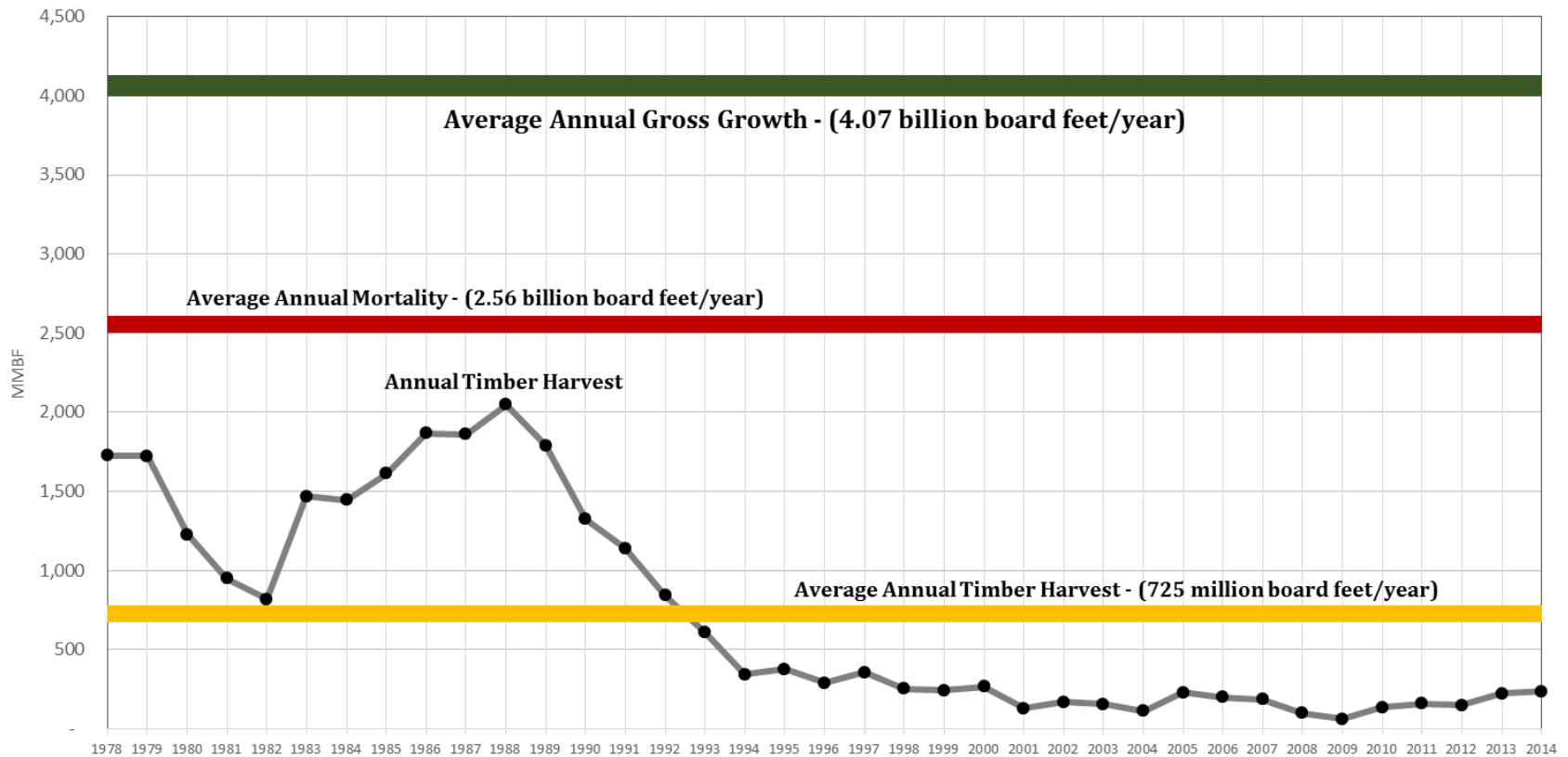


Data Sources: California Board of Equalization Harvest Statistics; US Forest Service FIA 2001-2010 plot data

- Annual Timber Harvest 1978-2014 (MMBF)
- Average Annual Timber Harvest 1978-2014 (BBF)
- Average Annual Gross Growth (BBF)
- Average Annual Mortality (MMBF)

