Fuels and Fire Behavior Digital Dictionary

The Fire Behavior Assessment Team

Walker Fire
Plot #8

9/14/2019
Region5/Plumas 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	Ponderosa, open understory
Slope (%)	7
Aspect (deg)	34
Elev (ft)	5,571

Climatic Variables	
Fire Arrival (Date, Time)	9/14/19, 15:00
Burn End (Date, Time)	9/14/19, 15:30
20ft Wind (mph), 10min avg./gusts	10/19
Onsite wind(mph), eyelevel (10min avg.)	n/a
Wind direction (azimuth)	340
RH (%)	11
Temp (F)	81
ERC/BI	20/40
Drought Index	n/a
Live FM% (Herb/Woody)	30/70
Dead FM% (1/10/100/1000hr)	2/5/18/25

Fuel Model (min/max)
183/188

Surface Fuels - Pre	Tons/acre
1-hour	0.1
10-hour	0.8
100-hour	0
1000-hour	0
Litter	2.1
Duff	20.3
Total Fuels	23.3

Understory Vegetation	Tons/ac
Live/Dead Shrub	0.005
Live/Dead Herbaceous	<0.001

Canopy & Stand	
Canopy Bulk Density (kg/m^3)	0.27
Canopy Base Height (ft)	6
Basal Area (ft^2/ac)	468
Overstory Trees/ac	297

Climatic Variable Sources
Weather and fuel moisture taken from Coyote RAWS using 1300 observation and NFDRS 78. ERC and BI are scores, not percentiles.

Site History: Plot 8 was located in an area of no known recent fuel treatments or recorded fire history. Older logging had occurred (evident due to stumps with advanced decay).

Fire Behavior

Fire Behavior	
Fire Type (min)	Surface
Fire Type (max)	Group torching
ROS - sensor source (ch/hr) (min/max/avg.)	N/A
ROS - video interp. (ch/hr) (min/max/avg.)	1.5/7/2/2/2
Flame Length (ft) (min/max/avg)	0.5/15/1
Direction fire spread is going. (azimuth)	340

Fire Video	Description
	n/a

Fire management actions affecting plot:
Plot 8 was burned as part of a burnout operation.

Low-end fire behavior

Higher end fire behavior with wind gusts

Group torching just outside plot

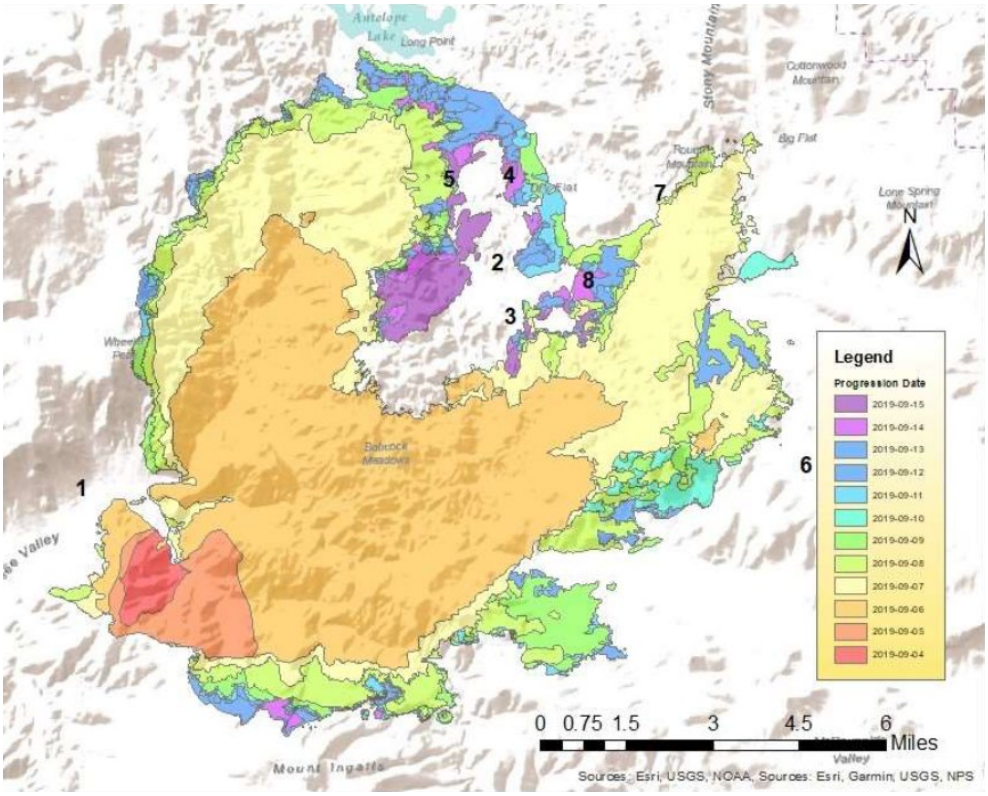
Single tree torching within plot

Fire Effects

Fire Severity	
Substrate Score (1-5)	3.4
Understory Vegetation Score (1-5)	3.2
Avg. % tree canopy scorch	63
Avg. % tree canopy torch	27
Avg. tree bole char (ft)	7 to 29

Fuel Consumption	%
1-hour	100
10-hour	100
100-hour	n/a
1000-hour	n/a
Litter	100
Duff	26

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