WEST COAST REGIONAL CARBON SEQUESTRATION PARTNERSHIP
westcarb.org

WESTCARB Annual Business Meeting

Fuel Hazard Reduction Projects

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Scottsdale, AZ
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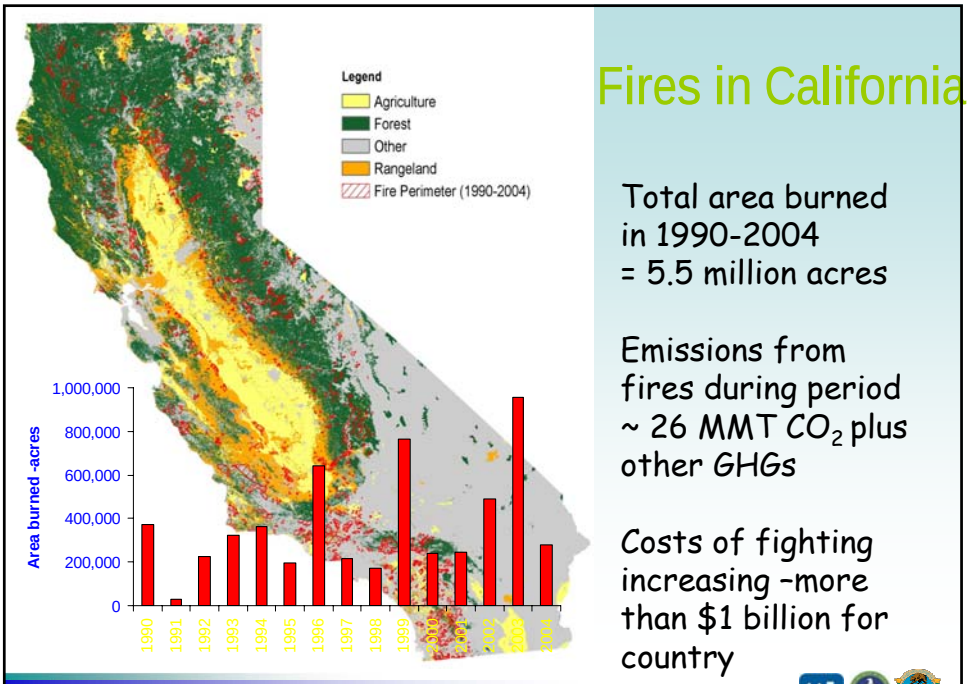

Fires in California

Total area burned in 1990-2004 = 5.5 million acres

Emissions from fires during period ~ 26 MMT CO_2 plus other GHGs

Costs of fighting increasing –more than $1 billion for country

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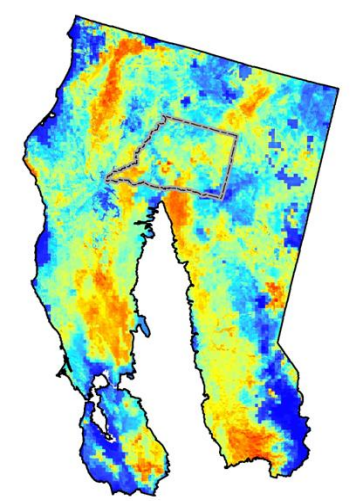
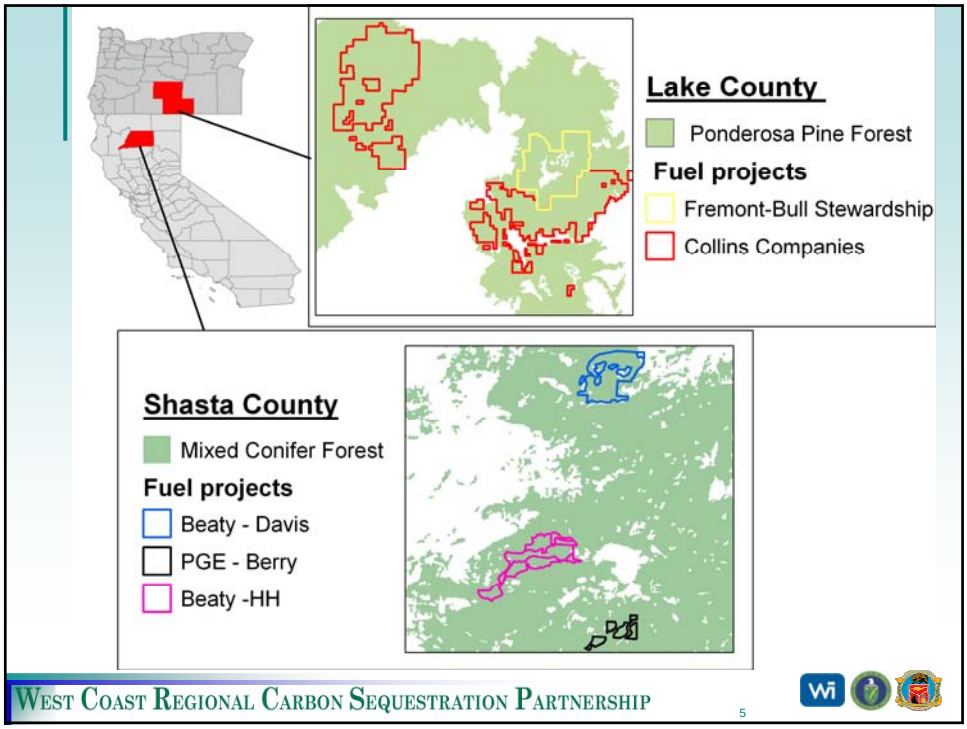
Probabilities of Fire



