



CLERE Inc.

California Law Empowering Renewable Energy

THE FATE OF FOREST WASTE

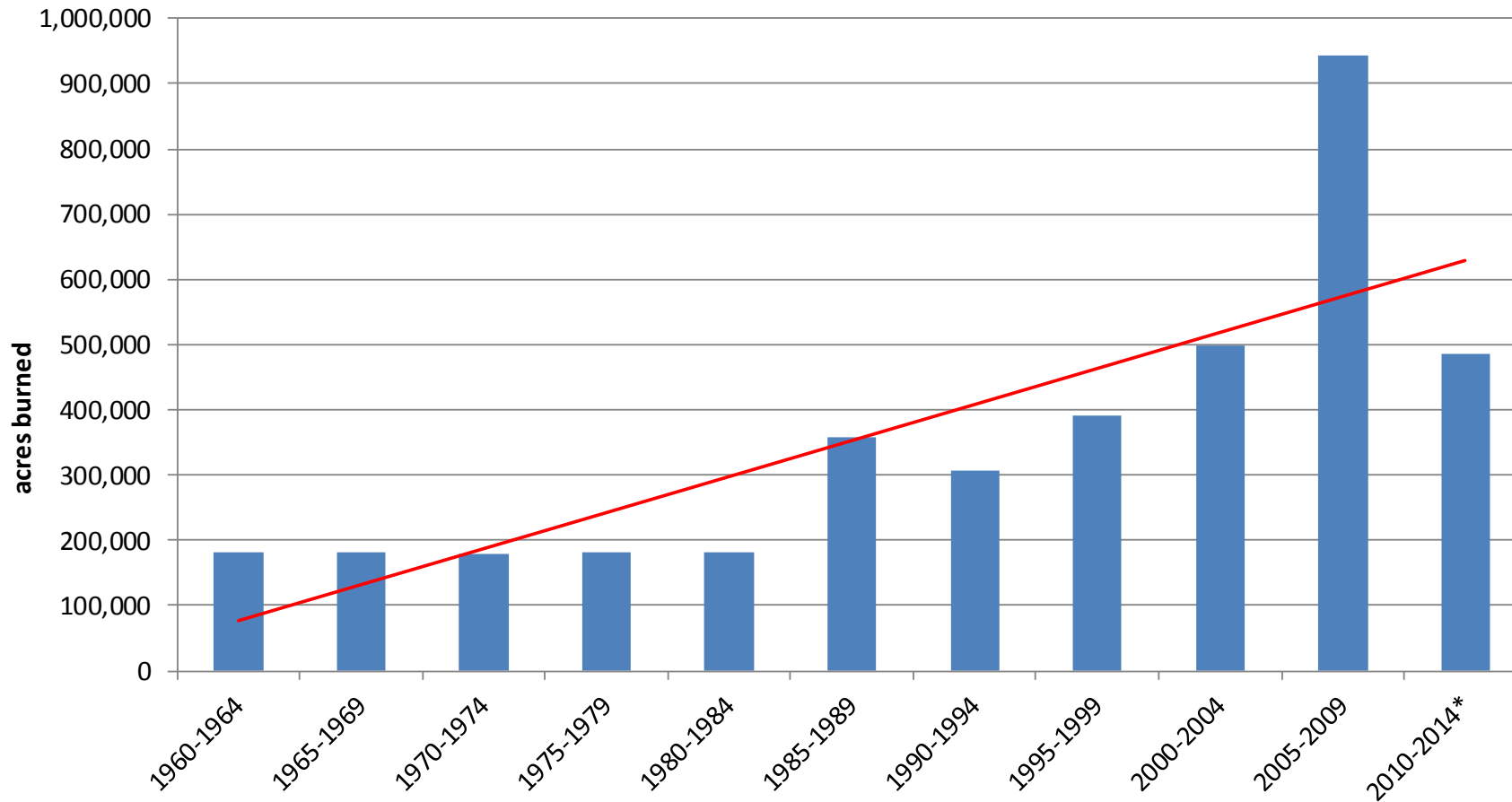
The death of California's forests, and what we can do about it

