

Minam 4

Escaped Prescribed Fire Review

September 28, 2016

Wallowa-Whitman National Forest
Eagle Cap Ranger District

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FINDINGS

The following seven assigned elements are addressed in this report in accordance with the Interagency Prescribed Fire Planning and Implementation Procedures Guide, July 2008, page 29 .

1. An analysis of seasonal severity, weather events, and on-site conditions leading up to the wildfire declaration.
2. An analysis of the actions taken leading up to the wildfire declaration for consistency with the Prescribed Fire Plan.
3. An analysis of the Prescribed Fire Plan for consistency with policy.
4. An analysis of the prescribed fire prescription and associated environmental parameters.
5. A review of the approving line officer's qualifications, experience, and involvement.
6. A review of the qualifications and experience of key personnel involved.
7. A summary of causal agents contributing to the wildfire declaration.

Element 1: Seasonal Severity, Weather, and On-Site Conditions Leading Up to the Wildfire Declaration

The seasonal severity at the time of ignition of Minam Unit 4 were at seasonal averages for the time of the season. Figure 1-2

The area of the Minam Fire lies within Fire Weather Zone ORZ645, in the Pendleton Fire Weather Forecast area. The on-site conditions were similar to the observations taken by the Point Prominence-Remote Automated Weather Station and best represent weather indices for the area of the Minam incident. Three days of reporting from the RAWs are in the tables below. Figure 3

2 Days Ago	Yesterday	Today	3 Day Average
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Figure 1

6. Northern Blues	Black Mtn Roberts Alder	ERC	55	56	56	56
		IC	25	28	28	27
		BI	47	46	46	47
		WDY	94	93	96	94
		1000h	12.3	12.0	12.3	12.2
		IFPL	1.1	1.5	1.5	1

