

Barry Point Fire

Retrospectives and Lessons Learned



USDA Forest Service

Pacific Northwest Region

Fremont – Winema National Forest

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I. Executive Summary

The Barry Point Fire of August, 2012 burned in South Central Oregon and northeastern California. The August 5th lightning caused fire occurred on federal lands protected by the Fremont – Winema National Forest (FWF) in Oregon and the Modoc National Forest (MDF) in California as well as private lands protected by the Oregon Department of Forestry (ODF) and private lands in California protected by the MDF under agreement with the California Department of Forestry and Fire Protection (CAL FIRE). The fire quickly spread from its origin on the FWF, initially moving to the northeast. On the night of August 10, the fire began to rapidly spread to the south eventually burning a total of 92,977 acres, by August 20.

The *Barry Point Fire Fact Finding Review Report* by Shepard & Associates, LLC, was commissioned by the Regional Forester, Region 6, United States Forest Service and was issued on January 9, 2013.

As a result of questions raised by members of the community in the above mentioned review and perceived issues related to communication between jurisdictional agencies, fire managers, landowners, and permittees, the Regional Forester assigned a further review to address specific recommendations from the *Fact Finding Report* as well as some additional tasks.

This report focuses on the following direction provided this review team by the Agency Administrator (AA):

- Addressing recommendations from the *Fact Finding Report* (section V, page 21). Be specific in addressing recommendation four from the report. (Conduct a further review of the events that occurred when the fire burned across the Morris, Harvey, and Albertson's property; and evaluate the risk to the landowners and the firefighters as the events occurred).
- Document key fire events and decisions to assess the overall fire suppression response and outline the challenges for the Forest Service, ODF, CAL FIRE, local and county stakeholders.
- Offer recommendations that provide a foundation of change/learning for the FWF, incident managers, responders, and community members for the management of wildfires into the future.
- Consider the attached Leader's Intent document (e.g., values at risk) and provide perspective and opportunities for further learning.

The assembled team reviewed documents including Incident Action Plans (IAPs), Wildland Fire Decision Support System (WFDSS) analysis, fire maps, cooperative agreements, the Agency Administrator's Strategic Risk Assessment (AASRA), the Fremont–Winema National Forest and Lakeview District Bureau of Land Management Fire Management Plan (FWF FMP), fire narratives and after action reports from the fire's various Incident Management Teams (IMTs). The team also conducted a limited site visit (much of the area was not accessible due to snow), completed a fire behavior analysis, and interviewed key fire, FWF, ODF, law enforcement personnel, and several affected private landowners and permittees.

The Barry Point Fire was managed under a full suppression strategy from the time of its discovery on August 6, 2012. This review found that the fire environment and behavior was extreme and were key contributors to its final fire size. The IMTs did a laudable job of protecting

the highest concentration of individual private property and structures on the northeast flank of the fire. The FWF has a number of guiding documents that led the FWF AA and the ODF AA to consistently place protection of private property as the highest priority behind public and firefighter safety. IMTs consistently followed the AAs' direction and included those priorities in the Incident Action Plans (IAPs). However, there was a lack of clarity in the IAPs regarding this primary mission, in particular with regard to protection of private property in certain areas of the fire. Fire operations personnel had to make control objectives decisions "*on the fly*" as the fire spread rapidly to the south. These fire operations were not always captured in the plan. The high number of IMTs assigned to this fire, and subsequent transitions, may have also contributed to the lack of specific direction.

Communications of objectives and tactics to cooperators and private landowners was a challenge for the IMTs throughout this incident. The need for cooperators and private landowners input into the strategic planning of the fire was also noted. The number of IMT transitions could have inhibited the abilities of the IMTs to effectively implement the direction provide by the FWF and ODF Agency Administrators. The number of IMT transitions could have affected the communication of fire information to involved stakeholders and created a lack of confidence with this constituency.

We found that concerns raised regarding "*on shift*" resources departing prior to relief arriving had merit. This lead to a lack of fire ground transition by fire suppression resources, resulting in some portions of the fireline being unstaffed at times.

Key Recommendations

1. The cooperators providing jurisdictional fire protection use the South Central Oregon Fire Management Partnership (SCOFMP) to implement the recommendations from this report. A key recommendation includes the use of Unified Command on multijurisdictional fires. The use of unified command adheres to the direction currently existing in the FWF FMP to contact landowners potentially affected by evolving wildfire. This has the potential to improve the information sharing process with both agency personnel and stakeholders.
2. AAs ensure IAPs are reviewed to verify that line officer direction is carried forward into specific, attainable and measurable control objectives which are included in the IAPs Incident Objectives and Division Assignments.
3. Minimize the number of IMT transitions through appropriate use of the Organizational Needs Assessment. When doubt exists as to the most appropriate incident management level, choosing an IMT with the greatest operational capacity should be strongly considered.
4. AAs and IMTs hold all levels of the organization accountable to meeting the leaders' intent and incident objectives.
5. The FWF develop a wildland fire stakeholder group modeled after the successful FWF Lakeview Stewardship Group to address issues via an ongoing venue before fire events occur.

II. Purpose

On February 25, 2013 a group of four wildland fire managers from multiple agencies was convened in Lakeview, Oregon, to follow-up on outstanding issues from the *Barry Point Fire Fact Finding Review Report* (Shepard and Associates, 2013).

In the Delegation of Authority issued to the team on February 28, 2013, the specific purpose of this report was defined as; *“Provide a continuous learning opportunity for incident managers, responders and community members for improved preparations and mutual understanding of management of wildfires in the future.”*

More specifically the team was assembled to address:

- Recommendations of the *Barry Point Fire Fact Finding Review Report*, (section V, page 21), specifically recommendation “d”.
- Document key fire events and decisions to assess the overall fire suppression response and outline challenges for the Forest Service, Oregon Department of Forestry, and CAL FIRE, local and county stakeholders.
- Offer recommendations that provide a foundation of change/learning for the FWF, incident managers, responders and community members for the management of wildfires in the future.
- Provide perspective and opportunities for future learning.

The team assembled to complete this task consisted of:

- Kelly Keenan, Amador-El Dorado-Sacramento Unit Chief, CAL FIRE
- David Kerr, Fire Management Specialist, Forest Service (retired)
- Greg Poncin, Kalispell Unit Manager, Montana Department of Natural Resource and Conservation
- Scott Williams, Fire Management Specialist, Forest Service, Washington Office Enterprise Program

III. Incident History

A. Initial Attack Chronology

The Barry Point Fire was ignited by lightning at approximately 1536 hours on August 5, 2012 (BLM lightning data). No measurable rainfall was associated with this lightning event based on records obtained from the Strawberry Remote Automated Weather Station (RAWS) for the time period August 5, 2012 - 1500 through August 06, 2012 - 1600 PDT. The Strawberry RAWS is located at 5,590 feet, approximately 5.5 air miles northwest of the point of origin of the Barry Point Fire.

The fire was discovered at 1626 hours on August 6, 2012 by the Dog Mountain lookout. At this same time Rob Wood, ODF, also observed and reported the fire. Initial reports from the lookout indicated that the fire was approximately ¼ acre, but that the base of the fire could not be seen from the lookout. The lookout relayed to the Lakeview Interagency Fire Center (LIFC) that the fire had doubled in size (½ acre) prior to the initial dispatch being transmitted by LIFC. The

lookout also reported torching and erratic northeast winds affecting the fire at 1635 hours that day. At 1657 the lookout reports a spot fire west of the main fire.

Based on dispatch logs maintained by the LIFC, and as summarized in the After Action Review (AAR), *Recollections of initial attack of the Barry Point Fire, the first three days*”, (Appendix B) the initial attack response (August 6, 2012, 1628 hours to 2124 hours) to the fire included resources listed in Table 1.

Table 1. Initial Attack Resources

Time Dispatched	Time of Arrival	Resource Designator	Leader/Type
	1628	8203	Rob Wood, ODF
1629	1720	3HT	Helicopter, pilot plus 8.
1629	1847	E312	Type 3 engine, FS Bly
1629	1637	BC-20	Coley Neider, FS Lakeview
1629	1738	T-802	Single Engine Air Tanker (SEAT) - Lakeview
1629	1637	DV1	Eric Knerr
	1629	9B	Eric Wolf
1629	1712	4AW	Helicopter, type 3
1629	1841	AA-3UV	Air Attack
1629	1742	E-613	Type 6 engine, FS Bly
1629	1841	2-B	Squad, FS Lakeview, 5 members minimum
1629	1847	E-7679	Type 6 engine, BLM Gerber,
1629	1847	E-421	Type 4 engine, FS Lakeview
1629	1847	E-7471	Type 4 engine, BLM Gerber,
1647	1812	Crew 7	FS, Klamath Falls
1647	1847	E-531	Type 3 engine
1648	1738	Chase 86	Tender for Dozer 86
1648	1738	D-86	ODF Dozer
1648	1847	E-312	Type 3 engine, FS Bly
1649	1714	E-8262	Type 6 engine, ODF Lakeview
1653	1720	15S	Helicopter, Type III
1700	1746	CH4	Barry Shullanberger, FS
1706		E-8266	Type 6 engine, ODF Camp 6,
1711	1751	DV2	Barry Hanson
1717	1908	T-847	SEAT
1842	2031	Doz1150	FS dozer
1849		Lockett WT	Contract water tender
1852	2124	Richmand DZ	Contract dozer

At 1708 on August 6, 2012, helicopter 4AW reported that the fire was 7 acres, burning in heavy timber with similar fuels immediately adjacent to the fire. Flame lengths were reported as 4 to 8 feet with the fire spotting 300 yards ahead of the main fire. Helicopter water drop records for the early days of the incident are shown in Table 2.

