

2012

Date of Report: 11/01/2012

**BURNED-AREA REPORT**

(Reference FSH 2509.13)

**PART I - TYPE OF REQUEST****A. Type of Report**

- ☒ 1. Funding request for estimated emergency stabilization funds
- ☐ 2. Accomplishment Report
- ☐ 3. No Treatment Recommendation

**B. Type of Action**

- ☒ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)
- ☐ 2. Interim Report
  - ☐ Updating the initial funding request based on more accurate site data or design analysis
  - ☐ Status of accomplishments to date
- ☐ 3. Final Report (Following completion of work)

**PART II - BURNED-AREA DESCRIPTION**

A. Fire Name: Condon Mountain      B. Fire Number: P1G5CH

C. State: Montana      D. County: Missoula

E. Region: Northern (1)      F. Forest: Flathead

G. District: Swan Lake      H. Fire Incident Job Code: P1G5CH

I. Date Fire Started: July 28, 2012      J. Date Fire Contained: October 31, 2012

K. Suppression Cost:

L. Fire Suppression Damages Repaired with Suppression Funds

- 1. Fireline waterbarred (miles): 0
- 2. Fireline seeded (miles): 0
- 3. Other (identify): 0

M. Watershed Numbers: 170102110205, 170102110203

N. Total Acres Burned: 5,237

NFS Acres (5,237)    Other Federal ()    State ()    Private ()

O. VegetationTypes: Douglas fir, larch, sub-alpine fir.

P. Dominant Soils: The following landtypes are within the burned area:

Landtype	Parent Material	Landform	Soil Classification	Hydrologic Soil Group	Acres	% of Burn Area
72	Rocklands and Talus	Cirque headwalls and ridges	Entic Cryandepts	C	1809	34.4%
73	Residuum and Till	Steep glacial valley walls	Andic Cryochrepts	D	1453	27.6%
76	Residuum	Steep scarp slopes	Andic Cryochrepts	A	746	14.2%
57-9	Residuum	Hillsides	Andic Cryochrepts	D	708	13.4%
21-8	Till/Residuum	Cirque Basins	Entic Cryandepts	C	298	5.7%
26C-8	Silty Till	Ground moraine	Rock outcrop	C	180	3.4%
75	Undifferentiated	Rock cliffs	Andeptic Cryoboralfs	---	42	0.8%

Most soils in the burn area have surface layers formed in loess that has been influenced by volcanic ash. This loess was deposited on the survey area approximately 6,700 years ago by the eruption of Mount Mazama in Oregon. These loess deposits range from over 12-inches thick in depressions to very thin deposits that may be mixed with underlying materials on steep southerly aspects at lower elevations, Soil surface layers formed in loess are an excellent medium for plant growth. Soils with the thickest loess surface layers tend to be the most productive. Although most soil surface layers are formed in loess that has been influenced by volcanic ash or loess mixed with subsoil material, lower soil layers are formed in materials derived from other sources.

Q. Geologic Types: Pre-cambrian metasediments of the Belt Supergroup including argillite and siltite of the Spokane and Empire formations and limestone and dolomite of the Helena formation.

R. Miles of Stream Channels by Order or Class:

Stream miles by order within perimeter.

Stream Order	Length (Miles)
1	8
2	5
3	
4	
5	
Grand Total	13

S. Transportation System

Trails: 4.5 miles      Roads: 0 miles

### **PART III - WATERSHED CONDITION**

- A. Burn Severity (acres): 1,220 (unburned); 2,665 (low); 1,234 (moderate); 119 (high)
- B. Water-Repellent Soil (acres): All high severity portions have varying degrees of water repellency. However, recent precipitation has likely reduced repellency substantially.
- C. Soil Erosion Hazard Rating (acres): 0 (low) 5237 (moderate) 0 (high)
- D. Erosion Potential (tons/acre): 6.7 (low severity) 9.9 (moderate severity) 18.9 (high severity)
- E. Sediment Potential (tons/acre): Exists, but not estimated

