

Blanket Creek Fire Long Term Strategic Analysis

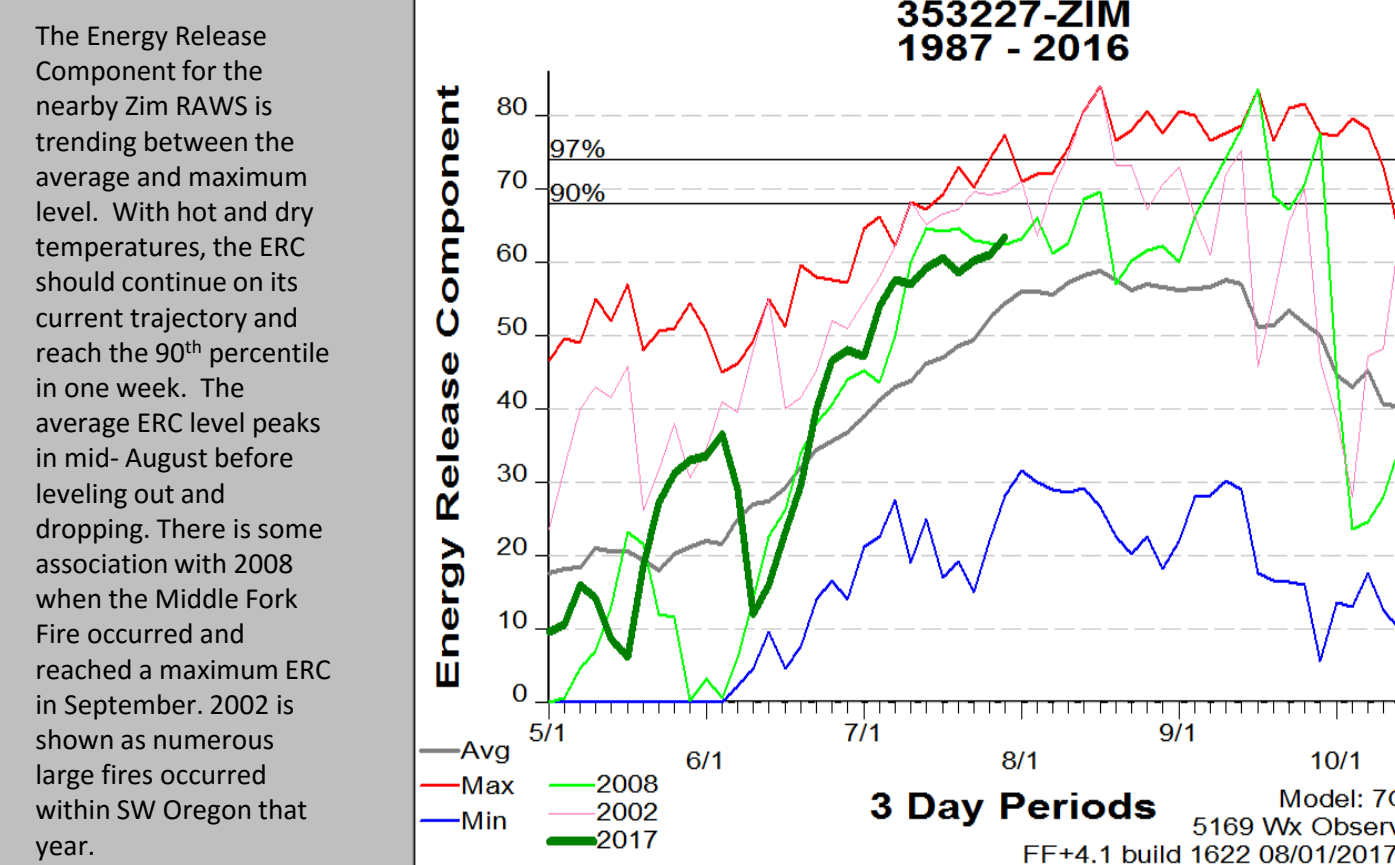
Overview

The Blanket Fire, on the Rogue River National Forest, was detected on 25 July 2017, when dry lightning came through the High Cascade starting five other fires in the vicinity. Four of the other fires were successfully initial attacked with the Spruce Creek fire still burning in Crater Lake National Park and near the Forest Boundary. The Blanket Fire was initial attacked with the Siskiyou Rappellers and the Rogue River Interagency Hotshot Crew. Considering firefighter safety, with steep, inaccessible terrain and hazardous associated with snags, the decision was made to remove ground resources in the initial attack and resort to indirect attack. There was initial concern for the Blanket Fire becoming a long duration event and potential to persist into the summer.

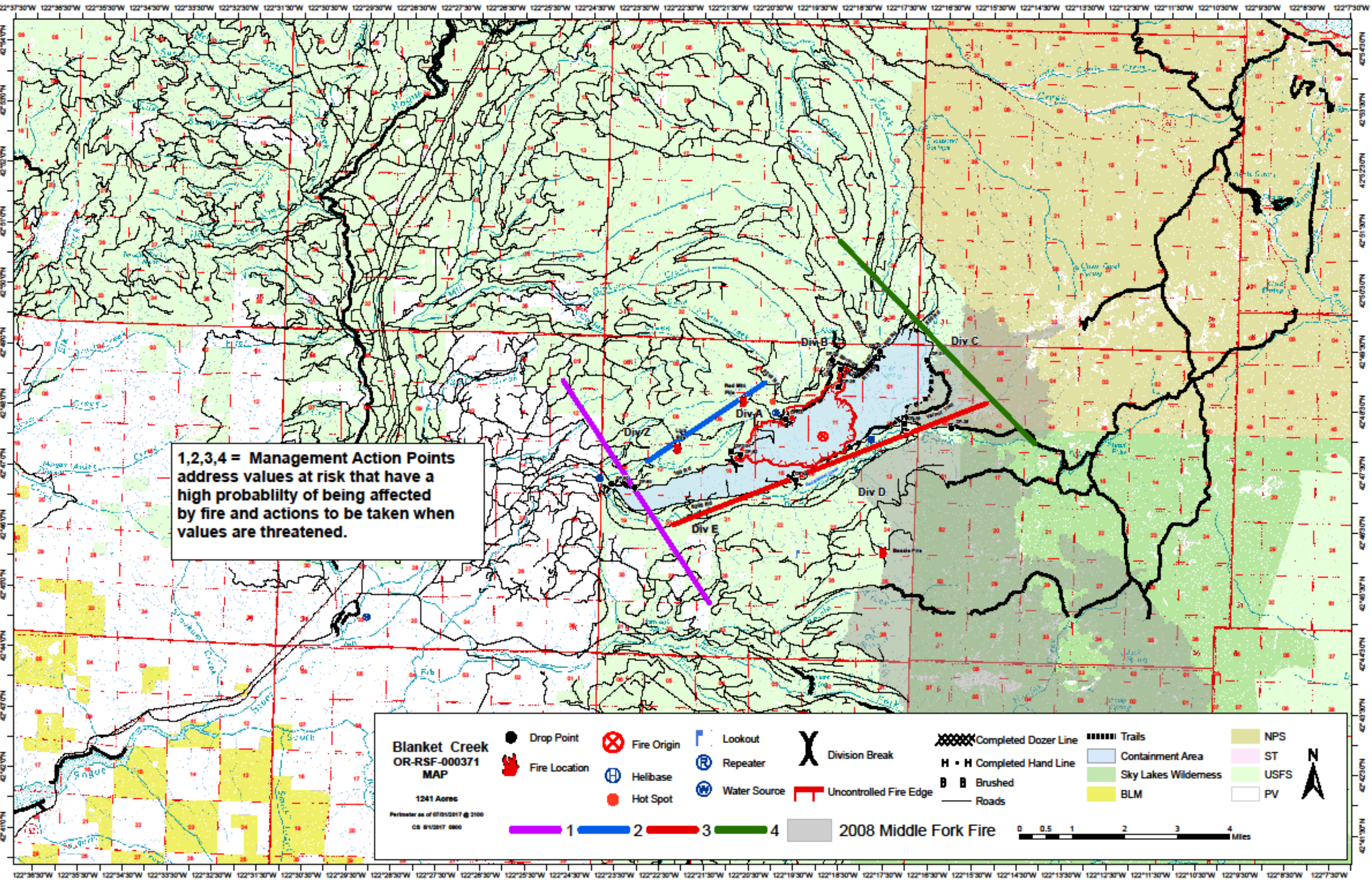
Area is largely composed of closed canopy mixed conifer with steep canyons. Fire is primarily burning as a surface fire in the dead and down component and some single to group torching primarily in the lichen that is providing vector for short range spotting. Fuels are identified as TU1 – low load timber with grass and shrub, TU5 – very high load timber with shrubs, and TL5 – high load conifer with litter. Both north and south of the primary perimeter are old timber sale units. The Middle Fork Fire from 2008 is to the east with timber, plantations and agriculture lands to the east.

The climate of the High Cascades is relatively moist with substantial snow in the winter and an ample amount of rain in the summer. The High Cascade is the highest elevation area on the forest with the greatest snowpack in Southwestern Oregon. Mean precipitation for the area is 56 inches. Last precipitation for the area was received 12 June 2017 with 84". During the past 6 months, the Standardized Precipitation Index shows the area at 1.25 to 1.99 or very wet. For the past year, the SPI is at the same level of 1.25 to 1.99 or very wet.

Current Situation



Management Action Points



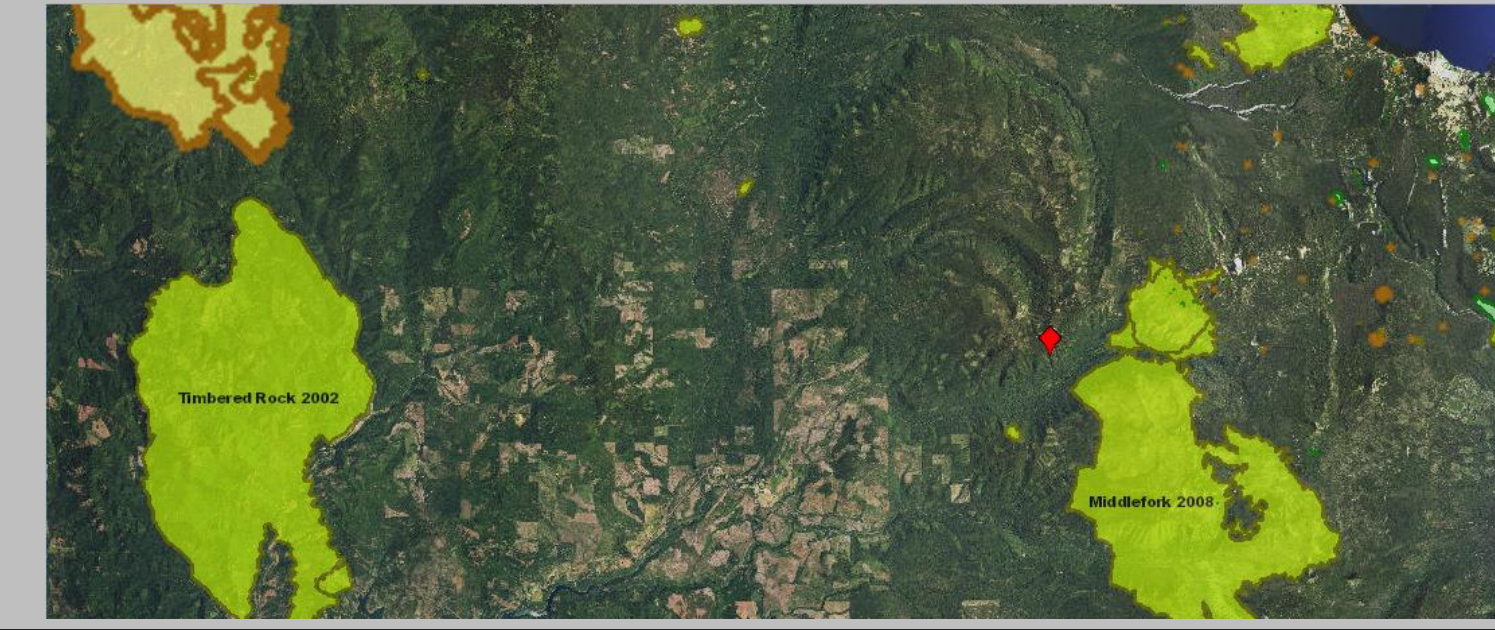
Northwest Incident Management Team 13 - Public