Table 2. Helicopter Water Drop Data

Helicopter Use Records – Gallons of Water Dropped				
	August 6, 2012	August 7, 2012	August 8, 2012	August 9, 2012
9696W	No data	No data	33,200	33,200
N7115S	No data	No data	14,400	7,920
223HT	No data	No data	10,980	11,566
Summary	No data	No data	58,580	52,686

Source: I-Suite Cumulative Air Cost Records

Heavy air tankers were requested by LIFC at 1805 hours, however none were available. Two single engine air tankers (SEATs) were assigned to the incident on August 6 and were on scene at 1840 hours. Retardant delivery records for air tankers assigned to the incident August 6 through 9, 2012 are shown in Table 3.

Table 3. Gallons of Fire Retardant Delivered – August 6 through August 9, 2012

Air Tanker Use Records – Gallons of Retardant Dropped				
Air Tanker	August 6, 2012	August 7, 2012	August 8, 2012	August 9, 2012
AT-802	6,750	12,750	2,100	4,500
AT-847	6,700	12,750	5,250	5,250
AT-40		29,833	10,685	
AT-142		11,914		2,000
AT-12		16,105	10,399	4,161
AT-62		11,619	3,012	5,978
AT-66		2,979		
AT-60				8,021
Summary	13,450	108,635	31,446	29,910

Sources: I-Suite Cumulative Air Cost Records, SEAT Cost Summary Sheets

At 2024 hours, the fire was reported to be 40 acres with multiple spots. All aircraft had been released due to darkness and were reordered for day shift August 7. Firefighters worked through the evening, with the exception of the Operations Section Chief, Engine 421, Engine 312, Squad 2B, nine individuals from the helitack module, dozer 1150 and one dozer boss. These resources were bedded down to work as part of day shift.

The initial attack strategy continued to focus on direct attack with dozers and hand crews. A critical holding feature had been identified as the Hay Creek road. The night operational objective was to establish an anchor point allowing for safe direct attack and to keep the fire within the road system surrounding Barry Point (Knerr, personal conversation, 2013). Orders for additional firefighting resources to augment the remaining initial attack forces were placed with LIFC throughout the evening hours by Incident Commander, Eric Knerr. These resource orders included a Type III Incident Management Team. This order was placed at 2115 hours.

Day shift August 7, 2012 was staffed with resources held over from the night shift and equipment that had been ordered to the incident the previous operational period. Air tankers 802, 847 and air attack 3UV were over the fire at 0917 hours. Three heavy air tankers were ordered and filled the night of August 6, 2012. These air resources were used extensively during the day operational period. An additional heavy air tanker was ordered at 1033 hours.

Incident command transferred from Knerr to Bustamante at 0730, August 7, 2012.

The fire continued to burn actively during day shift, with portions of direct and indirect dozer line compromised due to spotting. Slope, fuels and flame lengths made it unsafe to construct direct fireline, so much of the line on Division B was indirect and needed to be burned out to be secured (Miesinger, Division B, 2012).

At 1514 hours, air attack reported that spot fires have occurred over the Hay Creek Road (Forest Road (FR) FR 3940). This established fire outside of the primary control feature being utilized on the incident.

A Type II Incident Management Team was ordered at 1535 hours as the fire had crossed the decision point (Hay Creek Road) for placing this order. By 1628 hours the fire was reported at 500 acres with active short range spotting. The reported fire size was increased to 1,500 acres at 1631 hours (incident dispatch log, 2012).

The Type III Incident Management Team (Hunter) assumed command of the fire at 1838 hours August 7, 2012, with a Type II IMT (Watts) in route to the incident. Planning continued for a night burn operations along Forest Road (FR) 3940 to secure Division B and prevent the fire from continuing to the south. The burn was implemented at 2217 hours and concluded successfully at 0533 hours on August 8, 2012.

B. Total Incident Resources Assigned

Table 4. Types and numbers of resources used to manage the Barry Point fire based on ICS-209 data

DATE	CRW 1		CRW 2		HEL 1	HEL 2	HEL 3	ENGS		DOZR		WTDR	OVHD	CAMP CREWS	TOTAL PERSONNEL
	SR	ST	SR	ST	SR	SR	SR	SR	ST	SR	ST	SR	SR		
8-7-12			3					9		4		4	8		103
8-8-12	2		6		1	2		26		12		10	35	1	319
8-9-12	2		19		1	2		40	1	8	1	30	205	2	828
8-10-12	2		22		1	2		49	1	8		20	247	2	929
8-11-12	3		26		1	2	3	71	1	7		20	206	3	1,112
8-12-12	4		27		2	2	2	75	1	9		24	274	2	1,218
8-13-12	4		28		2	4	2	76	2	10		23	324	3	1,423
8-14-12	4		29		2	4	2	82	2	14		30	345	2	1,404
8-15-12	4		29		2		3	84	2	12		30	383	2	1,347
8-16-12	4		29		2	1	3	85	2	12	2	30	338	2	1,320
8-17-12	4		29		2	1		93	2	13	2	30	370	2	1,398
8-18-12	4		27		2	2	2	93	1	15	2	34	372	2	1,338
8-19-12	4		25		4	2	2	90	1	14	2	34	369	2	1,297
8-20-12	4		24		4	2	1	90		13	2	34	364	2	1,256
8-21-12	2		21		4	2	2	86		10		32	346	2	1,131
8-22-12	1		20		4	2	2	73		10	1	31	337	2	1,042
8-23-12	1		15		1	1	2	48		7		18	313	2	843
8-24-12	1		17		1	1	2	35		4		13	300	2	775
8-25-12			17		1	2	1	35		4		13	204	2	632
8-26-12			12		1	2	1	34		3		11	200		518
8-27-12			11		1	1	1	32		5		9	210		510
8-28-12			9				1	30		5		4	225		465
8-29-12			6				1	26		1		3	164		374
8-30-12			6		1	1	1	15		1		3	152		296
8-31-12			2				1	12		1		3	184		264
9-1-12			2				1	9		1		3	105		187
9-2-12			2				1	9		1		3	87		178
9-3-12			1				1	9		1		3	83		163
9-4-12			1				1	6		1		3	57		125
9-6-12			1					5					5		22
9-7-12			1					7				3	1		33

IV. Wildfire Environment

Barry Point Fire started as a result of a regional lightning event on August 5, 2012 and was discovered at 1536 hours August 6, 2012. The fire burned and grew in size for 14 days until reaching its final reported size of 92,977 on August 20, 2012.

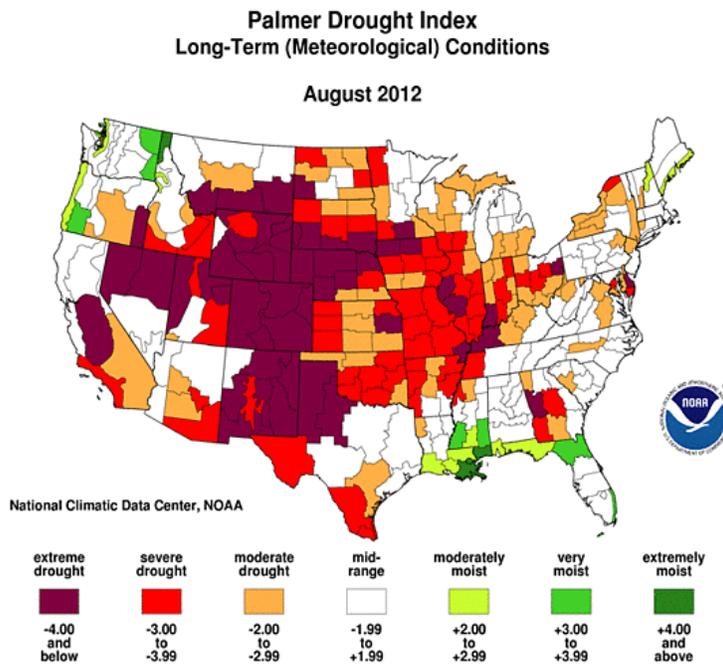
Fuels

A critique of the fuels within the final perimeter indicates that three primary fuel models dominated the fire area in Oregon; Fuel Model 122 (Moderate Load, Dry Climate Grass Shrub), Fuel Model, 165 (Very High Load, Dry Climate Timber Shrub) and Fuel Model 186 (Moderate Load Broad-leaf Litter). A total of 20 different fuel models composed the fuel complex for the Oregon portion of the fire. (LandFire Refresh lcp file, 2008).

Drought

The Palmer Drought Severity Index (PDSI) for the fire area shows a “*Moderate Drought*” (Figure 1) at the time of the incident. Based on the June 21, 2012 data provided by the Climate Prediction Center, the ongoing drought was expected to persist through the end of the forecast period, September 30, 2012.

Figure 1. Palmer Drought Severity Index – August 2012



Fuel Moisture

Both live and dead fuels were extremely dry during the fire period. One-thousand hour fuels (greater than 8” diameter) were at 7% based on data from the Gerber fuel sampling site. Fine dead fuels moistures (1/4” and less) were commonly 4% or less during afternoon burn periods.

Depending on aspect, slope and shading, these one-hour fuel moistures may have been as high as 8% during morning hours, but dried rapidly as the day warmed and solar radiation began to affect these surface fuels. Fine fuels and their associated fuel moistures are important drivers of surface fire spread and spot fire potential.