# GROWTH: MORTALITY; HARVEST

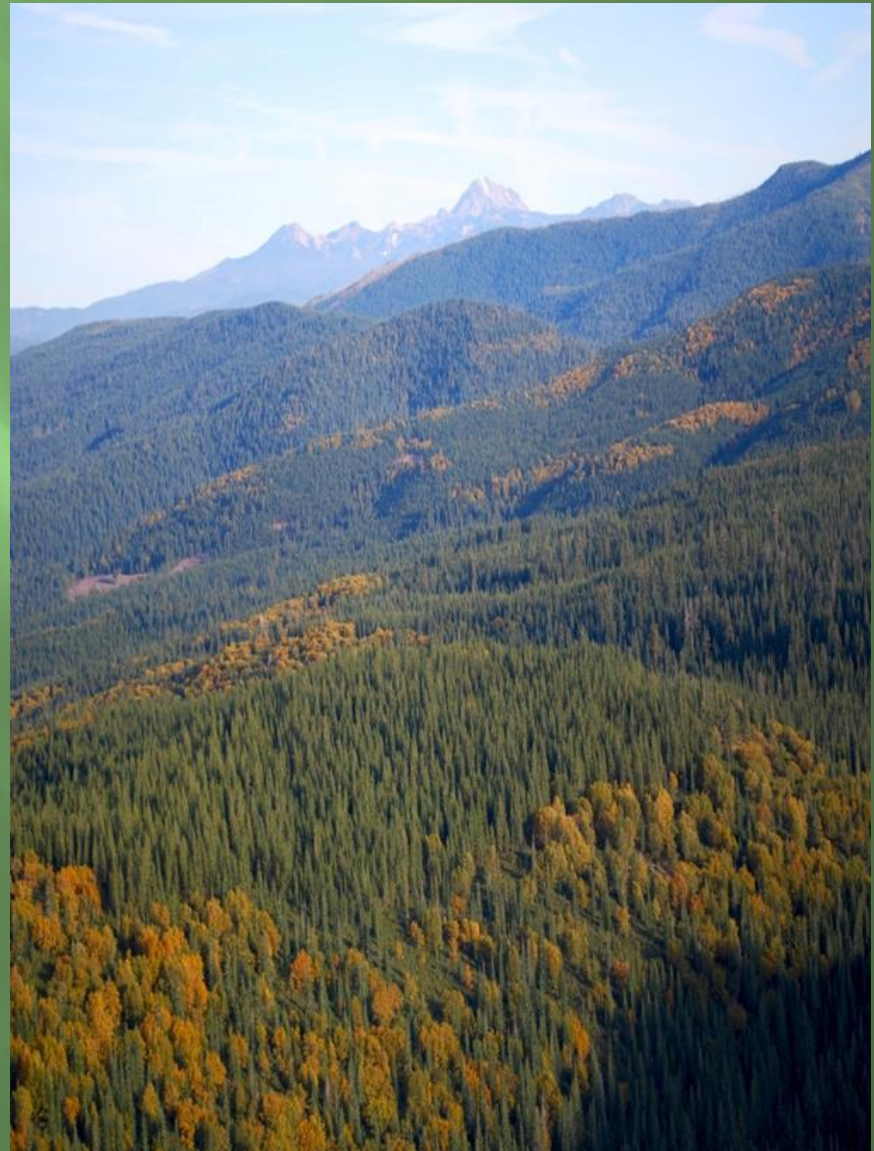
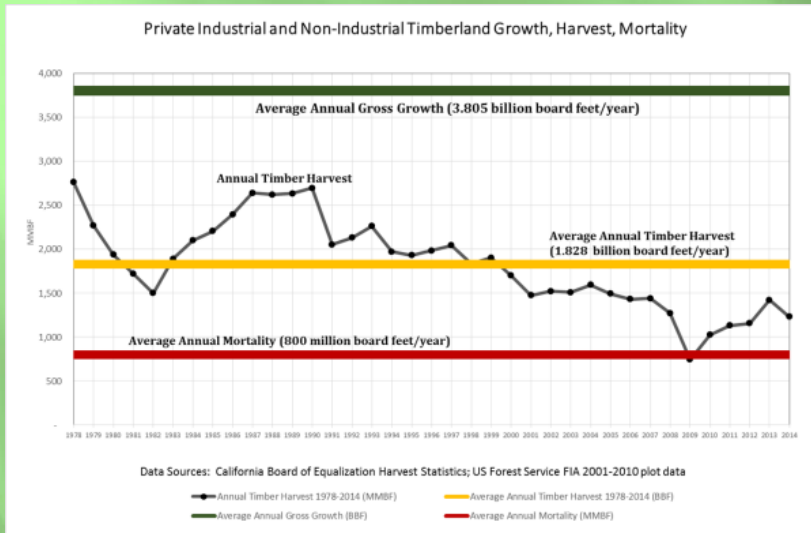
Public Timberland Growth, Harvest and Mortality (Billion Board Feet/Year)



