

Fuels and Fire Behavior Digital Dictionary

The Fire Behavior Assessment Team

King Fire
Plot #2

9/18/2014
Region5/Eldorado NF



Transect 1, Pre, 0-50 ft



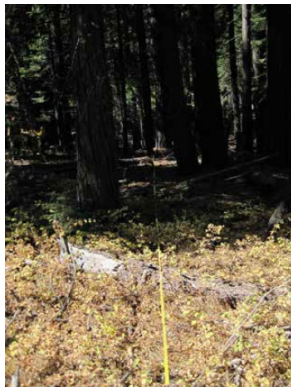
Transect 1, Post, 0-50 ft



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
(Missing)

Fuels, Topography, Weather

Site Info	
Veg Type	Mixed conifer
Slope (%)	18
Aspect (deg)	300
Elev (ft)	5325

Climatic Variables	
Fire Arrival (Date, Time)	9/18/2014, 18:05
Burn End (Date, Time)	n/a
20ft Wind (mph), 10min avg./gusts	2/5
Onsite wind(mph), eyelevel (10min avg.)	4-8
Wind direction (azimuth)	314
RH (%)	75
Temp (F)	62
ERC/BI	53/25
Drought Index	n/a
Live FM% (Herb/Woody)	37/66
Dead FM% (1/10/100/1000hr)	15/16/14/9

Fuel Model (min/max)
188/165

Surface Fuels - Pre	Tons/ac
1-hour	0.7
10-hour	1.4
100-hour	1.8
1000-hour	8.6
Litter	13.3
Duff	33.9
Total Fuels	59.7

Understory Veg.	Tons/ac
Live/Dead Shrub	<0.005/<0.005
Live/Dead Herbaceous	0/0

Canopy & Stand	
Canopy Bulk Density (kg/m ³)	0.35
Canopy Base Height (ft)	18
Basal Area (ft ² /ac)	513
Overstory Trees/ac	613

Climatic Variable Details

Fuel moisture and indices are from the Bald Mountain RAWS station utilizing NFDRS2016 calculations. Onsite winds was collected from an anemometer. ERC and BI are scores, not percentiles.

Site History: Many areas bordering the road appeared as having previous fuel treatments, but the plot area had not been treated (as recorded in FACTS), probably because it was located adjacent to a drainage.

Fire Behavior

Fire Behavior	
Primary Fire Type	Surface
Secondary Fire Type	Group torching
ROS - sensor source (ch/hr) (min/max/avg.)	0.48/0.50/0.49
ROS - video interp. (ch/hr) (min/max/avg.)	n/a
Flame Length (ft) (min/max)	Unknown
Direction fire is going. (azimuth)	~68

Fire Video	Description
	No video – Camera malfunction

Fire management actions affecting plot:
None indicated

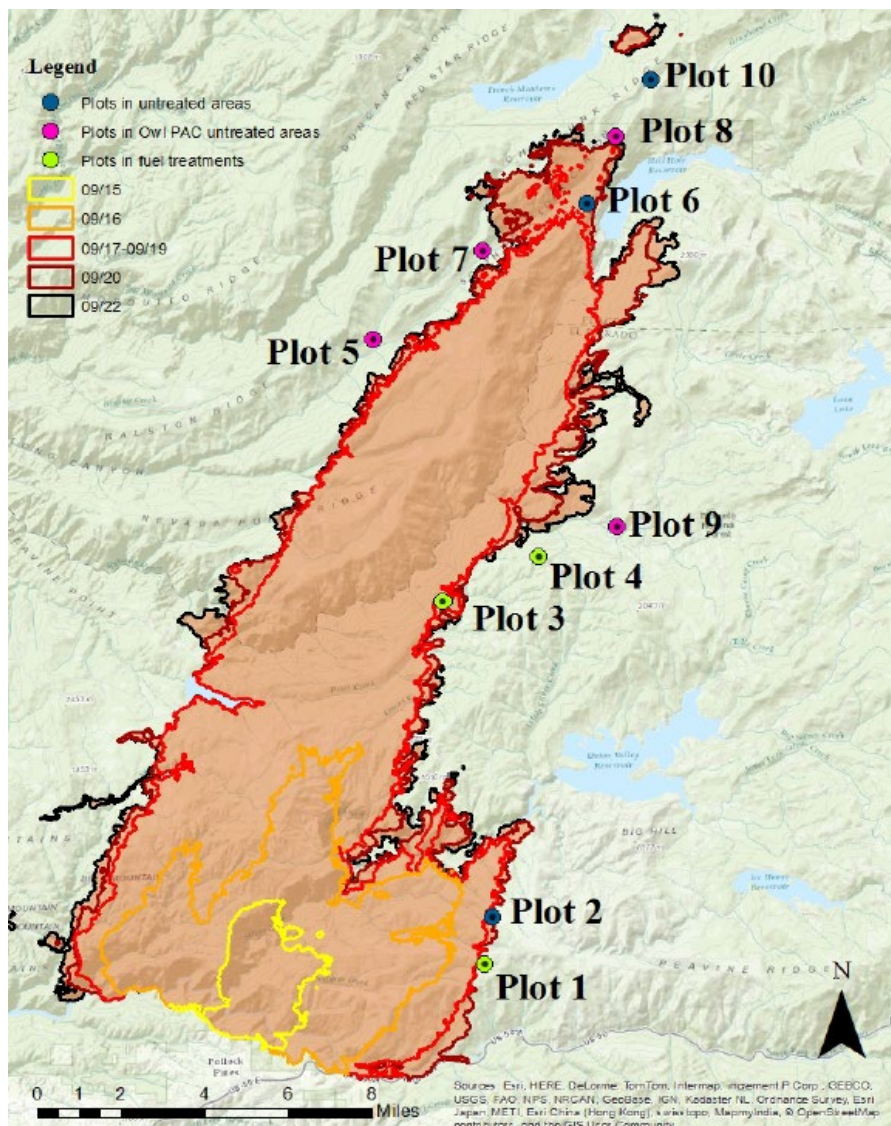
No Video. Camera malfunctioned due to high heat (videotape warped)

Fire Effects

Fire Severity	
Substrate Score (1-5)	3.6
Understory Vegetation Score (1-5)	5
Avg % tree canopy scorch	25
Avg % tree canopy torch	0
Avg tree bole char (ft)	12

Fuel Consumption	%
1-hour	89
10-hour	89
100-hour	100
1000-hour	93
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/Antelope_detail.pdf