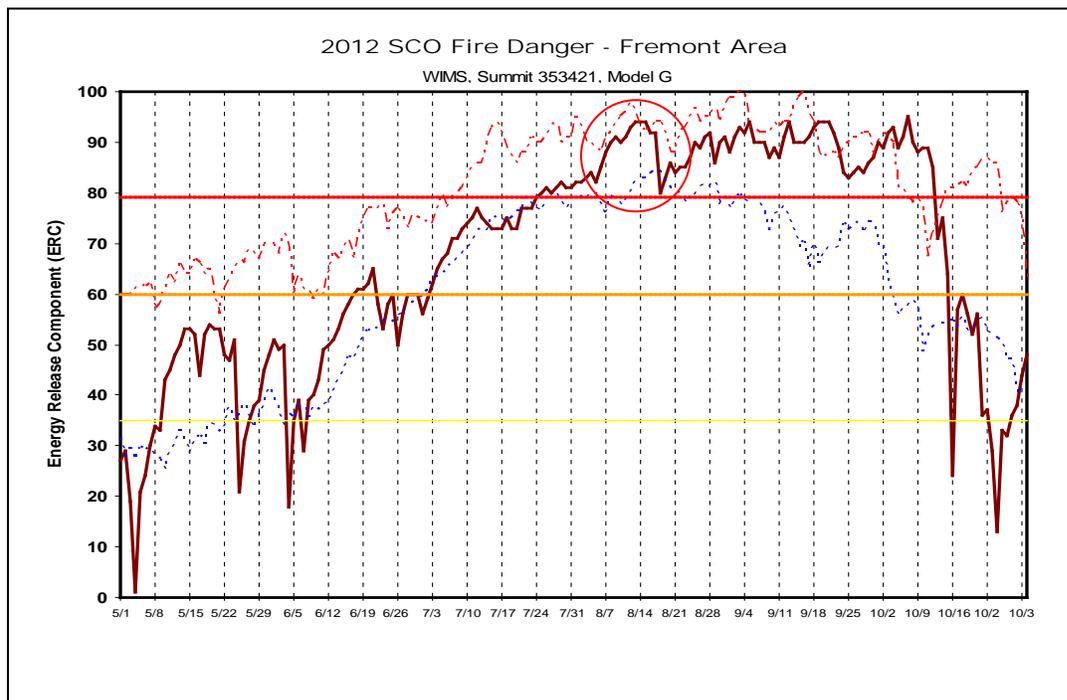
Live fuel moistures for the fire area were best represented by the Gerber live fuel moisture sampling site. According to records maintained by the FWF, sagebrush had a measured live fuel moisture content of 86% during the fire period.

Fire Danger

The Forest uses National Fire Danger Rating System (NFDRS) fuel model “G” to evaluate fire danger on National Forest System (NFS) lands. Energy Release Component (ERC) is the NFDRS index that the Forest uses to track seasonal changes in fire danger. ERC is an index related to how hot a fire can burn and is a representation of the 24-hour, potential worst case, total available energy (BTUs) per unit area (in square feet) within the flaming front at the head of a fire (USFS, Predictive Services, 2013). Figure 2 shows ERC trends for the Fremont Fire Danger Rating Area, which includes the Barry Point fire area. ERCs for the fire period ranged between the 80th and 92nd percentile based on all historic weather records. This range is classified as “*Extreme Fire Danger*” by the FWF.

The Fremont Area Fire Danger pocket card indicates four *thresholds of concern* for potential large fire growth. These thresholds are temperatures in excess of 80°F, relative humidity less than 15%, 1000-hour fuel moistures less than 10% and live woody fuel moistures less than 60%. All of these thresholds, with the exception of live woody fuel moisture, were exceeded on the Barry Point fire.

Figure 2. Energy Release Component – Barry Point Fire Area, 2012



Weather

Weather was relatively stable during the fire. Following the lightning activity of August 5, 2012, weather was dominated by high pressure which maintained clear skies, warm temperature and moderate general winds. Two key weather features affected the fire; the lack of nighttime humidity recovery, and the development of northerly winds, especially during late afternoons and evenings. The poor relative humidity recovery extended the active burn periods on the fire, while northerly winds pushed the fire south and helped distribute fire brands into unburned fuels. This northerly wind pattern is uncommon, according to local fire managers (Crumrine, personal conversation, 2013). Table 5 shows the ranges of three important fire weather elements during the critical fire period of August 6 to August 16, 2012. Some weather observations reported by fireline personnel exceeded the data ranges in Table 5.

Table 5. Weather Data Summary, August 6 to August 16, 2012. Strawberry RAWS

Range of Weather Data – Strawberry RAWS			
Time of Day	Maximum Temperature (°F)	Minimum Relative Humidity (%)	Average Wind Speed (mph)
Day (0600-1800)	75-85	14-35	3.0 - 6.3
Night (1900-0500)	57-65	23-52	0.7 – 2.7

Fire Behavior

An analysis of the fire behavior was conducted in order to better understand the challenges faced by fire managers on the Barry Point Fire. Special emphasis was placed on the time period August 6 to August 16, 2012 and the private lands which burned on August 13, 2012.

The fire behavior model of choice for this analysis is FlamMap, a fire behavior mapping and analysis program that computes potential fire behavior characteristics (spread rate, flame length, fireline intensity, etc.) over a digital landscape for constant weather and fuel moisture conditions (Fire.org, 2013). FlamMap provides the ability to look at fire potential over a large geographic area. This model provides the ability to identify locations of greater or lesser fire potential at a landscape level.

The fire behavior analysis used weather data obtained from the Strawberry RAWS for the time period August 6 to August 16, 2012. From this weather data, generalized weather conditions were developed for this time period. These generalized weather conditions were used to develop the fuel moistures for the analysis. Data in the landscape file obtained from the Landfire project contained the remainder of the fuels and topographic information required to run FlamMap.

The wind data utilized in the analysis was based on the wind gust information from the Strawberry RAWS. A value of 13 mph was used in the model. This is representative of afternoon conditions when wind gusts were commonly between 11 and 16 mph. To account for the unique northerly flow that influenced the fire, a wind direction of 315° was used. Gridded winds derived from the general winds were used in the fire modeling to help account for the effects of terrain and solar radiation on wind speed and direction.

It should be emphasized that FlamMap has the same limitations of other fire spread models in that it evaluates *surface fire behavior* and does not account for the influence of spot fires, group torching or fire whirls on overall fire spread. These limitations generally produce outputs which are less than those observed on the fire ground. What FlamMap does provide is the ability to evaluate the *potential* of fire over a large landscape. Other models, such as Behave Plus are utilized to evaluate spot fire probabilities and the effectiveness of firefighting resources against the modeled fire activity generated from FlamMap.

Fire behavior potential maps for the entire fire area and a specific analysis for the Yocum Valley and Buckaroo Pass areas using weather data for August 13, 2012 are found in Appendix I.

Fire Behavior Observations

Narratives provided and interviews conducted with the Fire Behavior Analysts (FBAN) assigned to the incident indicate that the Barry Point Fire was strongly influenced by the dryness and loading of the dead fuels. The assigned FBAN's indicated that group torching of trees was common, as was the development of fire whirls strong enough to note "*standing trees were falling in groups of 3-6 as the fire whirl moved*" (Ziel, personal conversation, 2013), Figure 3.

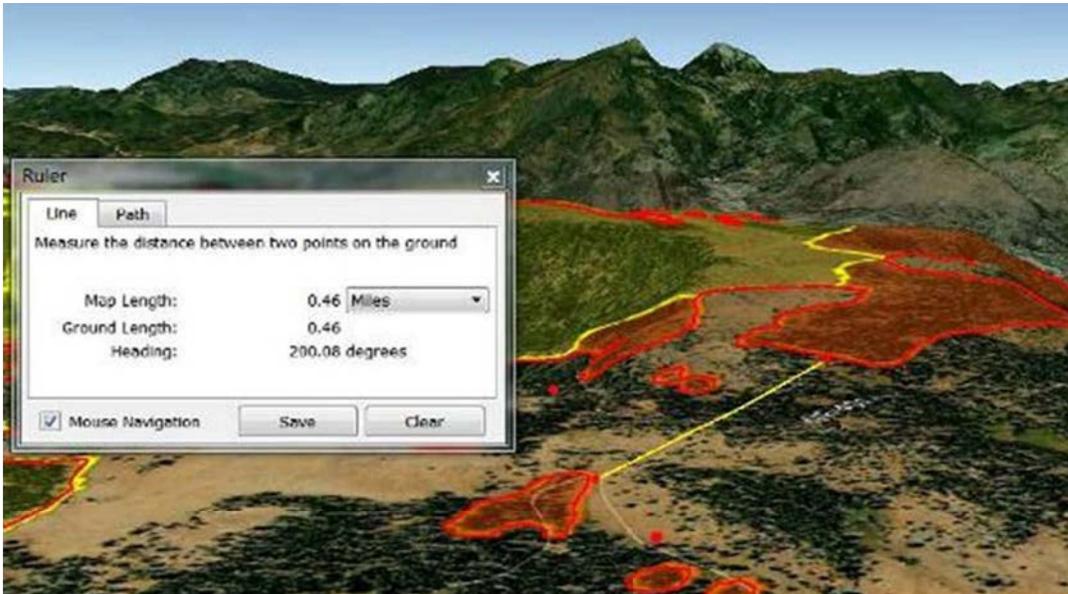
Figure 3. Active burning on Dog Mountain, August 9, 2012



Photo courtesy of Steve Ziel, Fire Behavior Analyst.

Spotting distances in excess of ½ mile were common on the incident (Barry Point Fire narrative, NWIMT2, 2012). This fact was validated by Ziel (Figure 4), where he documented spotting distance of 0.46 miles.

Figure 4. Barry Point Fire Spotting Distance



Modeled Fire Behavior

Geographic Information System (GIS) generated statistics based on FlamMap outputs for the Oregon lands involved in the Barry Point Fire are summarized in Table 6.

