

METOLIUS RESEARCH NATURAL AREA  
UNIT 61  
ESCAPED PRESCRIBED FIRE REVIEW

December 3, 2008

Deschutes National Forest  
Sisters Ranger District  
Sisters, Oregon

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## EXECUTIVE SUMMARY

On Thursday, September 25, 2008, a U.S. Forest Service prescribed fire near Camp Sherman, Oregon, escaped, resulting in 1840 acres of additional National Forest land being burned.

The Metolius Research Natural Area (RNA) Burn Unit 61 was planned to treat 30 acres of natural fuels on National Forest Lands. Its escape and the resulting Wizard wildfire caused 1840 acres of National Forest land to burn. No private lands and no structures were damaged. No injuries occurred. The initial phases of the wildfire were managed by the Central Oregon Type 3 Incident Management Team (Incident Commander Wells) then transferred to the Oregon/California Interagency Incident Management Team (Incident Commander Paul).

The Deschutes National Forest, Forest Supervisor convened a team of five people to conduct a review into the key causal factors for this escaped prescribed fire. The Review Team interviewed personnel associated with the implementation of the burn, and reviewed and examined written documentation of events and actions leading up to and immediately following the escape.

The Review Team found that the ignition phases of the prescribed fire were conducted successfully, but the prescribed fire escaped sometime between the night of September 24 and 12:25 September 25, 2008 during the patrol phase. The principle causal factor of the escape stemmed from a lack of patrolling of the unit the evening or next morning following ignition. No agency policy was violated, however the prescribed burn organization failed to implement required operational procedures.

A Prescribed Fire Burn Plan was prepared, approved and met policy requirements, but did not sufficiently address the mop up and patrol phase of the prescribed fire. There was no documentation or formal plan developed (which was supported by interviews) for mop up and patrol the following day. These are procedures which normally occur in the periods following ignition of a prescribed fire.

## BACKGROUND

The Sisters Ranger District is one of three Ranger Districts on the Deschutes National Forest in central Oregon.

On September 25, 2008 a U.S. Forest Service prescribed burn in Sisters, Oregon escaped; resulting in 1840 acres of National Forest land burned. The project had been initially ignited on September 24, 2008. The escaped fire initially burned with moderate intensity, but with rates of spread that outpaced the initial suppression efforts. The escaped fire mainly consumed grass, brush and small seedling and sapling sized trees, and a small portion of larger overstory trees.

The escape was initially managed as a Type 3 Incident, then transferred and managed as a Type 2 Incident (as recommended by a complexity analysis) and was established as the Wizard Fire, Incident OR-DEF-1056. Incident Objectives were: 1) SAFETY-Provide for firefighter and public safety at all times. Consideration shall be given for smoke impacts to traffic on major highways and roadways, 2) ECONOMIC-Prevent loss to private and public structures along the Metolius River. Keep fire off private lands to the east of Green Ridge. Protect Green Ridge fire lookout tower, 3) ENVIRONMENTAL-Minimize suppression impacts to Metolius River Wild and Scenic Area, TES species, cultural and archeological resources. Coordinate with the local resource advisor for specific, including maps. No

dozer use in the Metolius RNA. Contact Resource advisor prior to initiating suppression tactics within the RNA 4) SOCIAL-Provide timely and accurate information to public, internal and external partners.

## Background on the Metolius Unit 61 Prescribed Burn:

In 1928, the Deschutes National Forest recommended the protection of 640 acres of forest in the Metolius Basin as a “yellow pine museum”. Three years later, in 1931, the Metolius Research Natural Area (RNA) was established, protecting 1,400 acres of old growth pine forest for scientific study. In 1987, in an initial study of fire ecology in the RNA, scientists estimated the forests in the Metolius RNA burned at low intensities on a natural fire return interval of every 4-11 years before fire suppression began in the early 1900’s. The 1988 Metolius RNA Management Plan recognized the role of fire in maintaining natural succession in the RNA and began permitting prescribed fire as a management tool to protect, preserve, and restore the vegetation type for which the RNA was originally established. The plan divided the RNA into ‘cells’. In 1997, a Study Plan put the cells on a fire rotation to assess effects of different rotations and seasons of fire on tree biology, plant species diversity, tree distribution and other ecological factors.

### Long Term Objectives:

- Aid natural habitat restoration through fire regime maintenance.
- Allow the reintroduction and regeneration of native vegetation and habitat while recycling soil nutrients.
- Reduce the risk of catastrophic wildfire through the use of moderate intensity natural fire
- Provide for research opportunities to better comprehend management strategies associated with hazard fuel reduction and fire’s natural role in the ecosystem.