Presented by: Christiana Darlington



Wildfires in California

5-year average of acres burned by wildfires in California



* 2014 data is preliminary

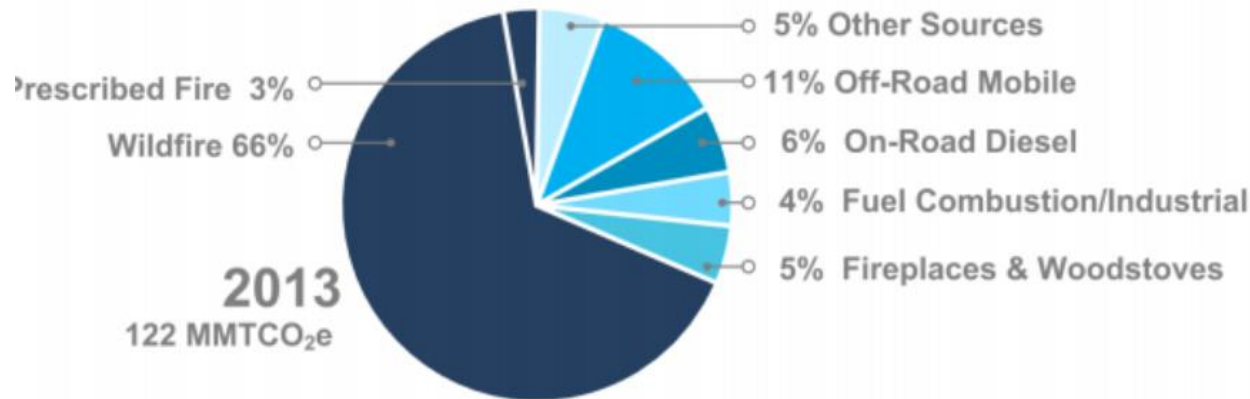
Source: Cal Fire Historical Wildfire Activity Statistics (Redbooks) http://www.fire.ca.gov/fire_protection/fire_protection_fire_info_redbooks.php

Wild Fires in California are happening at a staggering rate and contribute significant amount of air pollution into our atmosphere

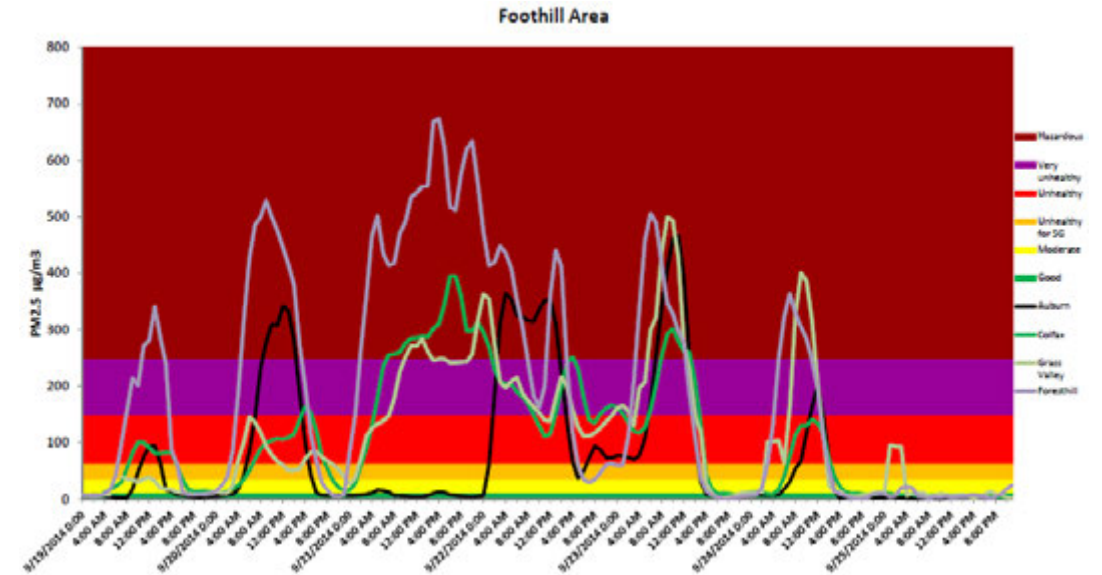
Black Carbon

Criteria Pollutants

Figure 5: California 2013 Black Carbon Emissions (including 10-year average emissions from forest-related sources)*



*Using 20-year GWP. "Prescribed Fire" does not include agriculture.