Aerial View of Backing Fire



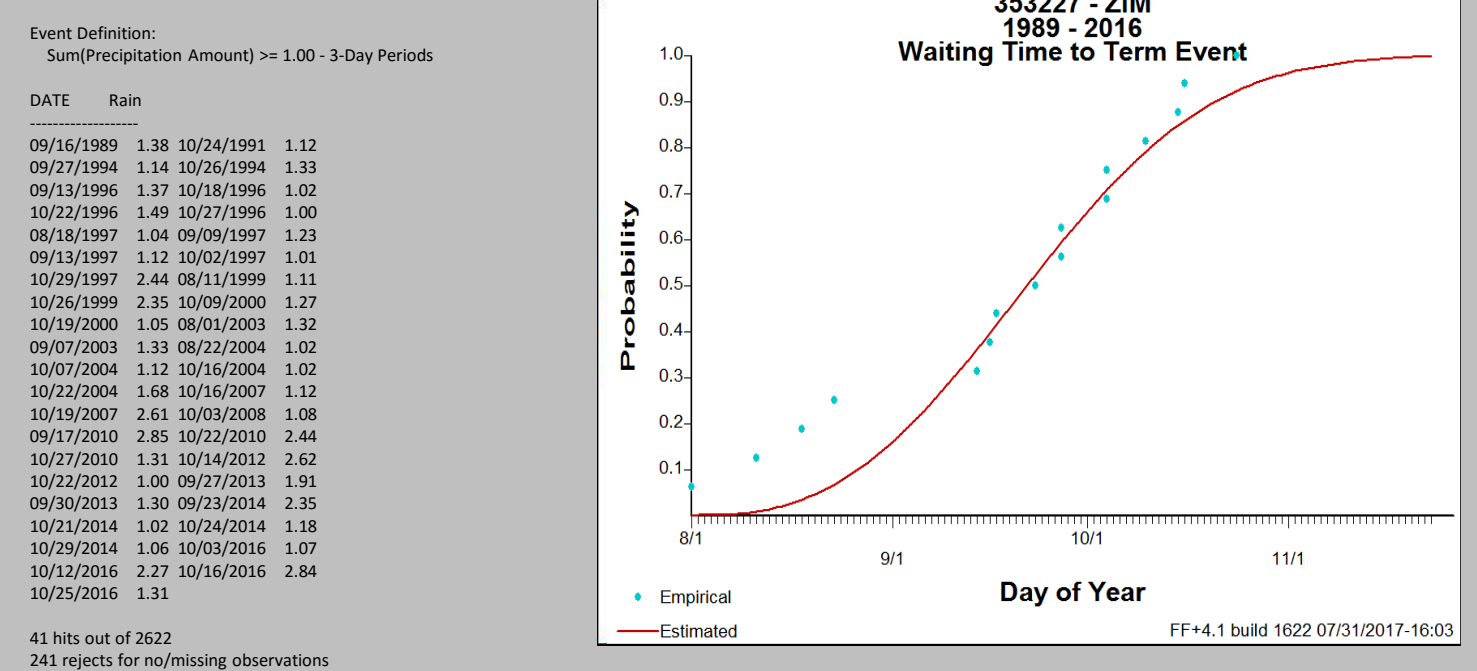
Fire History

The Rogue River Watershed/High Cascades area has experienced numerous large fires over the past fifteen years. Large fires typically occur later in the summer (August to September) when live fuel moistures have dropped and forest cover is conducive to crown fire movement. At the elevation Blanket Creek Fire is at and at this time of the year, expect fire to be surface fire spread with occasional torching and spotting. At a lower elevation, the Timber Rock Fire started on 13 July 2002 and burned for two weeks while the Middle Fork Fire, at a similar elevation, started 18 August 2008 and burned into the fall.



Season End/Slowing Event

- At least 1" of rain in a three day period after 12 September for a period of 2000-2015.
- There is a 50% chance of experiencing this event by 22 September
- By 1 October there is a 66% of a season slowing/ending.
- The Rogue/Siskiyou National Forest Fire Danger Operating and Preparedness Plan does not identify a season ending event.



Five Day Weather Matrix

Blanket Creek Incident General Weather Outlook
For Planning Purposes Only, see the IAP for the Official Forecast

Day	Forecast made 1 August 2017					
	1-Aug	2-Aug	3-Aug	4-Aug	5-Aug	6-Aug
Clouds @ 1500 (%)	30	25	20	40	40	40
Avg. Max Temp (F)	93	95	93	88	83	79
LAL	1	1	1	1	2	2
Ridge Wind (mph)	7	7	9	10	6	8
Wind Direction*	240	270	290	290	290	230
Min Humidity (%)	15	9	11	15	15	18
Haines Index	5	6	5	5	5	4

KEY:	Moderate Burning Conditions	Take Caution - Critical Burning	Extreme Burning Conditions
Clouds	> 50%	25 to 49%	<= 25%
Avg Max Temp	< 75 F	75 to 83 F	> 83 F
LAL	1	2 thru 5	6
Ridge Wind	< 10 mph	11 to 19 mph	>= 20 mph
Wind Direction (degrees)	290-360 & 0-120	240-280	130-230
Min Humidity	> 26%	19 to 26	<= 18%
Haines Index	< 4	5	6

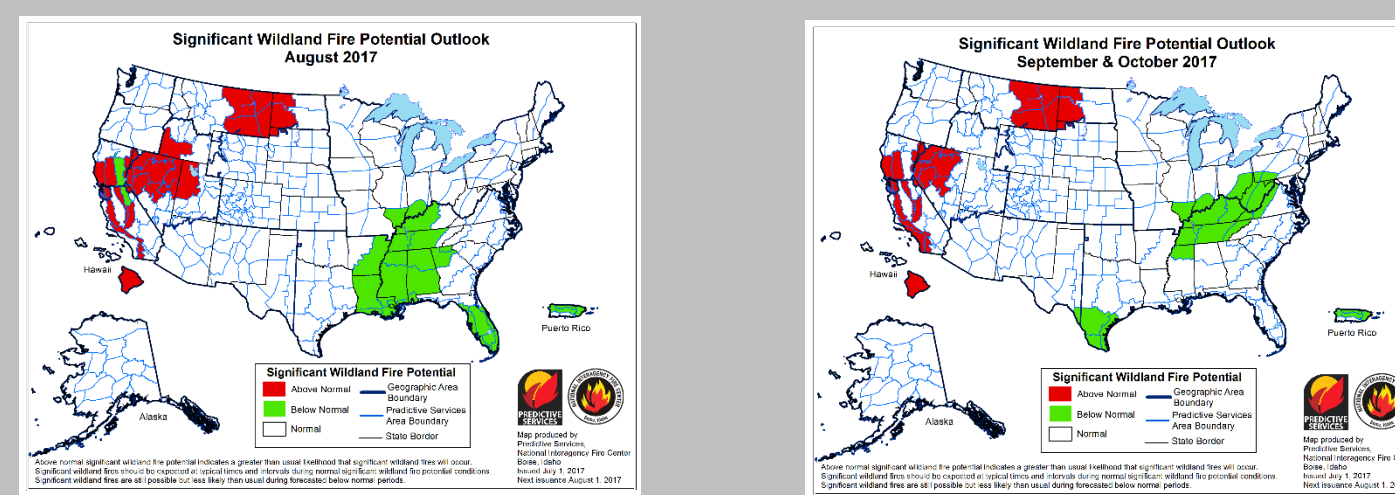
(Four or more) EXTREME blocks in a day equals the potential for a Critical Weather Day

This forecast matrix was developed for the Blanket Creek Fire Incident and uses criteria specific for this incident. Every incident will respond to conditions differently and adjustments to the formulas and or categories used may be needed.
***Adapted from Haines, © Fire

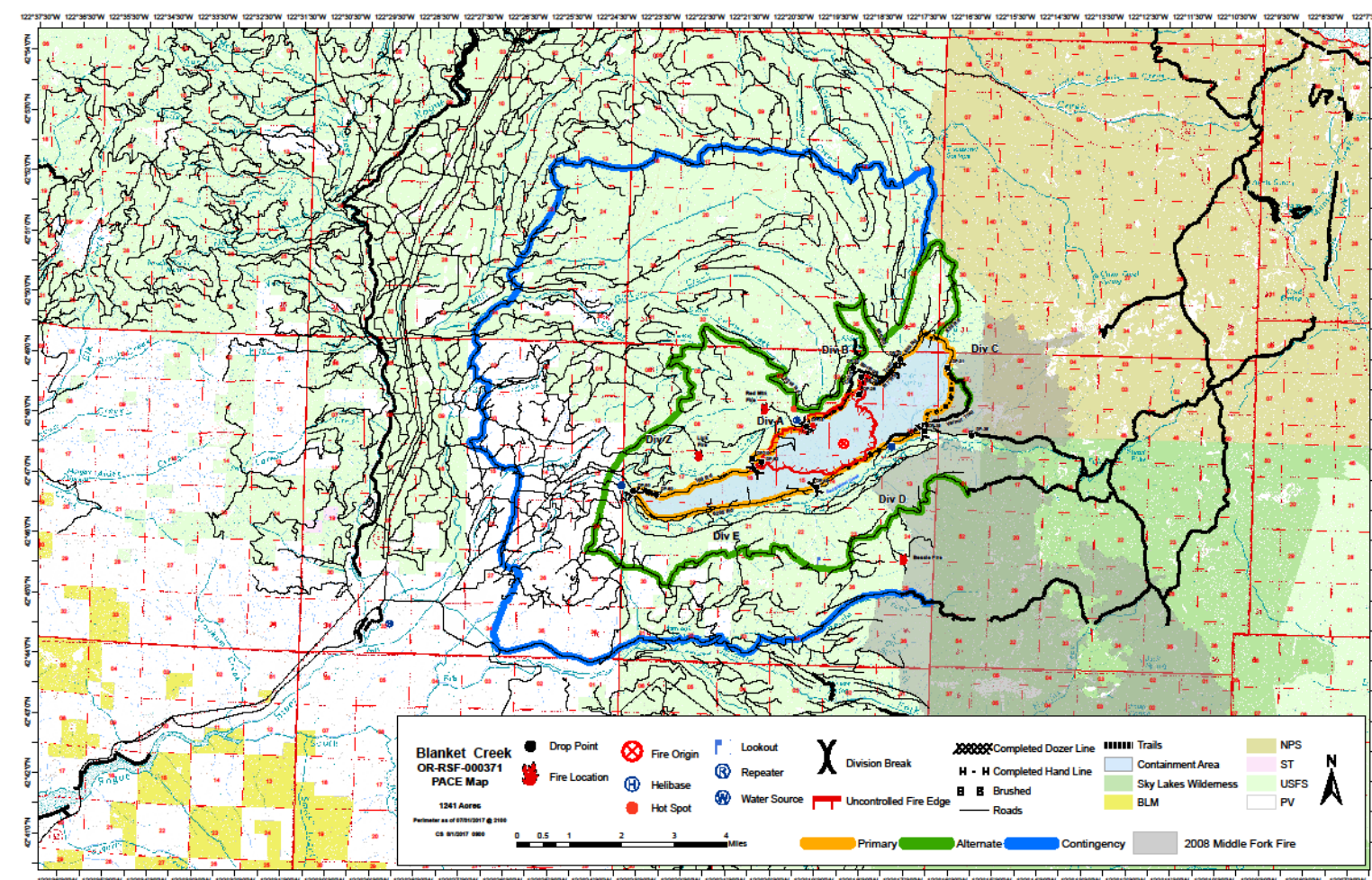
Wildland Fire Outlook

The Blanket Creek Fire is typical of other fires that have occurred within the High Cascades where direct attack is not the desired option. Fire has short term potential for growth with indirect attack and using primary containment lines. Moving further into summer, anticipate opportunities for large fire growth to increase with another 45 days of opportunity with conditions favorable for fire growth.