Photo 1: Metolius RNA Unit 61

### Metolius RNA Unit 61 Site Description:

(This describes the unit fuel conditions prior to the prescribed fire)

Understory fuels are comprised of long needle litter, short grasses, and bitterbrush. The stand is mixed-age with dead trees intermittently scattered throughout the unit. Ground fuels are relatively homogenous throughout the unit; they are made up of primarily of needle cast with inter-dispersed grasses and bracken fern. Bitterbrush occupies 10-20% of the unit with an average height of 2-3 feet. This was a fourth entry underburn. The unit inclines slightly from west to east as it reaches the base of Green Ridge. The unit has holding firelines around all perimeters. The 14 road provides a significant contingency holding line if fire progresses west. Elevation is 3200ft. in flat terrain (**See Photo 1**).



**Photo 4: Jackpot fuel**

**Fire Behavior (day of ignition):**

Fire behavior remained low to moderate through the burn period. Primary consumption occurred in the 1 hour (small diameter) fuels with active ground fire. Good consumption of needle cast and grasses was observed with 1-2 foot flame lengths on average. Scorch on larger overstory was minimal at 3-6 feet. Some isolated single tree torching was observed in areas with denser thickets of understory reproduction and accumulated jackpot fuels (**See Photo 4**). Some isolated snags were observed burning which produced some holding concerns. By 1600hrs, cloud cover, cooling temperatures, and rising relative humidities minimized fire behavior to creeping and smoldering with open flames being isolated to larger stumps and logs.

Prescribed fire objectives were achieved for the Metolius Basin RNA #61. The prescribed fire closely mimicked natural occurring ground fire in open ponderosa pine. Good consumption of needle cast and partial consumption of larger fuels and logs was observed. Some larger snags had to be felled due to proximity to holding lines. As is normal operating procedure, three full "grids" (walk-through by personnel) occurred the day of ignition, outside the perimeter, in the unburned fuels to check for any ember fall from fore-mentioned snags. These snags may have been in the vicinity of where the prescribed burn left the containment lines (NE corner of the burn block).

## BASIS OF REVIEW

The Deschutes National Forest, Forest Supervisor convened a team of five people to conduct a review into the key causal factors for this escaped prescribed fire. The Review Team interviewed personnel associated with the implementation of the burn, and reviewed written documentation of events and actions leading up to and immediately following the escape.

Per Forest Service Manual Direction 5140.42 Forest Supervisors are responsible for: “Conducting reviews of all prescribed fires that are converted to wildfire status”, and for “Reporting the review results to the Regional Forester within 60 days after the prescribed fire was declared a wildfire”.

Per the Interagency Prescribed Fire Planning and Implementation Procedures Reference guide (July 2008), “The goal of the escaped prescribed fire review process is to guide future program actions by minimizing future resource damage and/or preventing future escapes from occurring by gathering knowledge and insight for incorporation into future resource management and prescribed fire planning”.

## PURPOSE OF REVIEW

- Determine if the Prescribed Fire Plan was adequate for the project and complied with policy and guidance related to prescribed fire planning and implementation.
- Determine if the prescription, actions, and procedures set forth in the Prescribed Fire Plan were followed.
- Describe and document factual information pertaining to the review.
- Determine if overall policy, guidance, and procedures relating to prescribed fire operations are adequate
- Determine the level of awareness and the understanding of the personnel involved, in regard to procedures and guidance.

## PROCESS

The Review Team spent September 30, 2008, interviewing key personnel, researching, examining decision-making processes, and reviewing materials relevant to the Metolius Unit 61 Prescribed Fire. A subsequent interview was conducted on October 10, 2008 with the Division Fire Management Officer upon his return from an Incident Management Team assignment off-Forest.

The review process included review or analysis of:

- The Prescribed Fire Burn Plan.
- Weather and on-site conditions leading up to the escape.
- The qualifications of personnel involved.
- The actions leading up to the escaped fire, for consistency with the Prescribed Fire Burn Plan, including causal agents contributing to the escaped fire.
- Interviews with participants of the prescribed fire.

### Review Team

Mary Farnsworth	Team Leader	Deputy Forest Supervisor	Deschutes NF
Laura Mayer	Team Member	R6 Fuels Program Specialist	State Office Regional Office
Karen Curtiss	Team Member	Deputy Fire Staff Officer	Central Oregon Fire Management Services West
Shaun Larson	Team Member	Acting Asst Fire Staff Officer	Central Oregon Fire Management Services East
Tom Mountz	Team Member	Forest Safety Officer	Deschutes and Ochoco NF

## FINDINGS

The emphasis of the Review Team's findings is based on the following seven assigned elements: (Interagency Standards for Fire and Fire Aviation Operations (Red Book). Chapter 19)

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

In preparing this report, the Team focused on findings that were considered significant contributing factors to the escape of the prescribed fire.

The information under each element of the review is organized leading with a finding, followed by supporting discussion and background information. Recommendations are summarized in a separate section that follows the element reviews.

The report of findings also addresses key factors beyond the seven assigned elements to provide additional insight in areas recommended for future project improvements.