Table 6. Model Fire Behavior Potential

FlamMap Fire Behavior Potential Barry Point Fire – Oregon Land base			
Crown Fire Potential (% of land base)			
Non-Burnable	Surface Fire	Passive Crown	Active Crown
0.9%	59.2%	39.9%	negligible
Rate of Spread (% of land base)			
0-10 chs/hr	11-20 chs/hr	21-50 chs/hr	51+ chs/hr
71.2%	9.9%	13.1%	5.8%
Surface Fire Flame Length (% of land base)			
0-4 feet	5-8 feet	9-11 feet	12+ feet
56.4%	37.0%	1.8%	4.8%

The calculated Probability of Ignition (P_i) a measure of the ability of a firebrand to ignite unburned receptive fuels, ranged from 71% to 77% depending on the shading associated with the surface fuel. This range of P_i means that a firebrand landing on receptive fuels had a greater than 70% chance of causing an ignition. P_i varied across the fire landscape, but this range indicates a significant potential for spot fire development.

Resistance to Control

“Resistance to control” is a term used to capture the relative ease or difficulty with which firefighters can suppress a fire. The mechanism used to display resistance to control is the “*Fire Behavior Fire Characteristics Chart*” which visually indicates the type of equipment which may prove successful at suppressing the head of the fire, and also indicates points where the fire has a high probability of exceeding the control capacities of firefighters. Flame lengths in excess of 8 feet generally exceed the capability of firefighters to directly suppress (Table 7).

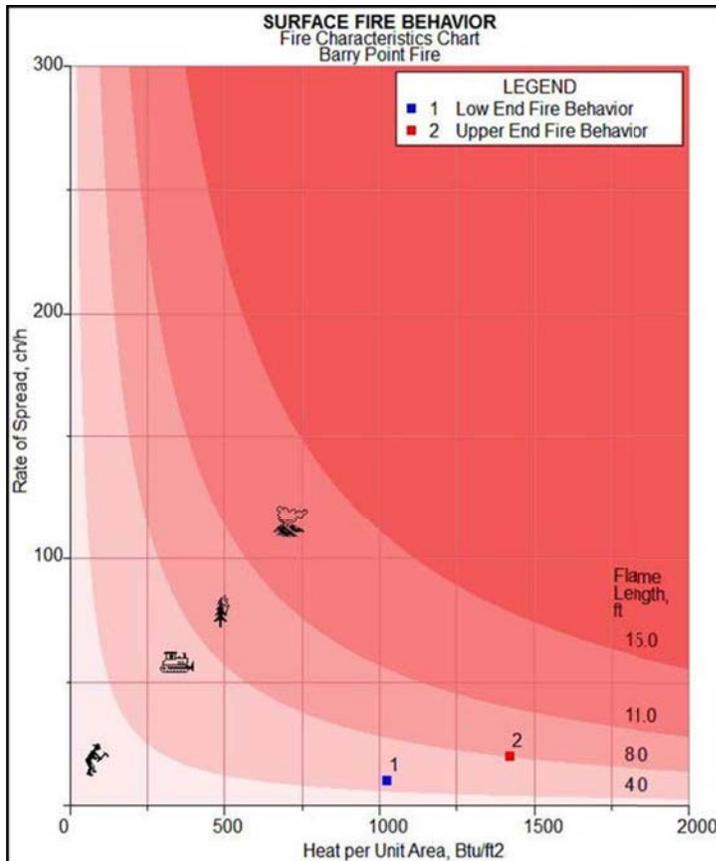
Table 7. Fire Suppression Interpretations

Flame Length (Feet)	Fire Line Intensity (Btu/ft/sec)	Interpretation
0-4	0-100	Persons using hand tools can generally attack fires at the head or flanks. Hand line should hold the fire.
4-8	100-500	Fires are too intense for direct attack on the head by persons using hand tools. Hand line cannot be relied on to hold fire. Equipment such as dozers, engines, and retardant aircraft can be effective.
8-11	500-1,000	Fires may present serious control problems such as torching, crowning, and spotting. Control efforts at the head of the fire will probably be ineffective.
11+	1,000+	Crowning, spotting, and major runs are common, control efforts at the head of the fire are ineffective.

Source: Fireline Handbook, 2004.

Figure 5 displays the “average” modeled resistance to control. Observed rates of spread (up to 3 miles/burn period), passive crowning and fire whirl activity created outputs beyond the capability of this surface fire characteristics chart to display.

Figure 5. Fire Behavior Characteristics Chart – Average Daytime Fire Burning Characteristics



V. Incident Complexity

Wildland fire complexity can be addressed in several ways. First, complexity can be defined by the number of interacting elements on a wildfire and the knowledge, skills and abilities required to address rapidly evolving incidents. Many fire managers and line officers have the ability to recognize these complex interactions and take proactive steps to address them. This is represented by the initial action of line officers and fire managers on the Barry Point Fire, as managers realized shortly after discovery of the fire that it was a fire of “*great potential*” (Shullanberger, Crumrine, Way, personal conversation, 2013).

In order to institutionalize the analysis of wildland fire complexity, the federal land management agencies and the National Wildfire Coordinating Group (NWCG) have established an Incident Complexity Analysis (ICA) and Organizational Needs Assessment (ONA).

The 2012 *Interagency Standards for Fire and Fire Aviation Standards* (Redbook), states; *Complexity is determined by completing an Incident Complexity Analysis*. The Redbook further states; *The National Wildfire Coordinating Group has adopted the Organizational Needs Assessment (ONA) as a replacement for the Type 3, Type 2, and Type 1 Incident Complexity Analysis (ICA)*. *The Organizational Needs Assessment assists personnel with evaluating the situation, objectives, risks, and management considerations of a complex incident and determining the appropriate organization necessary to manage the incident. The Organizational Needs Assessment is incorporated into the Wildland Fire Decision Support System.*

On the Barry Point Fire, documents show an ICA was completed on August 7, 2012 at 1200 hours indicating that a Type II Incident Management Team was the appropriate command structure. A second ICA was completed on August 8, with the same evaluation. These analyses were signed by Leland Hunter, Incident Commander III.

According to WFDSS records, the initial ONA was completed on August 7, 2013 at 1359 hours. The ONA indicated that a Type II long IMT was an appropriate level of management under given conditions. The *Relative Risk Rating* accompanying the ONA was rated 'High'. These decision support processes are documented in the WFDSS record.

A transfer of command to the NWIMT#4 (IMT Type II or IMT2), Watts, occurred on the Barry Point Fire at 0600 hours on August 9, 2012. The Type II IMT was shadowed by the Type III organization throughout the day shift of the 9th (Shepard, 2013).

As the fire continued to expand on August 10, 2012, the current Incident Commander and Agency Administrators from the Forest and Oregon Department of Forestry (ODF) met at 1030 hours to evaluate options for the long term management of the incident. A suggestion was made by Brian Watts, IMT2, to bring in a National Incident Management Organization (NIMO) team as an umbrella organization to increase the operational capacity of the Type II IMT. According to interviews, this suggestion was accepted by the Agency Administrators and an order for a NIMO team was placed. Brian Watts considers his time working with the NIMO team as a positive learning situation for his Incident Management Team (Watts, personal conversation, 2013).

Documentation of the rationale for this decision was not noted in WDFSS. No new ONA was found to support this decision. Brian Watts considers the NIMO oversight helpful and that it increased the capacity of his IMT. It also served as a valuable learning tool for the future.

This transition was viewed differently by John Giller, former Interagency Fire Staff Officer for the FWF and the Operations Section Chief for the Portland NIMO team assigned to serve as the umbrella organization for the Type II IMT. John also served as Operations Section Chief with the Type I IMT.

During his interview, Giller said he thinks when wildfires occur on the FWF that are not contained during the first two operational periods with a Type III organization, that they evolve into a Type I incident and should be staffed that way. Giller, while serving as the NIMO Operations Section Chief on the incident, was never able to get the IMT2 to move beyond their focus on actions immediately in the vicinity of the active fire and private lands. Locations to initiate control actions south of the main fire (Ruby Pipeline, Beaver Dam Road) were never adequately staffed because of lack of available resources and the inability of Watts' IMT to

manage the operational complexities of the Barry Point Fire. (Giller, personal conversation, 2013).

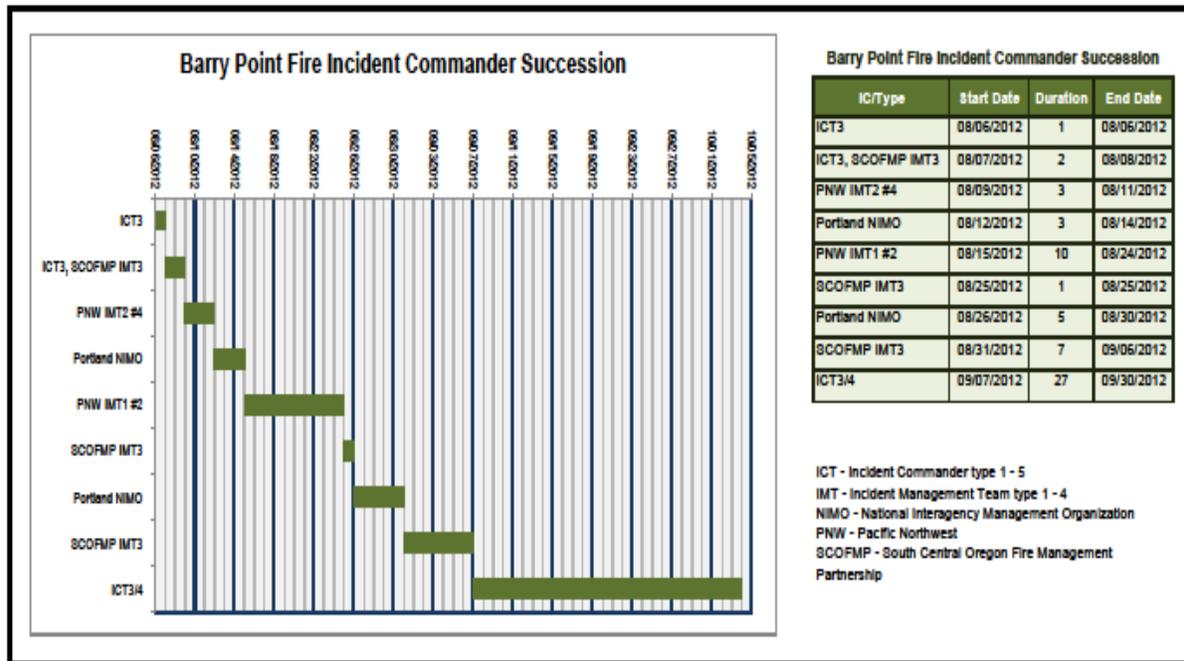
A transition to a Type I IMT (Morcom) occurred at 0600 hours, August 15, 2012. This transition was supported in the WFDSS records with a new ONA and Relative Risk Rating, completed at approximately 1230 hours on August 13, 2012. The Agency Administrators of the Forest Service and ODF encouraged the NIMO and Type II Incident Commanders, Steve Gage and Brian Watt to this transition. The ICs concurred as they did not feel the Type II IMT had the operational reach (additional branch directors and division supervisors) to succeed, even with the oversight of the NIMO (Gage, personal conversation, 2013).