### **PART IV - HYDROLOGIC DESIGN FACTORS**

- A. Estimated Vegetative Recovery Period, (years): 3
- B. Design Chance of Success, (percent): 80
- C. Equivalent Design Recurrence Interval, (years): 5
- D. Design Storm Duration, (hours): 24 hour
- E. Design Storm Magnitude, (inches): 2.4 inches
- F. Design Flow, (cubic feet / second/ square mile): 54 cfs/mi<sup>2</sup>
- G. Estimated Reduction in Infiltration, (percent): 80
- H. Adjusted Design Flow, (cfs per square mile): 80 cfs/mi<sup>2</sup>

### **PART V - SUMMARY OF ANALYSIS**

#### **A. Describe Critical Values/Resources and Threats:**

##### **Summary of Potential Watershed Response**

*The majority of precipitation in the burned area occurs as snow during the winter months. Peak runoff typically occurs during snowmelt, snowmelt mixed with rain, or in rare cases, rain-on-snow. Average annual precipitation ranges between 30 and 90 inches.*

*Runoff potential is relatively high in areas that experienced high burn severity. The vast majority of the fire is in the low and moderate severity class, which makes post-fire runoff and erosion potential relatively low at the watershed scale.*

## Values at Risk:

The risk matrix below was used to evaluate the Risk Level for each value identified during Assessment (Exhibit 2 of Interim Directive No.: 2520-2010-1). Proposed treatments and their associated risk levels are discussed below in the following categories: Life, Property, and Natural Resources.

Probability of Damage or Loss	Magnitude of Consequences		
	Major	Moderate	Minor
	RISK		
Very Likely	Very High	Very High	Low
Likely	Very High	High (Hazard Trees, Trail Erosion, Weed Spread)	Low
Possible	High	Intermediate	Low
Unlikely	Intermediate	Low	Very Low

### **Human Life and Safety: Employees and Forest Users on Backcountry Trails**

Forest Service Trail 29 is in the burned area, and there is a risk to employees and users from hazard trees.

*Risk Assessment – Threats to employees and trail users from hazard trees*

*Probability of Damage or Loss: Likely*

*Magnitude of Consequence: High – personal injury or fatality*

*Risk Level: Very High – Remove all hazard trees on trail segments within areas classified as moderate and high burn severity, and where active erosion control takes place. FS employees or contract crews can take the necessary precautions to avoid falling trees as they are walking along sections of trail to get to the areas where they will be working. Falling of potentially hazardous trees should only be done in those specific areas (if needed) where stationary work is being done- e.g. water bar construction or crossing work.*

### **Property: Forest Service Trails**

*Risk Assessment – Threats to Forest Service trails and associated structures*

*Probability of Damage or Loss: Likely – Increased potential for erosion of surface tread due to wooden structures being burned up. Soil deposition on trail surfaces from adjacent hillslopes may also occur.*

*Magnitude of Consequence: Moderate – Eroded material could potentially enter nearby streams, and trail damage could compromise user safety.*

*Risk Level: Intermediate – Complete trail inspection in high and moderately burned areas to ensure proper drainage structures are in place, particularly on steep hillslopes. Where needed, replace burned water bars and other drainage structures to minimize the potential for surface erosion during next year's snowmelt and thunderstorms. Trail incision and complete loss of trail tread could occur, therefore resulting in loss of trail infrastructure possibly leading to significant repairs and costs to restore sections of trail. The miles of FS Trail 29 by burn severity level are shown in the table below.*

Severity	Trail 29 Miles
Very Low/Unburned	0.61
Low	2.18
Moderate	1.31
High	0.50

### **Natural Resources: Native Plant communities**

*There are known infestations of spotted knapweed and other noxious weeds within and adjacent to the burned areas.*

*Risk Assessment – Threats to native plant communities and animal health due to toxic weeds.*

*Probability of Damage or Loss: Likely - Based on burn severity and proximity to known weed infestations.*

*Magnitude of Consequence: Major – Loss of native plant communities and spread of toxic weeds.*

*Risk Level: Very High – Invasive species detection surveys and spraying within and adjacent to the burned area. Primary risk comes from the existing infestations along Trails 29 and several local FS roads in the area. The BAER assessment was completed when snow was on the ground and weed spread potential was difficult to determine. Additional monitoring in the spring will better determine if weed spraying is necessary.*

## **B. Emergency Treatment Objectives:**

As noted above, threats to life, property, and natural resources could potentially result from post-fire conditions in the burned area. For these reasons the primary treatment objectives are:

- Minimize potential effects of post-fire conditions on human life and safety, particularly on forest trails within moderate or high burn severity. Primary hazards include falling trees, rolling rocks, and subsequent trail blockage.
- Minimize potential effects of post-fire conditions on natural resources, primarily soil productivity, water quality, and native plant communities. Primary hazards includes erosion, sediment delivery, and spread of noxious weeds.