Project GHG Benefits—loss or gain of C stocks

- + Gain from decreased intensity or spread of fire due to fuel treatment
- + Gain from growth differences between with and without project and with and without fire
- + Loss from removal of fuel to biomass energy plant
- + Gain from displaced fossil fuel
- + Loss from removals of fuel to wood products
- + Gain from sequestration in long-lived wood products
- + Loss from decomposition of additional dead wood stocks created through fuels treatment
- + Loss from fires occurring in with-project case


Lake County
Ponderosa Pine Forest
Fuel projects
Fremont-Bull Stewardship
Collins Companies
Shasta County
Mixed Conifer Forest
Fuel projects
Beaty - Davis
PGE - Berry
Beaty -HH
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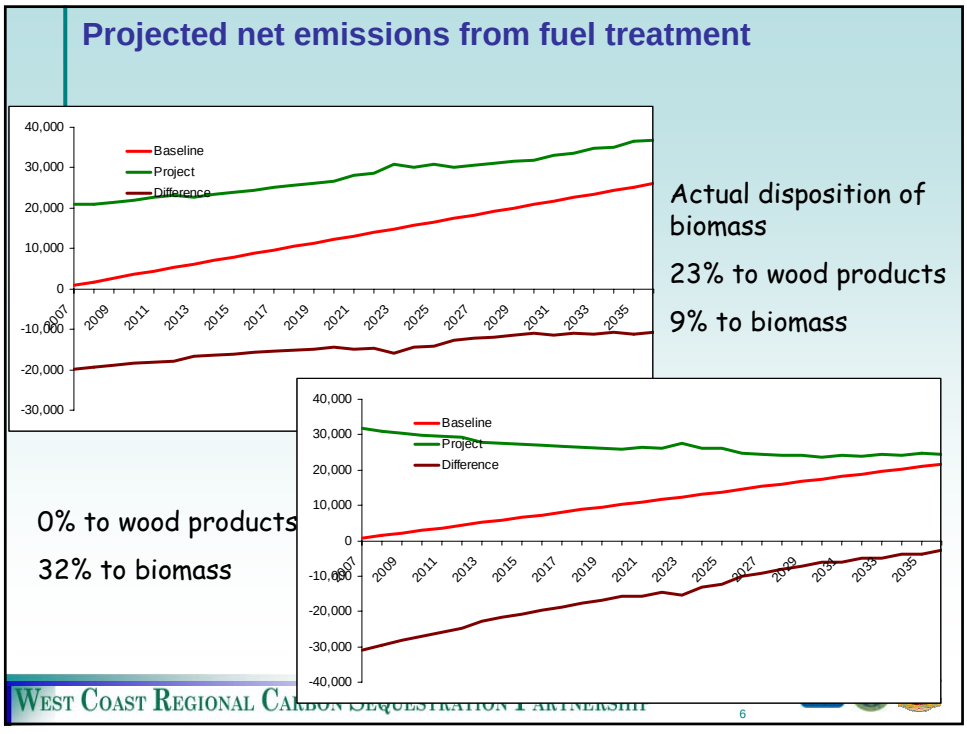
5


