

Fuels and Fire Behavior Digital Dictionary

The Fire Behavior Assessment Team

Rim Fire
Plot #6

8/31/2013
Region5/Stanislaus NF and Yosemite NP



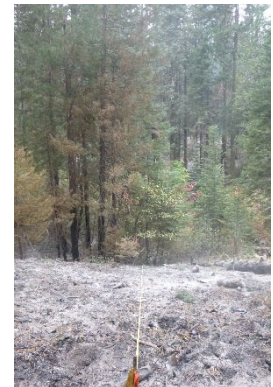
Transect 1, Pre, 0-50 ft



Transect 1, Post, 0-50 ft



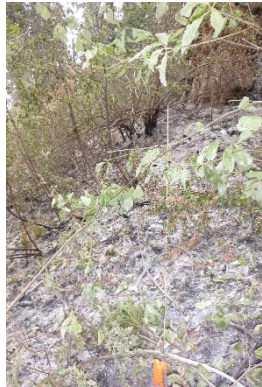
Transect 1, Pre, 50-0 ft



Transect 1, Post, 50-0 ft



Transect 2, Pre, 0-50 ft



Transect 2, Post, 0-50 ft



Transect 2, Pre, 50-0 ft



Transect 2, Post, 50-0 ft



Transect 3, Pre, 0-50 ft



Transect 3, Post, 0-50 ft



Transect 3, Pre, 50-0 ft



Transect 3, Post, 50-0 ft

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Fuels, Topography, Weather

Site Info	
Veg Type	Giant sequoia, w/mixed con
Slope (%)	30
Aspect (deg)	240
Elev (ft)	5,900

Climatic Variables	
Fire Arrival (Date, Time)	8/31/13, 17:46
Burn End (Date, Time)	8/31/13, 19:07+
20ft Wind (mph), 10min avg/gusts	8/13
Onsite wind (mph), eyelevel (10min avg)	n/a
Wind direction	180
RH%	34
Temp (F)	75
ERC/BI	67/46
Drought Index	n/a
Live FM% (Herb/Woody) from RAWS	42/98
Live FM% (taken onsite)	n/a
Dead FM% (1/10/100/1000hr)	7/6/9/10

Fuel Model (low/high)
188/165

Surface Fuels - Pre	Tons/acre
1-hour	0.5
10-hour	3.6
100-hour	3.9
1000-hour	7.8
Litter	13.1
Duff	43.1
Total Fuels	72

Understory Vegetation	Tons/ac
Live/Dead Shrub	2.218 / 0.2
Live/Dead Herbaceous	0.06 / 0.011

Canopy & Stand	
Canopy Bulk Density (kg/m ³)	0.027
Canopy Base Height (ft)	4
Basal Area (ft ² /ac)	131
Overstory Trees/ac	48

Climatic Variable Sources

Weather and fuel moisture taken from Mt. Elizabeth RAWS using NFDRS2016 outputs. eRC and BI are scores, not percentiles.

Site History: Ephemeral stream area. No prescribed fire history.

Fire Behavior

Fire Behavior	
Primary Fire Type	Surface
ROS - sensor source (ch/hr) (min/max/avg)	n/a
ROS - video interp. (ch/hr) (min/max/avg)	<0.1/ <0.1/<0.1
Flame Length (ft) (min/max/avg)	0.5/1/0.5
Direction Fire Spread is going (azimuth)	n/a