## **C. Probability of Completing Treatment Prior to Damaging Storm or Event:**

Land 0 % Channel N/A % Roads/Trails 50 % Protection/Safety 50 %

## D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	0	90	95
Channel	N/A	N/A	N/A
Roads/Trails	0	90	95
Protection/Safety	0	90	95

## E. Cost of No-Action (Including Loss): \$7,300

**F. Cost of Selected Alternative (Including Loss):** There remains a 10% chance that the proposed treatments for this initial work may not succeed. Total cost of the action alternative plus this 10% chance of failure is \$5,280.

## G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input type="checkbox"/> Range
<input type="checkbox"/> Forestry	<input type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input type="checkbox"/> Engineering
<input type="checkbox"/> Recreation	<input type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology
<input checked="" type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input type="checkbox"/> GIS

Team Leader: Craig Kendall

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## H. Treatment Narrative:

The proposed treatments on National Forest System lands can help to reduce the impacts of the fire, but treatments will not completely mitigate the effects of the fire. The treatments listed below are those that are considered to be the most effective on National Forest System lands given the local setting including topography and access. The attached Excel worksheet summarizes the funding request.

### Road and Trail Treatments:

- Remove hazard trees on 2 miles of trail to protect BAER crews improving trail drainage.
- Install and/or maintain existing drainage control structures on 2 miles of trail.
- Install signs to warn trail users of post-fire hazards.

### Land Treatments:

- Spray any new infestations of noxious weeds on approximately 50 acres, mostly along the burned priority trails and roads.

## I. Monitoring Narrative:

- No monitoring is requested at this time.

			NFS Lands					Other Lands			All
		Unit	# of		Other		# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER \$	\$		units	\$	Units	\$	\$
<b>A. Land Treatments</b>											
Weed Treatment	acres	400	0	\$0	\$0			\$0		\$0	\$0
Weed Assessment	acres	65	10	\$650	\$0			\$0		\$0	\$0
<i>Subtotal Land Treatments</i>				\$650	\$0			\$0		\$0	\$0
<b>B. Channel Treatments</b>											
<i>Insert new items above this line!</i>				\$0	\$0			\$0		\$0	\$0
<i>Subtotal Channel Treat.</i>				\$0	\$0			\$0		\$0	\$0
<b>C. Road and Trails</b>											
Trail Erosion Control	miles	800	2	\$1,600	\$0			\$0		\$0	\$0
Hazard Tree Removal	miles	300	2	\$600	\$0			\$0		\$0	\$0
Retaining Wall Reconstruction	feet	65	0	\$0	\$0						
Crib Reconstruction	feet	5	0	\$0	\$0						
<i>Insert new items above this line!</i>				\$0	\$0			\$0		\$0	\$0
<i>Subtotal Road &amp; Trails</i>				\$2,200	\$0			\$0		\$0	\$0
<b>D. Protection/Safety</b>											
Post-fire Hazard Signs on Trail 29	each	400	2	\$800							
					\$0			\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0			\$0		\$0	\$0
<i>Subtotal Structures</i>				\$800	\$0			\$0		\$0	\$0
<b>E. BAER Evaluation</b>											
Team Evaluation	each	350	5		\$1,750						
				---	\$0						
<i>Insert new items above this line!</i>				---	\$0			\$0		\$0	\$0
<i>Subtotal Evaluation</i>				\$0	\$1,750			\$0		\$0	\$0
<b>F. Monitoring</b>											
Flathead	each	350	0		\$0						
<i>Insert new items above this line!</i>				\$0	\$0			\$0		\$0	\$0
<i>Subtotal Monitoring</i>				\$0	\$1,750			\$0		\$0	\$0
<b>G. Totals</b>				\$3,650	\$1,750			\$0		\$0	\$0

## PART VII - APPROVALS

1. /s/Chip Weber  
Forest Supervisor

11/01/2012  
Date

2. /s/  
Regional Forester

XX/XX/2012  
Date