Figure 2

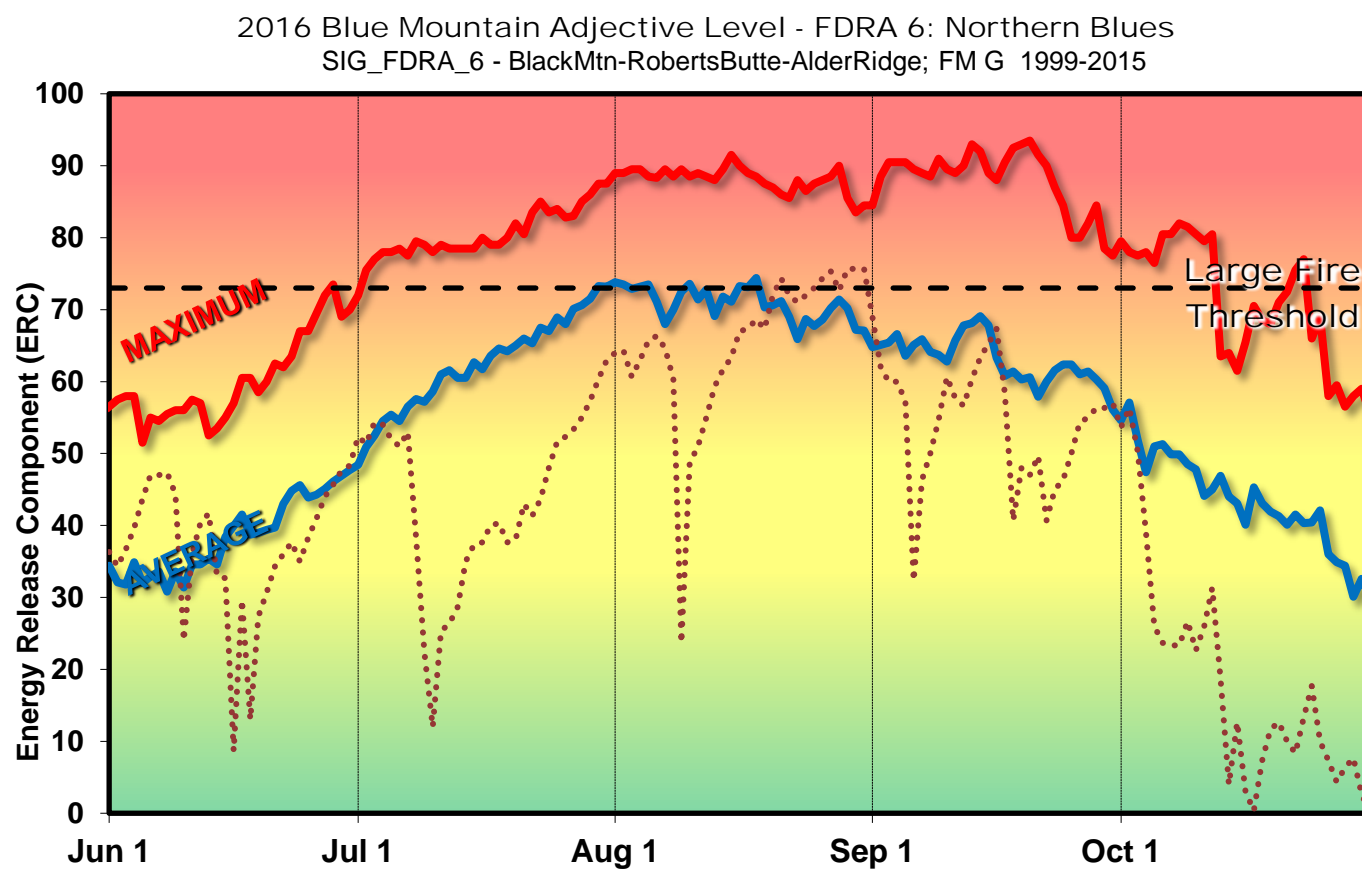


Figure 3

# STATION: PPFO3																	
# STATION NAME: POINT FROM II																	
# LATITUDE: 45.354722																	
# LONGITUDE: -117.704444																	
# ELEVATION [ft]: 6607																	
# STATE: OR																	
Station_ID	Date_Time	air_temp	relative_h	wind_spe	wind_dir	wind_gust	volt_set	solar_rad	precip_ac	water_ter	peak_wm	fuel_temp	fuel_mois	peak_wm	dew_poin	wind_chil	wind_carc
		Fahrenheit	%	Miles/hour	Degrees	Miles/hour	volts	W/m**2	Inches	Fahrenheit	Miles/hour	Fahrenheit	gm	Degrees	Fahrenheit	Fahrenheit	Code
PPFO3	09/27/2016 23:15 PDT	62.01	32	5.99	175	11.01	12.7	0	2.86		11.01	57	9.7	183	31.66		S
PPFO3	09/28/2016 00:15 PDT	62.01	32	5.99	177	10	12.7	0	2.86		10	59	9.7	193	31.66		S
PPFO3	09/28/2016 01:15 PDT	62.01	32	5.99	171	12.01	12.7	0	2.86		12.01	57	9.7	160	31.66		S
PPFO3	09/28/2016 02:15 PDT	61	34	7	178	12.01	12.7	0	2.86		12.01	57.99	9.7	209	32.27		S
PPFO3	09/28/2016 03:15 PDT	60.01	33	8.01	174	13	12.7	0	2.86		13	57	9.7	165	30.66		S
PPFO3	09/28/2016 04:15 PDT	57	35	7	186	12.01	12.6	0	2.86		12.01	55.99	9.7	196	29.44		S
PPFO3	09/28/2016 05:15 PDT	57.99	39	5.99	186	10	12.6	0	2.86		10	55	9.7	214	33.01		S
PPFO3	09/28/2016 06:15 PDT	57	42	5.99	186	8.99	12.6	0	2.86		8.99	53.01	9.8	201	33.97		S

