Earth's Future

Supporting Information for

Do vegetation fuel reduction treatments alter forest fire severity and carbon stability in California forests?

Kristofer L. Daum[1,*], Winslow D. Hansen[2], Jacob Gellman[3], Andrew J. Plantinga[3], Charles Jones[1], Anna T Trugman[1]

[1]Department of Geography, University of California, Santa Barbara, CA, 93016

[2]Cary Institute of Ecosystem Studies, Millbrook, NY, 12545

[3]Department of Economics, University of Alaska Anchorage, Anchorage, AK, 99508

*Author for correspondence; kldaum@ucsb.edu

Contents of this file

Experiment	Scenario	Dead Biomass Filtering	Proximity to Roads	Maximum Treatable Slope	Participating Land Jurisdictions	Proximity to WUI	Annual Treated Area	Percent Dead Fuels Removal
Restriction	Treatment Base *	>20th Percentile	< 3km	30˚	All Public Lands	Any	1000 km^2	90%
Restriction	Agency Low	>20th Percentile	< 3km	30˚	USFS & BLM	< 50km	1000 km^2	90%
Restriction	Agency High	>20th Percentile	< 3km	30˚	All Public & Private Lands	Any	1000 km^2	90%
Restriction	Access Low	>20th Percentile	< 1km	10˚	All Public Lands	Any	1000 km^2	90%
Restriction	Access High	>20th Percentile	Any	Any	All Public Lands	Any	1000 km^2	90%
Restriction	Knowledge Low	>5th Percentile	< 3km	30˚	All Public Lands	Any	1000 km^2	90%
Restriction	Knowledge High	Sorted	< 3km	30˚	All Public Lands	Any	1000 km^2	90%
Restriction	Synergy Low	>5th Percentile	< 1km	10˚	USFS & BLM	< 50km	1000 km^2	90%
Restriction	Synergy High	Sorted	Any	Any	All Public & Private Lands	Any	1000 km^2	90%
Area	100	>20th Percentile	< 3km	30˚	All Public Lands	Any	100 km^2	90%
Area	500	>20th Percentile	< 3km	30˚	All Public Lands	Any	500 km^2	90%
Area	1000 *	>20th Percentile	< 3km	30˚	All Public Lands	Any	1000 km^2	90%
Area	1500	>20th Percentile	< 3km	30˚	All Public Lands	Any	1500 km^2	90%
Area	2000	>20th Percentile	< 3km	30˚	All Public Lands	Any	2000 km^2	90%
Biomass	10%	>20th Percentile	< 3km	30˚	All Public Lands	Any	1000 km^2	10%
Biomass	30%	>20th Percentile	< 3km	30˚	All Public Lands	Any	1000 km^2	30%
Biomass	60%	>20th Percentile	< 3km	30˚	All Public Lands	Any	1000 km^2	60%
Biomass	90% *	>20th Percentile	< 3km	30˚	All Public Lands	Any	1000 km^2	90%
Biomass	100%	>20th Percentile	< 3km	30˚	All Public Lands	Any	1000 km^2	100%

Figure S1. *Parameterization of treatment factors for each model experiment. Asterisks indicate identical copies of the "Treatment Base" dataset.*