Table 8. The following table summarizes key events as the fire progressed

Day	Date	Command	Key Events	Fire Size (ac.)
1	August 6	Initial Attack	Type 3 Team ordered	258
2	August 7	Extended Attack	Type 2 Team ordered	1,587
3	August 8	Type 3		3,212
4	August 9	Type 2		11,813
5	August 10	Type 2	NIMO Team ordered	17,277
6	August 11	Type 2		28,402
7	August 12	NIMO/Type 2	NIMO took command 6:00 p.m.	30,824
8	August 13	NIMO/Type 2	Type 1 Team ordered(enters California night shift of 12th early morning hours of the 13th)	45,484
9	August 14	NIMO/Type 2		74,568
10	August 15	Type 1		83,791
11	August 16	Type 1		92,614
12	August 17	Type 1		92,629
13	August 18	Type 1	Weather and fire behavior moderate	
14	August 19	Type 1	Evacuations lifted	
20	August 25	NIMO/Type 3		92,977
22	August 27	Type 3	Contained	92,977

Source: Barry Point Fire Fact Finding Review Report – January 9, 2013

Figure 6. A graphic illustration showing incident management team succession



VI. Values at Risk

Strategic objectives of the WFDSS and AASRA for this fire identify key values at risk which include firefighter and public safety, private property, residences, structures, businesses, timber, watershed, water bodies, riparian areas, range, soils, orchards, wildlife, fisheries, rare, threatened and endangered species and their habitats, and cultural and ceremonial resources (Archaeological). Values at risk also included by the AAs were active logging operations, public and private grazing, ranch lands (which included fences, corrals, and infrastructure), transmission lines, communication sites, recreational sites, the Ruby Pipeline and resource values such as wildlife habitat and aesthetics.

Additional values at risk include the private property owners' culmination of work and heritage on their affected land; planned sustainable income, generations of family legacy, and hopes and dreams of future legacies. All of these values were expressed with heartfelt emotion during interviews.

Ultimately, there were effects to many of these values as a result of the fire. However, no lives were lost, no serious injuries occurred, and no residences were significantly damaged.

VII. Incident Objectives

There were eighty-five written incident objectives and incident requirements, strategic objectives and management requirements, course of action items, management objectives and operational objectives in the WFDSS and AASRA. There were seven written decision rationales in the

WFDSS and AASRA. Twenty of the twenty-seven course of action items were quantifiable and actionable. The IAPs ICS-202 forms contained numerous objectives throughout the duration of the incident but only two IAPs contained quantifiable, actionable objectives. These objectives were in the IAPs on August 9 and 10. Some IAPs that lacked quantifiable, actionable control objectives on ICS-202 forms did include ICS-204s, with additional specific control operations on Division Assignment lists.

Table 9. Types and numbers of objectives written for the Barry Point fire

Document	Incident Objectives	Incident Requirement	Strategic Objective	Management Requirement	Course of Action	Management Objectives	Operational Objectives
WFDSS	8	1	18	19	27		
AASRA						5	7

Both the WFDSS and the AASRA contained seven decision rationales. The first AA decision was made on 8/7/2012, and is found in the WFDSS:

“Barry Point Strategic Risk Decision - August 7, 2012

1. Risk Assessment –

Values at risk are:

- *Heritage resources*
- *Timber value- marked sale with target volume*
- *Cattle- grazing allotments*
- *Private land and infrastructure*

Probabilities that values at risk will be harmed:

- *Low probability of impacts to heritage resources*
- *High probability of loss of timber values*
- *High probability of loss of livestock forage*
- *Low probability of loss of property (animals)*
- *Low probability of loss of private land infrastructure*

Consequences of harm:

- *Loss of historic context associated with heritage resources*
- *Loss of timber value and target*
- *Added expense of alternate livestock forage*
- *Financial impact to private landowners due to potential livestock and infrastructure losses*
- *Loss of recreational value*

Potential benefits:

- *Hazard fuels reduction*
- *Potential improvement to wildlife habitat and forage condition*

2. Risk Analysis –

- *Direct perimeter suppression – This option would have high firefighter exposure to injury and low probability of success towards containment.*

- This option involves exposure to rough terrain, significant firefighter exposure hours, large areas resistant to control.
- If used, injuries and high monetary cost may be expected.
- Modified Suppression Strategy – This option is preferred, as it minimizes firefighter exposure, protects values, and has cost commensurate to values at risk and terrain limitations with a high probability of success.
- Risk to firefighters being injured is minimized.
- Suppression action would be taken to contain fire within (Maximum Manageable Area) MMA, protecting: private land, structures, and timber value.
- Monitoring Strategy- This option was not selected. This strategy is not consistent with the current Land Resource Management Plan direction.

3. Risk Communication –

- Have notified community, permittees, adjoining land owners, and neighboring agency partners.

4. Risk Sharing – Engage appropriate authorities (appropriate line officers and political appointees as necessary) of the potential decision in a dialogue aimed at obtaining understanding, acceptance and support for the range of potential prospects and likely decision.

- Risk analysis has been discussed and communicated to local line managers and (State Office Regional Office) SORO staff. Currently the assessment has concurrence with those notified and they are in agreement with preferred prospect.
- Contact list currently resides with Forest Public Affair Department.

5. Risk Decision –

Decision: Modified Suppression Strategy

Findings:

Finding 1 – Direct Suppression Strategy would be ineffective and would create unsafe situations for firefighters to implement.

Finding 2 – Modified Suppression Strategy offers the best potential for success.

6. Risk Monitoring –

I will monitor the incident situation and revise risk assessment, analysis and decision as warranted by changing conditions. Significant changes likely will require updates to risk: assessment, analysis, sharing and communication, and decision.

1.6. Rationale

1.6.1. Content

We chose the decision based on the outcome of our Strategic Risk Assessment outlined in the Validation section.”

The most specific AA decision is found in the Risk Decision from the AASRA incorporated by reference in the WFDSS, dated 8/17/2012:

“Prospect 1 – Full Perimeter Control, Direct Attack (Primary) with Indirect Options. Prospect 1 uses an aggressive suppression strategy to try to contain the fire as quickly as possible and limit fire size to the smallest footprint possible. Use all opportunities for direct attack; where

this is not a safe option, we will use indirect attack to provide for firefighter safety or to improve the probability of success. This prospect assumes the availability of assigned resources and an estimated time to containment of nine days – August 25, 2012.”

Providing numerous objectives in several different decision support documents could contribute to confusion and a lack of clarity for AAs and IMTs. Objectives and decision rationales are shown in appendix A.

VIII. Participant Stories – Decisions and Actions That Affected Outcomes

The Albertson Property

The following is the account of events surrounding the fire on the Albertson property on August 11 to 13, 2012 compiled from interviews with Bill and John Albertson, Sheriff Phil McDonald, Barb Albertson, and Eric Knerr. The Albertsons received notification about the fire on August 8, 2012. See Appendix J to view a map showing the location of the Albertson property.

Tuesday, August 11, 2012

Bill, John, and Hank Albertson received word from friends or family that the fire was spreading into Yocum Valley. In response to this John loaded his rubber tired backhoe and some other equipment and he and his brothers headed to their property.

Incident Action Plans (IAPs) for August 11 indicate that there were resources assigned near the fire’s edge in Division E, as well as indirect efforts were being initiated in Division AA to “*prep FR 4017 from Dog Lake Road south to Division ZZ break*” by heavy equipment and a hand crew. Division E showed approximately 110 resources assigned, but no work assignment (control objective) was shown for Division E on the Division Assignment List (ICS-204).

John Albertson traveled south past Dog Lake when he encountered a dozer operator and stopped to talk with him. He was informed that firefighters were prepping the FR 3940 road to burn that night, which the Albertsons found alarming because that was upwards of 5 miles from the current fire edge and included their property in Yocum Valley. John got on the phone with Incident Commander (IC) Brian Watts and asked him about those plans, told him no one was working on FR 4017, and asked under what authority he was operating that would allow him to burn private property without notification. John Albertson reports IC Watts’ reply to be “*sorry, my bad*” regarding the lack of notification. Watts said that a representative from ODF would call him and try to work through his concerns. That phone call happened and John was assured that crews would make an effort to construct direct fireline.

As John brought his backhoe into the property in Yocum Valley he ran into members of the Prineville Interagency Hotshot Crew (IHC) preparing the road to burn out. A crew member told John they would be putting a fireline around his fence line to protect his property. He later discovered that they did not go around his fence; they cut it and went across his meadow, allowing his cows to get out. A crew member reportedly told him they would come back and repair the fence, but that never happened. The Albertsons herded the cows back in and repaired the fence themselves.