## Chronology of Events

*Note: sequences in table format are transcribed from Dispatch Logs generated at COIDC unless identified otherwise.*

### Wednesday, September 24, 2008

TIME	MESSAGE/RECORD
12:04 pm	Started Test Fire
12:09 pm	Test Fire Successful, Continuing Burn
1:13 pm	Completed Ignition Operation
1:13-6:06 pm	Holding Operation in progress on site
6:06 pm	Final Resources Returning to Sisters
6:07 pm	On-scene report: Fire looks good, holding inside line, slight precipitation on Unit, 100% lined
7:01 pm	All Resources At Sisters, Out of Service

### Thursday, September 25, 2008

TIME	MESSAGE/RECORD
9:30 am	Initial Attack Resources report for Duty at Sisters Ranger Station; Resources informed of day's plan for next ignitions on Highway 20 Projects (Interview)
10:30 am	Resources departed for Highway 20, Unit 25 Project for briefing (Interview)
11:30 am	Discovered that no one had checked Metolius Unit 61. Sent Engine to check Unit (Interview)
11:45 am	Black Butte Lookout reported more smoke than expected in Unit 61 (Interview)
12:25 am	Engine on scene Metolius Unit 61. About 5-10 ac slopover on N end; Request 2 Eng and 5-10 person crew
12:29 am	Additional Resources arrive
12:30 am	Request Helicopter w/bucket (None available) Launch Air Attack
12:32-12:33 pm	Additional resources arrive
12:34 pm	Incident Commander Type 4: 10-15 acres
12:37 pm	Get Type 2 or Type 3 Helicopter. Other Air Resources?? Answer: Smokejumpers and Heavy Air tanker
12:46 pm	Arrival two additional engines
12:49 pm	Lookout Report: Winds change to SW; Torching on S side of fire
12:52 pm	Request Dozer Op and 1Airtanker
12:52 pm	Incident Commander Type 3: Determined to be wildfire

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

There were no unplanned weather events that contributed to this escaped fire. During mid-September, concerns normally turn to the human-caused fire element as a contributing factor to ignitions and suppression attention, with the onset of hunting, fall recreation and mushroom gathering activities.