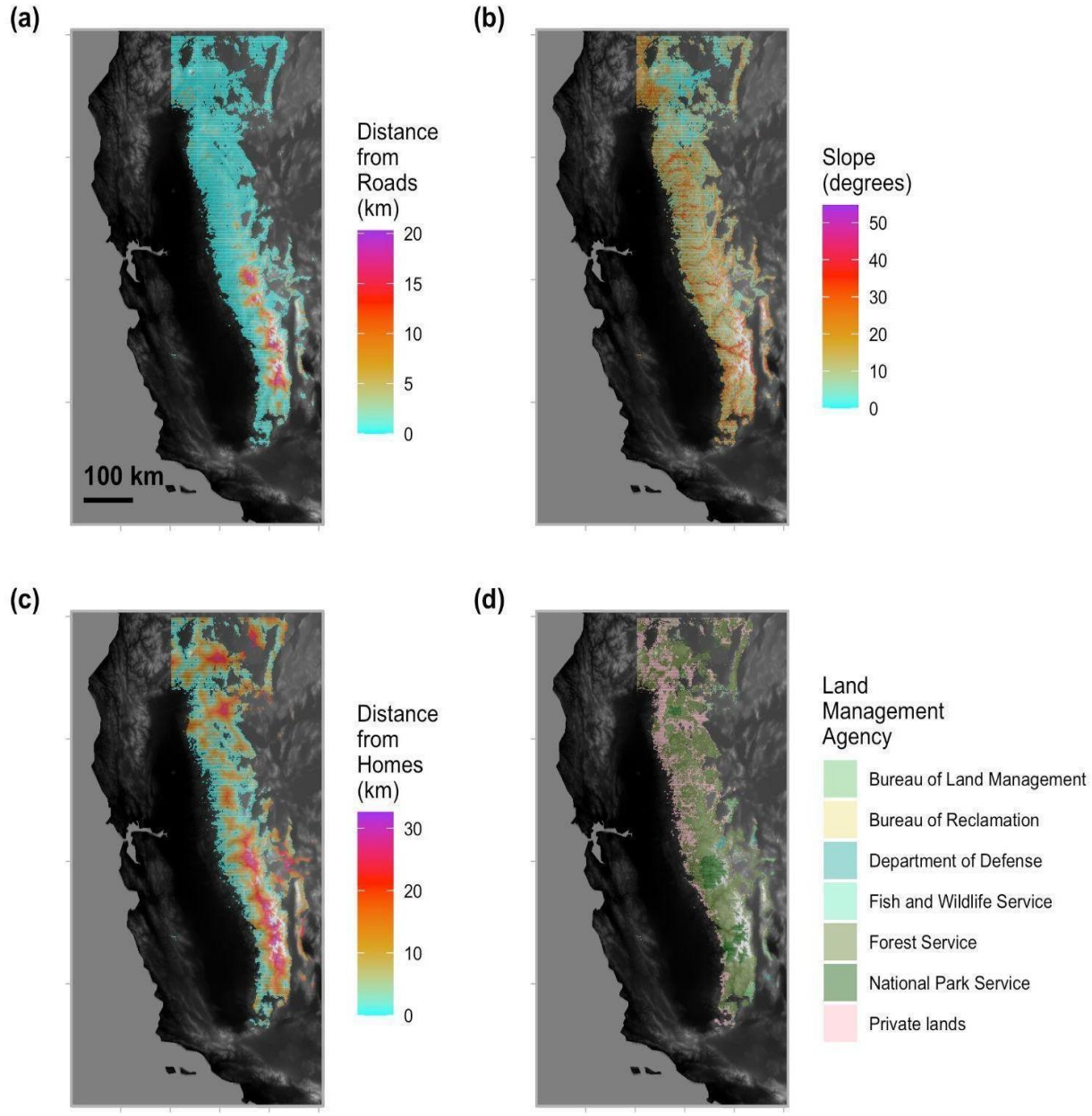

Figure S2 *Topographical, technical, and political factors influencing treatment distribution, clockwise from top left: a) Distance from roads by grid-cell, b) slope angle by grid-cell, c) distance from homes by grid-cell, and d) land management agency or stakeholder jurisdiction by grid-cell.*

