

Date of Report: 07/12/2012

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: Pony
B. Fire Number: P1GY6M
C. State: Montana
D. County: Madison
E. Region: Northern (1)
F. Forest: Beaverhead-Deerlodge
G. District: Jefferson and Madison
H. Fire Incident Job Code: P1GY6M
I. Date Fire Started: June 24, 2012
J. Date Fire Contained: July 8, 2012
K. Suppression Cost:
L. Fire Suppression Damages Repaired with Suppression Funds
 1. Hand Line (miles): 1.0
 2. Dozer Line (miles): 0.85
 3. Other (identify): 0
M. Watershed Numbers: 100200050801, 100200050602, 100200050702, 100200050601
N. Total Acres Burned: 5,157
 NFS Acres(3,288) BLM (690) State (115) Private (1,064)
O. VegetationTypes: Douglas fir, lodgepole pine, sage, grass

P. Dominant Soils:

Map Unit	Landform	Parent Material	Soil Classification
71ND3, 71NB3, 71NH3	High relief dissected mountain slopes	Archaen quartzofelspathic gneiss, minor component of Archaen amphibolite and hornblende gneiss	Loamy-skeletal, mixed, superactive lamellic Eutrocrypts

Q. Geologic Types: Archaen quartzofelspathic gneiss, minor component of Archaen amphibolite and hornblende gneiss

R. Miles of Stream Channels by Order or Class:

Stream miles by order within perimeter.

Stream Order	Length (Miles)
1	8
2	4
3	
4	
5	
Grand Total	12

S. Transportation System

Trails: 0.0 miles Roads: 6 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): __ (unburned); __ (low); __ (moderate); __ (high),

Burn Severity	Acres
Unburned/Very Low	1,044
Low	1,744
Medium	1,498
High	860

B. Water-Repellent Soil (acres): all high severity portions have varying degrees of water repellency

C. Soil Erosion Hazard Rating (acres):

__ (low) __ (moderate) (high)

Erosion Hazard Rating	Acres
Low	29
Moderate	2,570
High	2,552

D. Erosion Potential: 1.4 tons/acre

E. Sediment Potential: 613 cubic yards/square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 3

B. Design Chance of Success, (percent): 90

C. Equivalent Design Recurrence Interval, (years): 5

D. Design Storm Duration, (hours): 6 hour

E. Design Storm Magnitude, (inches): 1.1 inches

F. Design Flow, (cubic feet / second/ square mile): 15 cfs/mi²

G. Estimated Reduction in Infiltration, (percent): 100

H. Adjusted Design Flow¹ (cfs per square mile): 90 cfs/mi²

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, but spring and summer thunderstorms often produce runoff events. Runoff potential is relatively high in areas that have moderate and high burn severity. Hillslopes are generally quite steep and very rocky. In areas classified as low and moderate burn severity, needle-cast has created a degree of ground cover which will enhance infiltration during rain events.

On July 11, an isolated thunderstorm occurred over the burned area. According to fire suppression personnel, the storm lasted 10-12 minutes and dropped approximately 0.25 inches. This storm produced overbank flows in Carmichael Creek and exceeded the hydraulic capacity of three culverts. Another thunderstorm occurred over the burned area on July 16th. According to a local landowner, this storm produced about 0.75 inches. This storm resulted in overbank flows in Carmichael creek and the same three culverts were exceeded once again.

Soil hydrophobic conditions were investigated in moderate and high burn severity areas within the Bear Gulch watershed. Hydrophobicity was found to be minimal and limited to a very thin layer on the surface

¹ Post-fire runoff events are extremely variable. Relatively small storm events (2-5 year recurrence interval) can produce very large flood events. The adjusted design discharge represents the entire burned area. Past post-fire measurements indicate there is potential for much larger runoff events to occur (Parrett et al. 2004. USGS WRIR 03-4319).

of mineral soil. The recent thunderstorm wetted these soils and likely reduced hydrophobic conditions. Some evidence of overland flow was noted, but the majority of material transported appeared to be ash.

A high intensity thunderstorm has the potential to produce relatively large flood events.