The night of August 11, fire crews prepared a line that was more direct to the FR 4017.

Eric Knerr from the Bly Ranger District (RD) stated that he served as Division Supervisor overseeing the work in the FR 4017 area. Eric spoke with Bill Albertson presumably on this day about keeping his fences intact and gates closed because he had cattle in the area. The IMT and Eric planned and coordinated the burnout operations that occurred in the area, and Knerr stated there were no independent actions.

The review team presumes that Eric was working in Division E, although his name never appeared as a Division Supervisor in the IAPs between August 10 and August 13, 2012.

Sunday, August 12, 2012

The Albertsons met with the Incident Commander and ODF personnel to discuss issues regarding the lack of communications that was occurring between the landowners and the incident managers. This resulted in the formation of the Landowner Liaison Group which was designed to facilitate better two-way information flow between the incident, Agency Administrators and landowners.

The IAP for August 12, 2012 shows work assignments (ICS-204) for both Divisions E and AA as: Prep “FR 3940 Rd for burnout.” According to the IAP, approximately 180 personnel were assigned to these two Divisions to execute this mission. Interviews suggest a number of these resources were working off of FR 4017, and that this area was considered the primary line from the Buckaroo Pass down into Yocum Valley.

Monday, August 13, 2012

Bill Albertson attended the morning briefing at the Incident Command Post (ICP), and spoke with the IC about the large burnouts. Bill reported he was told “*they won’t burn*”, which he understood to mean the crews would not burn the large area between FR 3940 and FR 4017. At around 0800, Bill drove toward his property on the FR 4017 and did not see any firefighting personnel. He picked up his brother Hank and they headed into Yocum Meadow Cabin (also known by some as the old Yocum Post Office). He and Hank discovered fire was threatening or on their property and worked with shovels to beat out flames for what he estimated to be two hours. During this time no firefighting personnel were seen. John Albertson showed up driving his backhoe and finished their work building line west of FR 4017. Eventually they saw two dozers and he told them the best place cut fireline. A helicopter and two air tankers were also working the area and they then could hear fire crews working off in the distance.

Bill and Hank started fighting spot fires and John checked on the progress of the Forest Service dozers. Roughly one-half hour later they heard the two dozers leave.

Sheriff Phil McDonald drove in on the Dog Lake Road and encountered Barb Albertson, Hank’s wife. She was concerned about Hank’s location and his welfare. Sheriff McDonald offered to drive down and check on him and his brothers at their property in Yocum Meadow. The Sheriff met firefighters at the road junction above the Yocum Cabin and they confirmed that the Albertson brothers were at the cabin. He then met up with the Albertsons in the meadow by the cabin.

While all parties were at the cabin location they observed a burnout being initiated and were concerned because: 1) they weren’t notified; and 2) they did not know where John was and were worried that he may be above the burnout operation. John was subsequently located and the Albertsons, along with the Sheriff, remained in the meadow north of the burnout. John indicated

they all felt somewhat threatened because a normal wind pattern (from south-southwest) would have pushed the fire toward them and blocked their egress. They stated, and evidence supports that winds at the time were out of the north and consequently the fire did not approach them.

At an unspecified point in time during the burnout operations the Landowner Liaison Group arrived at the Albertson's location. Bill and John asked pointed questions about the lack of notification of the on-going burnout operation. Reportedly, no response was provided by members of the Liaison group.

The Harvey and Morris Properties

The following is the account of events surrounding the fire on the Harvey and Morris properties between August 10 and August 13, 2012, compiled from interviews with Matt, Mike and Kathy Morris, and Virgil and Sharon Harvey, Brian Spivey (North East Oregon (NEO) Task Force Leader), and Diego Mediola (ZigZag Interagency Hotshot Crew (IHC) Superintendent).

The Harvey and Morris properties are located at the head of the Dry Creek drainage. The families own adjacent parcels with the Morris property (shown as the Bruce property on the plat map) being the furthest north and the Harvey adjoining the Morris property on the south (Appendix J).

Friday, August 10, 2012

The Morris Property

The Morris' received notice to evacuate at 0100 the morning of August 10, 2012. Later that morning, they drove up to the ridge to observe the fire location. It was still at a considerable distance from their lands. They returned home and finished preparations around their property to make it more defensible. By 1500 that afternoon they made the decision that Mike and Kathy Morris would evacuate their property and their son, Matt, would stay behind to do what he could to continue making their property more defensible. At that time they opened the gates to let the cattle out, and as Mike and Kathy drove out they witnessed a massive, boiling column of smoke over the ridge. They did not see any flames on the ridge or anywhere along FR 4020.

Saturday, August 11, 2012

Matt Morris recounted driving the 12 miles back out to their property between 0800 and 1000 hours along FR 4020, and states that he did not observe a single air or ground resource on the fire. By 0900 or 1000 that morning the fire had burned roughly 5-10 acres of their land. He described a low intensity backing fire and was disheartened to not see any firefighters as he felt it would have been easy for them to directly extinguish the fire edge. He called the IMT Information Officer (PIO) whom he had met with many times over the previous days and asked what was going on. Matt told the PIO that no firefighters were out there, and he requested that they send some resources to his property. He was told that the decision had already been made to let the fire burn to the Ruby Pipeline. Again, he was disheartened to hear this news, especially because he had not been notified that his property would likely burn. The PIO called back and said that an engine task force would be reassigned to their property.

Meanwhile Mike and Kathy Morris received a phone call around this same time from ODF informing them that the fire was predicted to run all the way to California that day and that they should get whatever they needed from their property and evacuate.

1130 Hours

The NEO Engine Task Force arrived at the Morris property. The fire could now be seen burning on the ridge to the west above FR 4020. The Task Force was comprised of six engines and had a work assignment of holding FR 4020 that day. They were directed to the Morris property late morning to assist with keeping the fire off of private property. The NEO Task Force Leader recalled that the ZigZag IHC was in that area as well, but did not interface much with the crew.

Sunday, August 12, 2012

The Harvey Property

Virgil Harvey returned to his property around daylight on August 12 and met two Forest Service fire personnel assessing structure protection needs. The firefighters assured him there would be lots of resources in the vicinity of his property that day. Virgil proceeded to get on his ATV to check his property. He walked up his fence line to the FR 4020 and found that the fire had crossed the road and was now backing unchecked down toward his property.

Virgil drove over to the Morris' where he found a group of fire people. He informed the NEO Task Force Leader of what he had found and three engines were sent to the area of concern. One of the firefighters then told him that aircraft over the area reports that there was only smoke and no fire below FR 4020. Virgil and fire personnel then, according to Virgil, disagreed and argued about whether the fire had crossed the road. The engines arrived at the location where Virgil had reported the slop over to have occurred and found approximately six spot fires below the road. The engine crews lined the spots and layed hose down to them and began mopping up.

Virgil recounted that around this time he asked fire personnel for a dozer to be brought in and he could show them an easy road to open and in 1 ½ hours his property could be secured. No dozer arrived. He asked for air support and none was provided. He took one of the fire people up to the road location to show them the fire and the skid trails going across the hillside. The firefighter agreed it would be easy to put some fireline in on those trails, but that action did not occur.

Approximately 1500 Hours

Virgil observed the main fire still backing down the hill toward his property. About this time he heard trees torching and a fire brand (large fire ember) ignited a fire lower on his property. He hiked over to the fire and started taking suppression action on it. The NEO Task Force Leader remembers helping Virgil, presumably with this spot on his property. Virgil and the Task Force Leader easily extinguished the spot fire and he told Virgil they could finish it up. At that time Virgil left. The Division Supervisor or NEO Task Force Leader called and asked ZigZag IHC if they would scout the fire edge to see where and if opportunities existed to take action to prevent the fire from further burning onto the Harvey property. The Superintendent of the crew went one way and he directed a crew member to go another to scout the fire perimeter.

1600 – 1700 Hours

About this time Virgil noticed the fire behavior associated with the main fire was “*going to hell.*” The ZigZag Superintendent also reported that the fire activity was picking up (spotting and a general increased fire behavior). He spoke to a crew member who reported the same fire activity. The crew Superintendent directed him to pull out and go back to the meadow at Harvey’s. About this same time the engine crews reported that the main fire was beginning to pick up in intensity and they started getting too many spot fires to extinguish them all. The engine crews also retreated down to the meadow at Virgil’s cabin.

The fire was burning on Virgil’s property and was visible east of the Morris property. Matt Morris reported a “*blow up*” in fire conditions with 200 foot tall flame lengths, and was worried about Virgil’s situation because of the fire behavior.

The ZigZag crew member who had been scouting the fire found Virgil on his equipment and asked him to leave with him for his own safety. Virgil was hesitant and the crew member “*really had to put effort into*” getting him to leave. This caused a delay in getting out of the path of the fire and the crew member and Virgil ran to the safety zone.

1700 – 1800 Hours

Matt Morris called his parents to report that they were leaving (Matt and the NEO Task Force), then called back an hour later saying they couldn’t leave because their egress had been cut off by fire. Virgil and the crew member remained in the meadow on Virgil’s property with the engine crews.

The NEO engines were at this time split between Harvey’s and Morris’; with the engines at Harvey’s in the meadow with bare dirt. In the words of the NEO Task Force Leader, they “*were good*” (in a safe location). The engines at Morris’ property were also in a large meadow that was pre-identified as a safety zone. While both positions were considered safe, it was decided to bring everyone together at the Morris safety zone. Matt Morris guided the engines by way of an old unused road from Harvey’s to the Morris safety zone. The NEO task force, ZigZag IHC, fire line overhead and Matt Morris were now all grouped in the big meadow safety zone.

Mike and Kathy Morris, after getting the phone call from Matt, proceeded to the ICP and were met by the PIO. She facilitated getting radio communication with the firefighters at the Morris property who said they felt safe sitting out current fire activity at the Morris’s meadow.