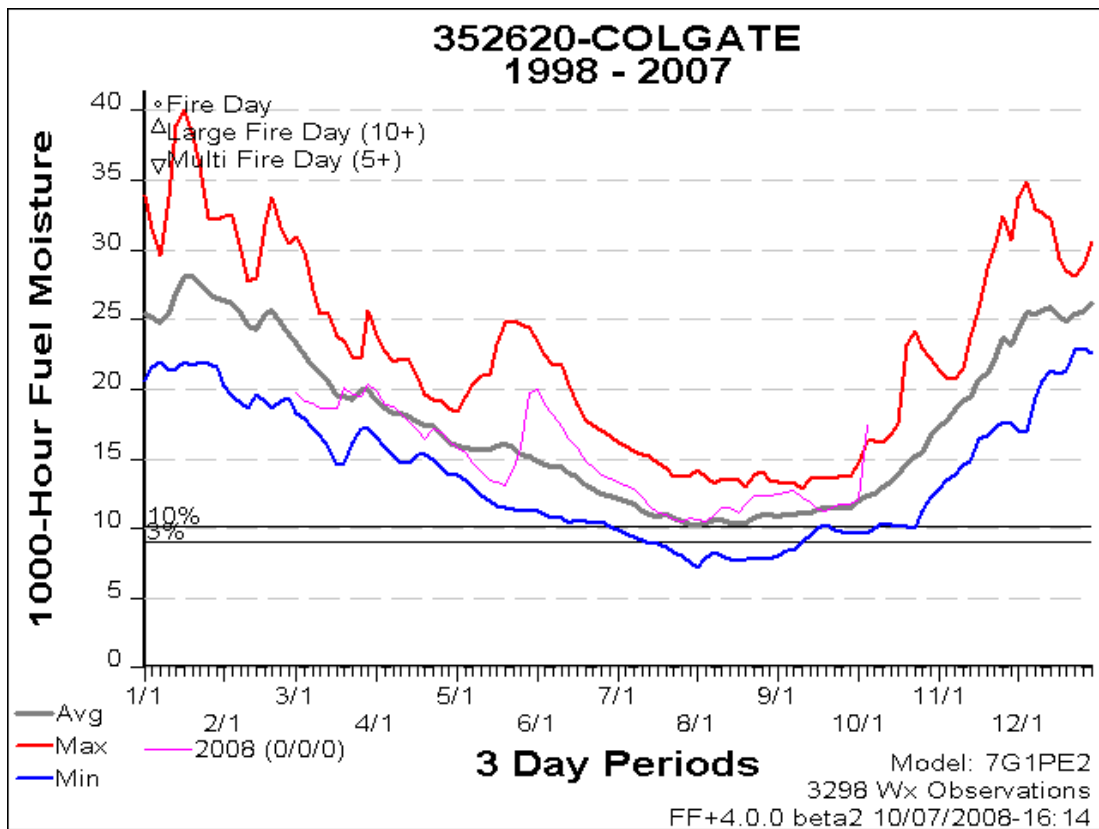
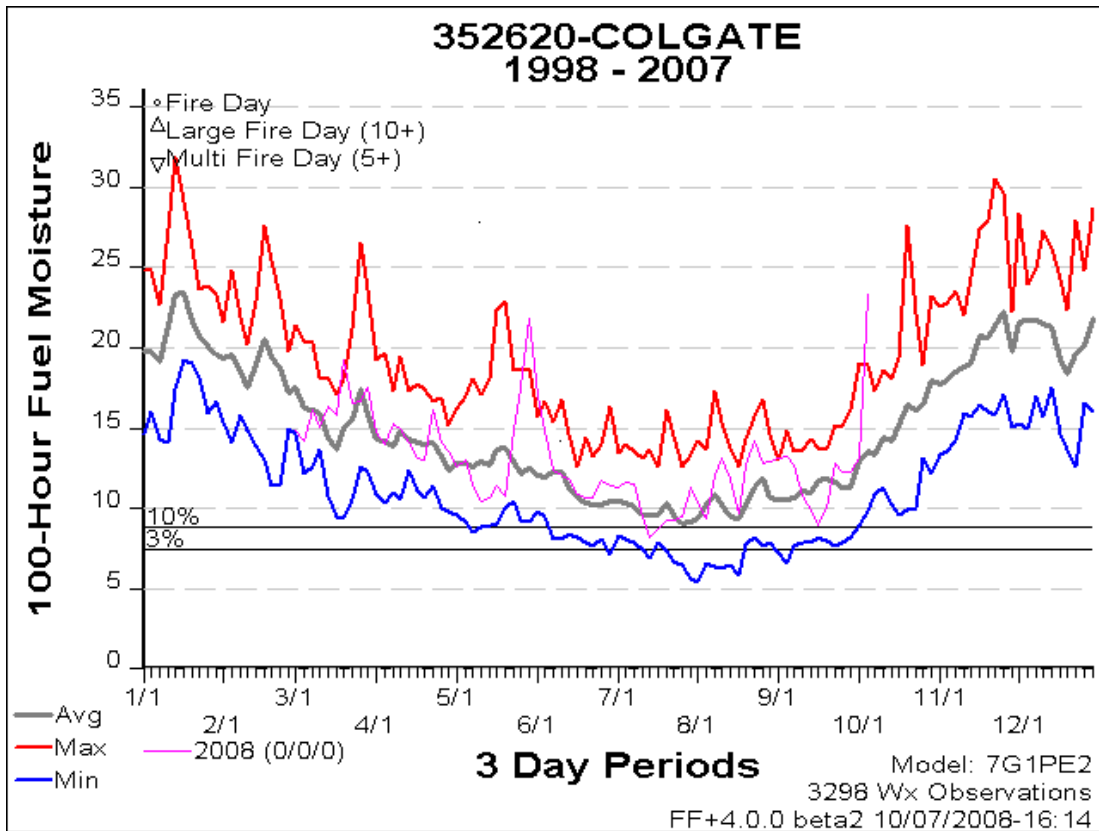
Local fire season historically declines in mid to late September, with season-ending precipitation occurring roughly 50% of the time by mid-October. The 2008 fire season was not significant locally, with the exception of two large lightning episodes in August which resulted in a few larger fires. The Deschutes had numerous Type 3/4/5 incidents, ---an average season by most accounts.