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	Low
Possible	High	Intermediate	Low
Unlikely	Intermediate	Low	Very Low

Human Life and Safety: Road Conditions

There are only three system roads that access the burned area. The Carmichael Creek Road accesses a very small portion of the NFS lands within the northeast portion of the burned area perimeter. This road is not adjacent to any burned timber on NFS lands. The Bear Gulch Road is gated and locked on private lands near the South Boulder River, so public access does not occur. This road was reviewed up to a bridge that was burned up. All stream crossings are fords. The road is extremely rocky and not conducive to drainage improvement work. It is well armored with coarse rocky material. Both sides of the road were burned, but no obvious hazard trees were observed. The "Zig Zag Road" on the south end of the burned area is entirely on private lands. Post-fire conditions on adjacent NFS lands do not have any potential to affect this road. The summary below only applies to NFS lands.

Risk Assessment – Threats to road users from hazard trees and/or falling rocks

Probability of Damage or Loss: Unlikely

Magnitude of Consequence: Moderate – personal injury

Risk Level: Low – Install warning signs at appropriate locations to warn forest users of post-fire hazards

Natural Resources: Soil Productivity and Water Quality

Areas burned at high and moderate severity are at elevated risk of soil erosion. Hydrophobicity is minimal. The flood that occurred on July 11th resulted in substantial channel scour in Carmichael Creek and exceeded capacity of three culverts on DNRC and private lands. Overland flow on hillslopes mostly transported ash to the stream channel, but there appeared to be very little sediment. Accelerated erosion and sediment delivery are still likely to occur, but will decrease as vegetation becomes established. In addition, needle cast will reduce potential erosion and sediment delivery.

Risk Assessment – Threats to soil productivity and watershed function

Probability of Damage or Loss: Unlikely – based on minimal hydrophobicity, needle cast, and down woody material.

Magnitude of Consequence: Minor – erosion hazard is elevated in some areas.

Risk Level: Low – No hillslope or channel treatments necessary.

Natural Resources: Native Plant communities

There are known infestations of houndstongue, spotted knapweed, musk thistle, and cheat grass within and adjacent to burned areas.

Risk Assessment – Threats to native plant communities and animal health due to toxic weeds. Houndstongue is particularly toxic to domestic and wild animals.

Probability of Damage or Loss: Very 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 within and adjacent to burned area.

B. Emergency Treatment Objectives:

As noted above, threats to life, property, and/or 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 native plant communities by assessing and controlling noxious weeds.
- Install 5 warning signs at appropriate locations to warn forest visitors of post-fire hazards. Signs will be placed in the following drainages that have road access (primarily on east side of burned area).
 - Cataract
 - Charcoal
 - Antelope
 - Antelope 2
 - Mammoth

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

Land 90 % Channel N/A % Roads/Trails N/A % Protection/Safety N/A %

D. Probability of Treatment Success

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

E. Cost of No-Action (Including Loss): \$100,000

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 \$39,500.

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 checked="" type="checkbox"/> Recreation	<input type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany/Weeds	<input type="checkbox"/> Archaeology
<input type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS

Name	Function	Unit
Craig Kendall	Team Leader, Hydrology	Flathead NF
Derek Milner	Team Leader, Soils, GIS	Flathead NF
Pam Fletcher	Trainee	Beaverhead-Deerlodge NF
Gordon Ash	Recreation	Beaverhead-Deerlodge NF, Dillon RD
Mike Mooney	Weeds	BLM, Dillon Field Office
Licette Hammer	Minerals	Beaverhead-Deerlodge NF
Steve Kujala	GIS	Beaverhead-Deerlodge NF

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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.

Land Treatments:

- Spray noxious weeds on 100 acres.
- Assess noxious weed spread on approximately 1,000 acres.

Channel Treatments

- None

Road and Trail Treatments:

- None

I. Monitoring Narrative:

Effectiveness of weed treatments will be monitored through visual observation. Continual assessment of weed establishment and spread will occur this fall and in early next spring. If assessments determine that additional weed treatments are necessary, an interim 2500-8 will be submitted.

PART VII - APPROVALS

1. /s/Dave Myers
Forest Supervisor

XX/XX/2012
Date

2. /s/ Faye Krueger
Regional Forester

XX/XX/2011
Date