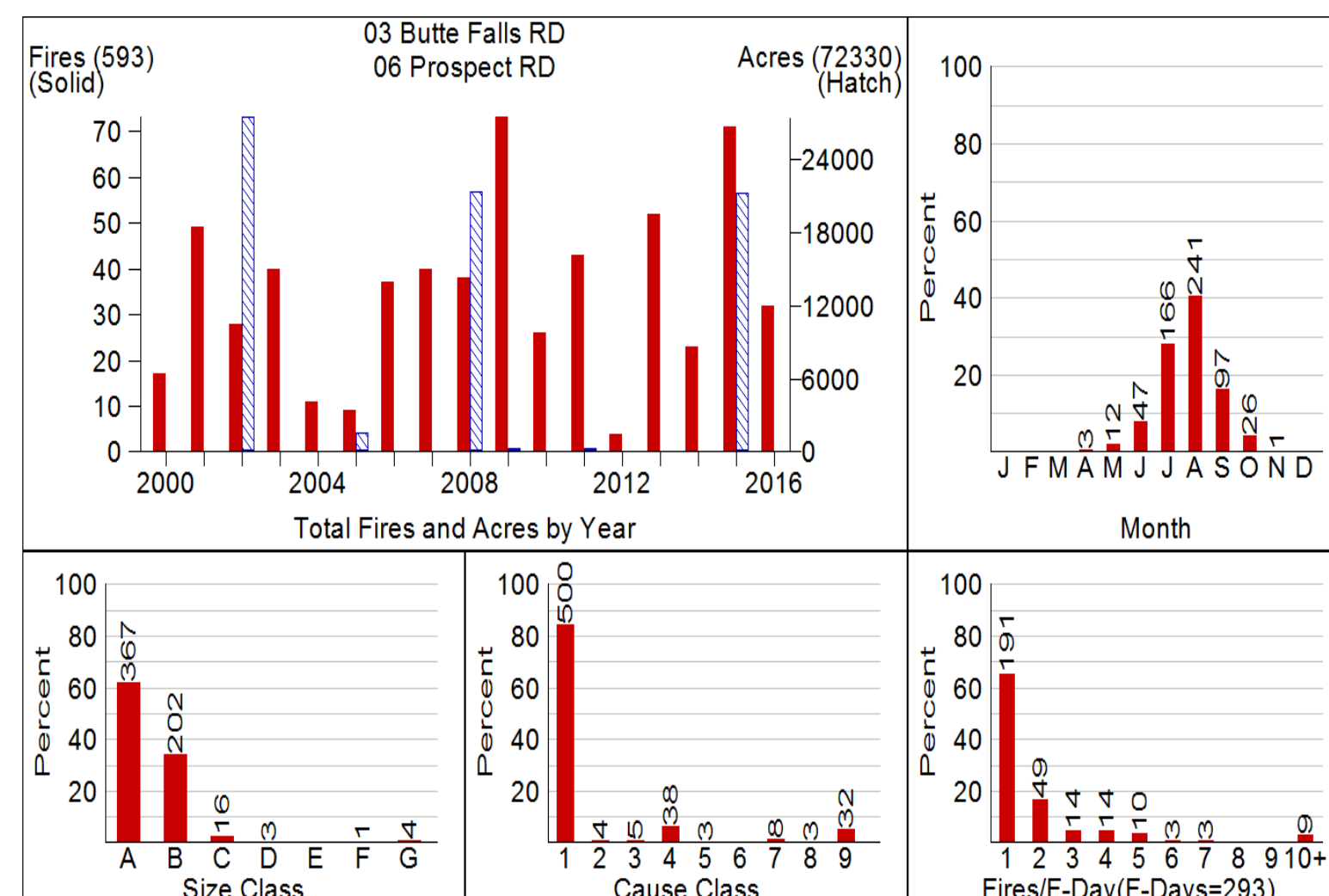
In general, fire potential will remain normal over the Pacific Northwest into mid September.



PACE - Primary-Alternative-Contingency- Emergency Map



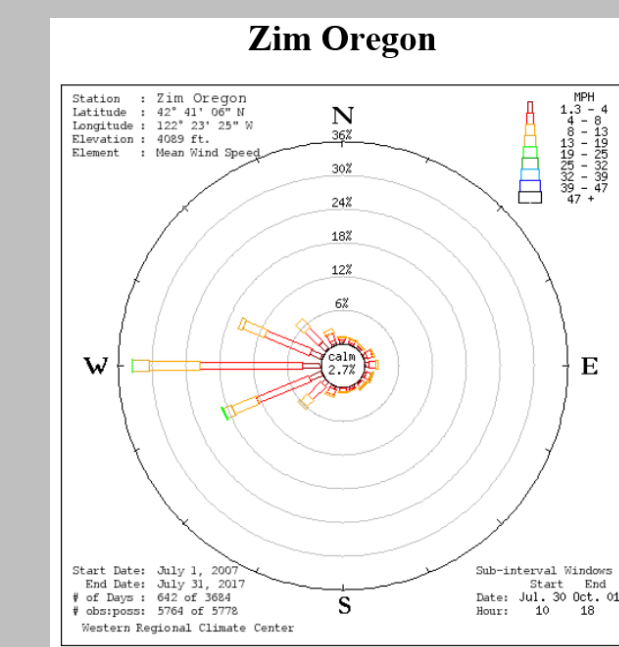
Fire History



Large Fire Growth

Large Fire Growth Thresholds were identified contributing to days of large growth for the Prospect Ranger District

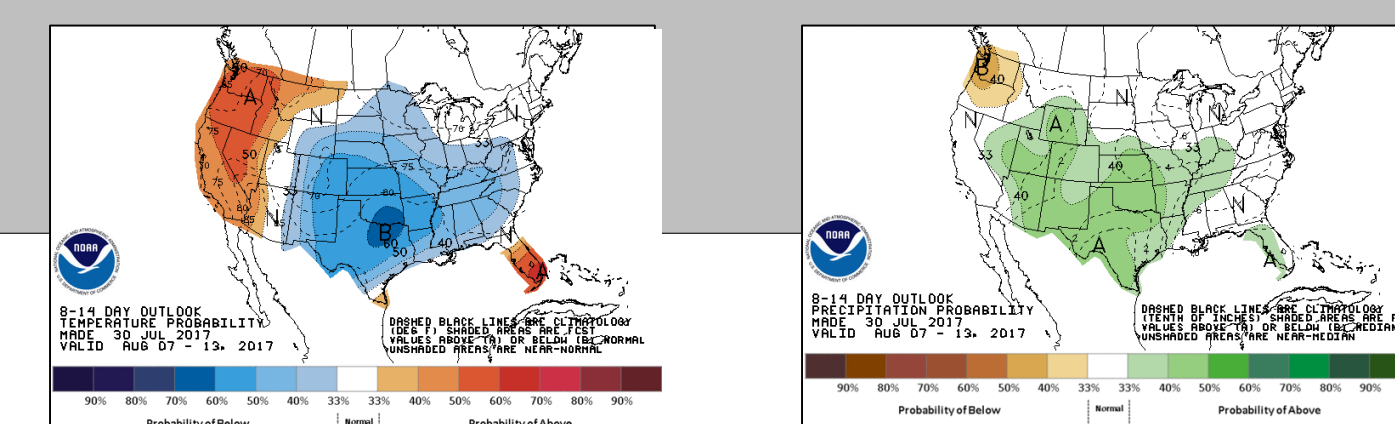
Variable	Value
ERC	>50
BI	>48
Haines	5 or >
10-hr tflm	5 or <
Min RH	<20
Max Temp	>85



- Large fires in area are common as many times resources are unable to access the fires and thus large fire growth occurs or numerous starts occur and overwhelm local resources.
- Wind direction was also analyzed with a wind rose to look at predominate westerlywinds.

Weather Outlook

The probability of thunderstorms increases late in the week into early next week as an eastward shift of the ridge allows southerly flow to develop and gradually takes an edge off the extreme heat...retreating to merely very hot with highs likely to still be in the lower 90s on the east side. While these thunderstorms would be much more likely to produce at least moderate rainfall amounts than any thunderstorms from now into Thursday, greater frequency of lightning has a significant risk of starting new fires. For the 6-14 day period, odds of above normal temperatures are elevated across the western CONUS with below normal precipitation favored. This is generally due to the predicted presence of a strong ridge over the western CONUS.



Values at Risk

Prospect – Community west of the fire area with residential and small business. The Prospect Ranger District Office is also located here. Red Blanket Village is included in this value

Union Creek – Several buildings and cabins associated with recreation opportunities are located here to the northwest of the fire area.

Rogue River Watershed – Area serves as the head waters to the Rogue River with numerous perennial creeks and streams flowing into the main river. This includes fish bearing streams (not anadromous).

Forest Timber Values – Commercial, late succession reserve, and designated wilderness occur within the area. Northern Spotted Owl habitat with four NSO sites identified. Huckleberry Campground, forest roads and trails, trailheads, and tribal access for huckleberry picking have been identified.

Private and Commercial Timber Values – These values are west of the fire area around Prospect and including lands outside of the forest boundary and inholdings within the forest boundary. Many of these areas have been cut and represent younger stands of timber and investments in plantations.