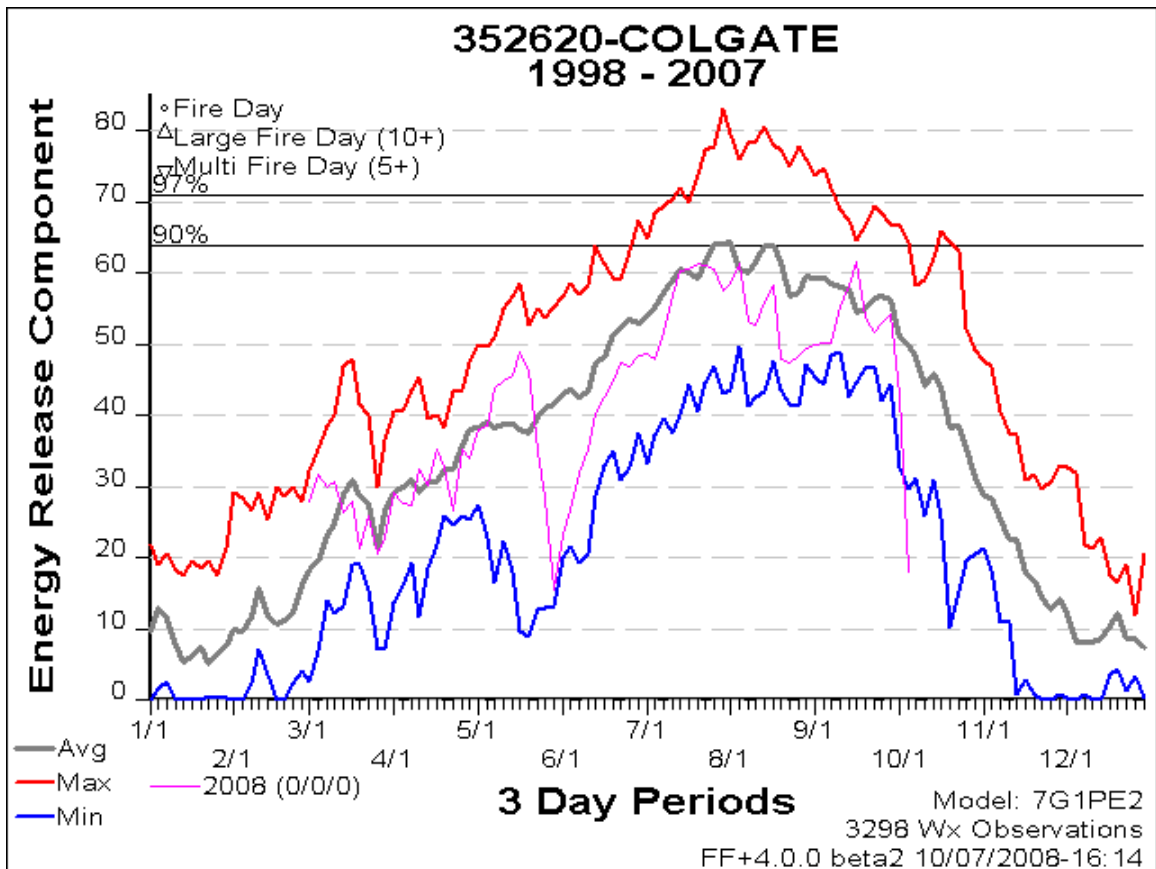
The conditions on-site had been monitored for several days, and the prescription parameters were deemed ideal for the project. A light precipitation was noted and recorded the evening of the ignition, prior to the Holding Boss leaving for the night.

September 23-26: National Preparedness Level: 2. Regional and Local Preparedness Levels: 3.

Sept	Staffing Class	Ignition Component	Spread Component	Energy Release Component	Burning Index	Haines Index
23	Observed H	21	4	53	35	3 (very low)
24	Forecasted H	20	5	51	38	2 (very low)
25	Observed H	32	9	57	52	4 (low)
26	Forecasted H	31	6	57	43	4 (low)
26	Observed H	19	4	54	35	5 (mod)
27	Forecasted H	26	5	55	39	4 (low)

The area of the Wizard incident lies within Fire Weather Zone 610, in the Pendleton Fire Weather Forecast area. The Colgate Remote Automated Weather Station (RAWS 352620) is the 'hot station' for the Central Oregon fire danger rating area known as Cascades. This station indicates the highest number of 97<sup>th</sup> percentile weather (worst case) weather days annually. For this reason, it is the station queried, monitored and posted (to the COIDC website) bi-weekly for seasonality indicators and fire business thresholds. The following charts show the 2008 annual trend, as compared to the trends for the past ten years for this station's 100 and 1000 hour fuels, as well as Energy Release Component.





### National Fire Danger Rating System (NFDRS) Terminology

**Staffing Class:** A component, index or related indicator whose outputs are correlated to the local fire problem, used to determine staffing levels.

**Ignition Component:** A rating of the probability that a firebrand will cause an actionable fire.

**Spread Component:** A rating of the forward rate of spread of the head of a fire.

**Energy Release Component:** The computed total heat release per unit area (British thermal units per square foot) within the flaming front at the head of a moving fire.

**Burning Index:** An estimate of the potential difficulty of fire containment as it relates to the flame length at the head of the fire.

**Haines Index:** An atmospheric index used to indicate the potential for wildfire growth by measuring the stability and dryness of the air over a fire.

**100 hour fuels:** 1" to 3" in diameter

**1000 hour fuels:** >3" in diameter

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

On September 24, at 6:07 pm the Holding Boss (plus one), and an Engine left the unit for the night. A night shift was deemed not necessary due to weather and fire behavior considerations.

Black Butte Lookout reported more smoke than expected in Unit 61 at approximately 11:45 am on September 25. At 12:25 pm, an Engine arrived on scene and reported that a slopover had occurred on

the North end of the unit. They requested 2 additional Engines, a helicopter with bucket and air attack, and a 5-10 person handcrew. Additional resources began arriving on scene at 12:32 pm. An Incident Commander was assigned at 12:34 pm and reported that the fire was now 10-15 acres. He then requested additional air resources including a heavy Airtanker.

