USDA-FOREST SERVICE FS-2500-8 (6/06)

Date of Report: 09/25/2018

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[X] 1. Funding request for estimated emergency stabilization funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[X] 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: Whale Butte

C. State: Montana

D. County: Flathead

E. Region: Northern (1)

F. Forest: Flathead

G. District: Glacier View

H. Fire Incident Job Code: P1L28W18

I. Date Fire Started: August 12, 2018

J. Date Fire Contained: November 1, 2018

K. Suppression Cost: $ 2,407,475

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: 170102060406, 170102060407

N. Total Acres Burned:
NFS Acres (511) Other Federal () State () Private ()

O. VegetationTypes: Douglas fir, ponderosa pine, larch, sub-alpine fir, riparian

P. Dominant Soils:

Landtype	Description	Slope (%)	Soils (order of proportion)
57-9	Residual soils on rolling and steep hillslopes influenced by volcanic ash and glaciation.	40-60	Andic Cryochrepts, Typic Cryochrepts, Typic Eutrocrepts
73	Glacial till and residuum located on steep concave hillslopes.	40-60	Ochrepts, Boralfs

Q. Geologic Types: Glaciated siltite, argillite, quartzite, and/or limestone within the Belt Supergroup.

R. Miles of Stream Channels by Order or Class:

Stream miles by order within perimeter.

Stream Order	Length (Miles)
1	1
2	0
3	0
4	0
5	0
Grand Total	1

S. Transportation System

Trails: 0 miles Roads: 2.2 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 114 (unburned); 274 (low); 99 (moderate); 24 (high)

B. Water-Repellent Soil (acres): High severity and moderate portions have varying degrees of water repellency.

C. Soil Erosion Hazard Rating (acres):
511 (low) 0 (moderate) 0 (high)

D. Erosion Potential: 0.8 tons/acre

E. Sediment Potential: 0.5 tons/acre

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): 6 hour

E. Design Storm Magnitude, (inches): 1.5 inches

F. Design Flow, (cubic feet / second/ square mile): 5 cfs/mi^2

G. Estimated Reduction in Infiltration, (percent): 30

H. Adjusted Design Flow, (cfs per square mile): 70 cfs/mi^2

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

Summary of Potential Watershed Response

The Whale Butte Fire burned roughly 515 acres on the divide between the Whale Creek and Moose Creek watersheds. This was a mixed severity burn with good mosaic (Figure 1). The BARC imagery has not been field verified. However, numerous field verification efforts from past fires on the forest have shown that initial BARC imagery slightly over-estimates severity.

Landforms in the burned area consist of alpine ridges and concave hillslopes influenced by glaciation.

Watershed response is expected to be fairly low for two reasons. First, the burn severity is relatively low. Secondly, fall rains tend to be of long duration and short intensity. In low and moderate severity burns, needle cast is common, which aids in infiltration. Erosion is likely to occur during spring snowmelt and rain. In terms of potential erosion, recovery of this burned area is expected to be fairly rapid.

Figure 1. Whale Butte BARC imagery looking west. Whale Creek is on the right and Moose Creek is on the left.

Values at Risk:

The risk matrix below and associated definitions were used to evaluate risk levels in the 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**

Probability of Damage or Loss: The following descriptions provide a framework to estimate the relative probability that damage or loss would occur within 1 to 3 years (depending on the resource):

- Very likely. Nearly certain occurrence (90% - 100%))
- Likely. Likely occurrence (50% - 89%)
- Possible. Possible occurrence (10% - 49%)
- Unlikely. Unlikely occurrence (0% - 9%)

Magnitude of Consequences:

- Major. Loss of life or injury to humans; substantial property damage; irreversible damage to critical natural or cultural resources.
- Moderate. Injury or illness to humans; moderate property damage; damage to critical natural or cultural resources resulting in considerable or long term effects.
- Minor. Property damage is limited in economic value and/or to few investments; damage to critical natural or cultural resources resulting in minimal, recoverable or localized effects.

Natural Resources: Native Plant communities

Noxious weeds may be present in the burned area. There have not been inventories in the areas in the Whale Butte fire perimeter, however there are existing roads and old road corridors along the fire perimeter that are likely infested with weeds. There is the potential of weeds spreading into the burned area.

Risk Assessment – Threats to native plant communities

Probability of Damage or Loss: Possible - Based on burn severity and proximity to potential weed infestations.

Magnitude of Consequence: Moderate – Loss of native plant communities and potential spread of noxious weeds.

Risk Level: Intermediate – Invasive species treatment may be needed on infestations in and adjacent to the fire perimeter. Additional invasive species monitoring next year will determine if weeds are present and if weed spread is occurring.

There are 27 acres of disturbed road/trail corridor on the fire perimeter that could currently or potentially be infested with invasive plants. This acreage was created from a 100 foot buffer on the interior of the fire perimeter from the existing road corridor.

B. Emergency Treatment Objectives:

- Reduce or prevent the spread of noxious weeds within the burned area.

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

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

EDRR for weeds would begin in the spring.

D. Probability of Treatment Success

	Years after Treatment		
	1	2	3
Land	N/A	80	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): $8,100

F. Cost of Selected Alternative (Including Loss): There remains a 20% chance that the proposed treatments for this initial work may not succeed. Total cost of the action alternative plus this 20% chance of failure is $7,420

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology	[X] Soils	[ ] Geology	[ ] Range
[] Forestry	[ ] Wildlife	[ ] Fire Mgmt.	[ ] Engineering
[] Recreation	[ ] Ecology	[X] Botany	[ ] Archaeology
[X] Fisheries	[ ] Research	[ ] Landscape Arch	[ ] GIS

Team Leader: Craig Kendall

Email: craigkendall@fs.fed.us Phone: 406-758-6485

H. Treatment Narrative:

The proposed trail treatments are designed to reduce the spread of noxious weeds. This loss is likely to occur in the next 12 months without treatment. Proposed treatments are summarized below.

- EDRR to prevent or reduce the spread of noxious weeds.

I. Monitoring Narrative:

Monitoring of post-fire conditions will be monitored informally by ranger district personnel and reported to the Forest BAER Coordinator.

PART VI - EMERGENCY STABILIZATION TREATMENTS AND SOURCE FUNDS

Line Items	Units	Unit Cost	NFS Lands # of Units	BAER $	Other $
A. Land Treatments					
EDRR	acres	200	27	$5,400	
Subtotal Land Treatments				$5,400	$0
B. Channel Treatments					
Insert new items above this line!				$0	$0
Subtotal Channel Treat.				$0	$0
C. Road and Trails					
				$0	
				$0	
Insert new items above this line!					
Subtotal Road & Trails				$0	$0
D. Protection/Safety					
				$0	
				$0	$0
Insert new items above this line!				$0	$0
Subtotal Structures				$0	$0
E. BAER Evaluation					
Team Evaluation	each				$1,000

Insert new items above this line!				---	$0
Subtotal Evaluation				$0	$0
F. Monitoring					
Post-fire Monitoring	each			$0	$0
Insert new items above this line!				$0	$0
Subtotal Monitoring				$0	$0
G. Totals				**$5,400**	$1,000

PART VII - APPROVALS

1. /s/ Chip Weber — Forest Supervisor — 10/02/2018 — Date

2. /s/ Jane D. Darnell — Regional Forester — 10/04/2018 — Date