Fuels and Fire Behavior Digital Dictionary

The Fire Behavior Assessment Team

Walker Fire	9/14/2019
Plot #4	Region5/Plumas NF

Transect 1, Pre, 0-50 ft
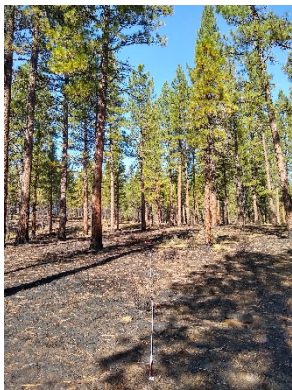

Transect 1, Post, 0-50 ft

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

Site Info	
Veg Type	Ponderosa pine, open understory
Slope (%)	7
Aspect (deg)	154
Elev (ft)	6145

Climatic Variables

Climatic Variables	
Fire Arrival (Date, Time)	9/15/19, 14:30
Burn End (Date, Time)	9/15/19, 15:55
20ft Wind (mph), 10min avg./gusts	11/17
Onsite wind(mph), eyelevel (10min avg.)	n/a
Wind direction (azimuth)	170
RH (%)	13
Temp (F)	76
ERC/BI	19/44
Drought Index	n/a
Live FM% (Herb/Woody)	3/70
Dead FM% (1/10/100/1000hr)	3/6/19/25

Fuel Model (low/high)

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181/121

Surface Fuels - Pre	Tons/acre
1-hour	0.1
10-hour	0.2
100-hour	0
1000-hour	0
Litter	3.2
Duff	2.5
Total Fuels	6

Understory Vegetation	Tons/ac
Live/Dead Shrub	0.194
Live/Dead Herbaceous	0.054

Canopy & Stand	
Canopy Bulk Density (kg/m^3)	0.05
Canopy Base Height (ft)	24
Basal Area (ft^2/ac)	160
Overstory Trees/ac	85

Climatic Variable Sources
Weather, fuel moisture and FDR indices taken from Coyote RAWS at 1300hrs using NFDRS78. EC and BI are scores, not percentiles.

Site History: 1996 commercial and pre-commercial thin. Wheeler fire, low severity.

Fire Behavior

Fire Behavior	
Primary Fire Type	Surface
Secondary Fire Type	n/a
ROS - sensor source (ch/hr) (min/max/avg.)	1.4/1.9/1.6
ROS - video interp. (ch/hr) (min/max/avg.)	1.5/1.5/1.5
Flame Length (ft) (min/max/avg.)	1/2/1.5
Direction fire spread is going. (azimuth)	220

Fire Video	Description
	n/a

Fire management actions affecting plot:
Likely burned as part of burnout operation.

2019/09/16 05:58:26

Fire Effects

Fire Severity	
Substrate Score (1-5)	2.1
Understory Vegetation Score (1-5)	3.0
Avg. % tree canopy scorch	0
Avg. % tree canopy torch	0
Avg. tree bole char (ft)	2

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

Fuel Consumption	%
1-hour	100
10-hour	0
100-hour	n/a
1000-hour	n/a
Litter	82
Duff	29

Walker Fire, Plot4, 2019
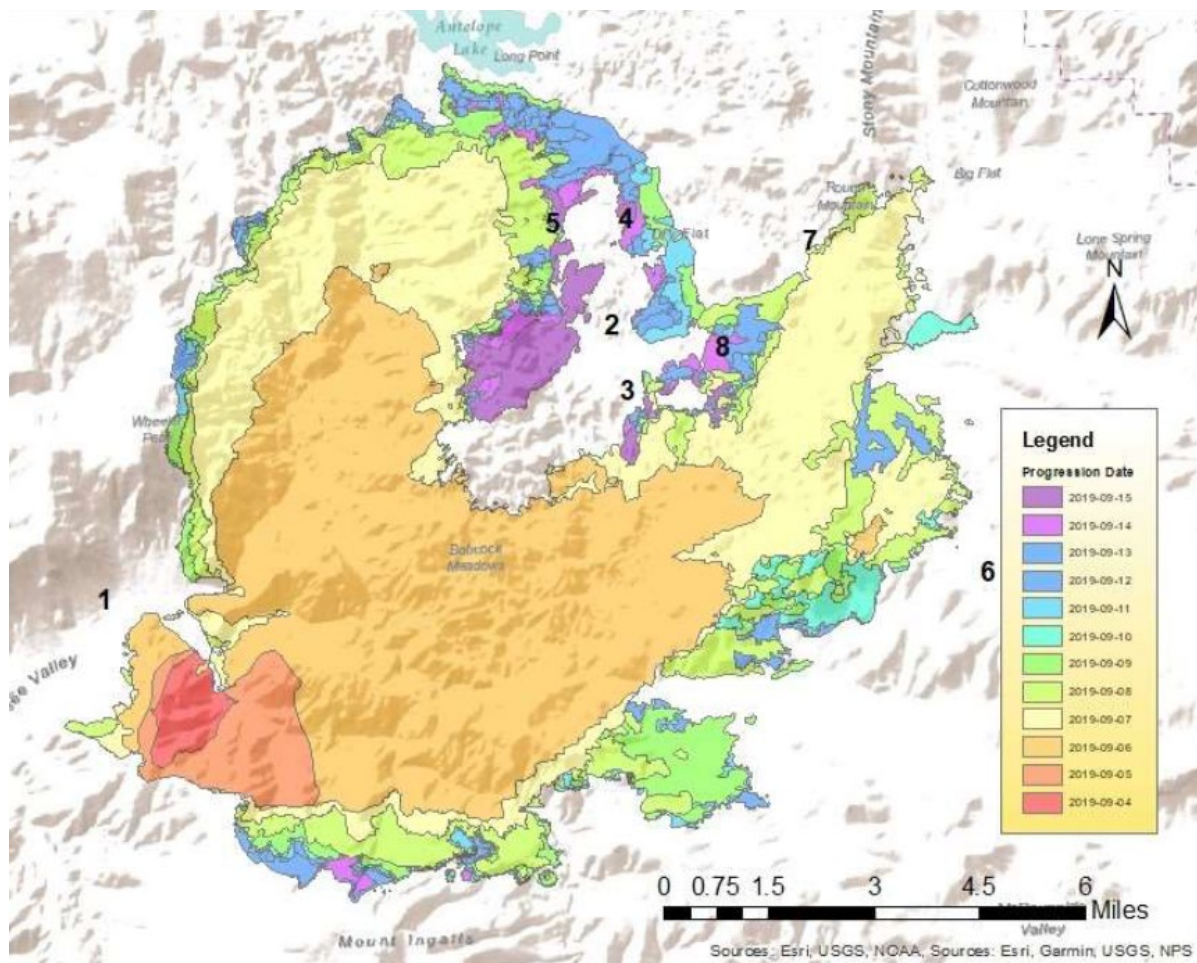
About the Fire Behavior Assessment Team (FBAT)

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