Data Sources: California Board of Equalization Harvest Statistics; U.S. Forest Service FIA 2001-2010 plot data

- Annual Timber Harvest 1978-2014 (MMBF)
- Average Annual Timber Harvest 1978-2014 (MMBF)
- Average Annual Gross Growth (MMBF)
- Average Annual Mortality (MMBF)

# PRIVATE FOREST HEALTH SOLUTIONS



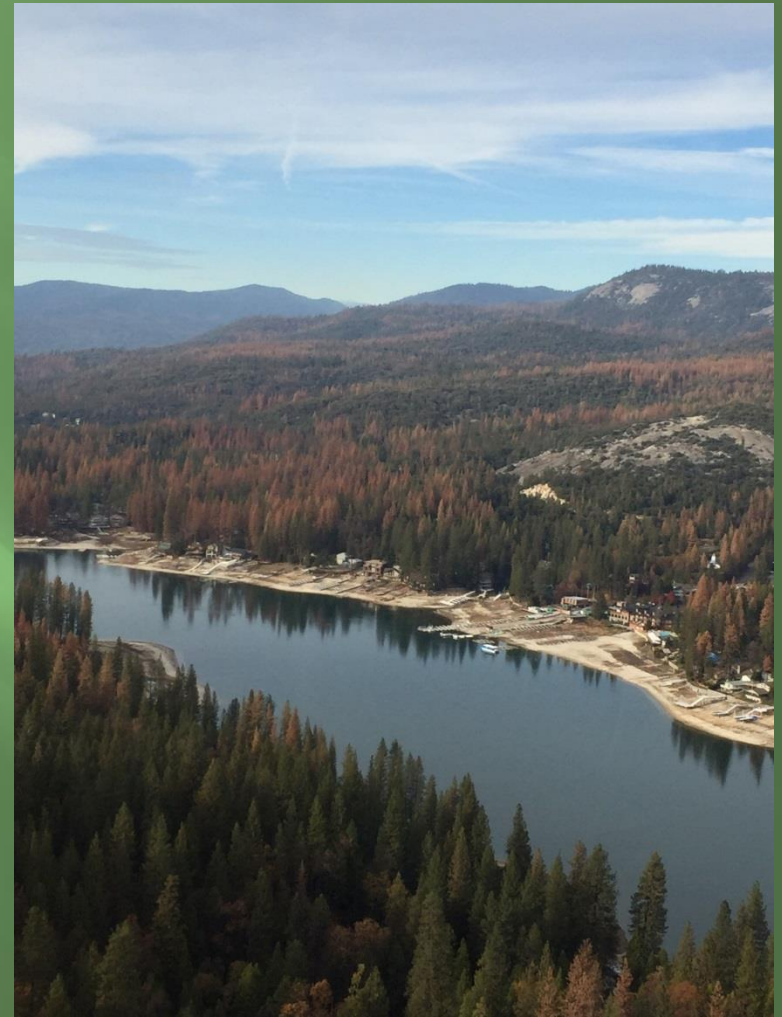
# BOARD FORESTRY ACTIONS

## State Board of Forestry Actions

### 1052.1

The following are conditions that constitute an emergency pursuant to 14 CCR § 895.1:

\*\*\*\*\* (b) Trees that are fallen, damaged, dead or dying as a result of wind, snow, freezing weather, **drought**, fire, flood, landslide or earthquake. \*\*\*\*\*



