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

Date of Report: 10/03/2011

2011

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: South Fork Lost Creek

B. Fire Number:

C. State: Montana

D. County: Lake

E. Region: Northern (1)

F. Forest: Flathead

G. District: Swan Lake

H. Fire Incident Job Code: PNGAB7

I. Date Fire Started: August 13, 2011

J. Date Fire Contained: Not contained

K. Suppression Cost:

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 2
2. Fireline seeded (miles):
3. Other (identify):

M. Watershed Numbers: 170102110306

N. Total Acres Burned: 2,100 acres
NFS Acres(1,900) Other Federal (000) State (200) Private (000)

O. VegetationTypes: Douglas fir, larch, sub-alpine fir, non-vegetated talus slopes and cliffs.

P. Dominant Soils: Landtype 73: Glacial till residuum on steep glacial trough walls with rocky cliffs and talus (Landtype 73), cirque headwalls and narrow alpine ridges (Landtype 72), and rocky limestone cliffs (Landtype 75). In general, soils formed on colluvial slopes and ridgetops are gravelly and influenced by volcanic ash.

Q. Geologic Types: Pre-cambrian metesediments including argillite, quarzites, limestones, and siltites.

R. Miles of Stream Channels by Order or Class:

Stream miles by order within perimeter.

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

S. Transportation System

Trails: 1.0 miles Roads: 1.4 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 260 (unburned); 345 (low); 1,070 (moderate); 425 (high)

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

C. Soil Erosion Hazard Rating (acres):
1,100 (low) 600 (moderate) 200 (high)

D. Erosion Potential: 0.5 tons/acre (estimate)

E. Sediment Potential: 6,400 cubic yards / square mile

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 (does not include possible bulking with sediment)

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

The South Fork Lost Creek Fire burned a small portion of the South Fork Lost Creek headwaters near the Swan Mountain crest. The vast majority of the fire burned on National Forest System lands within the South Fork Lost Creek watershed. Approximately 200 acres of State land were burned and a few acres that spotted on the east side of the Swan crest.

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. Runoff potential is relatively high in areas that experienced high burn severity. However, the mosaic pattern of burn severity levels reduces the risk of larger scale runoff events. The burned area is located on steep hillslopes dissected by parallel intermittent streams. During the fire, several boulders were observed rolling down the hillslopes and onto Road #680 creating a major safety hazard.

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: Forest Users on Road 680

Road 680 is located down-slope of the burned area. During the fire, several boulders and large cobbles rolled down the slope and onto the road. Talus slopes and breaklands on hillslopes above the road are

the source of these rocks. More material is expected to roll off these slopes, especially in the spring when soil moisture is high.

Risk Assessment – Threats to road users

Probablity of Damage or Loss: Possible

Magnitude of Consequence: Moderate – personal injury or fatality

Risk Level: Intermediate – Close section of Road 680 within the burned area until summer 2012. When road is opened, install sign warning people of post-fire conditions. Remove boulders from road surface prior to re-opening.

Human Life and Safety: Forest Users on the Alpine 7 Trail

Add and improve trail #7 drainage structures to protect the trail and reduce potential concentrated flow and erosion.

Alpine Trail #7 runs along the east side of the fire, and there may be a risk of hazard trees.

Risk Assessment – Threats to trail users from hazard trees

Probablity of Damage or Loss: Possible

Magnitude of Consequence: Moderate – personal injury or fatality

Risk Level: Intermediate – Remove all hazard trees with hand crews

Natural Resources: Native Plant communities

There are known infestations of spotted knapweed, hawkweed, ox-eye daisy and many other noxious weeds on Road 680 which is within the burned area.

Risk Assessment – Threats to native plant communities.

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

Magnitude of Consequence: Major – Loss of native plant communities in the burned area.

Risk Level: Very High – Invasive species detection surveys and spraying within and adjacent to the burned area. Primary risk comes from the infestations along Road 680. Invasive species mitigation is only allowed during year one.

Natural Resources: Water Quality and Aquatic Habitat

There is one under-sized culvert on Road 680 on State land immediately downstream of the burned area. This will be done under an existing road maintenance agreement.

Risk Assessment – Potential threat to water quality, aquatic habitat, and road damage.

Probablity of Damage or Loss: Likely - Likely - Based on burn severity and runoff potential.

Magnitude of Consequence: Major – Sediment delivery and potential damage to bull trout habitat.

Risk Level: Very High – A potential culvert failure could degrade water quality and aquatic habitat. Bull trout, a threatened species occupies South Fork Lost Creek, which is immediately downstream of said culvert.

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 Road 680 and Alpine Trail #7.
- Minimize potential effects of post-fire conditions on natural resources, particularly native plant communities.
- Minimize potential post-fire flooding to cause a culvert failure on State land.

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

Land **80** % Channel **N/A** % Roads/Trails **90** % Protection/Safety **80** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	80	80	90
Channel	N/A	N/A	N/A
Roads/Trails	80	90	95
Protection/Safety	80	90	95

E. Cost of No-Action (Including Loss): $65,600

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 $37,030.

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Craig Kendall

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

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:

- *Construct and/or maintain trail drainage structures*
- *Remove hazard trees on Alpine Trail #7.*
- *Close Road 680 until summer 2012 and install warning sign when re-opened.*
- *Remove boulders or other debris from Road 680 in the spring if necessary.*
- *Upgrade culvert on Road 680 to accommodate potential post-fire flood.*

Land Treatments:

- *Spray noxious weeds on 5 acres, mostly along Road 680. These trails already have weeds present that may rapidly spread into adjacent burned or disturbed areas.*
- *Upgrade one under-sized culvert on Road 680.*

I. Monitoring Narrative:

PART VII - APPROVALS

1. /s/Chip Weber _____ 10/03/2011 _____
   Forest Supervisor Date

2. /s/ Leslie Weldon _____ XXXX/2011 _____
   Regional Forester Date