

# Fuels and Fire Behavior Digital Dictionary

The Fire Behavior Assessment Team

Rough Fire  
Plot 16

8/30/2015  
Region5/Sierra and Sequoia NF



Transect 1, Pre, 0-50 ft



Transect 1, Post, 0-50 ft



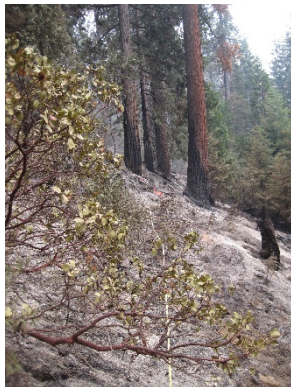
Transect 1, Pre, 50-0 ft



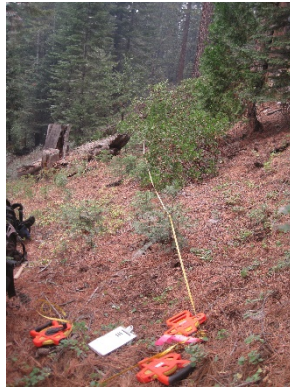
Transect 1, Post, 50-0 ft



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

Rough Fire, Plot 16, 2015

## Fuels, Topography, Weather

Site Info	
Veg Type	Mixed con, sequoia. Med to thick understory
Slope (%)	45
Aspect (deg)	336
Elev (ft)	6630

Climatic Variables	
Fire Arrival (Date, Time)	8/30/15, ~15:00
Burn End (Date, Time)	8/30/15, 16:30+
20ft Wind, 10min avg/gusts (mph)	6/18
Onsite wind, eyelevel (20min avg) (mph)	0.4 (2.8 peak)
Wind direction (azimuth)	270
RH (%)	37
Temp (F)	76
ERC/BI	54/62
Drought Index	n/a
Live FM% (Herb/Woody)	113/138
Dead FM% (1/10/100/1000hr)	9/12/11/12

Fuel Model (low/high)	
188/161	
Surface Fuels - Pre	Tons/ac
1-hour	0.3
10-hour	0.5
100-hour	0
1000-hour	8.1
Litter	8.7
Duff	17.56
Total Fuels	35.2

Understory Veg.	Tons/ac
Live/Dead Shrub	1.625/0.069
Live/Dead Herbaceous	0/0

Canopy & Stand	
Canopy Bulk Density (kg/m <sup>3</sup> )	0.043
Canopy Base Height (ft)	6
Basal Area (ft <sup>2</sup> /ac)	162
Overstory Trees/ac	33

### Climatic Variable Details

Weather and fuel moistures taken from cedar ridge RAWs at 1500 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, low intensity
Secondary Fire Type	n/a
ROS - sensor source (ch/hr) (min/max/avg.)	0.02/0.23/0.1
ROS - video interp. (ch/hr) (avg.)	0.8/0.8/0.8
Flame Length (ft) (min/max)	0.5 /3/1
Direction Fire Spread is going (azimuth)	225

Fire Video	Description
n/a	n/a
n/a	n/a
n/a	n/a

Fire management actions affecting plot: n/a

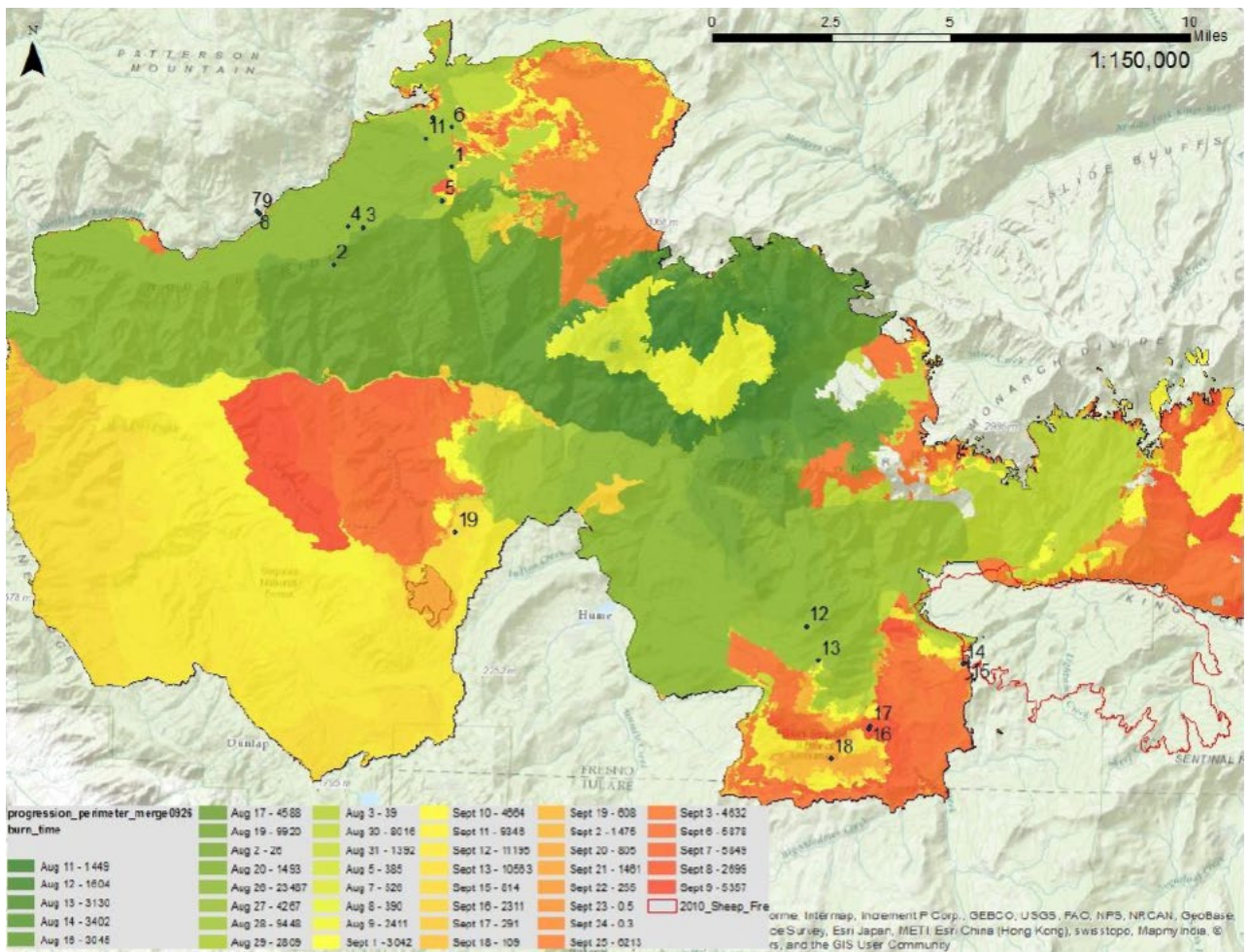


# Fire Effects

Fire Severity	
Substrate Score (1-5)	3.6
Understory Veg Score (1-5)	2.3
Avg % tree canopy scorch	27
Avg % tree canopy torch	0
Avg tree bole char (ft)	No data

Fuel Consumption	%
1-hour	74
10-hour	67
100-hour	0
1000-hour	100
Litter	80
Duff	75

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](https://www.fs.fed.us/adaptivemanagement/reports/fbat/2015RoughFire_FBAT_Summary_Final_2Mar2016.pdf)