Management Action Points

The Blanket Creek Fire is currently burning entirely on the Prospect Ranger District of the Rogue National Forest. Private land and developments occur to the west of the fire area and Crater National Park existing to the northeast. Various areas of concern and value at risk exist beyond the fire in each cardinal direction. Management Action Points (MAP) were identified for the Blanket Creek Fire with location and condition identified for each if control/contain not achieved:

- MAP-1** - Red Blanket Village Protection - 1/2 mile west of Primary Containment Strategy and National Forest boundary - East or down slope winds increase fire activity in alignment with Red Blanket Creek resulting in fire movement towards the Red Blanket Village.
- MAP-2** - Lick Creek Basin - 1/2 Mile north of the Primary Containment Strategy - Fire is actively backing or spotting north of the primary containment strategy into Lick Creek basin and is unlikely to be contained within one operational period. If the fire becomes established in this basin it has the potential to move downhill and toward the west.
- MAP-3** - Blanket Creek, South - 1/4 Mile south of the Primary Containment Strategy - Fire becomes established south of Blanket Creek and is unlikely to be contained within one operational period.
- MAP-4** - Varmint Trail, East - 1/2 Mile east and/or 1 mile southeast of the Primary Containment Strategy - Fire becomes established east or southeast of the Varmint Trail and is unlikely to be contained within one operational period.

Limitations & Validation

There are limitations to all of the long-term decision support models. All of these models are based on historical weather records, weather forecasts and standardized fuel model mapping. Although expert opinion is used in making adjustments to much of this information, there is a lot of variability in natural systems and the complex interactions in our fire environment that cannot be modeled. All models are simplifications of reality, and there are assumptions within the fire spread models that also need to be considered. The results from these models are based on the best available current data; models and information are also limited by this same information.

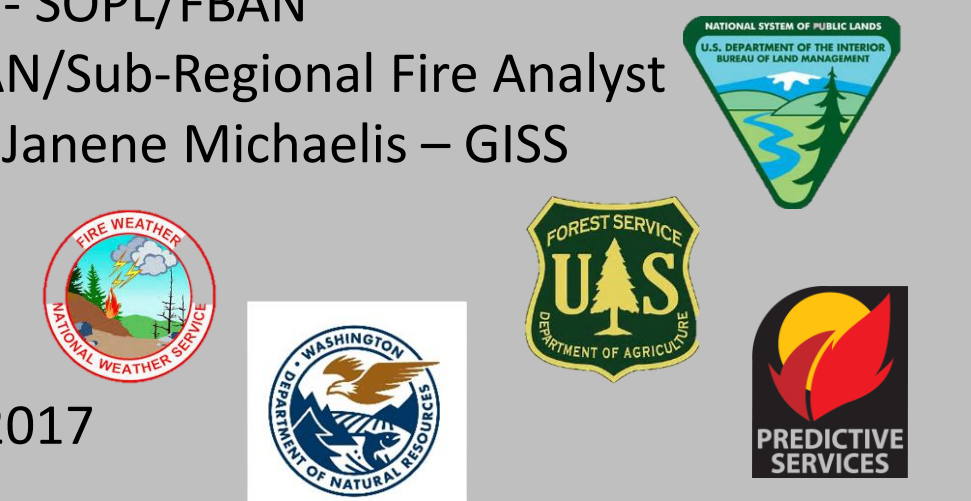
The Blanket Creek Fire Long Term Strategic Analysis should be reassessed regularly or as dictated by weather or fire activity.

Long Term Assessment Team

The Range Creek Long Term Assessment Team consisted of:

- J. Bradley Washa - SOPL/FBAN
- Brian Maier – LTAN/Sub-Regional Fire Analyst
- Carrol Smith and Janene Michaelis – GISS
- Brett Lutz - IMET

Created: 1 August 2017



Overview

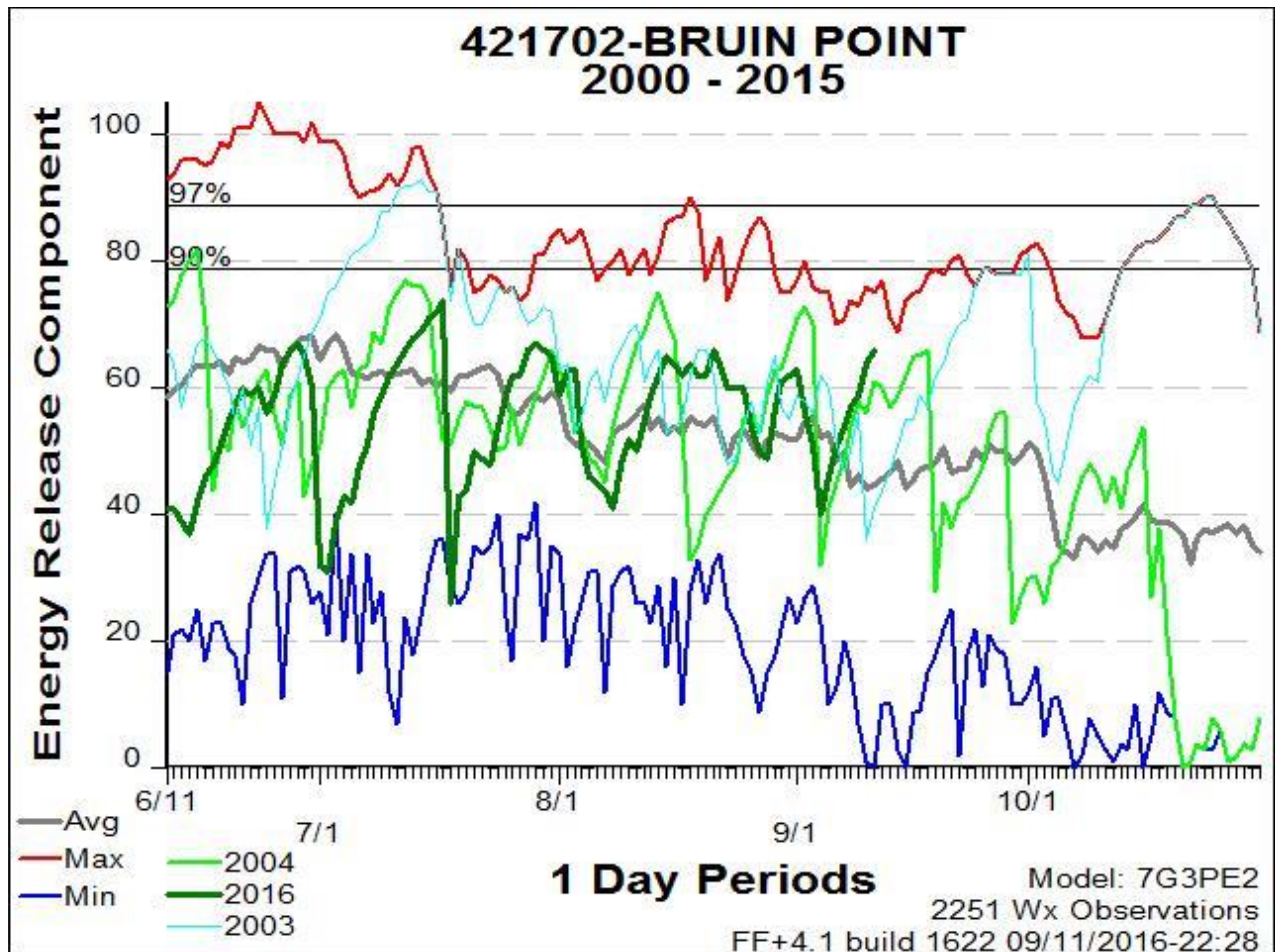
The Range Creek Fire, was detected on 10 September 2016, is at 26 acres (as of 11 September 2016) in size and is expected to be a long duration event, with the potential to persist into October. Considering firefighter safety, with steep, inaccessible terrain and hazardous associated with snags, the decision was made to not use ground resources in the initial attack and through most of the fire area during extended attack.

Several bug infestations have impacted the area with varying levels of mortality. This has focused on the Douglas-fir starting about 12 years ago with several occurrences, which is contributing to the dead and down component and standing snags. Fuels and continuity are varied throughout the fire area transitioning from more closed stands of mixed conifer (Fuel Model TL3) and aspen (TL2) on the upper slopes to aspen and sage brush (GS2) on the Tavaputs Plateau with broken pinyon and juniper on the lower reaches and into Range Creek Canyon.

The climate of the Tavaputs Plateau is relatively moist with substantial snow in the winter and an ample amount of rain in the summer. The rain in the summer is associated with the monsoonal flow which impacts the Colorado Plateau during July and August in the form of showers and thunderstorms. During the past 1-3 years the precipitation across this area has been nearly 100 percent of normal. During the past 6 months, precipitation has been on a decline with only 70-90% of normal since end of January (180 days), 30-50% of normal since end of April (90 days), and 5-25% of normal since end of May (60 days). Temperatures during the past 1-3 years have been close to normal. During the past 6 months temperatures have been deviating on the warm side by up to 2 degrees and more recently during the past 60 days (end of May) temperatures have been running 2-4 degrees above normal.