The Metolius RNA Unit 61 prescribed burn was declared a wildfire on September 25, 2008 at 12:52 pm by the on duty Battalion Chief, and was named the Wizard Fire.

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

Overall the burn plan is adequate; however there are certain areas where it is lacking in depth.

The burn plan package contained all the pre-burn materials, spot weather forecasts, on-site weather readings, test fire documentation, prescribed burn boss report and signed go-no-go form. There was no documentation (unit logs or other) from the personnel assigned.

Documentation of the burn organization is not clear. It only covers burn day, not follow up patrols.

The Patrol plan is vague. The burn plan speaks to the day of the burn, but not to the following days during the patrol portion of the burn. The burn plan mentions the untreated forest land along the north boundary. The Mop-up shift plan was not utilized for the day after the ignition phase of the burn.

<b>PRESCRIBED FIRE PLAN ELEMENTS:</b>	<b>COMMENTS/FINDINGS</b>	<b>Did this play a role in Escaped Fire?</b>
<b>1. Signature page</b>	According to the Inter-agency prescribed fire guide a fully qualified Burn Boss 2 should be involved in the preparation of the burn plan.	No
<b>2. GO/NO-GO Checklists</b>	The go/no go checklist was not completed in terms of items A and B not being filled out on page 4.	No
<b>3. Complexity Analysis Summary</b>	Complexity analysis: The complexity rating of moderate is commensurate with the burn.	No
<b>4. Description of the Prescribed Fire Area</b>	Good description.	No
<b>5. Goals and Objectives</b>	Good measurable objectives.	No
<b>6. Funding</b>	Complete	No
<b>7. Prescription</b>	The burn unit was in prescription in terms of weather and fuel guidance.	No
<b>8. Scheduling</b>	Could narrow down the earliest date and latest date to encompass the period of time when fall like conditions occur.	No
<b>9. Pre-burn Considerations</b>	Notification checklist is very detailed and a good product. Notification date not filled in and the landowner sheet "header" was not filled out.	No
<b>10. Briefing</b>	Documentation of the burn organization is not clear to the reviewer. Only covers burn day, not follow up patrols.	<b>Yes</b>
<b>11. Organization and Equipment</b>	According to the organization in the burn plan it requires a Type 1 Burn Boss. This contradicts the burn being rated as	No

	moderate in element 3. It is the reviewer's opinion that this is a moderate complexity (type 2) burn.	
<b>12. Communication</b>	Communication plan completed (including command and tactical radio frequencies, and important cell phone numbers)	No
<b>13. Public, Personnel Safety and Medical Procedures</b>	It is not clear to the reviewer on how to mitigate smoke hazards to public on roadways. There are several campgrounds and the fish hatchery in the proximity of the burn.	No
<b>14. Test Fire</b>	Weather was not written down on the test fire worksheet and there is no signature by the burn boss.	No
<b>15. Ignition Plan</b>	Completed	No
<b>16. Holding Plan</b>	Patrol plan is vague. The burn plan speaks to the day of the burn, but not to the following days during the patrol portion of the burn. The burn plan mentions the untreated forest land along the north boundary. Mop-up shift plan not utilized for the day after the ignition phase of the burn.	Yes
<b>17. Contingency Plan</b>	Contingency resources should be specified in the burn plan so the Burn Boss knows the kind, type and how many to have on site.	No
<b>18. Wildfire Conversion</b>	Should be modified to include a process to be followed when no resources are on site.	No
<b>19. Smoke Management and Air Quality</b>	The sentence in the "visibility hazard" block does not speak to how the hazards will be reduced. I.E. using flaggers, smoke ahead signs, etc. and the time frames for their use. Who will be responsible for managing the smoke.	No
<b>20. Monitoring</b>	The monitoring report is excellent the day of the burn.	No
<b>21. Post-burn Activities</b>	Documentation that this was completed is missing.	No

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

Through review of project documentation and interviews with burn personnel, it appears that the Prescribed Fire Burn Plan prescription was followed during the ignition.

Prescribed weather, fuel-moisture conditions, and fire-characteristics parameters were identified in the Burn Plan. Both acceptable and optimum ranges were developed for weather and fuel parameters. An acceptable range for fire characteristics (flame lengths) was listed.

All identified prescribed weather parameters were measured and found to be within acceptable ranges during all ignition phases. Those parameters included temperature, relative humidity, eye-level wind speed and direction, and transport wind.

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

The Agency Administrator has responsibility to ensure that all prescribed fires are conducted in accordance with the approved implementation plan and established standards and guidelines.

