

# Fuels and Fire Behavior Digital Dictionary

## The Fire Behavior Assessment Team

Rough Fire  
Plot 4

8/21/2015

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

## Fuels, Topography, Weather

Site Info	
Veg Type	Shrubland, (Prunus and Ceanothus species)
Slope (%)	27
Aspect (deg)	194
Elev (ft)	6549

Climatic Variables	
Fire Arrival (Date, Time)	8/21/15, 14:53
Burn End (Date, Time)	8/21/15, 16:12+
20ft Wind, 10min avg/gusts (mph)	4/15
Onsite wind, eyelevel (20min avg.) (mph)	0.3 (2.3 peak)
Wind direction (azimuth)	284
RH (%)	25
Temp (F)	81
ERC/BI	56/64
Drought Index	n/a
Live FM% (Herb/Woody)	113/140
Dead FM% (1/10/100/1000hr)	7/12/10/11

Fuel Model (low/high)
142/145

Surface Fuels - Pre	Tons/ac
1-hour	0.1
10-hour	1.9
100-hour	1.8
1000-hour	0
Litter	79.5
Duff	9.5
Total Fuels	92.8

Understory Veg.	Tons/ac
Live/Dead Shrub	5.826/3.268
Live/Dead Herbaceous	0

Canopy & Stand	
Canopy Bulk Density (kg/m <sup>3</sup> )	0.015
Canopy Base Height (ft)	12
Basal Area (ft <sup>2</sup> /ac)	19
Overstory Trees/ac	0

### Climatic Variable Details

Weather and fuel moistures taken from cedar ridge RAWs 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
Surface Fire Type	Shrub crown fire
ROS - sensor source (ch/hr) (min/max/avg.)	1.03
ROS - video interp. (ch/hr) (min/max/avg.)	No data
Flame Length (ft) (min/max)	No data
Direction Fire Spread is going (azimuth)	~40

Fire Video	Description
n/a	Video malfunction – high heat.
n/a	n/a
n/a	n/a

Fire management actions affecting plot:n/a



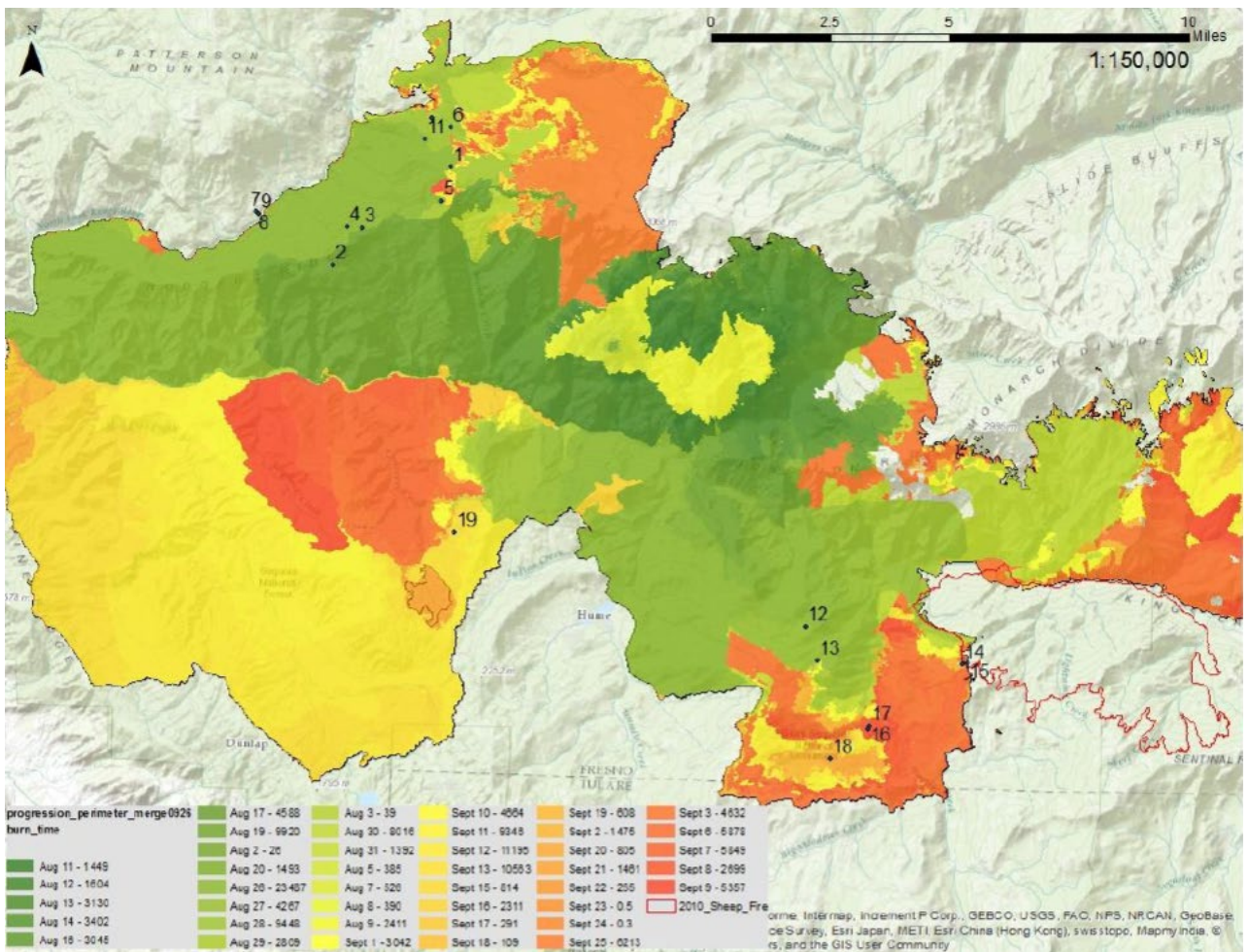
Plot 4, overview of the area after the fire. The plot location is circled in red, where workers are there re-visiting the site.

# Fire Effects

Fire Severity	
Substrate Score (1-5)	4
Understory Veg Score (1-5)	2.6
Avg % tree canopy scorch	62
Avg % tree canopy torch	38
Avg tree bole char (ft)	No data

Fuel Consumption	%
1-hour	95
10-hour	78
100-hour	100
1000-hour	0
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/2015RoughFire\\_FBAT\\_Summary\\_Final\\_2Mar2016.pdf](https://www.fs.fed.us/adaptivemanagement/reports/fbat/2015RoughFire_FBAT_Summary_Final_2Mar2016.pdf)