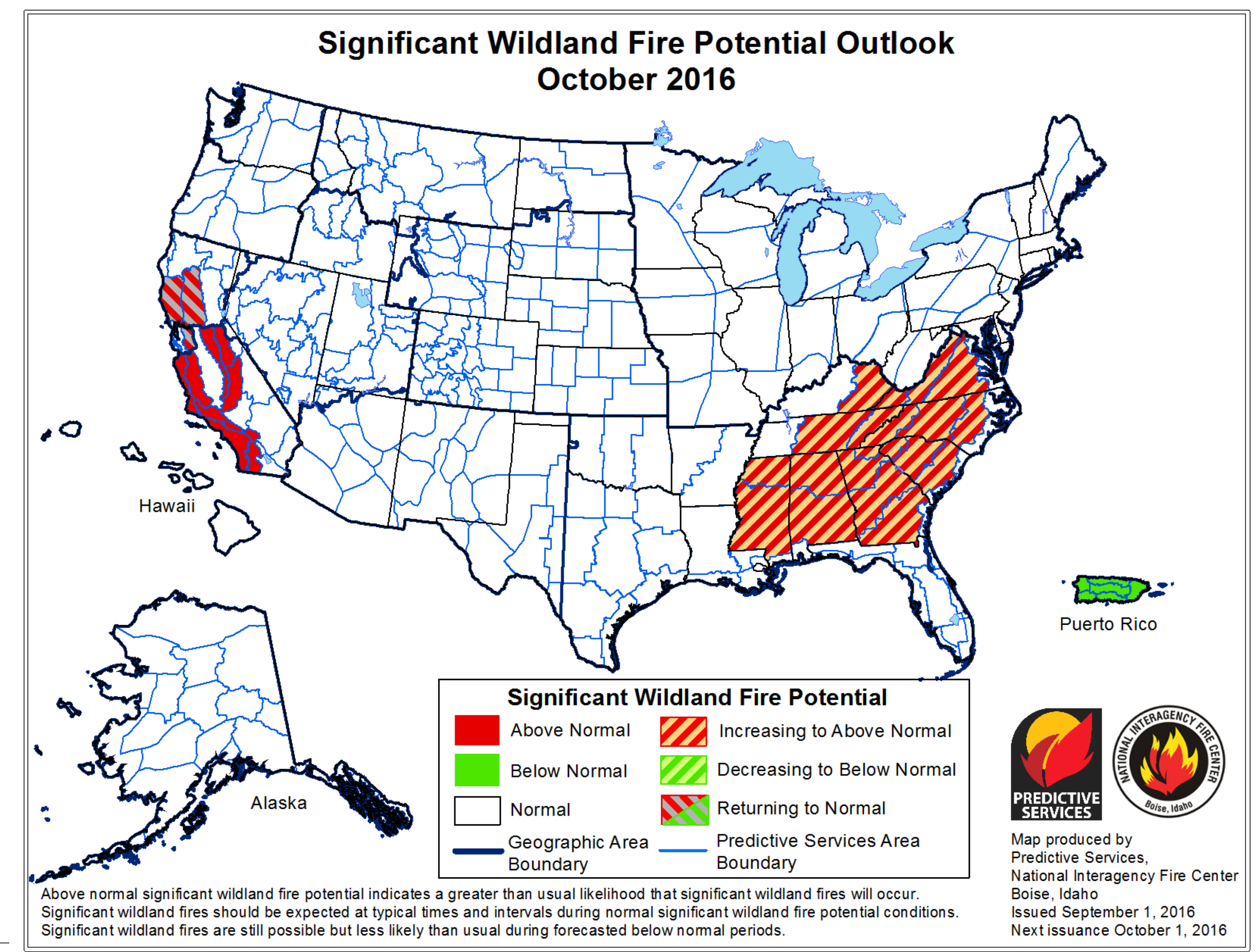
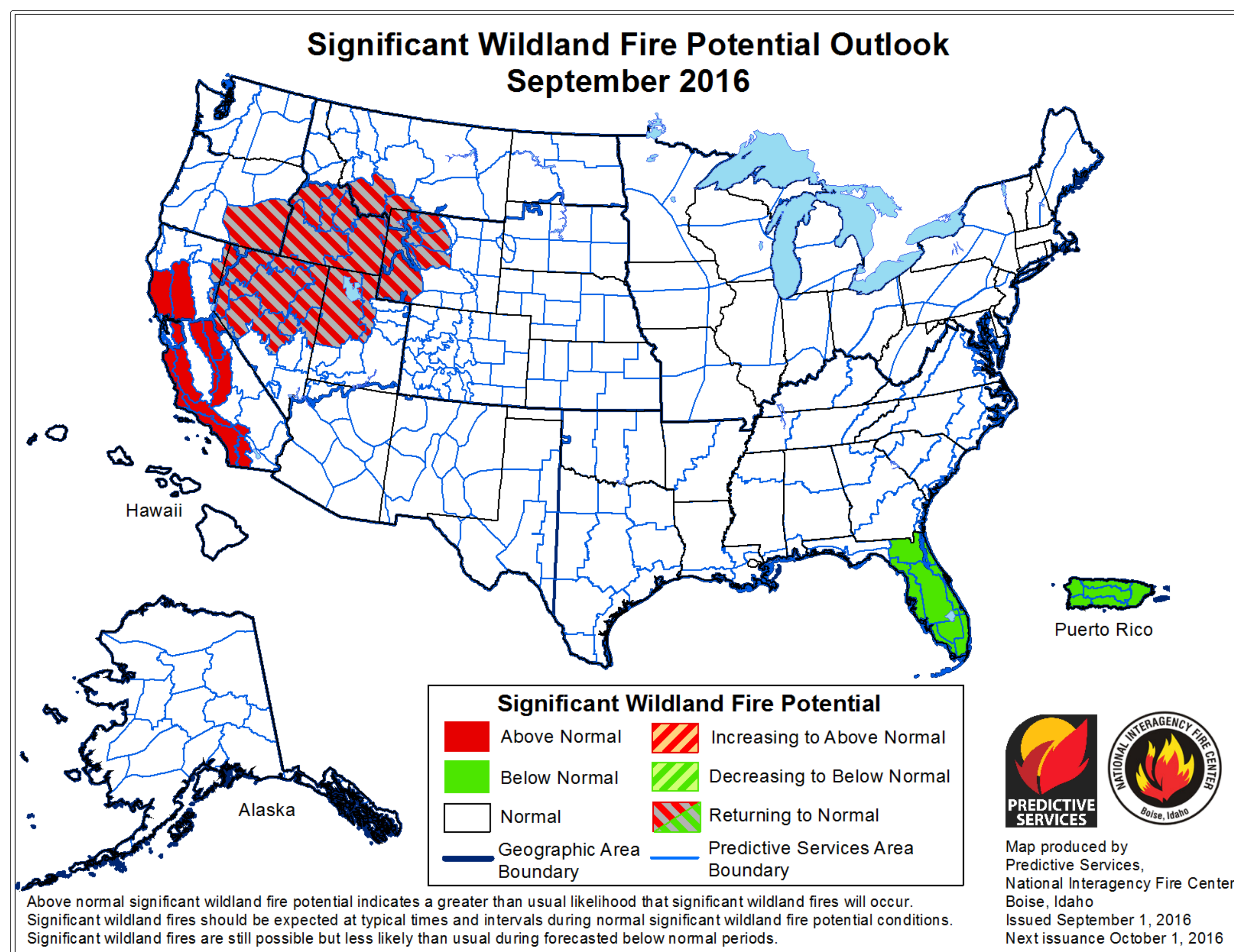
Current Situation

The Energy Release Component for the nearby Bruin Point RAWS has hovered around the 15 year average with typical spikes as drying occurs and drops associated with moisture. There is a close association with 2004 when the Trail Canyon and Big Canyon Fires occurred on the south end of the Tavaputs Plateau. The Big Canyon was eventually suppressed by an early season snow storm at the beginning of September. In 2003 the ERC reached the 97th percentile in October.



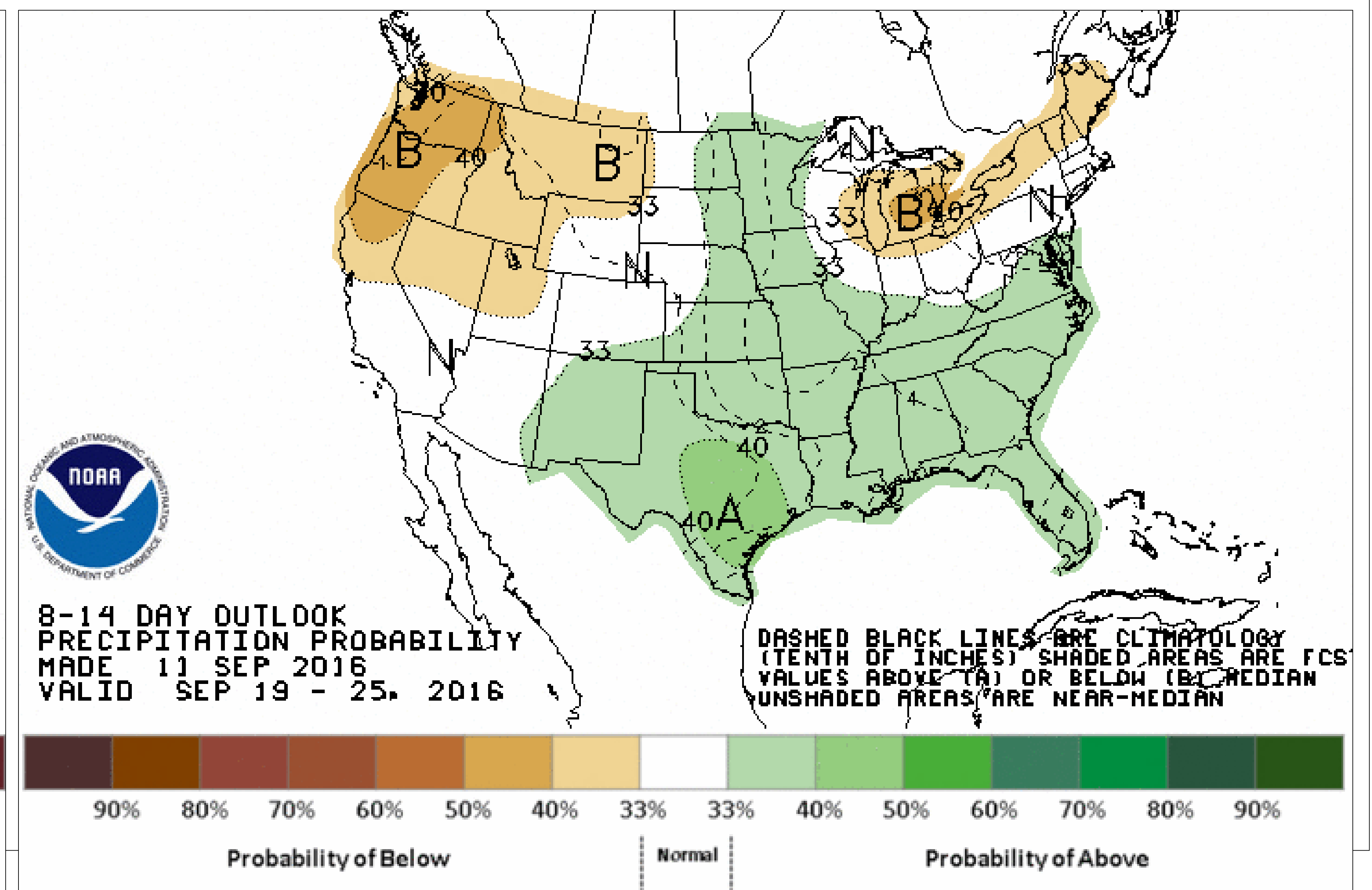
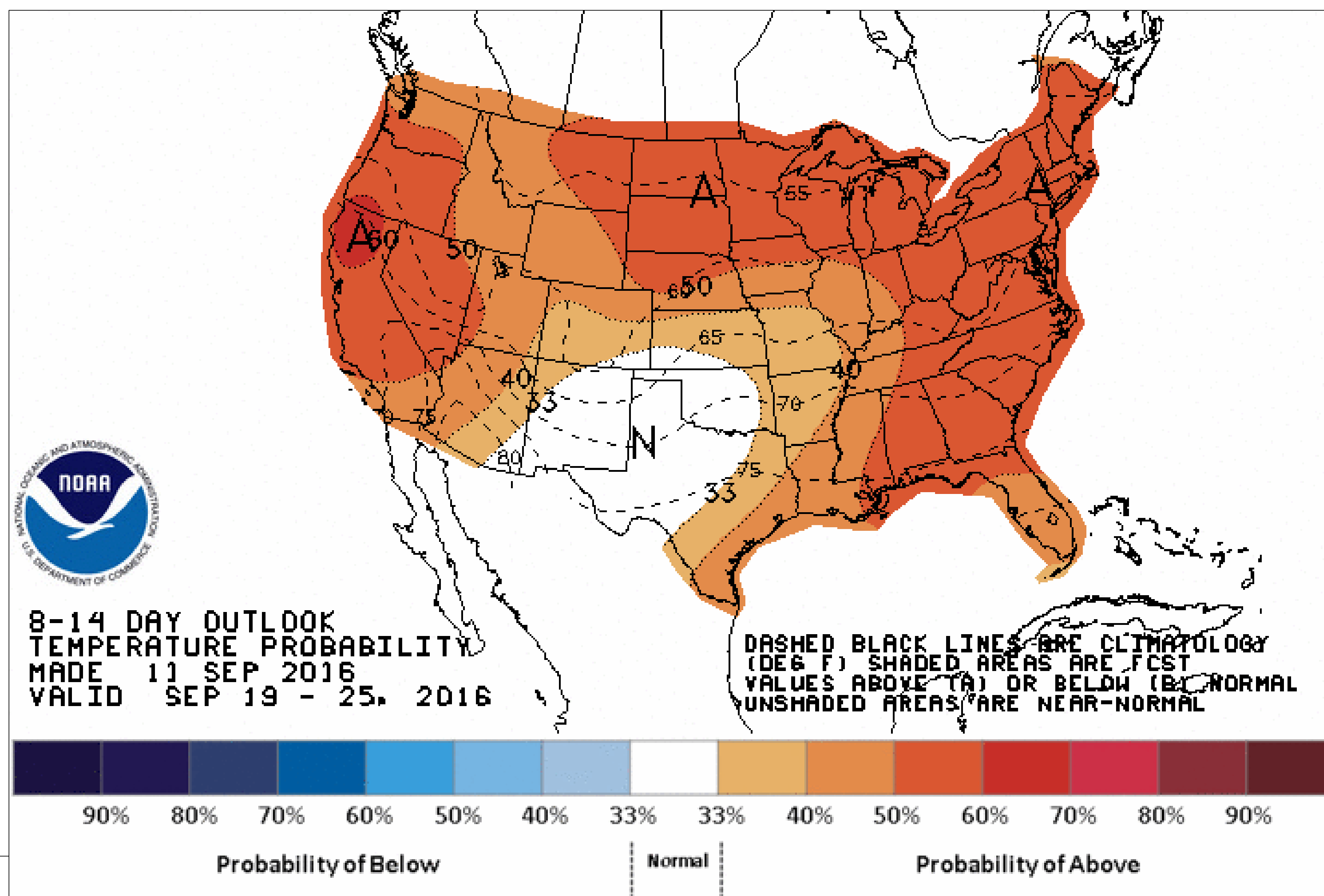
Wildland Fire Outlook

