

Date of Report: 11/1/13

**BURNED-AREA REPORT**  
(Reference FSH 2509.13)

**PART I - TYPE OF REQUEST**

A. Type of Report

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

B. Type of Action

- ☒ 1. Initial Request (Best estimate of funds needed to complete eligible rehabilitation 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: Gold1

B. Fire Number: MT-BRT-5111

C. State: Montana

D. County: Ravalli

E. Region: 01 (Northern)

F. Forest: Bitterroot

G. District: Stevensville

H. Date Fire Started: August 9, 2000

I. Date Fire Contained: not yet contained

J. Suppression Cost: Sept. 15 – \$10,990,817

K. Fire Suppression Damages Repaired with Suppression Funds

- 1. Fireline being recontoured (miles): 3.2
- 2. being seeded (miles): 3.2
- 3. Other (identify): 50 acres of disturbed area being seeded. All dozer line being mulched and fertilized.

L. Watershed Number: 170102051204 - Burnt Fk, 170102051205 - Gold Cr composite

M. Total Acres Burned:    NFS Acres (8296)    Other Federal ( )    State ( )    Private ( )

## Burned Area Report

- N. Vegetation Types: Mixed conifer, Douglas Fir, Lodgepole Pine, Englemann Spruce
- O. Dominant Soils: Cryochrepts, Ustochrepts, 35-85% coarse fragments, cobble and gravel common. Rock outcrops, talus, and rubble land found on > 70% of burn area.
- P. Geologic Types: Meta-sedimentary (Belt) and Calc-silicates, predominately Quartzite
- Q. Miles of Stream Channels by Order or Class: Not computed due to lack of existing coverage.
- R. Transportation System (within fire perimeter)
- Trails: 5 miles Roads: 2 miles

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

- A. Burn Severity (acres): 31,314 (87%) (unburned); 1,267 (4%) (low); 1890 (5%) (moderate); 1,250 (4%) (high)
- B. Water-Repellent Soil (acres): 412 acres
- C. Soil Erosion Hazard Rating (acres): 32,581 (91%) (low) 1890 (5%) (moderate); 1,250 (4%) (high)
- D. Erosion Potential: 0.023 tons/acre, 17.8 cubic yards / square mile
- E. Sediment Potential: 7.31 cubic yards / square mile

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

- A. Estimated Vegetative Recovery Period, (years): 5yrs for the understory, 15-30 yrs for conifers
- B. Design Chance of Success, (percent): 90
- C. Equivalent Design Recurrence Interval, (years): 10
- D. Design Storm Duration, (hours): 24
- E. Design Storm Magnitude, (inches): 2.0
- F. Design Flow, (cubic feet / second/ square mile): 11.5
- G. Estimated Reduction in Infiltration, (percent): 9
- H. Adjusted Design Flow, (cfs per square mile): 13.9

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

### A. Describe Watershed Emergency:

This Gold 1 Fire was limited to Bitterroot National Forest Lands. Specific threats are listed below:

Threat to private property: Increased sediment to Stevensville Municipal water system and Bull Trout habitat. The plant cannot meet state water quality standards for turbidity during sediment events. Summer water supply for the town depends heavily (65%) on treated surface water from the Burnt Fork watershed. Threat to life or injury from hazard trees along trails and roads.

Threat of soil loss: Certain areas of moderate to high severity burn are at high risk of soil erosion. Specific areas include:

- High severity burns in upper, and mid elevations in Flat Rock Creek and Burnt Fork of the Bitterroot River.
- Trail tread adjacent to high and moderate severity burns.

Threat of water quality deterioration: Sediment yield is expected to increase from moderate and high severity burn areas. Key streams considered to be at risk from increased sediment yield are Flat Rock Creek and the Burnt Fork of the Bitterroot River. The sites at risk contributing to this downstream concern are previously listed above. Pollutant of concern is sediment (turbidity standard).

Threat to aquatic ecosystem integrity: Bull Trout is the main TES fish species inhabiting the upper Burnt Fork drainage. Bull trout is a Threatened species under the Endangered Species Act, and Westslope cutthroat trout is a Sensitive species in the Northern Region the Burnt Fork and short sections of Gold and Flat Rock Creeks are the known occupied bull trout habitats within the analysis area.

