



Climate Action Team: Interagency Forest Work Group

# Roles and Concerns of CDPH Regarding Forest Management for Sustainable Biomass Production



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**Thanks to Placer County**

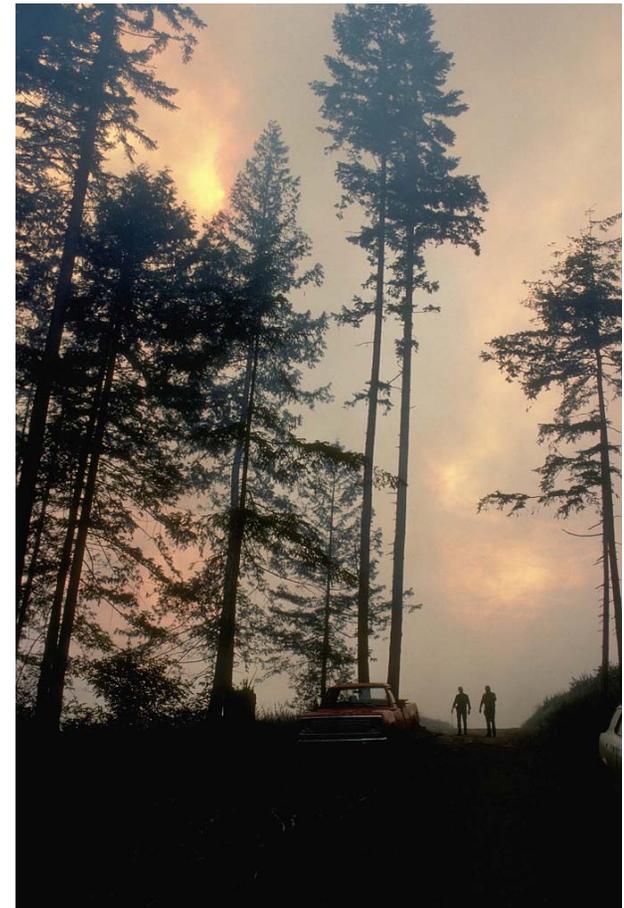




# ***How Can CDPH work with Cal-Fire?***



- Task 2
  - Capacity of State and Federal forestry regulations to meet 5 MMT target for carbon sequestration
- Task 3
  - Examination and development of definitions and technical protocols for forest biomass sustainability for energy projects





# Translating Public Health Terminology



- Primary prevention
  - Efforts to slow, stop, and reverse climate change
  - Same as mitigation
  
- Secondary and tertiary prevention
  - Anticipating and preparing for effects of climate change
  - Same as adaptation



## Cedar fire 10/25/2003 Example: Catastrophic Results of Fire



3 days of unhealthy-hazardous air quality

392,000  
acres burned

Over  
\$900,000,000  
in damage



16  
confirmed  
dead

2574 homes  
and 2700  
structures  
destroyed



## Potential Cost of a Catastrophic Wildfire

- Loss of homes/business (insurance premiums)
- Potential for loss of life & wildlife
- Air pollution increase
- Respiratory and cardiovascular impacts
- Watershed failure for decades
- Loss of forest for decades
- Increased green house gas release
- Professional firefighters cost
- Socio-psychological impacts

***Fire Prevention costs a fraction of what a fire costs***

	1/1/09- 12/31/09	5 year average (same interval)
# Fires	8,291	7,871
Acres Burned	93,296	270,351

[http://cdfdata.fire.ca.gov/incidents/incidents\\_stats?year=2009](http://cdfdata.fire.ca.gov/incidents/incidents_stats?year=2009)

## Wildfire Smoke

A Guide for Public Health Officials

Revised July 2008



## Components of Wood Smoke:

- Combustion is inefficient -> partially oxidized organic chemicals
- Contains thousands of chemicals
  - Particulate matter ( $PM_{2.5}$ )
  - Polycyclic aromatic hydrocarbons (PAH)
  - Benzene
  - Aldehydes
  - Carbon monoxide (CO)
  - Nitrogen oxides ( $NO_x$ )
  - Minerals



## Smoke Composition Due to:

- Fuel type
- Moisture content
- Fire temperature and stage
- Wind conditions
- Weather conditions
  - Wind amount, direction
- Terrain
- Fire
- Fire suppression activities





