USDA-FOREST SERVICE FS-2500-8 (7/00)

Date of Report: 11-17-03

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[X] 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)

[X] 2. Interim Report
[X] 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: **Rough Draw (Complex)** B. Fire Number: MT-GNF-024

C. State: Montana D. County: Park

E. Region: 01 F. Forest: Gallatin

G. District: Livingston and Gardner

H. Date Fire Started: Rough Draw 8/9/03, Slippery Rock 8/12/03 Date Fire Contained: 9/7/03 for Slippery Rock and Rough Draw Brundage - Unknown

J. Suppression Cost: $8.0 million for Rough Draw Complex (9-07-03 estimate)

K. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 4
2. Fireline seeded (miles): 3.5 miles dozerline native mix
3. Other (identify): 5 helipads rehabilitation, spike camp rehab, private land rehab

L. Watershed Number: (Sixcode HUC's) Rough Draw Fire: 10070002050-050 Slippery Rock Fire: 10070001100-030 Brundage Fire

M. Total Acres Burned: Rough Draw: NFS Acres (1,029) State (0) Private (0)
Slippery Rock: NFS Acres (1,072) State (0) Private (0)
Brundage NFS Acres (3,000) State (0) Private (0)

N. Vegetation Types: Douglas-fir, Lodgepole Pine, Subalpine fir, grassland, sagebrush

O. Dominant Soils: Argic, Mollic, and Typic Cryoboralfs

P. Geologic Types: Paleozoic sediments (Rough Draw fire), Livingston Volcanics (Slippery Rock fire), Extrusive Tertiary Volcanics (Brundage Fire)

Q. Approximate Miles of Stream Channels by Order:
First Order: - 16, Second Order – 5, Third Order – 4, Fourth Order^{+} -0

R. Transportation System: Rough Draw Trails: 4 miles
Slippery Rock Roads: 4.5 miles
Brundage Trails: 2.0 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 1910 (low) 1463 (moderate) 1728 (high)

B. Water-Repellent Soil (acres): 580

C. Soil Erosion Hazard Rating (acres): 1910 (low) 1468 (moderate) 1728 (high)

D. Erosion Potential: 11.1 tons/acre (average) (range 2.75 to 41 tons/acre)

E. Sediment Potential: 10.5 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): 1

E. Design Storm Magnitude, (inches): 0.9

F. Design Flow, (cubic feet / second/ square mile): 1 CSM

G. Estimated Reduction in Infiltration, (percent): 13

H. Adjusted Design Flow, (cfs per square mile): 7.47 CSM

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

- Water Quality, Fisheries, and Aquatics, both within the fire area and downstream.

The Rough Draw fire has Yellowstone Cutthroat trout in Mission Creek although purity has not been recently documented. High intensity burned areas occur along the east side of Rough Draw as well as along a 1.5 mile section of Mission Creek. Sediment modeling of potential fire effects using the R1R4 model indicates a change in Mission Creek sediment at the Forest boundary (near the north fire perimeter) from current 0% over natural to 42% over natural. Hillslope treatments are not being proposed since the rocky nature of much of the burned area would not facilitate

seeding or mulch placement.

Approximately 3.0 miles of trails are expected to be at risk of deterioration from additional runoff and sediment from post-fire conditions. The threats are from upland slope erosion 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-slopes. Failure of drainage dips and water bars may cause stream capture onto trail surface area causing soil erosion, including loss of the trail by rilling and gullying.

- Threats to Long-term Soil Productivity and Ecosystem Integrity

Field reviews within the burned area indicated that the Rough Draw complex does not pose a likely threat to long term soil productivity. Short tem losses in soil productivity could result from erosion from localized storm events during 2003, 2004, and 2005. The most likely time of concentrated flow will be during July and August of 2004.

Compromised soil productivity and fire suppression activities have provided a threat of a noxious weed species that are currently found in moderate populations throughout the road system that access the burned area in the Gallatin National Forest.

The spread of noxious weeds will likely increase within the fire area, especially along roads, trails, and dozerlines where fire suppression activities disturbed the existing weed seed bank and opened lands to invasion by adjacent weed populations. Those species of greatest concern include spotted knapweed, Canada thistle, and leafy spurge. Treatments will be used to limit the spread of existing populations.

- Threats to Life and Property

No threats to life from storm events were identified with the Rough Draw, Slippery Roc, or Brundage fires. An in-channel fish pond in Mission Creek is located on private property about 0.5 miles north of the Rough Draw fire perimeter in T3S R11E S5. The pond is property of the 63 Ranch. The NRCS in Livingston has been notifed about the pond and increased sedimentation rate (bedload aggredation) likely during 2004 and 2005. The NRCS is in contact with the landowner about possible dredging of the pond in 2004 and/or 2005.

About 1.5 miles of the Mission Creek trail are at risk of accelerated erosion through high burn intensity areas. This trail section also poses a safety risk for hazard trees. About 0.5 miles of the Red Rocks Sheep Driveway Trail #395 and 1 mile of the Horse Creek trail #86 are subject to accelerated erosion.

B. Emergency Treatment Objectives:

- Reduce sediment delivery to Mission Creek and Red Rock Sheep drveway erosion by augmenting drainage on the high burn intensity parts of the trails (1.5 miles). Reduce hillslope erosion on the south side of Red Rock Plateau. Reduce trail erosion on and from Horse Creek trail (1.0 miles)
- Mitigate effects on long-term soil productivity and ecosystem function/integrity by monitoring and treating expansions of existing noxious weed infestations.
- Provide for public health and safety by conducting hazard tree assessments along the Mission Creek trail and by and installing a safety sign about hazard tree, rolling rocks, and erosion hazards at the Mission Creek trailhead.

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

Land 80 % Channel - % Roads - % Other (weed) 0 %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Weed treatments	75	85	90
Channel			
Trails	90	95	95
Other			

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:

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

Team Leader: Mark Story, Hydrologist, Gallatin National Forest

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H. **Treatment Narrative:**

LAND TREATMENTS:

Noxious Weed Control

The threat of noxious weed expansion is significant. This treatment will use herbicide and/or cultural and mechanical control treatments on known noxious weed infestations along identified roads and trails systems and the Mission Creek trailhead which was disturbed by fire suppression.

ROADS AND TRAIL TREATMENTS:

Trails

Install and maintain waterbars on high burn intensity area of the Mission Creek, and Red Rock sheep driveway trails to prevent erosion from the expected increase in runoff from the fire along and above trails. Waterbars should be installed in the fall of 2003 and cleaned during the summer of 2004. Install waterbars on the Horse Creek trail to prevent erosion from runoff increase from and along the trail.

I. Monitoring Narrative:

The following is a brief synopsis of proposed monitoring. A detailed monitoring plan for he weed monitoring is included in the specification sheets.

Noxious Weed Spraying Implementation and Effectiveness 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.

PART VI - EMERGENCY REHABILITATION TREATMENTS AND SOURCE OF FUNDS BY LAND OWNERSHIP

See attached spreadsheet.

PART VII - APPROVALS

1.	/s/ Rebecca Heath Forest Supervisor (signature)	11/17/2003 Date
2.	_____ Regional Forester (signature)	_____ Date