



Monitoring Summary *Ben Delatour Scout Ranch—Burn Only*

Wildfire Mitigation Strategy: Prescribed fire was applied to a ponderosa pine stand in a collaboratively funded demonstration project designed to promote forest resilience to wildfire and protect water supply and infrastructure.

Project Highlights: Prescribed fire reduced modeled fire hazard, achieving similar fire mitigation benefits as an adjacent unit that was mechanically thinned before prescribed burning. The fire reduced tree density and basal area, though some large ponderosa pine trees were killed in addition to smaller trees regularly targeted by fuels treatments. Crown base height of the remaining live trees raised substantially and surface fuels were reduced following the prescribed burn, which increased the stand’s resistance to crown fire.

Project Information

Implementation Agency	The Nature Conservancy
Funding	The Nature Conservancy, Peaks to People Water Fund
Location	Larimer County, CO
Year Completed	2017
Area Monitored	5 acres
Forest Type	Ponderosa pine
Implementation Method	Broadcast burn
Slash Treatment	Broadcast burn



Pre-treatment photo point



Immediate post-burn photo point



1-year post-burn photo point

Forest and Fuels Inventory

Summary	Pre-treatment	Post-treatment
Year sampled	2017	2017
Live basal area* (ft ² /ac)	70 ± 40	36 ± 30
Live tree density (trees per acre)	104 ± 75	65 ± 70
Canopy cover (%)	37 ± 25	22 ± 25
Canopy base height (ft)	7 ± 4	33 ± 10
Fine Woody Fuel Loading (tons/acre)	0.68	0.37

*Basal area is the cross-sectional area of tree stems at breast height (4.5 ft.) for a given area.

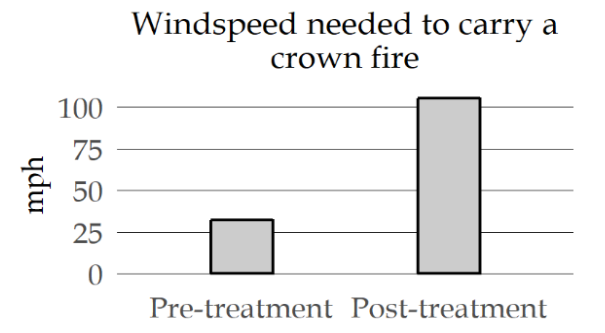
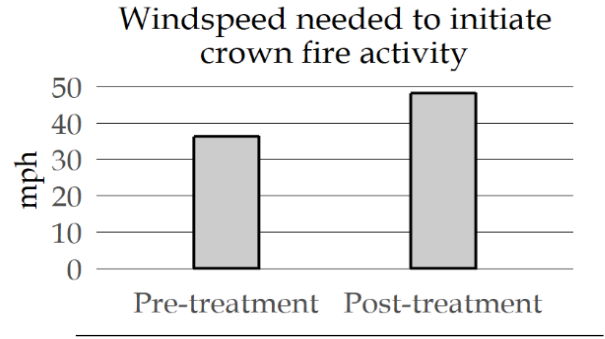
Prescribed fire severity assessment

All five plots showed signs of fire, with 39% of plot ground surface visibly burned.

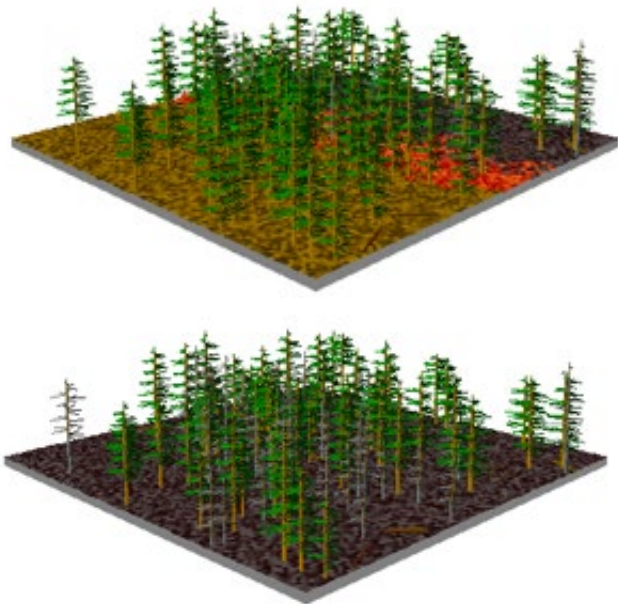
Fire Hazard Analysis

We assessed the effectiveness of fuels treatments to change expected fire behavior by collecting forest and fuels inventory data at 5 field plots pre-treatment and post-treatment. Field data was used to model potential fire behavior with the Fire and Fuels Extension to the Forest and Vegetation Simulator. The table displays fire behavior outputs modeled under severe and moderate conditions. The graph and images show changes in forest structure and modeled fire behavior under severe conditions.

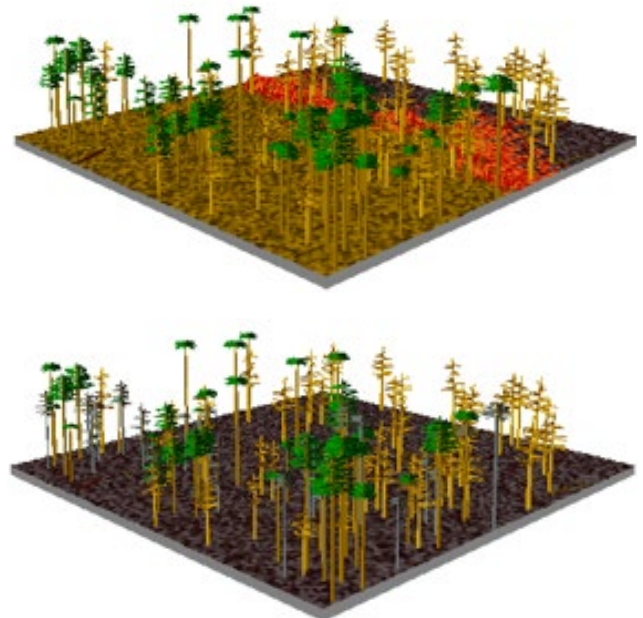
Modeled Fire Behavior				
Fire weather and fuel conditions	Pre-treatment		Post-treatment	
	Severe	Moderate	Severe	Moderate
Fire type	Surface	Surface	Surface	Surface
Total flame length (ft)	2.8	1.2	6.2	0.2
Surviving tree basal area (ft ² /ac)	48 (68%)	56 (80%)	18 (50%)	28 (77%)



Pre-treatment



Post-Treatment



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Full methods and details described in the Peaks to People Monitoring Report, available at cfri.colostate.edu. January, 2019.