- The Range Creek Fire is typical of other fires that have occurred within the Book Cliffs where direct attack is not the desired option. Fire has the short term potential for growth over 100 acres. With the onset of Autumn, anticipate opportunities for large fire growth to moderate. Indian summer conditions and associated strong winds could occur into the fall offering conditions favorable for fire growth.
- In general, fire potential will remain elevated over the Northern and Central portions of the Great Basin into mid September.



Weather Outlook

Weather disturbances will brush by to the north of the fire every three or four days sending dry cold fronts through the area. In advance of the cold fronts warmer, windier conditions will prevail with cooler temperatures in the wake of the cold fronts. Moisture will remain to the north of the area, so the main impact to the fire will be gusty winds ahead of the fronts with cooler temperatures/higher RH behind the fronts. Timing of these weather systems is challenging in the extended forecast period, so it is hard to say with much confidence exactly when these cold fronts will move through the fire. However, in general warm breezy periods will be followed by cooler periods in the 8 to 14 day time frame.



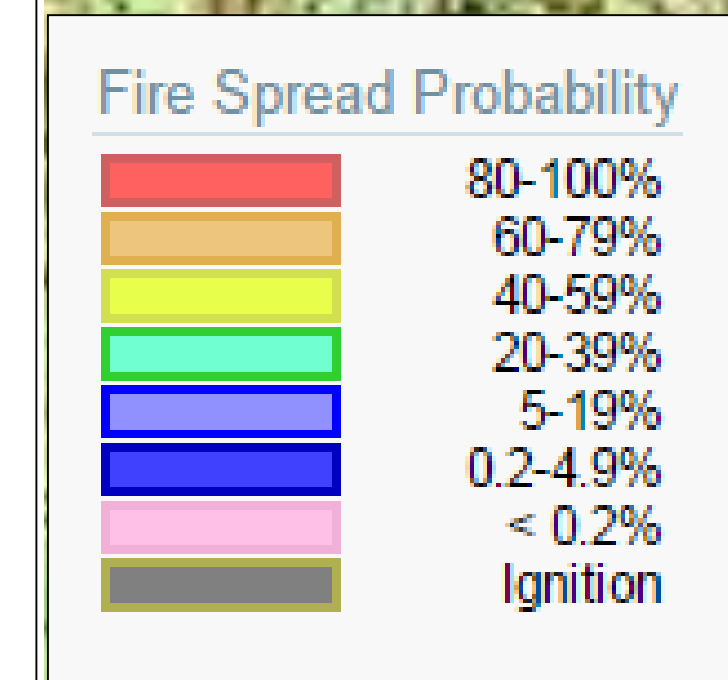
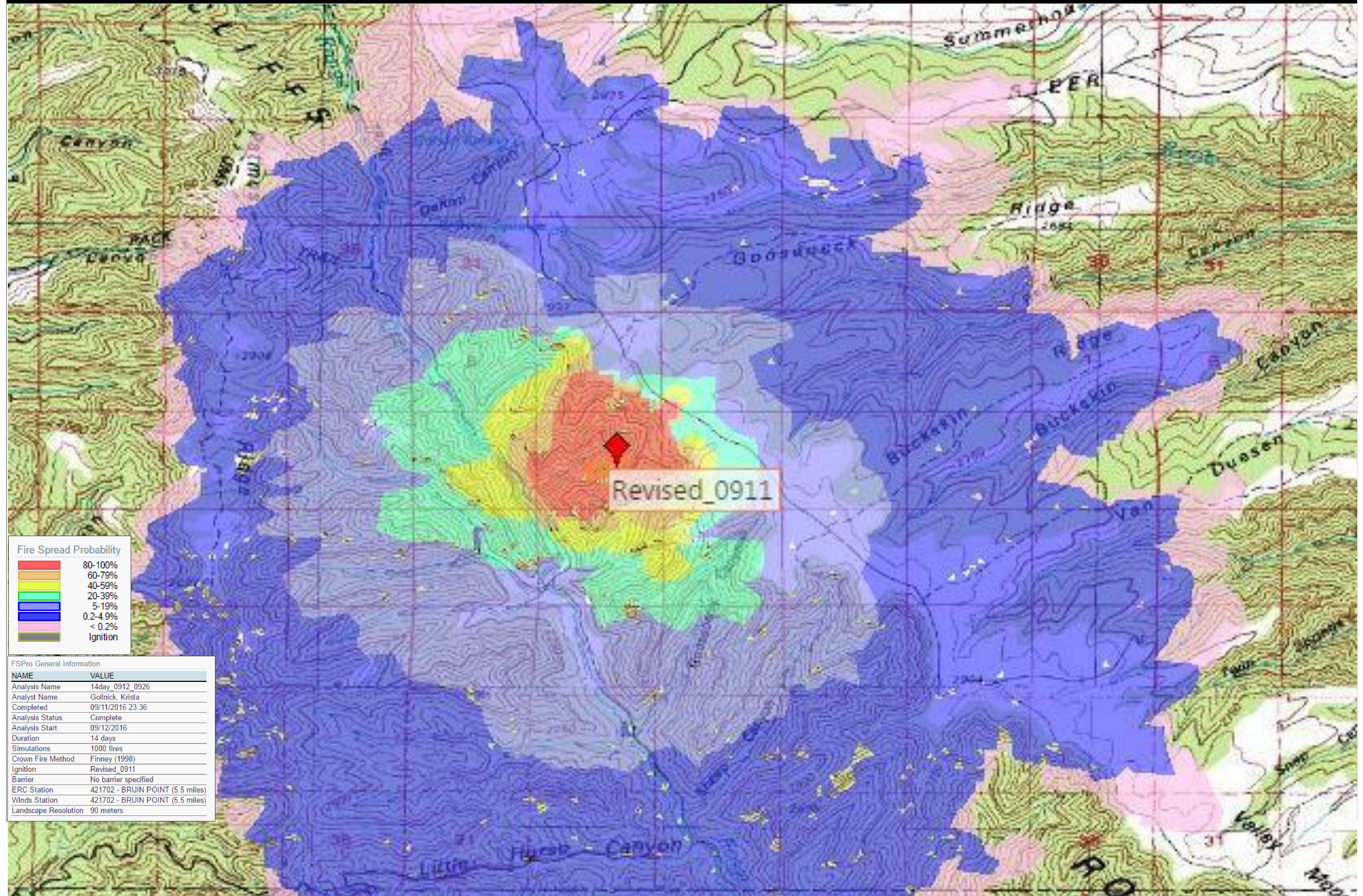
Values at Risk

- **Tavaput Plateau Ranches** – Several ranches occur above the fire on the Tavaputs Plateau. The nearest ranch, Rock Creek, is on the ridge immediately above the current fire location. The Tavaputs Ranch is six miles to the southeast of the fire. Several out buildings associated with the Preston Nutter Ranch are 3.5 miles to the north of the fire.
- **Range Creek Cabins** – Several cabins are spread out throughout Range Creek.
- **Range Creek Cultural Sites** – Range Creek is world renowned for its Fremont Cultural Archeological Sites. The University of Utah has a field station to conduct archeological research on the sites.
- **Sage-Grouse Habitat** – General Habitat Management Area is immediately adjacent to the fire on top of the Tavaputs Plateau with Primary Habitat Management Area nearby. This area part of the Carbon population.
- **Bruin Point** – Numerous communications sites are located at Bruin Point 8.7 miles to the north of the fire.