# Catastrophic Wild Fire Prevention Tools



## Traditional Tools

Fuel Breaks

Prescribed fire

Timber harvest

Chipping/clearing

Minimal biomass removal

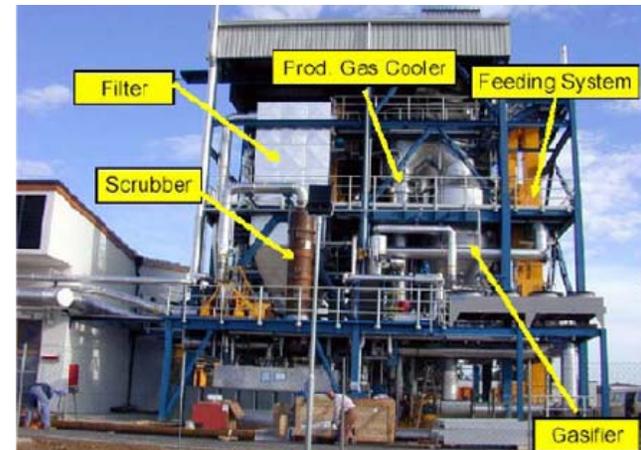


## New Tools

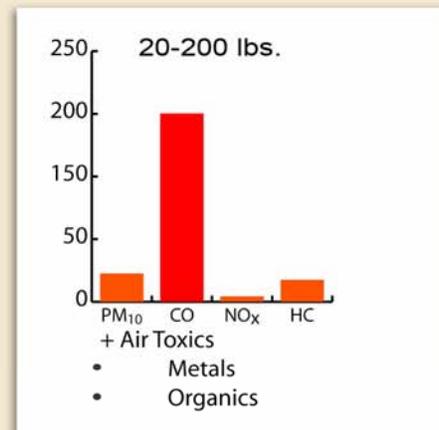
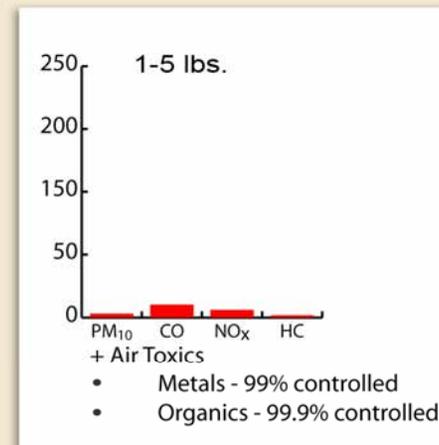
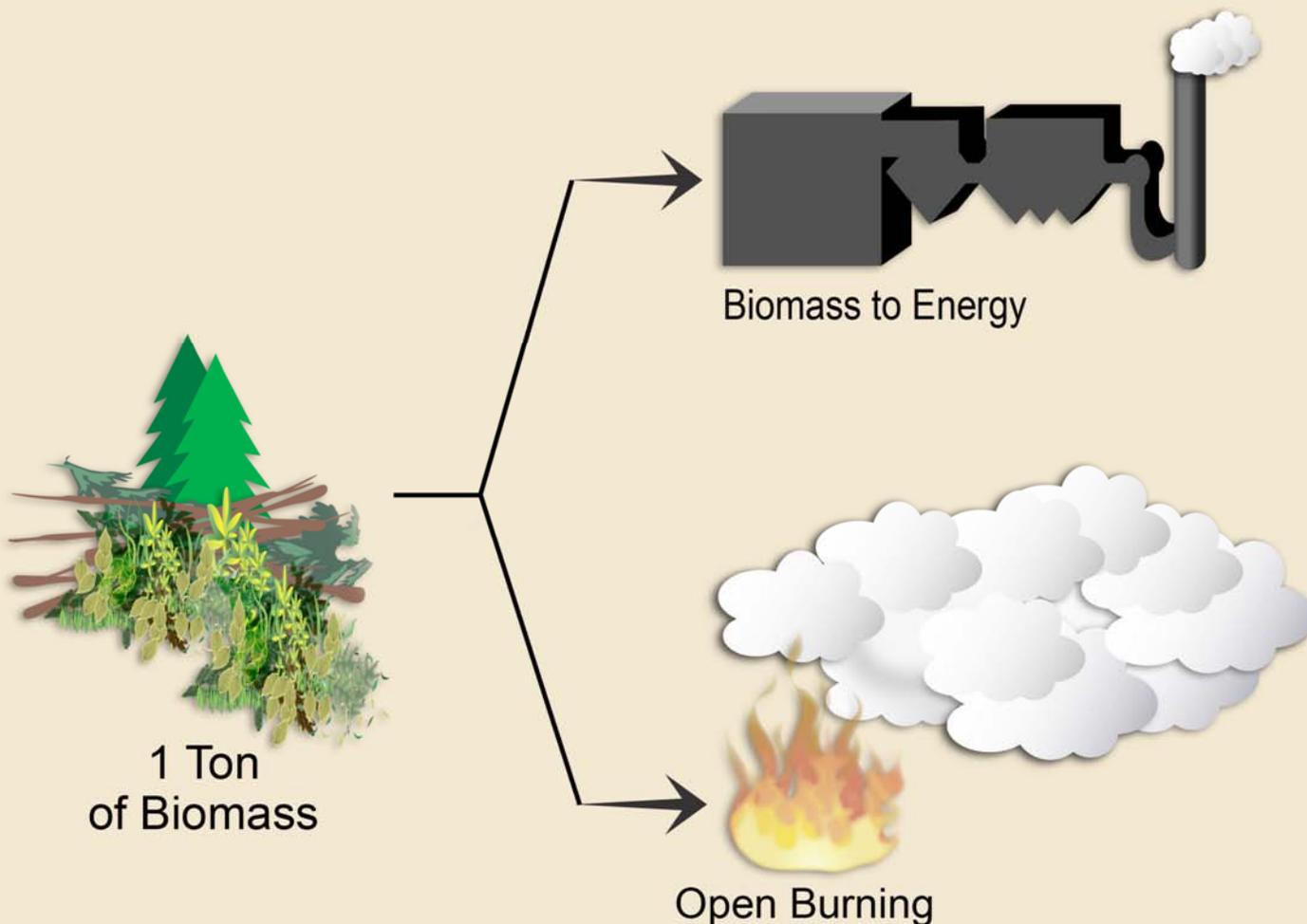
Improvement in Land Management Treatments  
*“Optimum Biomass”*