# BOARD FORESTRY ACTIONS

Amended 14 CCR 1038

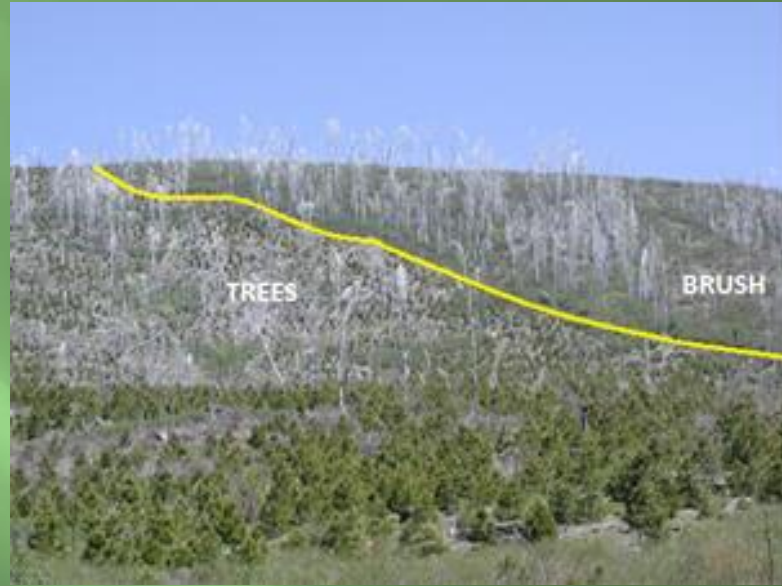
Added a new subsection (k) that allows for the removal of trees in groups.



# FOREST HEALTH LEGISLATION



# FEDERAL PLANNING SOLUTIONS





# Forest Policy Opportunities

## Uncompensated (Ancillary) Benefits of Biomass Energy Production

	<u>Cents/kW-Hr</u>
Criteria Pollutants	4.3
Greenhouse Gas Reduction	5.9
Avoided Landfill	1.1
Timber Stand Improvement	0.1
<b>Total</b>	<b>11.4</b>

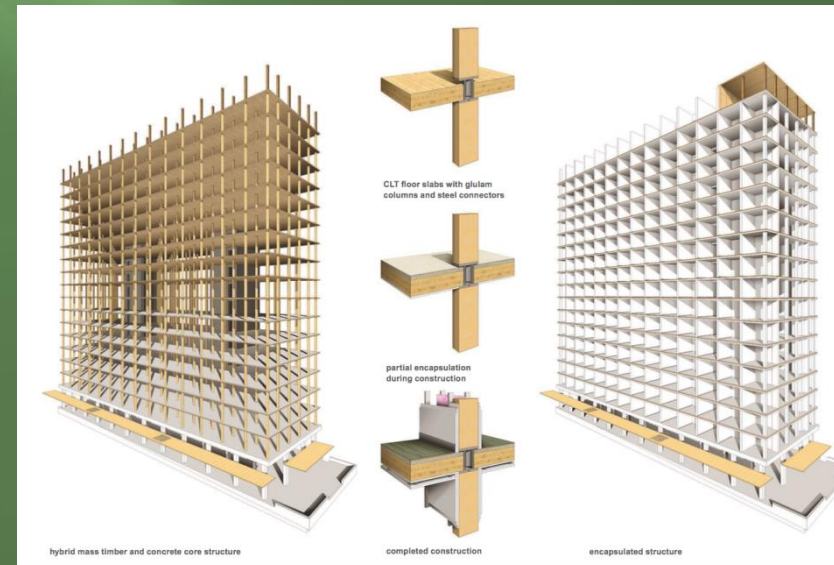


Cogeneration

# Forest Policy Opportunities



The University of British Columbia Point Grey Campus in Vancouver will be the site of the **tallest mass timber building in the world**, with a height of 53 meters and standing at 18-storyes high. Under the name of Brock Commons, the \$51.5 million project will be completed in 2017.