2200 Hours

Matt called his parents to say that he and the day shift resources were all safe on the pavement on the FR 4020 and he was headed back into town.

2300 – 2330 Hours

The ZigZag IHC, after the fire front passed and as fire conditions moderated, burned out around the structures in order to secure them. The presence of thick forest near the structures drove the decision to burn out this area. This action was in accordance with what they were instructed. The

crew Superintendent said the objective was to burn with a lower intensity to minimize mortality. The crew spent all night burning and he believed they achieved 95% of their objective.

Monday, August 13 to Thursday, August 16, 2012

The trees along Harvey's property line torched and threw spots onto the property for the next four days. Virgil spent this time mopping up the fire edge on his property and suppressing flare-ups. The Morris' purchase a firefighting pump and hose and mop up the fire edge on their property for days after the main front had passed. It is their belief that there was still a significant threat and they were not getting the help they needed from the IMT.

Sunday, August 19, 2012

On or around August 19, 2012, the Morris's reported, an ODF crew boss came by and stated that he was directed not to mop up private property in the interior of the fire or along FR 4020. However, the crew boss went against these orders and stayed and helped secure the Morris property and eventually got permission for this assignment from "*higher ups in ODF.*" The Morris' thought his action went against the direction of the "*USFS commanders.*"

IX. Summary and Lessons Learned

Based on direction in the delegation of authority letter dated February 28, 2013 and using "*Recommendations a-d*", page 21 of the *Barry Point Fire Fact Finding Review Report* (Shepard, 2013), a summary of the team's findings and, where appropriate, lessons learned are provided below. While all firefighting activities and incident management decisions on a 92,977 acre wildfire can never be fully understood by this review team, the lessons learned are offered as a mechanism to improve fire operations and stakeholder relations on future fires on the FWF and ODF.

Barry Point Fire Fact Finding Review Report, Recommendation "a":

Work with ODF to clarify the delegations of authority, joint operations, and supervision and evaluation of IMT's on fires that cross jurisdictions.

Summary

The delegations of authority to Incident Commanders Hunter, Watts and Gage were generic in nature and contained similar direction even as the fire had evolved into a more complex event. The delegations did not provide direction or a trigger as to when ODF would enter into a Unified Command structure to assist in supporting their organizational mission of protecting private lands.

ODF delegated authority to the IMTs for action on their direct protection areas. While an Agency Representative from ODF was provided to the IMTs during the incident, shared (unified) command did not occur.

Shared decision making, shared incident management risk and shared priority setting is often enhanced through unified command. By acting as an Agency Representative on a fire burning on multiple jurisdictions, ODF's issues, concerns and management perspective were not fully

incorporated into measurable actions. The lack of unified command is viewed to have impacted the efficient utilization of fire resources. Without direct participation in command decisions, ODF minimized their ability to ensure that federal fire managers were undertaking appropriate actions on ODF direct protection lands.

Based on records and interviews, the Forest and ODF were working cooperatively in the evaluation of the execution of incident objectives and the assigned command structure. IMT transitions were discussed between agencies and ODF was a signatory on all delegations of authority. Formal evaluations of the IMTs at the close of their assignment were conducted by AAs from both the FWF and ODF.

Interviews indicated that fire operations objectives between the Forest and ODF were not consistent. While both agencies approved delegations with objectives to the IMT, several interviews indicated that during the Barry Point fire conflicting incident management emphasis was being given the IMT. It was stated in multiple interviews that the FWF saw a need to use indirect firefighting tactics well ahead of the main fire, in particular once the fire turned south and was burning towards California. These same individuals indicated that during the same time period ODF was promoting a direct attack strategy in attempts to minimize the acres of private lands burned during the course of the fire.

The ODF's strategic emphasis, as noted in the delegations of authority, state that the principle objective as *"minimize acreage burned and damage to private property and improvements."*

Fire managers stated that these conflicting strategies did not support the efficient utilization of all fire resources and that fireline actions were often directed towards tactics which if successful, would have minimized acres burned, but which in reality had little potential for success.

A review of written incident objectives, section VII above, showed there were very few quantifiable, actionable objectives developed and used during the management of the incident. While it is acknowledged that IAP objectives can become obsolete prior to being implemented when a fire is rapidly spreading, this does not eliminate the need to establish quantifiable, actionable objectives in each IAP.

Lessons Learned

1. Strongly consider the use of unified command on multi-jurisdictional fires. The unified command structure increases the potential that all partners have an equal say in setting incident priorities, managing fire operations and redeeming the full jurisdictional responsibilities of their agencies. Unified command assists in assuring that a single strategic message is being provided to firefighters, agency managers and involved stakeholders. Unified command also shares the risk of incident management between the jurisdictional agencies. At this point in time, the Barry Point Fire is viewed by stakeholders as a FWF fire. Had the agencies been in unified command, ODF would have likely been viewed as a larger player in the outcome of the fire and the impacts to affected parties.
2. Ensure that pre-fire season coordination meetings are held between the FWF and ODF. An agenda item should include a discussion which creates a greater understanding of the mission of each agency and overriding fire management policies. Use of the Barry Point Fire is recommended as a learning mechanism for addressing any strategic disconnect between agencies.

3. Ensure that AAs and ICs provide oversight to the incident planning process. They should ensure that quantifiable and actionable incident objectives, based on strategic priorities, are provided to firefighting personnel in order to support coordinated, efficient and safe fire ground operations. AAs and IMTs need to hold subordinate employees and firefighting resources accountable for meeting the leaders' intent and incident objectives.

Barry Point Fire Fact Finding Review Report, Recommendation "b":

Ensure that the Forest Service addresses how local knowledge of terrain and environmental conditions as well as community and landowner communications can best be addressed by IMTs at the time they are ordered and throughout the duration of the fire.

Summary

The Barry Point fire was a rapidly spreading incident affecting Forest Service Regions 5 and 6, ODF, CAL FIRE, private timber lands, privately owned lands and range allotments on federal lands. Local incident managers (Knerr, Hunter, and Wood) were assigned during the time period August 6 to August 10 with out of area Incident Management Teams in command of the incident beginning August 11.

A concern was expressed in interviews, and a perception persists among affected stakeholders, that the IMTs did not seek or utilize intelligence provided by the stakeholders regarding potential access, control options and values at risk. Interviews indicate that local employees were not allowed to fully engage with the permittees and landowners and that opportunities for sharing information and gathering intelligence were missed.

All claims made during interview process cannot be fully corroborated, but this theme was commonly expressed.

Lessons Learned

1. Ensure that when entering into Unified Command the elements of the example Delegation of Authority for multijurisdictional fires noted in the FWF FMP are used. This example Delegation of Authority includes a list of agency contacts to be filled that include Agency Representatives, Resource Advisors, Public Information Officers, and Landowner Representatives as well as the FMP requirement for the FWF to directly contact landowners threatened by fire if a protecting agency is not established for said land.

2. Institutionalize the use of a local knowledge expert to support out of area IMTs. Out of areas IMTs are often not familiar with local factors that can provide the difference between success and failure of firefighting actions. It is difficult to expect that all IMTs which manage incidents on the FWF will understand the complexities of the fire management problem on this unit. This is particularly true of rapidly evolving incidents where actions are required ahead of the main fire while direct protection actions are also occurring. It is recommended that the Forest and/or ODF incorporate highly skilled operational personnel with any incoming IMT until a level of familiarity with the fire ground is achieved. This position should be defined within the Delegation of Authority to the incoming IC, with the AA's expectation of this position also defined.

3. Continue the use of the Landowner Liaison Team. The Landowner Liaison Group (LLG) was viewed by most agency personnel as an effective way to share information with

stakeholders. However, to have been fully successful the LLG needed to be organized much earlier in the incident. By the time they formed, many of the issues that continue to linger for the stakeholders had already developed. In addition, based on interviews, the LLG operated outside of the IMT structure. It is recommended that the LLG is fully integrated with the IMT Liaison Officer on future incidents.

It also appears that the LLG spent most of their time seeking out stakeholders in the field. This was both time consuming and lacked efficiency. A mechanism needs to be established where stakeholders come to the incident base to interact with LLG representatives. This structural change in the operations of the LLG will ensure better coordination with incident managers and create greater efficiencies for the group.

4. Ensure that Type I and II IMTs appropriately staff the Liaison Officer function when assigned to incidents on the Fremont-Winema. Interviews and written documentation from the Type II IMT indicates that the Liaison function was not appropriately staffed for this incident. The lack of staffing exasperated the poor communications with stakeholders during the incident. The Agency Administer should strongly consider requiring the IMT to staff the Liaison function on large fires. This could become part of the Delegation of Authority issued to the IMTs or could become a standard business practice implemented at the Geographic Area Coordination Center (GACC) level.

Barry Point Fire Fact Finding Review Report, Recommendation “c”:

Establish procedure to ensure ongoing direct communications with individual landowners and permittees relative to future fire threats to their property and grazing allotments and suppression actions to mitigate those threats.

Summary

Interviews indicated that there is not a standing “*Fire Stakeholder Group*” on this portion of the forest. Attempts have been previously made to establish such a working group. The reasons this has not occurred rests on several factors:

- The relative small number of large wildfires that affect this specific geographic area.
- The independent nature of the local landowners and permittees.
- Frequent turnover in staff at both the district and forest level due to the remoteness and rural nature of the duty station.

A functioning model for the development of a *Fire Stakeholder Group* exists on the forest in the form of the Lakeview Stewardship Group. This group is viewed as being highly functional and has active involvement from agency officials, private landowners, contractors and permit holders.

