

Fuels and Fire Behavior Digital Dictionary

The Fire Behavior Assessment Team

Rough Fire
Plot 1

8/25/2015
Region5/Sierra and Sequoia NF



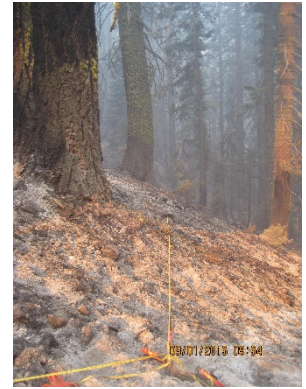
Transect 1, Pre, 0-50 ft



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

King Fire, Plot2, 2014

Fuels, Topography, Weather

Site Info	
Veg Type	Red and white fir
Slope (%)	45
Aspect (deg)	320
Elev (ft)	7159

Climatic Variables	
Fire Arrival (Date, Time)	8/25/15
Burn End (Date, Time)	-
20ft Wind, 10min avg/gusts (mph)	6/17
Onsite wind, eyelevel (20min avg) (mph)	4.3 (6.5 peak)
Wind direction (azimuth)	277
RH (%)	17
Temp (F)	86
ERC/BI	56/70
Drought Index	n/a
Live FM% (Herb/Woody)	113/143
Dead FM% (1/10/100/1000hr)	5/9/12/12

Fuel Model (low/high)
183/161

Surface Fuels - Pre	Tons/ac
1-hour	0.4
10-hour	1.1
100-hour	3.4
1000-hour	5.1
Litter	23.6
Duff	53.3
Total Fuels	86.9

Understory Veg.	Tons/ac
Live/Dead Shrub	0.110/0.033
Live/Dead Herbaceous	0.003/0.002

Canopy & Stand	
Canopy Bulk Density (kg/m ³)	0.067
Canopy Base Height (ft)	27
Basal Area (ft ² /ac)	433
Overstory Trees/ac	45

Climatic Variable Details

Weather and fuel moistures taken from cedar ridge RAWs at 1300 hrs using NFDRS2016. Onsite wind was collected from an anemometer. ERC and BI are scores, not percentiles.

Site History: n/a

Fire Behavior

Fire Behavior	
Primary Fire Type	Surface, (assumed)
Secondary Fire Type	n/a
ROS - sensor source (ch/hr) (min/max/avg)	No data
ROS - video interp. (ch/hr) (min/max/avg)	Not data
Flame Length (ft) (min/max)	No data
Direction Fire Spread is going (azimuth)	Not data

Fire Video	Description
n/a	No video – Camera malfunction, high heat
n/a	n/a
n/a	n/a

Fire management actions affecting plot: n/a

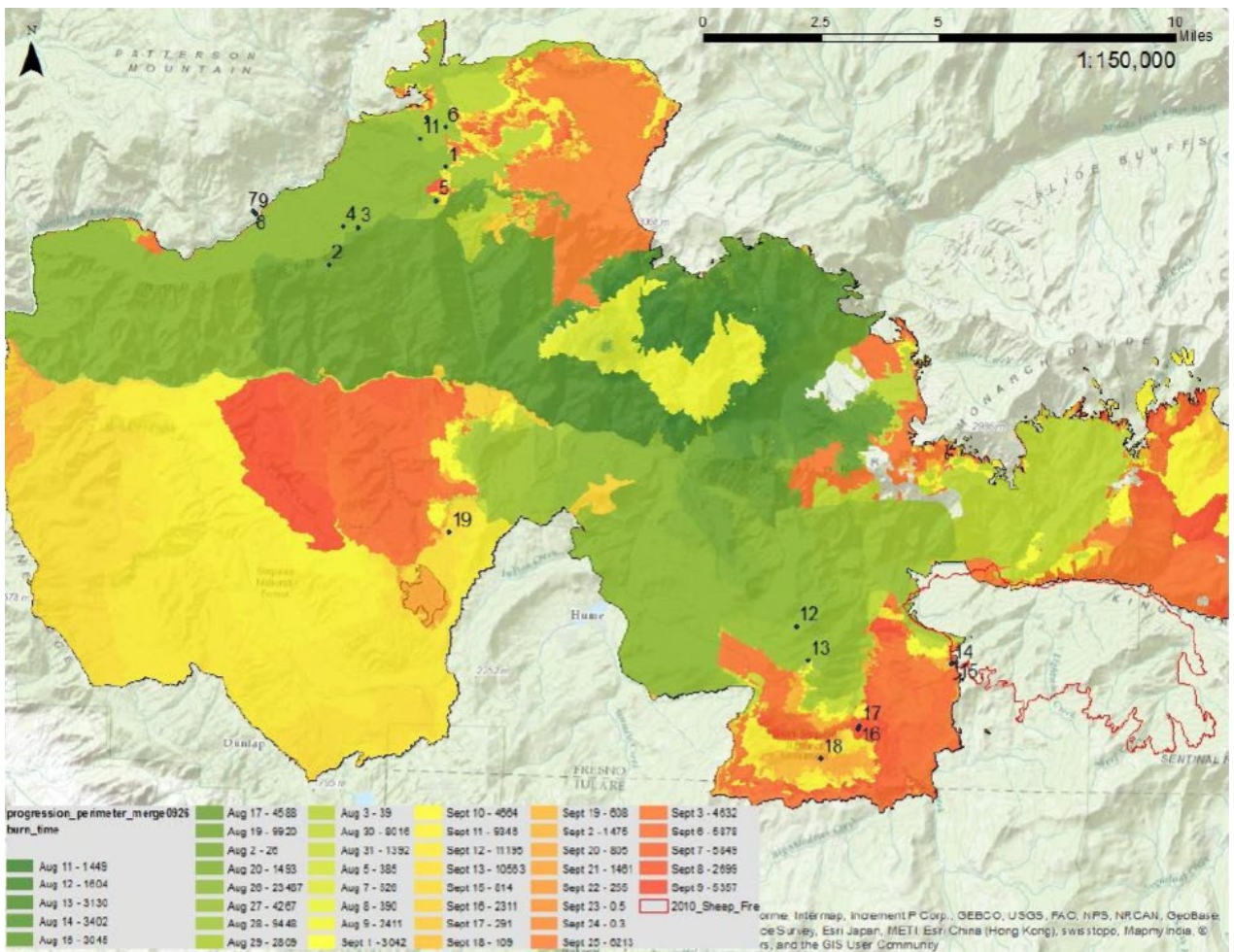
No Video. Camera malfunctioned due to
high heat

Fire Effects

Fire Severity	
Substrate Score (1-5)	3.6
Understory Veg Score (1-5)	2.7
Avg % tree canopy scorch	2
Avg % tree canopy torch	0
Avg tree bole char (ft)	No data

Fuel Consumption	%
1-hour	88
10-hour	79
100-hour	100
1000-hour	100
Litter	94
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/2015RoughFire_FBAT_Summary_Final_2Mar2016.pdf