Fire Video	Description

Fire management actions affecting plot:
Burnout operation



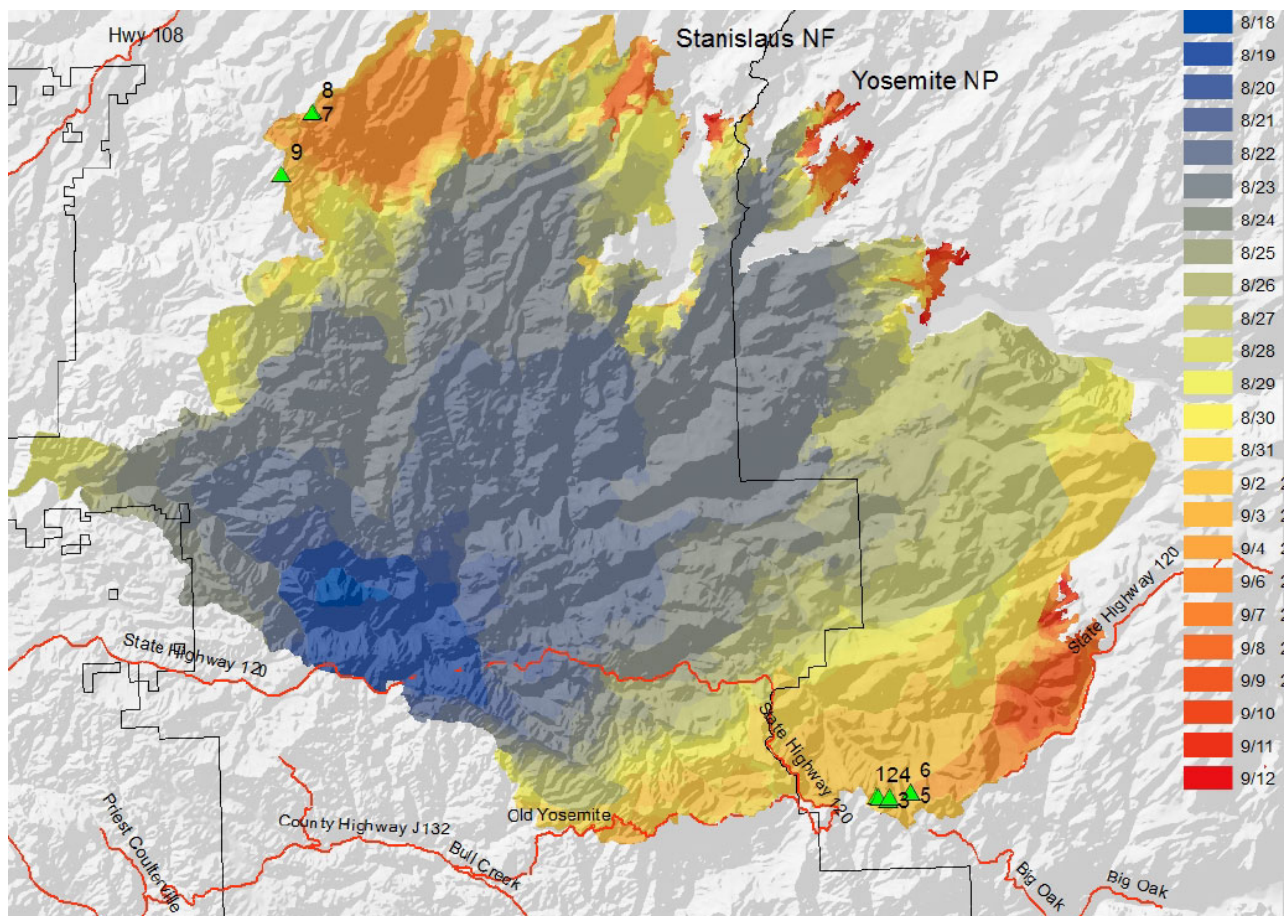
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Fire Effects

Fire Severity	
Substrate Score (1-5)	2.0
Understory Vegetation Score (1-5)	2.5
Avg % tree canopy scorch	1.1
Avg % tree canopy torch	0
Avg tree bole char (ft)	n/a

Fuel Consumption	%
1-hour	88
10-hour	93
100-hour	90
1000-hour	90
Litter	100
Duff	100

Severity category definitions: 1= unburned, 2=low, 3=moderate, 4=high, 5=very high



About the Fire Behavior Assessment Team (FBAT)

Abstract

Despite the scope of the US wildfire problem, capabilities for monitoring active wildfires to answer pressing questions about fire behavior and personnel safety are severely limited. The **Fire Behavior Assessment Team (FBAT)** is the only team currently collecting [applied science data on active wildfires](#). FBAT functions in collaboration with land managers and interested research groups. In coordination with incident management, sites are placed opportunistically ahead of the fire accounting for current and expected fire behavior, safe access, and fire management tactics.

FBAT can collect standard weather, fire behavior and fire severity observations as well as set up dataloggers which store wind speed, direction, temperature and RH. FBAT can also take plot data which includes:

- Heat resistant fire behavior equipment left on-site (video camera, 5-foot anemometer, sensor array for rate of spread/temperature profile through time, heat flux sensor).
- Fuels data collected on canopy, surface and ground fuels before and after the fire, and fire severity assessment post-fire. Fuel moisture data is often collected prior to the fire.

More information about methods and data can be found on the FBAT website:

<https://www.frames.gov/fbat/home>

The report for this fire which includes field methods and other background can be found at:

https://www.fs.fed.us/adaptivemanagement/reports/fbat/2013_FBATdraftRimFire_061015_Final.pdf