There is no emergency from a fisheries viewpoint. The increase in temperature and fine sediment is not likely to reach a level that has more than short-term influences on fish habitat. Fire killed trees may actually improve the habitat for fish once they fall into the channel. Increases in nutrients may be beneficial since the effects will be diluted by the amount of the watershed that remains in an unburned condition.

Threat to terrestrial ecosystem integrity: Spotted knapweed is present along the road systems in the area affected by the fire. Knapweed is known to have impacts to ecosystem integrity, including competition with native plants and reduction in quality of big game range.

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### Threat to heritage resources:

Two heritage sites are located within the area affected by the Gold 1 fire. Site types include a historic Forest Service lookout site and a mining diversion ditch. Sites not directly destroyed or damaged by the fire itself may be at risk from increased post fire erosion or from ground disturbance or equipment activity related to other resource rehabilitation treatments. Noxious weeds may invade cultural plant areas.

### B. Emergency Treatment Objectives:

A major objective of the proposed treatments is to reduce damage to areas and facilities at risk from runoff from burned areas. Many of the treatments are also intended to reduce overall soil erosion which will limit adverse impacts to water quality, fish habitat, and a variety of additional values.

### C. Probability of Completing Treatment Prior to First Major Damage-Producing Storm:

Land 80 % Trails 75 % Other 80 %

### D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	80	90	95
Trails	80	90	95
Other	N/A	N/A	N/A

E. Cost of No-Action (Including Loss): **See attached cost-risk analysis document.**

F. Cost of Selected Alternative (Including Loss): **See attached cost-risk analysis document.**

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

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input checked="" type="checkbox"/> Range
<input type="checkbox"/> Forestry	<input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input checked="" type="checkbox"/> Engineering
<input type="checkbox"/> Contracting	<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 checked="" type="checkbox"/> GIS

Team Leaders: Ed Snook

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Phone: 406-777-7416

### Team Members and Contributors

<b>Team Leader</b>	Ed Snook (D-1, BNF)
Hydrologist	Terry Carlson (SO, BNF)
Soil Scientists	Karen Gallogoly (S-CNF SO), Terry Carlson (SO,

## Burned Area Report

	BNF
Fisheries	Rob Brassfield (D-1, BNF)
Botany	Linda P. (SO, BNF)
GIS	Jim Fears (SO, BNF)
Stevensville Municipal Water System Rep	George Thomas Ed Sutherland 777-3341
Engineering/Roads	Rich Raines (SO, BNF)
Heritage	Mary Williams (SO, BNF)
PAO	Ellen Davis (SO, BNF)
Fiscal Mgmt/Purchasing	Teresa Harshman-Ward(SO, BNF), Tina Mainey(SO, BNF)
Recreation/Trails	Bill Goslin (D1, BNF)
Wildlife Biologist	Dave Lockman (D1, BNF)
Invasive species, Range	Gil Gale (D3, BNF)

### H. Treatment Narrative

The following are the proposed emergency treatments for the Gold1 Fire. These treatments were developed based on the BAER objectives, team recommendations of proven effective treatments, and the line officer/agency administrator input, as well as interagency cooperative BAER Team effort and discussion. Due to the high values at risk, multiple treatment types may occur in the same area, to address the same emergency situation, thereby improving the overall effectiveness of mitigating the emergency. Preventive treatments are targeted at the high severity burn areas. Treatments with low probability of success were eliminated by use of a preliminary least cost plus risk analysis to refine treatments.

### Slope Treatments

#### *Aerial Mulching*

##### Objective

The purpose of the treatment is to restore watershed functions formerly provided by ground vegetation, canopy, and duff layer that were lost due to the fire. By reducing the amount of surface runoff, this treatment would have beneficial protective effects of reducing sediment into streams supplying the water treatment plant at Stevensville, and also protecting Bull Trout habitat.

##### Methods

Weed-free straw would be applied with a helicopter at 2 tons/acre on high and moderate intensity burn areas. Treatment sites would be strategically located to prevent eroded soils from entering area streams.