Air Attack Aerial



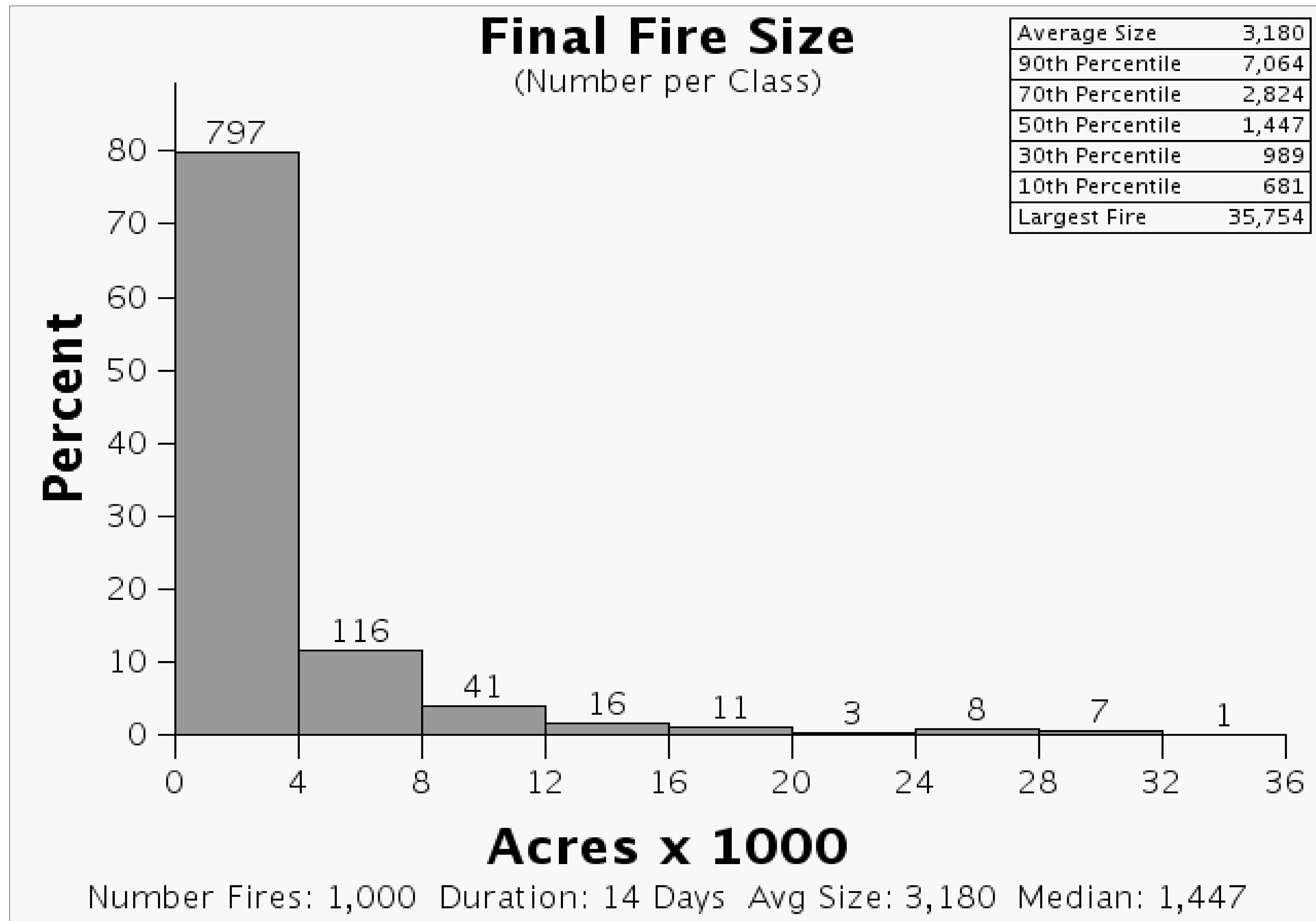
FSP Pro Run



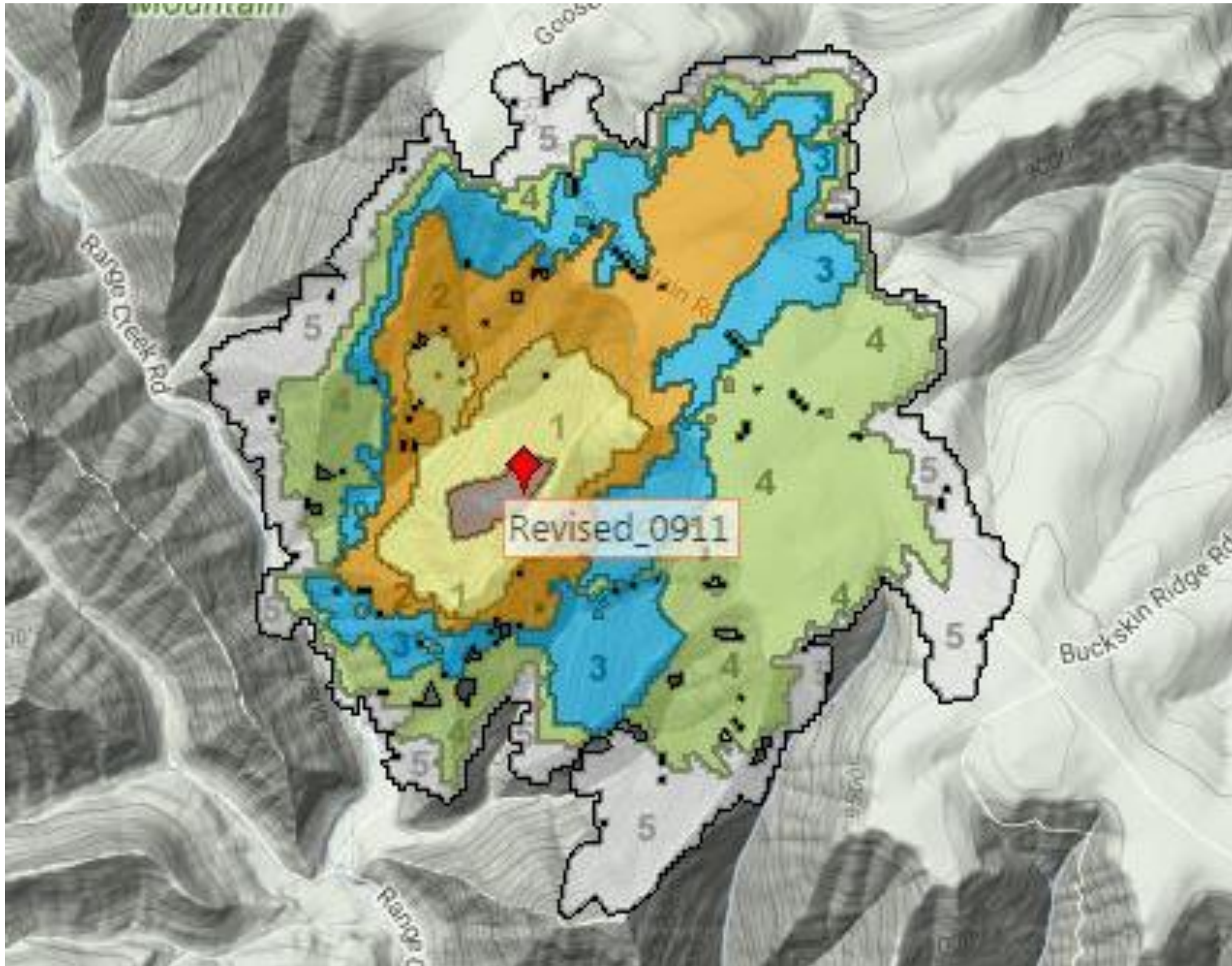
FSP Pro General Information

NAME	VALUE
Analysis Name	14day_0912_0926
Analyst Name	Gollnick, Krista
Completed	09/11/2016 23:36
Analysis Status	Complete
Analysis Start	09/12/2016
Duration	14 days
Simulations	1000 fires
Crown Fire Method	Finney (1998)
Ignition	Revised_0911
Barrier	No barrier specified
ERC Station	421702 - BRUIN POINT (5.5 miles)
Winds Station	421702 - BRUIN POINT (5.5 miles)
Landscape Resolution	90 meters

FSP Pro Calculations



WFDSS Near Term

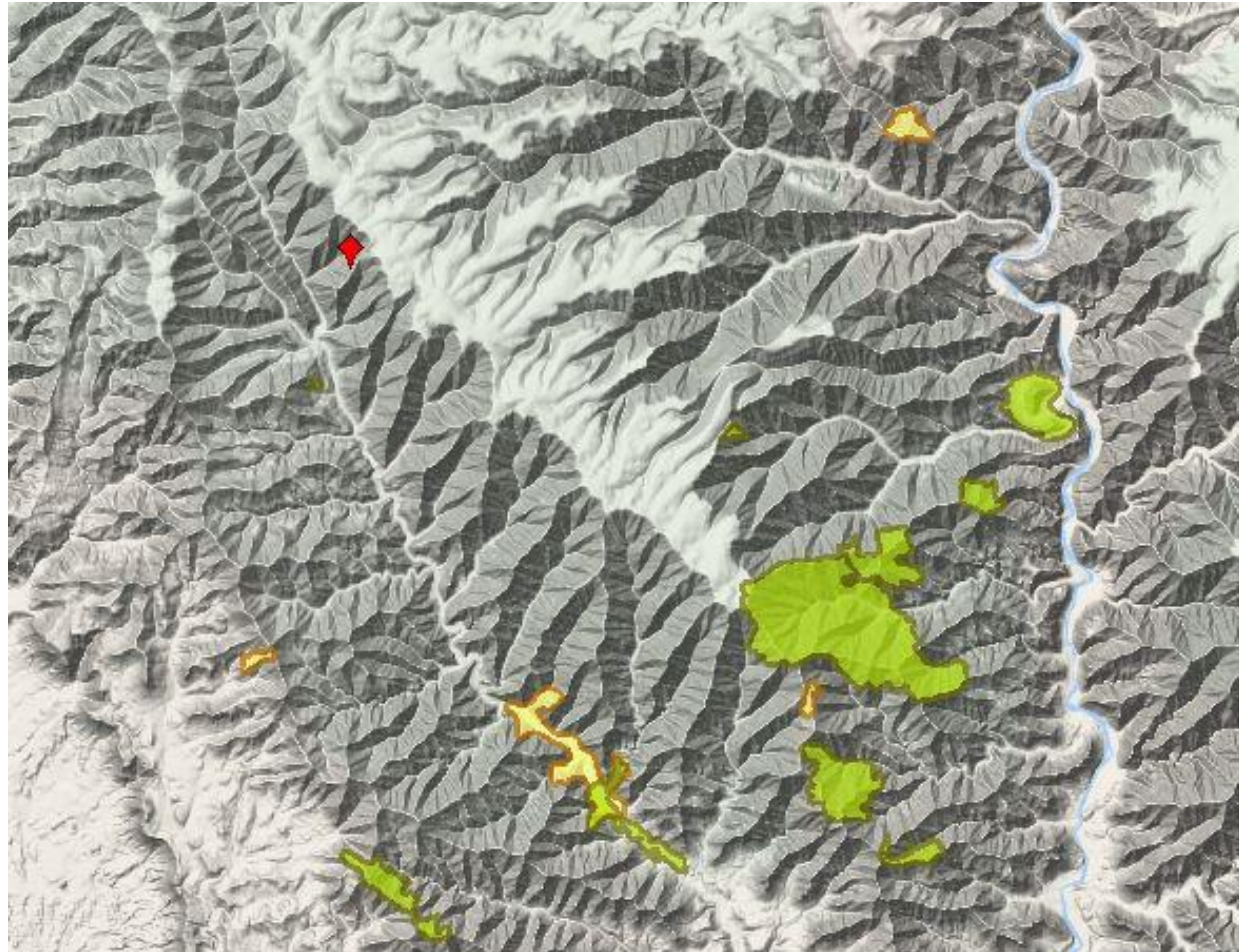


Management Action Points

- The Range Creek Fire is currently burning entirely on the Price Field Office of the Bureau of Land Management. Private land and ranches are located on top of the Tavaputs Plateau with private and Utah State Institutional Trust Lands managed by the University of Utah located on the bottom.
- Two areas of concern and value at risk exist beyond the fire. These include the Tavaputs Plateau with private ranches and Sage-Grouse habitat and the bottom of Range Creek with Fremont Culture Archeological Sites and private cabins. Management Action Points (MAP) were identified for the Range Creek Fire with location, condition, actions, and resources identified for each and :
- **MAP-1** - Fire threatens to come out of the canyon off of the steep slope and onto the Tavaputs Plateau threatening ranches and Sage-Grouse habitat.
- **MAP-2** – Fire threatens to back down into Range Creek threatening cabins and Fremont Cultural Archeological Sites.
- **Resources for both MAPs** – ICT3 or Type 3 IMT, Dozer T2, HEQB, READ (archeologist desired) with consideration of the following: Type 3 helicopter (or better), Type 1 helicopter, 2 type 2 IA crew (or better), 1 Striketeam/Taskforce of Engines (Type 3, 4, and 6), and 2 Water Tenders T2 (for Tavaputs Plateau).