District Ranger Bill Anthony has many years of experience reviewing and approving prescribed fire burn plans. The Ranger reviews and approves all burn plans, an average of 15-20 per year. He has completed the required courses and meets the definition of Advanced Line Officer Certification.

## **Element 6: Qualifications and Experience of Other Key Personnel**

**Burn Boss (RXB2):** Prescribed Fire Burn Boss was qualified in 2008. This was his first assignment as a fully qualified RXB2. He has been a career firefighter for over 10 years.

**Holding Boss:** Qualified with 11 years fire/fuels career experience.

**Fuels Technician:** Qualified as RXB2 (T) and has 5 years career experience in fire/fuels.

**Fuels AFMO:** Qualified as RXB2, and 20 years fire/fuels career experience.

**Suppression AFMO:** Qualified as RXB1, 32 years fire/fuels career experience.

**Division FMO:** Type 2 Incident Commander, and Prescribed Fire Manager, Type 1 (RXM2). 28 years fire/fuels career experience.

All individuals with primary responsibility in this project are permanent employees of the fire/fuels organization on the Cascade North Division at Sisters, part of the Central Oregon Fire Management Service organization.

## **Element 7: Key Causal Factors**

### **Primary Causal Factors contributing to the wildfire declaration:**

1. Prescribed Burn Unit #61 was not patrolled between 6:07 pm on September 24th (holding crew left the scene on the day of ignition) and 12:25 pm on September 25th (the time the escape was reported). It is likely that an evening or morning patrol would have detected and controlled fire found outside the unit boundary.
2. On the day of the ignition, no plan was developed or discussed for the next day's activities related to Unit 61, or a multi-ignition scenario. A preoccupation with ignition of a new unit (Highway 20 Project, unit #25) occurred. No plan was established for multi-ignition prescribed burn operations, which lead to focus on the next ignition of the Highway 20 Project Unit #25 and missing the patrol and mop-up phases of Unit #61. The Acting FMO, Fuels Specialist, and Fuels Technician, discussed plans for the next day, but no operational plan was formalized, nor were crews briefed related to Unit 61 AND Unit 25.
3. Organizational structural relationship between the Fuels, Suppression and the Burn organization was not clear, leading to confusion regarding responsibilities. Prescribed Burn organizations (pulled together for a specific assignment) are normally and routinely comprised of both Fuels and Fire Suppression personnel.
  - Responsibility for who determines coverage for those rotating off the prescribed burn assignment (days off, Incident Management Team assignments etc) was not clear.
  - There was an impression by key members of the burn organization that assignments were for the day, not for the duration of the burn cycle, in other words, until the burn is declared out or at least in patrol status. Key members

of the burn organization described that they felt they were done with their assignments at the end of the day.

4. The Burn Plan did not adequately document the prescribed burn organization, the patrol plan, and requirements for mop-up. The patrol plan was vague. The burn plan speaks to the day of the burn, but not to the following days during the patrol portion of the burn. Mop-up shift plan was not utilized for the days after the ignition phase of the burn.
5. Most prescribed burns on the Sisters District are assessed a “high” complexity. While the Risk assessment in the Metolius RNA Unit 61 Burn Plan identified the burn as “Moderate”, operationally the burn organization appeared to treat it as if it was a “low” complexity / “low” risk burn, leading to possible complacency.

**Secondary causal factors:**

1. Implementation documentation, including plans for post ignition efforts is poor.
  - Element 14-Test Fire Provisions and Results -Weather, Results of Test Fire, and Burn Boss signature were not documented
  - Daily Mop-up Shift Plan - not completed other than date and “Post ignition secure edge using Minimal Impact Suppression Tactics”. No Personnel or Equipment documented.
  - Element 20- Monitoring and Prescribed Fire Report – minimal documentation recorded.
  - Element 21-Post-Burn Activities- not completed
  - Unit Log (pg 31 of the Burn Plan) – not completed
2. Distractions such as personnel rotating off the burn assignment due to approved annual leave, Incident Management Team activations of key personnel, not filling positions behind detailed personnel, work assignment diversions, and individual personal issues, prevented supervisory overhead redundancy from noticing breakdowns in critical operational requirements such as post-ignition patrols.
3. There was a perception of a pressure to burn more acres (either through the fire organization or through a sense of individual responsibility) that may have lead to urgency to move from one unit to the next without adequate attention to the previous day, as well as a perception of being understaffed to meet expectations. Discussions with Suppression Ops the evening of the burn appeared to lead to an impression of marginally being able to light the unit the next day, let alone patrol and mop. The District Ranger was not informed of concerns relating to the next day’s burn activities.
4. Relatively new or less tenured employees may have assumed that overhead were taking care of operational activities when in fact they were not.
5. Concern that expectations regarding resource issues within the Metolius Research Natural Area may have affected safety of fire crews, and tactics related to mop-up of the prescribed burn. There was an initial impression by some personnel that snags should not be cut unless a serious threat or a problem. This led to a delay in falling the snags that were threatening the fireline creating possible firefighter safety issues and changes in tactics. Crews eventually cut down snags that were throwing embers across the line, laid hose to the NE edge of the line and mopped them up. These snags were near the fireline and may have contributed to the escape. There is no indication that any specific direction was given by the Line Officer or Staff that resource issues were to take priority over firefighter safety.