#### *Noxious Weed Control Treatments - Hillslopes*

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### Objective

The purpose of the treatment is to maintain ecosystem integrity by treating selected sites adjacent to where weed-free native plant populations currently occur. Small areas of knapweeds are in the vicinity and the treatment should reduce the spread of knapweed. By reducing the amount of weed seed in the area, sensitive plants will have an opportunity to take advantage of the post-fire nutrient flush without competition. Slope herbicide treatments are also proposed for drier sites where the loss of canopy due to high burn severity would increase the knapweed encroachment.

### Methods

Treat severely burned areas with clopyralid (Transline or Stinger) using a backpack sprayer where known noxious weed populations exist in proximity of the currently weed-free native plant communities. Effects of herbicide treatments using Clopyralid at the proposed rates are addressed in the "Bitterroot National Forest 2003 Noxious Weed Treatment Project EIS. Selected sites include areas along fire suppression disturbances (handlines, dozer lines, safety zones)

## Road and Trail Treatments

### *Roadside Noxious Weed Control Treatment - Roads*

### Objective

The purpose of the treatment is to maintain ecosystem integrity in the Burnt Fork roadless area, where known noxious weed populations exist. Without treatment knapweed would spread into the severely burned areas. By reducing the amount of weed seed along roads in the area, native species will have an opportunity to take advantage of the post-fire nutrient flush without competition from noxious weeds.

### Methods

Treat fire access road areas with picloram (Tordon 22K) or clopyralid (Transline or Stinger) where there are known noxious weed populations. Selected sites include roadside spraying along FDR 969 and FDR 312 where heavy canopy loss towards the top has increased the risk of knapweed (*Centaurea maculosa*) spreading down slope. Effects of herbicides treatments at the proposed rates using clopyralid or picloram is addressed in the Bitterroot National Forest Noxious Weed Environmental Assessment.

### *Removal Hazard Tree - Trails*

### Objective

This treatment reduces the chance for injury or loss of life from falling snags on trails by reducing the number of hazard trees along the trails.

### Methods

Fell and remove any hazardous burned trees (within one tree height) that are located along trails. Maintain snags >12" where possible for wildlife trees, however do not compromise safety.

### *Erosion - Trails*

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### Objective

Approximately 5 miles of trail are expected to be at risk of deterioration from additional runoff and sediment from post-fire conditions. The threats are from upland slope erosion and flow being deposited on the trail. The trails were not designed for the increased flow that may occur from the fire. This may cause soil erosion on the trail surface and fill-slope. Failure of drainage culverts and water bars may cause stream capture onto trail surface area causing soil erosion, including loss of the trail by rilling and gullying. Trail Numbers 43 and 312 for a total of 5 miles of trail are included in this list.

### Methods

Methods for reducing this risk include 30 water bars, which would be used to direct and divert flow to areas off the trail or to drainage ways. These treatments, along with the cleaning of 20 existing water bars would reduce the risk of the trail washing out and transporting sediment to streams.

### **I. Monitoring Narrative:**

Monitoring will be focused on first year effectiveness of BAER treatments. The question to be answered is did the BAER treatments provide the needed protection and rehabilitation of the burned area.

#### Noxious Weed Monitoring

Monitor known and high potential infestation sites for noxious weed species in the burned area and determine need and extent of control treatment to be implemented. Monitor weed treatments results to ensure objectives are being met. During 2004, monitor effectiveness of the spraying and establishment of new weed populations. Accurately map new populations using GPS and GIS. Establish photo plots for documentation.

BAER Hillslope Treatment Effectiveness Monitoring. Qualitatively monitor effectiveness of treatments. Monitor natural vegetative recovery in severely burned areas to determine the need for further treatments.

### **PART VI - Emergency Rehabilitation Treatments and Source of Funds by Land Ownership (see attached spreadsheet)**

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**PART VII - APPROVALS**

Recommended by:

\_\_\_\_\_/s/ Ed Snook\_\_\_\_\_  
BAER Overhead Team Leader (signature)

\_\_\_\_\_9/25/03\_\_\_\_\_  
Date

\_\_\_\_\_/s/Dave T. Bull\_\_\_\_\_  
Forest Supervisor (signature)

\_\_\_\_\_9/25/03\_\_\_\_\_  
Date

\_\_\_\_\_  
Regional Forester (signature)

\_\_\_\_\_  
Date