

Fuels and Fire Behavior Digital Dictionary

The Fire Behavior Assessment Team

Rough Fire
Plot 14

8/26/2015
Region5/Sierra and Sequoia 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

Rough Fire, Plot 14, 2015

Fuels, Topography, Weather

| Site Info | |
|--------------|------------------------------------------------------|
| Veg Type | Mixed con, white/red fir, Jeffrey pine, sparse ustry |
| Slope (%) | 45 |
| Aspect (deg) | 264 |
| Elev (ft) | 8122 |

| Climatic Variables | |
|-----------------------------------------|------------|
| Fire Arrival (Date, Time) | 8/26/15 |
| Burn End (Date, Time) | n/a |
| 20ft Wind, 10min avg/gusts (mph) | 7/17 |
| Onsite wind, eyelevel (20min avg) (mph) | No data |
| Wind direction (azimuth) | 315 |
| RH (%) | 17 |
| Temp (F) | 86 |
| ERC/BI | 55/68 |
| Drought Index | n/a |
| Live FM% (Herb/Woody) | 113/140 |
| Dead FM% (1/10/100/1000hr) | 6/10/12/12 |

| Fuel Model (low/high) |
|-----------------------|
| 181/161 |

| Surface Fuels - Pre | Tons/ac |
|---------------------|---------|
| 1-hour | 0.4 |
| 10-hour | 0.8 |
| 100-hour | 1.2 |
| 1000-hour | 69.0 |
| Litter | 10.8 |
| Duff | 36.3 |
| Total Fuels | 118.5 |

| Understory Veg. | Tons/ac |
|----------------------|------------|
| Live/Dead Shrub | 0.08/0.001 |
| Live/Dead Herbaceous | 0.002/0 |

| Canopy & Stand | |
|------------------------------------------|-------|
| Canopy Bulk Density (kg/m ³) | 0.017 |
| Canopy Base Height (ft) | 27 |
| Basal Area (ft ² /ac) | 389 |
| Overstory Trees/ac | 12 |

Climatic Variable Details

Weather and fuel moistures taken from cedar ridge RAWs at 1300 hrs using NFDRS2016. Onsite wind was collected from an anemometer. ERC and BI are scores, not percentiles.

Site History: n/a

Fire Behavior

| Fire Behavior | |
|-------------------------------------------|------------------------|
| Primary Fire Type | Surface, low intensity |
| Secondary Fire Type | n/a |
| ROS - sensor source (ch/hr) (min/max/avg) | No data |
| ROS - video interp. (ch/hr) (min/max/avg) | 0.5/0.5/0.5 |
| Flame Length (ft) (min/max/avg) | 1/4/2 |
| Direction Fire Spread is going (azimuth) | 20 |

| Fire Video | Description |
|------------|-------------|
| n/a | n/a |
| n/a | n/a |
| n/a | n/a |

Fire management actions affecting plot: n/a

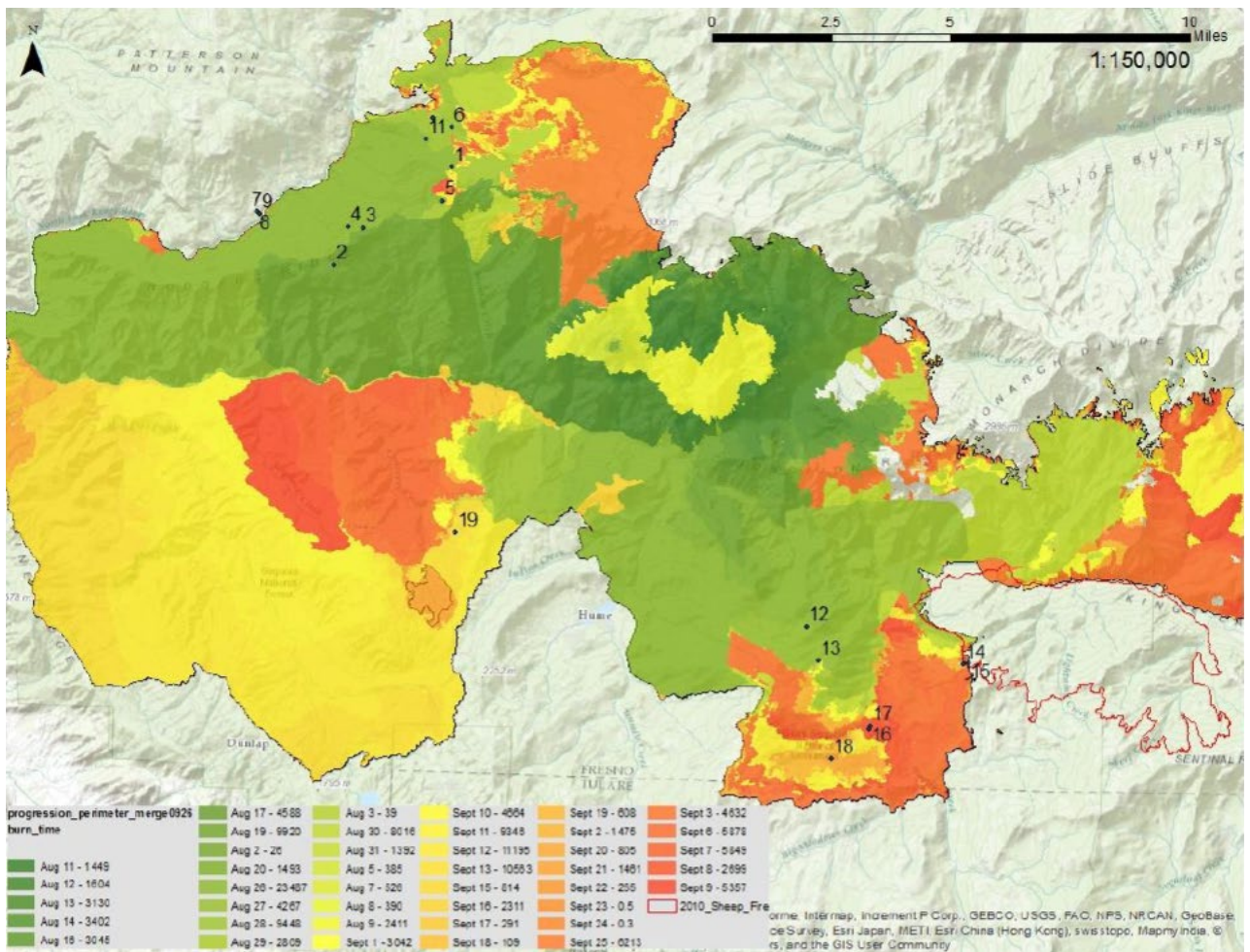


Fire Effects

| Fire Severity | |
|----------------------------|---------|
| Substrate Score (1-5) | 3.9 |
| Understory Veg Score (1-5) | 2.3 |
| Avg % tree canopy scorch | 8 |
| Avg % tree canopy torch | 0 |
| Avg tree bole char (ft) | No data |

| Fuel Consumption | % |
|------------------|-----|
| 1-hour | 63 |
| 10-hour | 91 |
| 100-hour | 100 |
| 1000-hour | 93 |
| Litter | 69 |
| Duff | 83 |

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



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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/2015RoughFire_FBAT_Summary_Final_2Mar2016.pdf