## CONCLUSIONS

The information collected for this review is not all inclusive of what could be considered causal elements for all aspects of the Metolius Escaped Prescribed Fire. The Review Team was tasked with addressing the seven required elements for reports of this nature, and the team members were all specifically included on the team for their technical fire, fuels and prescribed fire expertise.

Once the prescribed burn was considered an escape and declared a wildfire, there were no actions considered beyond full suppression of the fire by either the Type 3 or the Type 2 Teams. Hence, the suppression actions were appropriate and a cursory review of the operation was conducted, but no significant issues were found.

It is the Deschutes National Forest's expressed intent to not have a reoccurrence of a similar event in the future. This review will be the basis to further examine the prescribed fire program on the Forest, and an action plan will be developed to implement the recommendations below and rectify any additional concerns. This action plan will have a completion date of February 2009 and will result in implementation prior to the spring, 2009 prescribed fire season.

## RECOMMENDATIONS

1. Review local Standard Operating Procedures that tier to the Interagency Standards for Fire and Fire Aviation Operations (Red Book) and formally convey duties and expectations (roles and responsibilities) regarding assignments of the Burn, Fuels, and Suppression organizations related to each prescribed burn season. Focus specifically on each position in each function (Burn Boss, Holding Boss, Fuels Technician, Prescribed Fire Manager, etc) as well as transfer of command.
2. Provide an overview and operational briefing each morning and evening regarding plans for the next operational period.
3. Burn Plan:
  - All personnel assigned as burn bosses, ignition specialists and resource advisors will complete all required documentation prior to, during and after operations.
  - Organization charts will be developed, handed out to the resources on scene the day of the burn and included in the documentation package.
  - Ensure emphasis is placed on mop-up standards, patrolling and multi-ignition and multi-day scenarios in the burn plan including the briefing checklist, covering from ignition to when the burn is declared out. Identify specific responsibilities and assignments for mop-up and patrol.
  - Review and ensure wording in the Burn Plan reflects personal protective equipment standards are met.
4. Prior to burning season; provide an overview of the prescribed fire program to all employees with fuels qualifications, to re-iterate roles, responsibilities and expectations. Provide earlier notification of burning organization assignments to those in critical positions (Burn Boss, Holding Boss, and Prescribed Fire Manager).
5. Review and convey policies/direction and expectations related to the Metolius Research Natural Area (and other unique project areas) in light of safety and tactical concerns. Document in each prescribed fire burn plan and emphasize in prescribed fire operational briefings that firefighter and

public safety is always the number one objective regardless of the “special or unique” status of some areas.

6. Place emphasis on the levels of complexity and risk identified in each burn plan with the reasons why it was identified, during operational briefings.

## APPENDIX 1: REFERENCES

Forest Service Manual 5100 Fire Management. Chapter 5140 – Fire Use.

Incident Qualification and Certification System (IQCS)

Interagency Standards for Fire and Fire Aviation Operations (Red Book). Chapter 19 – Reviews & Investigations, 19-1.

Forest Service Handbook, FSH 5109.17, Training & Qualifications Standards

Prescribed Fire Planning and Implementation Procedures Reference Guide (July 2008).

## APPENDIX 2: SPECIFIC ORGANIZATIONAL RESPONSIBILITIES

(excerpted from the *Interagency Standards for Fire and Aviation Operations 2008*):

*Agency Administrator.* Ensure that all prescribed fires are conducted in accordance with the approved implementation plan and established standards and guidelines.

*Fire Management Officer or Acting-The Fire Management Officer (FMO)/Fire Program Manager* is responsible to the agency administrator for planning, implementing and monitoring of the Prescribed Fire Program in accordance with policy and direction. Also assigns the Prescribed Fire Burn Boss.

*Prescribed Fire Manager*-Brief the Burn Bosses and direct operational assignments according to policies, priorities, and standards. Ensure the completion of all required documentation including the evaluation and documentation of accomplishments, fire behavior and fire effects, operation procedures, and cost summaries.

*Burn Boss*-Supervise assigned personnel and direct the ignition, holding and monitoring operations. Supervise implementation including mop-up and patrol until the responsibility is formally passed to a Prescribed Fire Burn Boss, Prescribed Fire Manager or the local fire management organization. Declare the prescribed fire out unless the responsibility for it is formally passed to another Prescribed Fire Burn Boss, Prescribed Fire Manager or the local fire management organization.

*Holding Boss* - Confine the fire to a predetermined area, mop up, and patrol.