Projected net emissions from fuel treatment
Baseline
Project
Difference
Actual disposition of biomass
23% to wood products
9% to biomass
0% to wood products
32% to biomass
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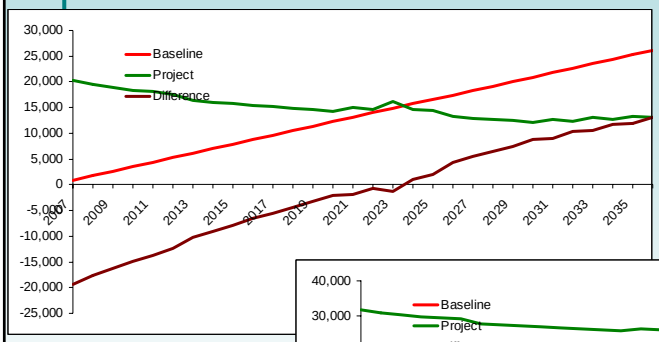
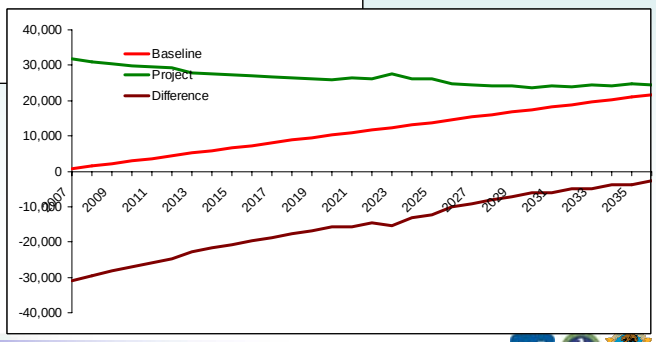
6

Sensitivity of energy source replaced



32% to biomass

Replace coal



32% to biomass

Replace natural gas

Shasta Fuels Treatments - % removed

	Trees	Litter	Understory	1000 hr fuels	100hr fuels	10hr fuels	TOTAL
Davis	19%	33%	-5%	-34%	-14%	22%	14%
HH	26%	0%	100%	-30%	27%	46%	20%
PG&E	27%	82%	100%	32%	-65%	16%	32%

Shasta County Fuels Treatments

All units CO_2/acre

	Project Emissions
Davis	36
HH	49
PG&E	78

Assumptions:
Equipment emissions: 1.6 tons/ac
Annual fire risk is 0.41%
Fire w/o treatment would burn 40% of biomass
Fire after treatment would burn 10% of biomass

Shasta County Fuels Treatments

All units CO_2/acre

	Project Emissions	Emissions with bionenergy
Davis	36	29
HH	49	36
PG&E	78	65

Shasta County Fuels Treatments

All units CO_2/acre

	Project Emissions	Emissions with bionenergy	Fire Emissions w/o Treatment
Davis	36	29	25
HH	49	36	31
PG&E	78	65	34

Shasta County Fuels Treatments

All units CO_2/acre

	Project Emissions	Emissions with bionenergy	Fire Emissions w/o Treatment	Fire Emissions w/Treatment
Davis	36	29	25	5
HH	49	36	31	6
PG&E	78	65	34	6

Shasta County Fuels Treatments

All units CO_2/acre

	Project Emissions	Emissions with bionenergy	Fire Emissions w/o Treatment	Fire Emissions w/Treatment	Breakeven Year w/o Bioenergy
Davis	36	29	25	5	120
HH	49	36	31	6	130
PG&E	78	65	34	6	185

Shasta County Fuels Treatments

All units CO_2/acre

	Project Emissions	Emissions with bionenergy	Fire Emissions w/o Treatment	Fire Emissions w/Treatment	Breakeven Year w/o Bioenergy	Breakeven Year w/Bioenergy
Davis	36	29	25	5	120	97
HH	49	36	31	6	130	95
PG&E	78	65	34	6	185	153

Conclusions:

- Project: treatments leads to large emissions
  - Emissions across entire project area as opposed to 0.8% (maximum) of area burned per year in baseline
  - Shadow or multiplier effect – higher value makes project case more favorable
  - Growth advantage varies
- Baseline emissions outweighed by project emissions under most reasonable and conservative assumptions
- Analysis suggests that project scale for HFR does not make sense for carbon projects

Next steps

- Project growth
- Model fire risk with and without project
- *Model multiple treatment scenarios*
- Treatments must:
  - Be appropriately placed
  - Reduce fire risk or intensity *on the landscape*
  - Minimally decrease carbon stocks
  - Utilize harvested products if possible
  - Increase residual growth

Additional work

- Work at a larger scale:
  - Strategically placed treatments to maximize risk of burning and shadow effect—how large can this effect be and under what conditions?
  - Treatments across counties or even state
    - Greatly increase probability that one or more treated areas will burn
- Incorporate treatment emissions into landscape scale projects

Contact info

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