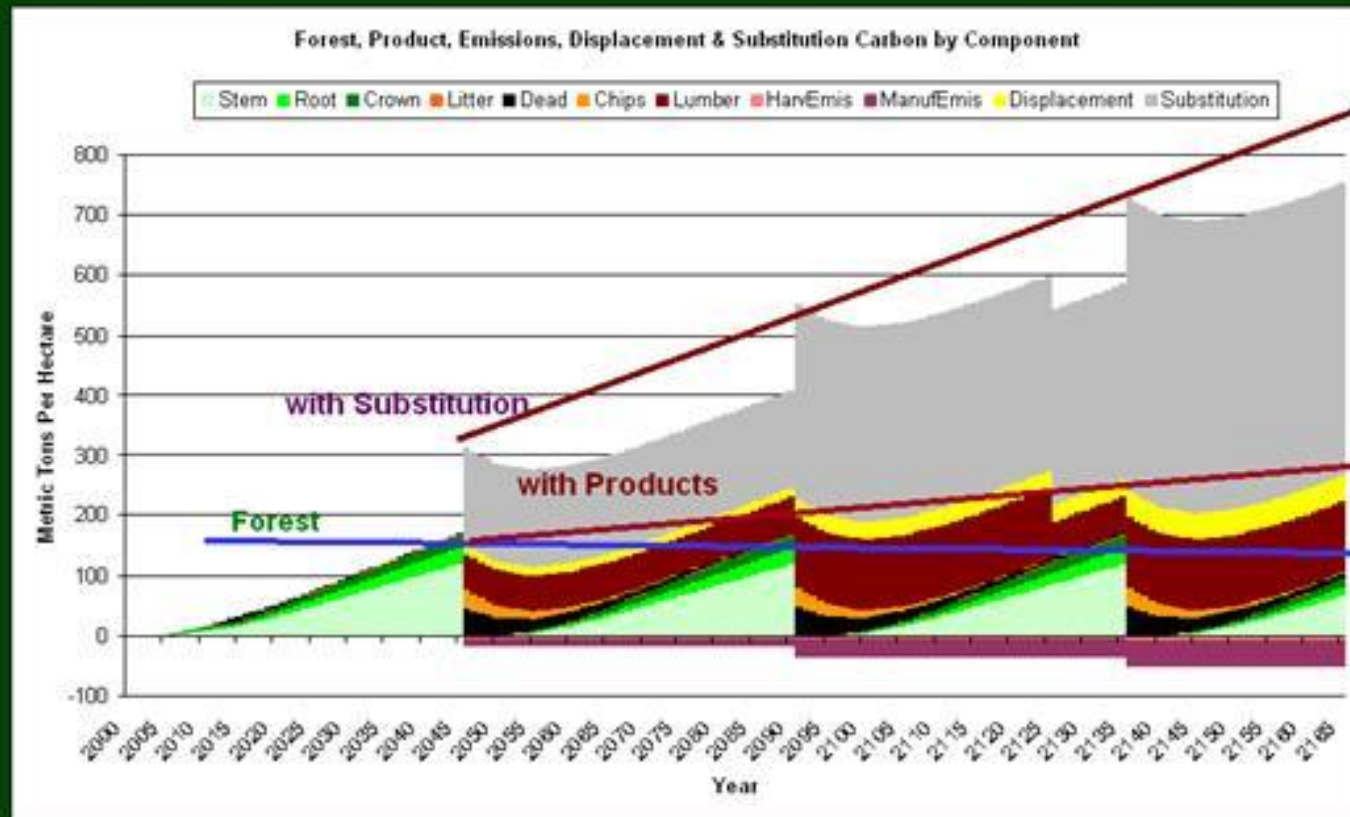
# Forest Policy Opportunities

## Net Carbon (C) Emissions in Producing a Ton of Various Materials

Material	Net Carbon Emissions (kg C/metric ton) <sup>1/ 2/</sup>	Net Carbon Emissions Including Carbon Storage Within Material <sup>3/</sup>
Framing lumber	33.00	<b>(457.00)</b>
Medium density fiberboard	60.00	<b>(382.00)</b>
Brick	88.00	88.00
Glass	154.00	154.00
<b>Recycled steel (100%)</b>	220.00	<b>220.00</b>
<b>Concrete</b>	265.00	<b>265.00</b>
Concrete block	291.00	291.00
<b>Recycled aluminum</b>	309.00	309.00
<b>Steel (virgin)</b>	694.00	<b>694.00</b>
Plastic	2,502.00	2,502.00
<b>Aluminum (virgin)</b>	4,532.00	4,532.00
<sup>1/</sup> Values are based on life cycle assessment and include gathering and processing of raw materials, primary and secondary processing, and transportation.		
<sup>2/</sup> Source: USEPA (2006).		
<sup>3/</sup> A carbon content of 49% is assumed for wood.		

# Forest Policy Opportunities

## Forest, Product and Substitution Pools



# CONCLUSIONS



THANK YOU