Bioenergy (heat, water, fuel)

Bio-based products

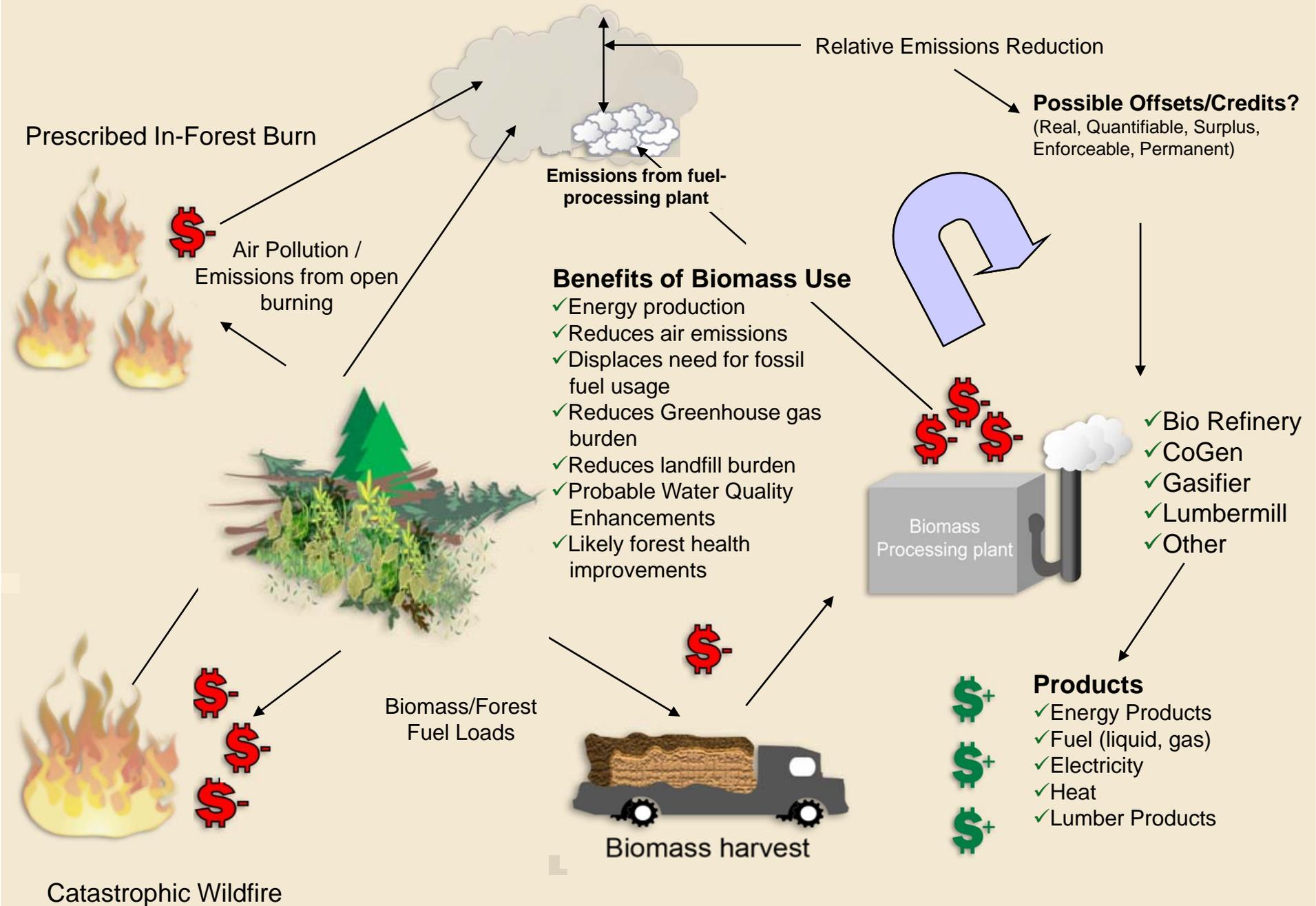


# Air Quality Comparison (Relative Emissions)



Note: Other emissions not included are: Transport and firefighting related; localized emissions import from fuel processing plant; fugitive dust after burns; emissions from forest decay.

# Biomass Emission / Economic Process Model





## Public Health Approach to Complex Issues

- Forestry management and GHG reduction are too important to be left to experts.
- There must be public engagement.
- Long-term and short-term public health impacts should be assessed with the hope that policy decisions will maximize public health benefits and minimize public health harms.