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Station_ID	Date_Time	air_temp	relative_h	wind_spe	wind_dir	wind_gust	volt_set	solar_rad	precip_ac	water_ter	peak_wm	fuel_temp	fuel_mois	peak_wm	dew_poin	wind_chil	wind_carc	heat_inde
		Fahrenheit	%	Miles/hour	Degrees	Miles/hour	volts	W/m**2	Inches	Fahrenheit	Miles/hour	Fahrenheit	gm	Degrees	Fahrenheit	Fahrenheit	Code	Fahrenheit
PPFO3	09/30/201	63	30	8.01	164	18.01	12.7	0	2.86		18.01	60.01	8.7	161	30.93		SSE	
PPFO3	09/30/201	61	30	8.99	168	20	12.7	0	2.86		20	60.01	8.7	161	29.19		SSE	
PPFO3	09/30/201	63	27	10	166	18.01	12.7	0	2.86		18.01	59	8.7	152	28.35		SSE	
PPFO3	09/30/201	62.01	28	11.01	167	24	12.6	0	2.86		24	60.01	8.6	140	28.38		SSE	
PPFO3	09/30/201	61	30	10	165	18.99	12.6	0	2.86		18.99	61	8.7	185	29.19		SSE	
PPFO3	09/30/201	62.01	29	10	154	28.99	12.6	0	2.86		28.99	60.01	8.8	139	29.24		SSE	
PPFO3	09/30/201	59	34	11.01	173	17	12.6	4	2.86		17	57	8.7	189	30.5		S	
PPFO3	09/30/201	61	37	12.01	174	20	12.7	38	2.86		20	60.01	8.8	146	34.39		S	

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		Fahrenheit	%	Miles/hour	Degrees	Miles/hour	volts	W/m**2	Inches	Fahrenheit	Miles/hour	Fahrenheit	gm	Degrees	Fahrenheit	Fahrenheit	Code	Fahrenheit
PPFO3	09/29/201	57.99	43	4	178	5.99	12.7	0	2.86		5.99	55.99	10	192	35.46		S	
PPFO3	09/29/201	59	45	4	168	8.01	12.7	0	2.86		8.01	54	10	152	37.54		SSE	
PPFO3	09/29/201	60.01	43	4.99	160	8.99	12.7	0	2.86		8.99	55.99	10	156	37.3		SSE	
PPFO3	09/29/201	60.01	42	5.99	164	13	12.7	0	2.86		13	55	10	162	36.7		SSE	
PPFO3	09/29/201	61	36	5.99	167	12.01	12.6	0	2.86		12.01	55.99	9.9	146	33.7		SSE	
PPFO3	09/29/201	60.01	32	7	167	12.01	12.6	0	2.86		12.01	57.99	9.8	163	29.9		SSE	
PPFO3	09/29/201	61	33	8.01	165	14	12.6	0	2.86		14	57.99	9.8	175	31.53		SSE	
PPFO3	09/29/201	60.01	32	10	166	18.01	12.6	10	2.86		18.01	59	9.7	166	29.9		SSE	

Element 2: The Actions Taken Leading Up to the Wildfire Declaration, to Determine Consistency with the Prescribed Fire Burn Plan

This prescribed burn plan elements regarding holding and contingency were followed and the unit was patrolled by air and on foot, the day of and the day after the initial ignition, by the Burn Boss and other assigned personnel. The initial spot fire that caused the Minam Fire was located via a helicopter recon at approximately 1900 hours on September 30, 2016. It was too dark and remote to make an attempt to physically locate the spot fire and take any suppression action.

The following morning the Burn Boss and two other personnel walked into the area where the reported spot fire was located. Upon nearing the location the Burn Boss walked into an active fire perimeter at the top of the ridge above where the initial spot fire was located. It was determined that the spot fire had burned from the bottom of the Trout Creek drainage to the top of Cougar Ridge and was approximately a mile wide at the top along the ridge.

After a thorough assessment of the fire area, the Burn Boss (also the FMO) contacted the Line officer and the Deputy Fire staff to notify them of the situation. Upon discussion and following the protocol in the burn plan the consensus decision was to convert the prescribed fire to a wildfire, midmorning on October 1, 2016.

The Minam Fire was declared on Saturday in on October 1, 2016 at 1030. The decision was made to have the incident managed as a Type 3 incident and resources were ordered and a briefing was conducted the following morning. Resources were in place and taking suppression action on the fire by midmorning on October 2, 2016.