Lessons Learned

1. Work on creating a Fire Stakeholders Working Group with ODF based on the model of the Lakeview Stewardship Group. Present this to the stakeholders as a mechanism to bring their fire management related concerns to the table and a forum where their input into future fire management actions can be considered. It would be valuable to establish a lead for the stakeholders group who could serve as an initial point of contact on future fires.

2. Consider using permit issuance as a mechanism to involve permittees in information sharing regarding future fires. The signing of annual permits offers a formal face-to-face setting for the agency and the permittee to interact concerning not only issuance of the permit, but auxiliary topics that may affect the permit area and/or the permittee. These meetings could be used as an opportunity to open a dialog with the permittee regarding fire management activities, preseason fire potential outlooks, incident management education, Firewise Principles, the incident command system, and other fire management practices which could impact the permit holder. This opportunity also allows the permittee to share information with the agency regarding values at risk and fire protection needs and opportunities within the scope of their individual permit.

Barry Point Fire Fact Finding Review Report, Recommendation “d”:

Conduct a further review of the events that occurred when the fire burned across the Morris and Harvey properties and the Albertson’s property; and evaluate the risk to landowners and firefighters as the events occurred.

Summary

While the fire’s growth between August 8 and August 16, 2012 was a challenge to keep up with, it was also foreseeable that the fire could reach and impact the Albertson, Harvey, and Morris properties. While much of this report is focused on three specific properties, it is important to note the good work done on the north and west sides of the fire in protecting the private properties there. The competition for resources and the emphasis placed on protecting private property and minimizing acreage burned on a fire where direct attack was generally not safe or effective contributed to the IMT not being able to “get out ahead” of this fire in terms of their planning, strategy and tactics as it progressed steadily if not rapidly to the south.

These three property owners lay in the path of the fire as the team looked for locations where they might be operationally successful. Aside from some of the main Forest roads (FR 3940, FR 4017, and the FR 4020), the only good option was the large cleared area running along the Ruby Pipeline. This information does not appear to ever have been formally presented to the above mentioned property owners in the context of the overall control objectives of the fire, nor does it appear they had the opportunity to offer input into the planning and strategy effort. These property owners also assert their local knowledge was never tapped, they were not consistently provided with information or timely notification, other than what they received from IAPs they occasionally got from line personnel. While this was not always the case, the property owners commented that when they did engage with fire personnel they didn’t always appear to listen to them, and were patronizing in their responses. The vagueness in the division assignments and objectives made it difficult for those not directly involved in the operation to know who was where and what they were doing.

These property owners in general did not understand why it was necessary to burn on their lands, and felt that timely direct attack (early morning) and/or better location of control lines would have reduced impacts to their property. All three landowners commented on the absence of fire personnel during the morning hours when the fire behavior was calmer. In fact, the shift change issue (the night shift personnel leaving before the day shift arrived and vice versa) seems to be acknowledged as a legitimate problem by both agency fire managers and these private landowners.

Generally these landowners expressed that having resources specifically assigned to protecting their property, to interact with them to provide information, and to utilize their local knowledge would have been very beneficial.

Finally, on the matter of whether the events associated with the fire on these private lands posed a risk to the landowners or firefighters, it's best to look at each group separately and then together since the actions of each potentially affected the other.

Firefighters – the review team did not do an in depth survey of all the firefighters that were involved, but instead looked at the operation as a whole. It is our opinion that LCES was in place for the firefighting operations that took place on the Albertson, Harvey and Morris properties. The operation on the Albertson property, insofar as the firefighters are concerned, was relatively routine, and was conducted in a reasonable manner. The operation on the Harvey Morris property was certainly less routine given the extreme fire behavior forcing the retreat of the resources deployed to protect the private property. By all indications, their actions had been well thought out and in consultation with the Line Safety Officer who was present during the time when they had to pull off the line. The resources had clearly identified their escape routes and safety zones, the NEO Task Force Leader had a lookout position where he could see the area his engines were working in and they had communication that provided for an orderly retreat back to the safe zones. Whereas there were no apparent risk issues with firefighters on the Albertson property, firefighters at the Harvey/Morris properties had a different experience. The mission of protecting these properties in light of the rapidly developing fire behavior created narrower margins for safety, but the pre-planning and protocols appeared to all be in place, and as such, this team feels they undertook reasonable risk for the mission assigned.

Landowners – Although the landowners were not strangers to fighting fire and they knew the terrain well, the landowners involved did not have the full benefit of being informed on the strategy and tactics being employed, they did not have communication with everyone around them, perhaps most importantly a lookout. It's not entirely clear if they knew exactly what to do if fire threatened their location and they did not have adequate PPE by agency standards. The other factor affecting the landowners was their mindset in protecting their own property presumably predisposed them to a higher risk threshold.

Landowners and firefighters – When considered independently, the firefighter's and landowner's actions do not seem unreasonably risky. However, when looked at collectively it's clear to see that their interaction along with the lack of coordination and communication introduced risk factors that are not acceptable. For example, it was the unannounced burnout that caught the Albertsons unaware at a time when they didn't know where their brother was. The firefighters, waiting for the right conditions to start burning, would not have begun had they known that someone was possibly above where they intended to burn.

At another location, the ZigZag IHC member would have presumably had a more orderly retreat back to the safe area had he not spent the time trying to convince the landowner he needed to leave. The result of this was likely very beneficial for the landowner, yet in reality only served to narrow the safety margin. Whereas, it might be inferred that landowners that choose to stay and engage the fire on their property do so at their own risk, the reality often plays out otherwise.

The uncoordinated work of the firefighters and land owners groups created additional hazards that need to be accounted for, and it appears to the review team that they were not. This clearly was not done to the extent necessary and as such created unnecessary risk to the landowners, with regard to the Albertson property, and to the firefighter, with regard to the Harvey property.

Lessons Learned

1. Ensure that IMTs maintain a 48 to 72 hour strategic and operational planning horizon while also providing for adequate staffing in the Liaison function so that potentially affected property owners can be notified and brought into the IMT's strategic planning process and information networks.

2. Instill a customer service ethic into all levels of the fire organization that provides for recognition of landowner courtesies:

- Engage property owners with the understanding that you may be the only source of information sharing that he/she has.
- Stakeholders may very well possess local knowledge of the area that will be beneficial to the fire operation. Through the use of clear leaders intent allow fire personnel to make necessary operational adjustments based on new or better information. This information may be provided through non-traditional sources such as landowners or other key local stakeholders.
- When it is necessary to cut fences, build line, and burn on private property, let the affected stakeholders know what is planned and why (in advance preferably). Conduct these operations as if you were doing it on your own land.

3. IMT overhead need to provide strict operational oversight to ensure work is being performed in accordance with their expectations. If issues are apparent with timing of crews in and out of camp, that needs to be addressed expediently, especially if it results in leaving portions of the fire unstaffed for extended periods of time.

4. Work assignments and resource tracking on the ICS-204s (Division Assignment List) needs to be more accurate: In researching the events as documented in the 204s, the work assignment for Division E was missing entirely on August 11; the Division Supervisor assigned during the burning operation on the Albertsons was never listed. The ZigZag IHC is shown on the night IAP for August 11, and the day IAP for August 12. The crew superintendent said he spent the night of August 12 burning around the Morris structures (which is documented with online photos), and they were shown as working again on the day IAP for August 13. We are not sure if this is a work/rest issue, an inaccuracy in resource tracking, or both, but the lesson presented here is the importance of accuracy in the IAPs so that these potential issues can be detected and addressed in a timely manner.

5. The recommendation of this review team is that landowners who are present on the fire ground must be encouraged to leave. Landowners who choose to stay and engage the fire on their property need to coordinate with the IMTs Liaison Officer before the fire reaches their property in order to receive safety information and to assure their locations are known by fireline supervisors.

Other Recommendations/Lessons Learned Based on Interviews and Document Reviews

Beyond addressing recommendation “a-d” of the *Barry Point Fire Fact Finding Report* as presented above, the following are additional recommendations and/or lessons learned which are considered germane to the Barry Point Fire.

1. Establish roles for Ranger District and Supervisor’s Office staff during large fire events. Defined responsibilities could decrease the amount of freelance and duplicate efforts that was occurring on the incident. Defined roles provide employees with clear expectations before the fire starts and will increase efficiencies during the early phases of an evolving incident.
2. Train Ranger District and Supervisor’s Office staff on how they appropriately interact with the Agency Administrator and the IMT. Knowledge of expectations and organizational operations will help limit the number of counterproductive interactions on fires in the future, as a greater working knowledge of ICS will help to ensure that necessary and important local input to incident management is directed through the appropriate chain of command.
3. Strongly consider the use of Type I IMTs when the operational reach of a Type II IMT is exceeded. The use of the NIMO team to augment the incident management capabilities of the IMT2 assigned to the Barry Point Fire was not considered successful by several involved parties. The lack of knowledge of the capabilities of personnel assigned to the Type II team hampered the ability of the NIMO Operations Section Chief to create a better operational outcome.

On rapidly escalating fires, a full Type I IMT brings the organizational structure and enhanced operational capacity that is not achievable by integrating NIMO oversight with an existing Type II IMT organization.

X. Appendices

- A. Barry Point Objectives, Course of Action and Decision Rationale**
- B. First Three Days Fire Fighting Action Chronology – September 11, 2013**
- C. IMT Type 3 – Narrative**
- D. IMT Type 2 (Oregon Team 4), and NIMO, (Portland) – After Action Review**
- E. IMT Type 1 (National Incident Management Team 2) – After Action Review**
- F. Barry Point Fire Fact Finding Review Report – January 9, 2012**
- G. WFDSS Incident History List for Barry Point**
- H. Excerpts from the Fremont – Winema National Forest and Lakeview District Bureau of Land Management, Fire Management Plan – 2011**
- I. Fire Behavior Maps**
- J. Property Ownership Map**
- K. List of Interviewed Individuals**
- L. Private Property Owner’s Interview Notes**