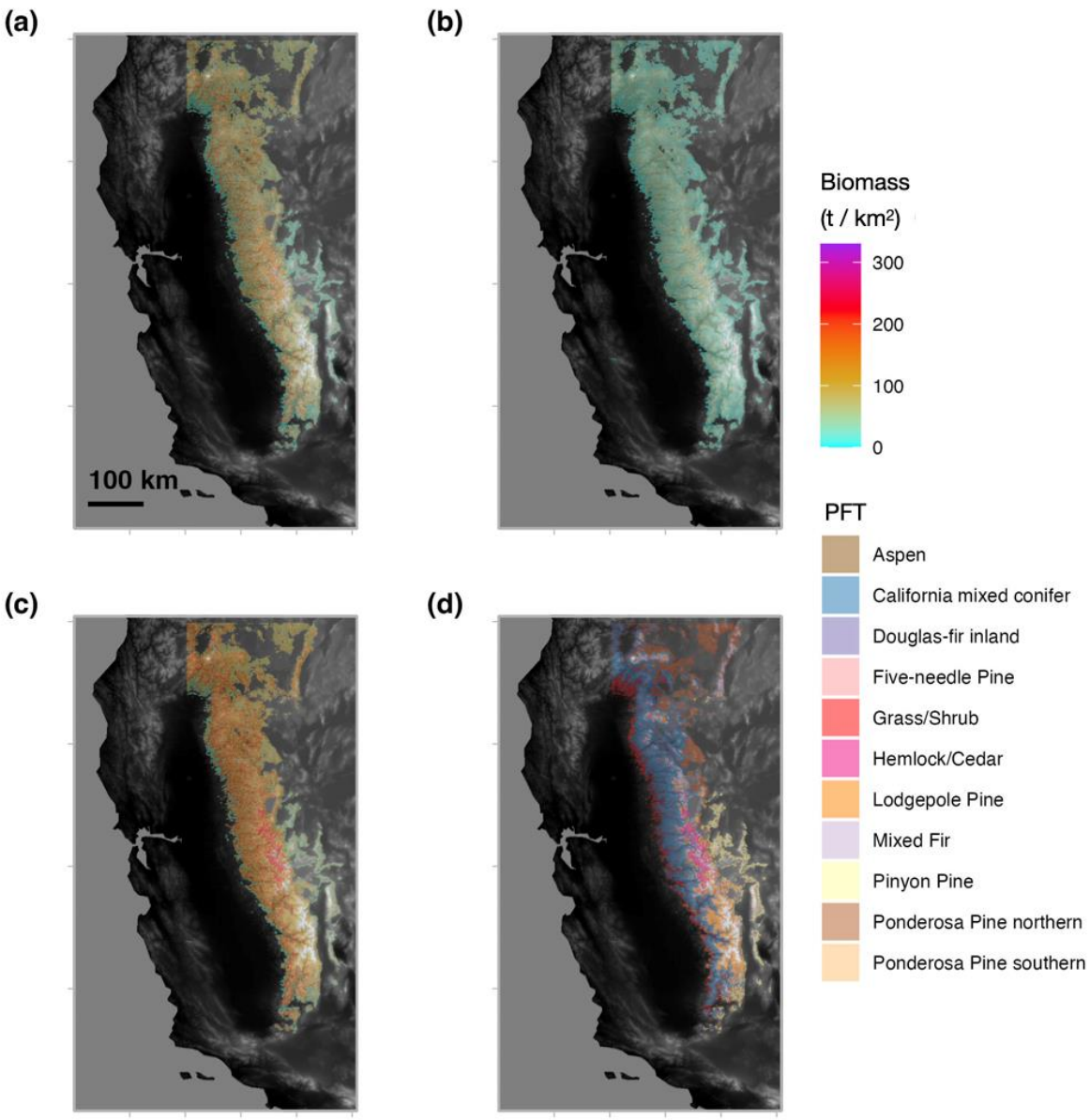

Figure S3 *Biomass loading at year 0 after a 250 year spin up shows how pretreatment biomass distributions vary as a result of climate and forest type. (a) Live biomass, (b) Dead biomass, (c) Total biomass, (d) plant functional type (PFT).*

