Fuels and Fire Behavior Digital Dictionary

The Fire Behavior Assessment Team

French Fire   8/1/2014
Plot #1   Region5/Sierra NF
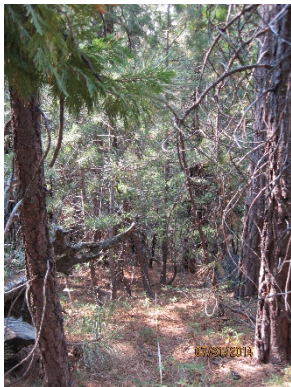

Transect 1, Pre, 0-50 ft

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	Mixed conifer, bear clover
Slope (%)	33
Aspect (deg)	140
Elev (ft)	5480

Climatic Variables	
Fire Arrival (Date, Time)	8/1/2014, 10:57
Burn End (Date, Time)	uncertain
20ft Wind (mph), 10min avg./gusts	5/8
Onsite wind(mph), eyelevel (10min avg.)	1 to 3
Wind direction (azimuth)	151
RH (%)	19
Temp (F)	86
ERC/BI	62/37
Drought Index	n/a
Live FM% (Herb/Woody)	30/109
Dead FM% (1/10/100/1000hr)	6/8/10/11

Fuel Model (min/max)
188/165

Surface Fuels - Pre	Tons/acre
1-hour	0.09
10-hour	0.4
100-hour	0.5
1000-hour	6.9
Litter	5.7
Duff	24.6
Total Fuels	38.1

Understory Vegetation	Tons/ac
Live/Dead Shrub	0.11/<0.005
Live/Dead Herbaceous	<0.005/0

Canopy & Stand	
Canopy Bulk Density (kg/m^3)	0.19
Canopy Base Height (ft)	1
Basal Area (ft^2/ac)	211
Trees per Acre (pre/post)	808/0

Climatic Variable Sources
Weather and fuel moisture from Minaret RAWS utilizing NFDRS2016. Onsite wind was collected from an anemometer. ERC and BI are scores, not percentiles.

Site History: Plot 1 is located in an area of no known recent fuel treatments or fire history.

Fire Behavior

Fire Behavior	
Primary Fire Type	Crown fire
Secondary Fire Type	Crown fire
ROS - sensor source (ch/hr) (min/max/avg.)	28.1/49.9/36.8
ROS - video interp. (ch/hr) (min/max/avg.)	n/a
Flame Length (ft) (min/max)	72+
Primary Fire Spread Direction in plot (azimuth)	~290

Fire Video	Description
n/a	Camera malfunctioned
n/a	
n/a	

Fire management actions affecting plot:

Video not available
(Camera malfunction)

Fire Effects

Fire Severity	
Substrate Score (1-5)	4
Understory Vegetation Score (1-5)	5
Avg. % tree canopy scorch	51
Avg. % tree canopy torch	49
Avg. tree bole char (ft)	72+

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

Fuel Consumption	%
1-hour	100
10-hour	100
100-hour	100
1000-hour	92
Litter	96
Duff	97

French Fire, Plot1, 2014

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/Antelope_detail.pdf