



# **Forest Resource Sustainability: Improving Air Quality and Reducing Greenhouse Gases**

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**Capitol Region Climate Committee  
Sacramento, CA**

**January 19, 2017**



# Overview

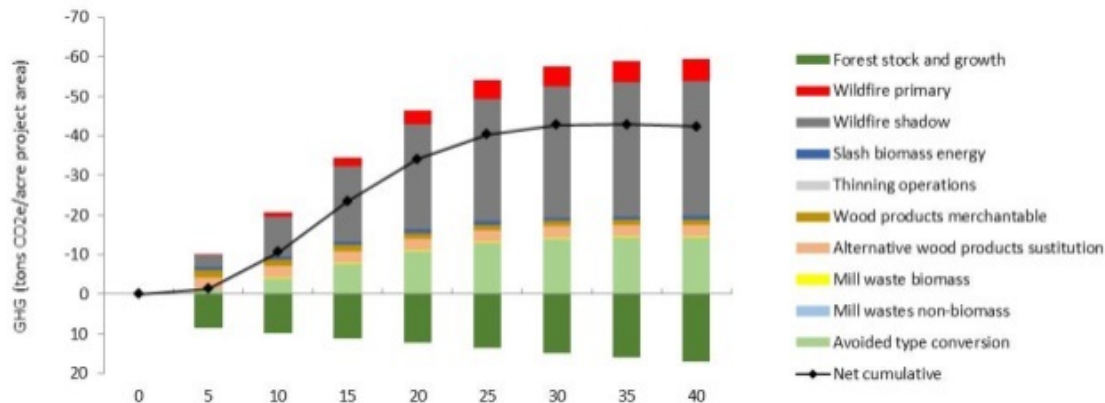
- Sierra Nevada forest at risk for catastrophic wildfire from hazardous fuel load and tree mortality
- Focus on adaptation strategies for:
  - Mitigating wildfires
  - Reducing prescribed and open pile burning
- Initiatives to improve economics of:
  - Fuels reduction (thinning)
  - Renewable energy and biochar from forest wastes





# Forest Fuel Treatment Impact on Wildfires and Emissions

- Developing GHG offset protocol for avoided wildfire from forest fuel reduction projects. Benefits from:
  - Reduced wildfire severity and size
  - Reduced tree mortality
  - Stimulated forest growth
  - Wood products, biomass energy
- Multi-stakeholder research team – Spatial Informatics Group, UC Berkeley, University of San Francisco, USFS, CAL FIRE, private forest land owners
- Submitting for adoption into the American Carbon Registry in Spring 2017





# Black Carbon

- Short lived climate “super” pollutant with very high global warming potential
- Significant source from uncontrolled biomass burning -- prescribed burning (open pile and broadcast) and wildfire
- Developing GHG offset protocol for biomass energy as alternative to open pile burning
  - Conducting research program to quantify emissions from open pile burning of forest and ag materials in Placer County
    - Measurements being conducted by USFS Rocky Mountain Science Station Missoula Fire Sciences Laboratory





# Biochar

- Carbon-rich solid from gasification of biomass. As soil amendment:
  - Sequesters carbon -- highly stable and resistant to decomposition
  - Enhances soil fertility -- increases water and nutrient holding capacity
  - Reduces soil emissions, enhances biomass growth
  - Displaces fertilizer manufacturing
- GHG Offset Protocol adopted by CAPCOA GHG Offset Registry in 2015
- Research field trials ongoing to evaluate water and nutrient retention





## Other Efforts

- SB1122 BioMat program -- support for distributed electricity and/or biochar located in Sierra Nevada's
- New GHG thresholds for land use projects
- Educational outreach workshops
- Statewide tree mortality task force engagement, policy development and advocacy
- Evaluate air quality impacts of municipal organics disposal options