Tree Mortality Task Force



- ❖ Forests are overgrown, dry, and infested with bark beetles 65 million dead trees and counting, worst tree die off in thousands of years.

Experts agree this volume of dead biomass is unhealthy for the forests

Governor Brown has declared State of Emergency some state agencies have become actively involved in effort to deal with situation.

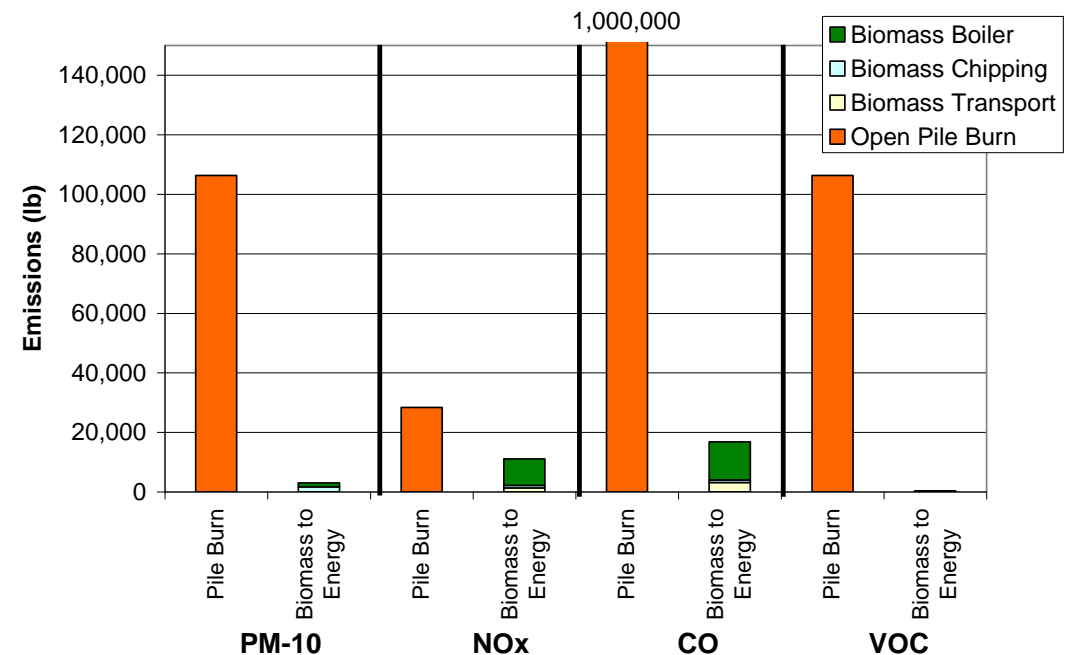
Fire is here to stay: how we need to adapt

- Wild fire is inevitable, we can help
- Prescribed fire is needed, risk is necessary
- Open Pile burning should be disposal method of last resort



Criteria Pollutant Reduction

Open Pile burn vs. traditional biomass



Wood waste is challenging to dispose of... but we can avoid the land fill and the open pile burn

- Chip and disperse
- Mulch, compost
- Wood products
- Air Curtain Incinerators
 - provide reductions in PM and black carbon, but not NOx
- Existing biomass infrastructure
 - BACT
 - New PPA agreements procuring 125 MW, use of CPUC RAM process for forest waste/displacement of ag waste issue



SB 1122 The BioMat Program at CPUC

- Incentivizes small distributed generation facility development with 10,15 or 20 year PPA agreement
- 3MW export. Up to 2 MW use on site
- Project must have site control. a completed , but not active, interconnection study and a project developer with experience on their team.
- Price will begin at 12.7 cents and will rise every 30 days initially, beginning in February of 2017
- Waste must be source from unique definition “sustainable forest management” defined for this program.
- Program will end January of 2021.



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More Questions?

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