Resources on Scene were- ICT3, OPS, 2 DIVS, 2 IHC crews, 1 Type 1 Helicopter

The 900 plus acre fire was located predominately in the Eagle Cap Wilderness but outside of the planned prescribed unit. Approximately 5-7 acres were outside of the wilderness in the Deer Creek drainage east of the Wilderness Boundary. All of the acres burned were Forest Service lands.

Element 3: The Prescribed Fire Burn Plan and Consistency with Policy

PRESCRIBED FIRE PLAN ELEMENTS:	COMMENTS/FINDINGS	Did this play a role in Escaped Fire?
1. Signature page	Signature page is complete.	No
2. GO/NO-GO Checklists	Complete	No
3. Complexity Analysis Summary	Complete.	No

4. Description of the Prescribed Fire Area	Complete.	No
5. Goals and Objectives	Complete	No
6. Funding	Complete	No
7. Prescription	Complete.	No
8. Scheduling	Complete.	No
9. Pre-burn Considerations	Complete.	No
10. Briefing	Complete.	No
11. Organization and Equipment	Complete.	No
12. Communication	Complete.	No
13. Public, Personnel Safety and Medical Procedures	Complete.	No
14. Test Fire	Complete.	No
15. Ignition Plan	Complete.	No
16. Holding Plan	Complete.	No
17. Contingency Plan	Complete.	No
18. Wildfire Conversion	Complete.	No
19. Smoke Management and Air Quality	Complete.	No
20. Monitoring	Complete. Long Term – monitoring of burn unit for fuels treatment effectiveness.	No
21. Post-burn Activities	Short Term – complete.	No

Element 4: Prescribed Fire Prescription and Consistency with On-Site Measured Prescription Parameters

The ignition phases of the prescribed fire were conducted successfully and in accordance with stated burn plan prescription parameters. Aerial ignition of the unit was completed in the first shift as planned and the unit was allowed to burn throughout the unit for the rest of the burn period and into the next, in accordance with the burn plan prescription. (Figure 4)

Figure 4

Environmental Prescription –Minam 4

	Low	High
	14	7
10 HR Fuel Moisture (%)	16	8
100 HR Fuel Moisture (%)	20	14
1000 HR Fuel Moisture (%)	36	18
Live fuel moisture (%)	200+	90
Relative Humidity (%)	40	18
Temperature (F)	55	80
Mid-flame windspeed (mph)	0	10
Acceptable wind directions	S, SW, W, NW	S, SW, W, NW

Element 5: Approving Line Officer's Qualifications, Experience, and Involvement

Line Officer has completed the required courses and meets the definition of Advanced Line Officer Certification.

Element 6: Qualifications and Experience of Other Key Personnel

The assigned personnel with primary responsibility in this project are the Eagle Cap Ranger District ZFMO whom is currently carded as RXB1. Per the burn plan parameters, there were no holding resources on the burn unit, however there were 4 personnel assigned as Fire Effects Monitors that were taking weather and observing the burn unit from the eastside of the Trout Creek drainage.

Element 7: Key Causal Factors

Primary Causal Factors contributing to the wildfire declaration:

- The principle causal factor of the escape stemmed from a combination of thunderstorm passage, a nighttime wind event, and low nighttime humidity recovery.
- The Trout Creek Drainage is a steep and narrow drainage near the bottom, coupled with the nighttime weather conditions, allowed for firebrands to reach the opposing hillside to the East and become a spot fire.
- The fire escaped the primary burn unit.

- The fire burned beyond the planning area boundary.
- The fire could not be contained in 24 hours.

CONCLUSIONS

Several weather and topographical factors can be identified as causal agents for ignition of the Minam Fire.

- There was no containment line utilized on the burn area perimeter, drainage bottoms and flowing streams were utilized. (per burn plan due to wilderness constraints)
- The burn unit is remote with limited access. This increases the likely hood of a spot fire growing beyond control due to lack of access by on ground holding resources.
- The escape started from fire brands that spotted across Trout Creek via wind currents during the night time.
- The days leading up to and including the day of ignition were under the influence of a dry air mass with low daytime relative humidity and poor nighttime humidity recovery, making the opposing hillside susceptible to spotting.