

# Fuels and Fire Behavior Digital Dictionary

The Fire Behavior Assessment Team

Beaver Fire  
Plot 7

8/10/2014  
Region5/Klamath 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

Beaver Fire, Plot 7, 2014

## Fuels, Topography, Weather

Site Info	
Veg Type	Dense mixed-age mixed conifer
Slope (%)	25
Aspect (deg)	260
Elev (ft)	1,033

Climatic Variables	
Fire Arrival (Date, Time)	8/10/14, 17:50
Burn End (Date, Time)	8/10/14, 17:53
20ft Wind (mph), 10min ave/gusts	1/12
Onsite wind (mph), eyelevel 20min avg./Pk of 20min in 10s running avg.	2.5 / 7.8
Wind direction	67
RH%	19
Temp (F)	91
ERC/BI	61/42
Drought Index	n/a
Live FM% (Herb/Woody) from RAWS	30/94
Live FM% (taken onsite)	n/a
Dead FM% (1/10/100/1000hr)	4/8/11/11

Fuel Model (low/high)
183/184

Surface Fuels - Pre	Tons/ac
1-hour	0.3
10-hour	1.5
100-hour	3.7
1000-hour	52.7
Litter	16
Duff	18.1
Total Fuels	92.3

Understory Veg.	Tons/ac
Live/Dead Shrub	0.56 / <0.005
Live/Dead Herbaceous	<0.005 / <0.005

Canopy & Stand	
Canopy Bulk Density (kg/m <sup>3</sup> )	0.35
Canopy Base Height (ft)	10
Basal Area (ft <sup>2</sup> /ac)	579
Overstory Trees/ac	1022

### Climatic Variable Details

Weather and fuel moisture taken from the Oak Knoll RAWS using NFDRS2016. Onsite wind was collected from an anemometer. ERC and BI are scores not percentiles.

### Site History:

## Fire Behavior

Fire Behavior	
Primary Fire Type	Surface, mod-high intensity
Secondary Fire Type	Torching, crown fire in distance
ROS - sensor source (ch/hr) (min/max/avg.)	15.7 / 59.5 / 31.8
ROS - video interp. (ch/hr) (min/max/avg.)	1 (avg)
Flame Length (ft) (min/max)	1 / 6
Direction Fire Spread is going (azimuth)	~225

Fire Video	Description

Fire management actions affecting plot:

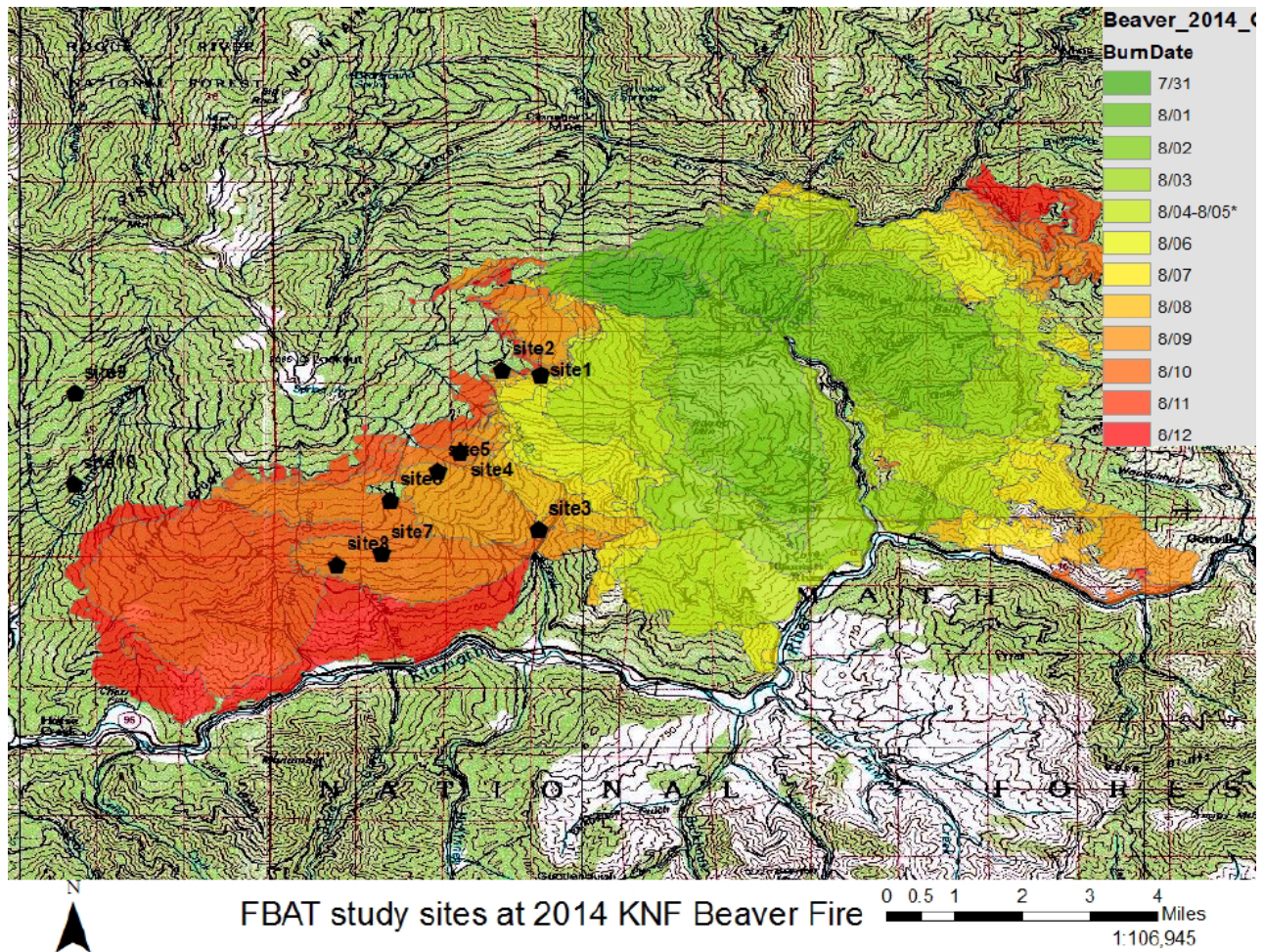


## Fire Effects

Fire Severity	
Substrate Score (1-5)	4.1
Understory Vegetation Score (1-5)	5
Avg. % tree canopy scorch	32
Avg. % tree canopy torch	68
Avg. tree bole char (ft)	58

Fuel Consumption	%
1-hour	67
10-hour	67
100-hour	100
1000-hour	69
Litter	100
Duff	67

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/2014\\_FBATReport\\_BeaverFire\\_043015update\\_091015formatting.pdf](https://www.fs.fed.us/adaptivemanagement/reports/fbat/2014_FBATReport_BeaverFire_043015update_091015formatting.pdf)