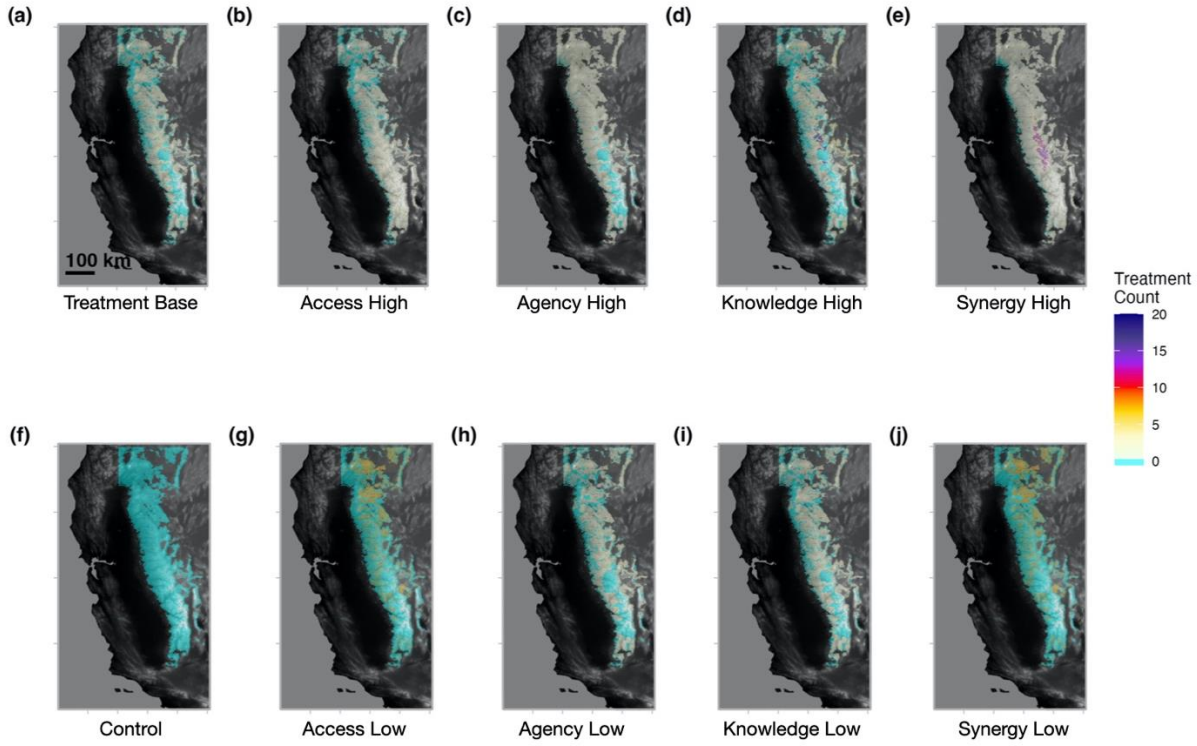

Figure S4 *Retreatment counts for each simulated scenario (untreated areas displayed in turquoise): (a) Treatment Base, (b) Access High, (c) Agency High, (d) Knowledge High, (e) Synergy High, (f) Control (no treatment), (g) Access Low, (h) Agency Low, (i) Knowledge Low, (j) Synergy Low*

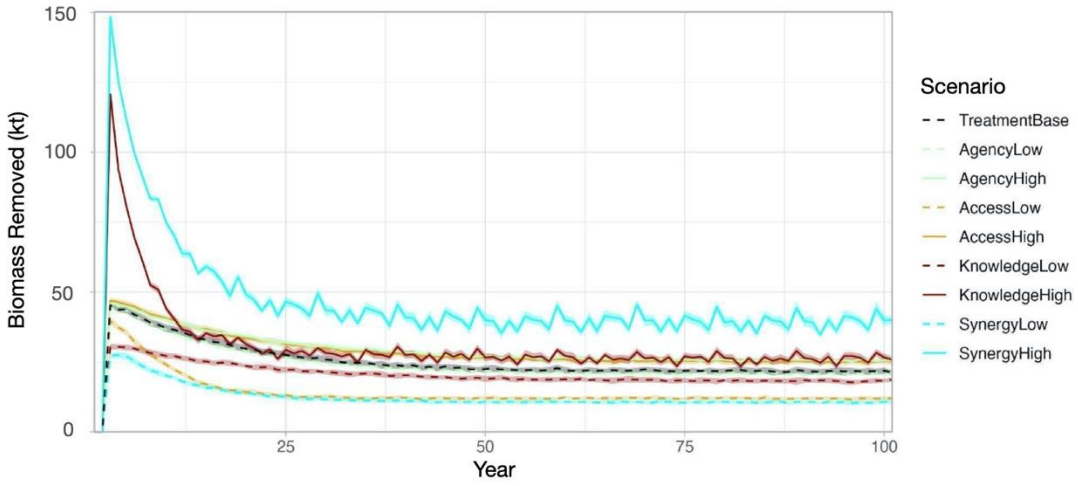

Figure S5 *Mean annual dead biomass removed (plotted in metric kilotons) during fuels treatments for each scenario was closely correlated with treatment success. Shaded regions indicate standard deviation.*