Fire History

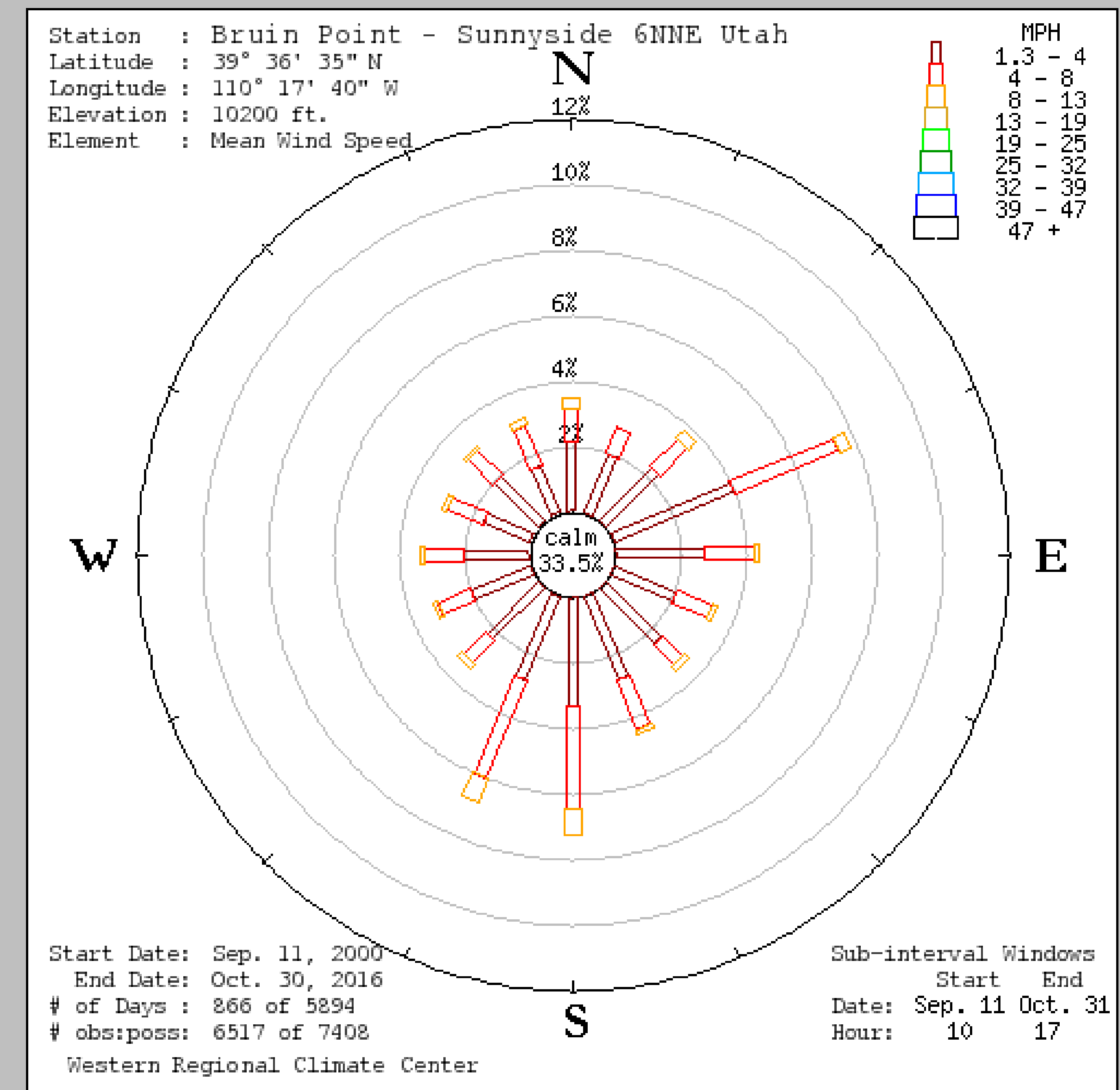
The Tavaputs Plateau has experienced numerous large fires over the past fifteen years. Fires typically stay off of the plateau itself until later in the summer when the grass has cured out and the live moisture of the sage brush has dropped off to carry fire. This time of the year, expect fire to spread on the top of the plateau.



Large Fire Growth

- Large Fire Growth Thresholds were identified contributing to days of large growth for the Tavaputs Plateau

Variable	Value
ERC	>60
BI	>60
Haines	5 or >
10-hr tlfm	4 or <
Min RH	<18
Max Temp	>75



- Large fires in area are common as many times resources are unable to access the fires and thus large fire growth occurs.
- Wind direction was also analyzed with a wind rose to look at predominate winds.

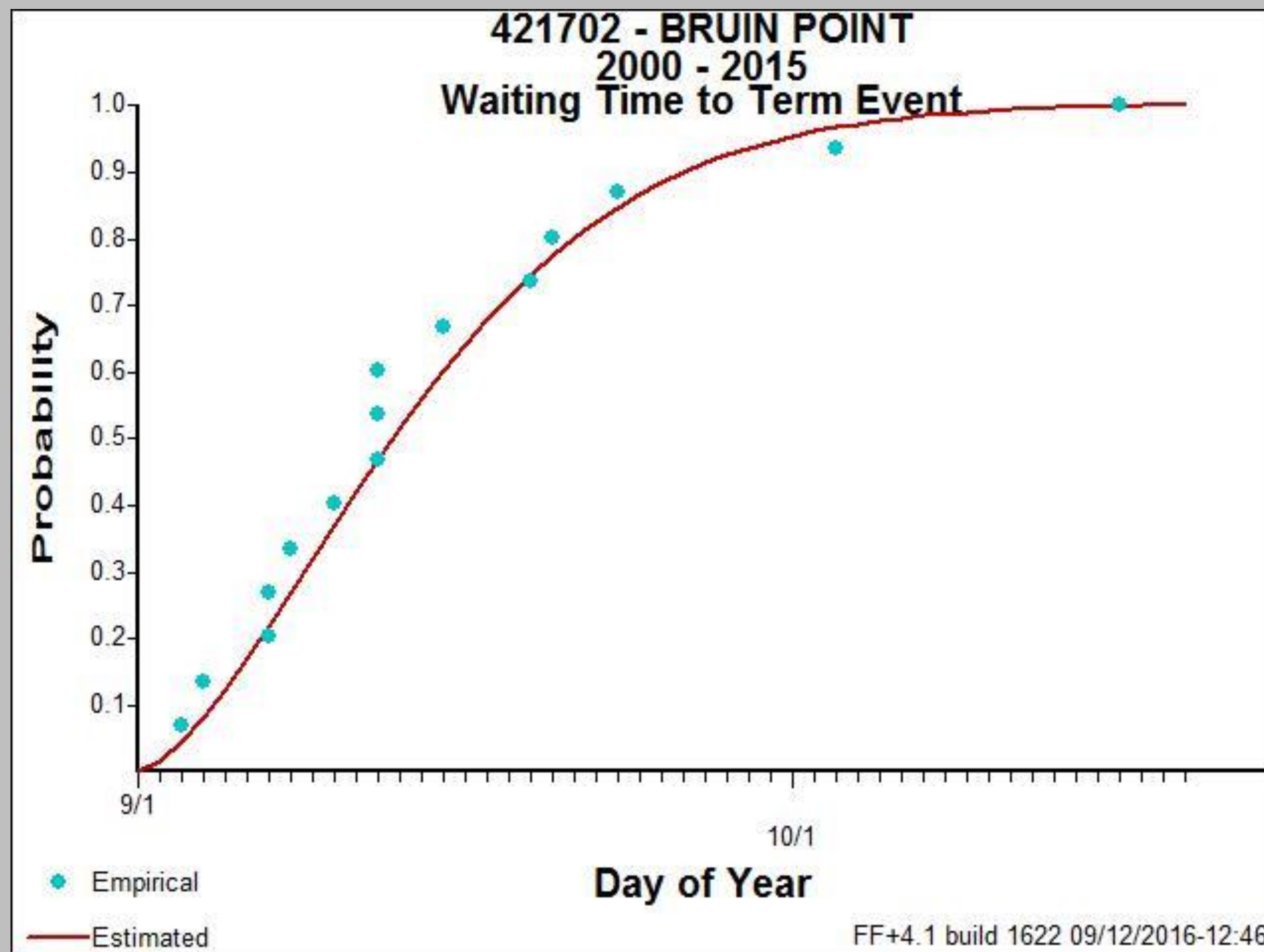
Season Ending Event

- At least .75" of rain in a three day period after 12 September for a period of 2000-2015.
- There is a 93% chance of experiencing this event by 1 October
- Significant snowfall on the Tavaputs is also a season ending event.
- The Southeast Utah Fire Danger Operating and Preparedness Plan does not identify a season ending event.

- Event Definition: $\text{Sum}(\text{Precipitation Amount}) \geq 0.75$ for 3-Day Periods

DATE	Rain
10/16/2000	0.90
09/11/2002	2.37
10/05/2002	0.86
09/17/2004	1.06
10/19/2004	1.61
09/20/2005	0.77
10/05/2005	0.75
09/13/2006	1.18
10/03/2006	0.92
10/06/2006	3.02
09/21/2007	3.16
10/04/2007	1.77
10/08/2007	0.87
10/04/2008	1.08
09/13/2009	0.90
10/04/2010	1.49
10/07/2010	0.90
10/23/2010	1.50
09/16/2011	0.79
10/09/2011	1.01
09/23/2012	0.77
09/26/2012	0.81
09/11/2013	0.92
10/12/2013	0.78
09/20/2014	0.90
09/26/2014	1.47
09/29/2014	0.78
09/13/2015	0.80
09/16/2015	1.91
10/17/2015	1.48
10/20/2015	1.02

• 31 hits out of 722



Five Day Weather Matrix

Forecast made 12 September 2016

Day	Tue	Wed	Thu	Fri	Sat	Sun
	13-Sep	14-Sep	15-Sep	16-Sep	17-Sep	18-Sep
Clouds @ 1500 (%)	55	48	10	0	0	10
Avg. Max Temp (F)	65	61	59	61	67	67
LAL	2	2	UN	UN	UN	UN
Ridge Wind (mph)	21	15	10	10	10	10
Wind Direction*	150	290	360	90	360	230
Min Humidity (%)	25	30	31	28	23	23
Haines Index	5	0	0	0	0	0

Limitations & Validation

- There are limitations to all of the long-term decision support models. All of these models are based on historical weather records, weather forecasts and standardized fuel model mapping. Although expert opinion is used in making adjustments to much of this information, there is a lot of variability in natural systems and the complex interactions in our fire environment that cannot be modeled. All models are simplifications of reality, and there are assumptions within the fire spread models that also need to be considered. The results from these models are based on the best available current data; models and information are also limited by this same information.
- The Range Creek Fire Long Term Strategic Analysis should be reassessed regularly or as dictated by weather or fire activity.

Findings

- No direct attack on the fire has occurred outside of several airtanker drops on the southern perimeter and bucket work. Heat remains on all areas within the perimeter of the Range Creek Fire. Although ridgeline where retardant was dropped above Beef Slide Canyon was holding on the southern perimeter, fire is backing down slope to the north.
- The fire has potential for future growth considering position on slope and fuels profile.
- Grasses and sage brush are receptive to burning this time of the year.
- Long range spotting (0.2-0.3 mile) from torching trees (dead Doug-fir snags) and rolling materials are the greatest risk for fire spread.
- The threats of large fire growth decrease each day as autumn is approached.
- The historic peak in average and maximum values for ERC are reached in June into July, although the 97th percentile has been reached in October.
- By 1 October there is a 93% chance of a season ending event with $\frac{3}{4}$ " inch of precipitation within a 3 day period.
- Early season snow falls are not uncommon for the Tavaputs and result in season ending events.
- Large fires are not uncommon on the Tavaputs as many times fires cannot be safely direct attacked.

Long Term Assessment Team

The Range Creek Long Term Assessment Team consisted of:

- J. Bradley Washa - SOPL/FBAN
- Krista Gollnick-Wade – LTAN
- Nanette Hosenfeld –
 - Predictive Services Program
- Created: 12 September 2016

