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

Date of Report: July 11, 2008

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
[X] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[ ] 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)

[X] 2. Interim Report # 1
[X] Updating the initial funding request based on more accurate site data or design analysis
[X] Status of accomplishments to date

[ ] 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Jocko Lakes

B. Fire Number: MT-FHA-000115

C. State: Montana

D. County: Missoula

E. Region: One

F. Forest: Lolo

G. District: Seeley Lake

H. Fire Incident Job Code: PADU45(1502)
Starting 9/15/07: PADYLA

I. Date Fire Started: 8/03/2007

J. Date Fire Contained: 95 percent

K. Suppression Cost: $29,300,000

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 79 miles of dozer line, 9 miles handline
2. Fireline seeded (miles): 60 miles of dozer line, 30 miles of rehabed roads
3. Other (identify): 40 “spot” seedings of safety zones, helispots, stream crossings, etc.

M. Watershed Number: 17-01-02-03-12-01,02,03

N. Total Acres Burned: 35,016
NFS Acres(10,506) Other Federal (0) State (2,073) Private (19,357) Tribal (3,080)

O. Vegetation Types: The fire burned northeast and southwest aspects along the southeast-flowing Placid Creek drainage at elevations from 4100 to 7000 feet. The burned area is Douglas-fir, lodgepole pine, and larch with some ponderosa pine at lower elevations and mixed shade-tolerant species including alpine fir and spruce at higher elevations and north aspects. The area has an extensive history of timber harvest on non-Forest Service lands.

P. Dominant Soils: Soils are predominantly glacial till, drift and re-worked till derived from weakly weathered Belt Supergroup formations. Textures are sandy loams to loams and contain many rounded to sub-rounded rock fragments.

Q. Geologic Types: Landforms are gently to moderately sloped glacial valley trains, steeper glaciated sideslopes and troughwall and stream breaklands with slopes greater than 65 percent.

R. Miles of Stream Channels by Order or Class: 57 miles Intermittent 31 miles Perennial

S. Transportation System

Trails: 4 miles Roads: 265 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 6,136 (low) 15,692 (moderate) 10,033 (high)

B. Water-Repellent Soil (acres): 540 (appx.)

C. Soil Erosion Hazard Rating (acres):
24,757 (low) 6,485 (moderate) 3,774 (high)

D. Erosion Potential: 9.7 tons/acre (Lolo Land Systems Inv. base rates with WATSED wildfire coefficients and delivery ratios for sediment)

E. Sediment Potential: 2,048 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 2

B. Design Chance of Success, (percent): 85

C. Equivalent Design Recurrence Interval, (years): 2 (Average Annual)

D. Design Storm Duration, (hours): The Lolo NF culvert database contains measured information at each culvert including stream gradient, channel width, culvert dimensions and fill height to allow calculation of in-culvert flow depths and velocities from design flows (below). Where design flows exceed the capacity of the culvert (H/D>1.0) the risk of failure is considered high.

E. Design Storm Magnitude, (inches):

F. Design Flow, (cubic feet / second/ square mile): 8.1

G. Estimated Reduction in Infiltration, (percent): 33

H. Adjusted Design Flow, (cfs per square mile): 21.0

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

The Jocko Lakes Fire was generally a mosaic burn, with the exception of the Placid Creek drainage, which experienced a wind driven high-intensity burn throughout its length resulting in severely burned soils in much of the riparian area. It is likely that stormflows will significantly increase in this drainage, and in several of its main tributaries, with attendant increases in erosion and sediment. Because much of the riparian area of Placid Creek was severely burned and, because it is easily accessible by the parallel road systems, it is at risk of soil damage and loss of down wood from firewood cutting and illegal OHV use. Fish habitat in the Placid Creek drainage is at risk, as well as water quality in Placid Creek and Placid Lake. Fire induced higher flows may damage or destroy portions of the Placid Creek and Finley Creek roads at currently undersized stream crossings.

A. Emergency Treatment Objectives:

The following is a summary of treatments recommended for the immediate emergency. Treatment areas were prescribed based on the potential for National Forest property damage from fire induced runoff increases, loss of both soil productivity and riparian function,

Treatments are designed to:

- Mitigate likely impacts to severely burned riparian areas of Placid Creek by signing to prohibit firewood cutting and OHV access.
- To further protect sensitive riparian areas and to also mitigate sediment impacts to Placid Creek, a tributary to Placid Lake and sensitive habitat for Bull trout by adding educational and informational patrols to ensure compliance.
- Mitigate impacts to National forest roads by providing adequate stream crossing capacity or install armored emergency spillways and "storm-proofing" interior roads to handle fire induced runoff increases. For example:

  Finley Creek road crossings – install three armored emergency spillways.
  Placid Creek Road at Slippery John Creek – replace vulnerable culvert; obliterate newly visible jammer road.
  Grouse Creek and unnamed tributary to Placid Creek – Replace vulnerable culverts.
  System roads Placid Creek tributaries - enlarge ditches, remove or clean culverts, install drain dips, spray roadside weeds

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

Land __ % Channel ___ % Roads/Trails **90** % Protection/Safety **100** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel			
Roads/Trails	85	90	90
Protection/Safety	80	80	80

E. Cost of No-Action (Including Loss): A Values-at-Risk Benefit/Cost spreadsheet is attached. All but one of the proposed treatments are economically justified with a Benefit/Cost ratio of at least 1.0 The proposed closing and stabilizing of two miles of non-system roads has a benefit/cost ratio of 0.8 with an implied minimum non-market value of around $5,000. Considering the benefits to water quality, fish habitat protection and OHV access control the proposed expenditures for obliterating these old jammer roads appears justified.

F. Cost of Selected Alternative (Including Loss):

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Arne Rosquist

Email: arosquist@fs.fed.us Phone: (406) 329-3811 FAX (406) 329-3795

H. **Treatment Narrative:**

(Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments, include species, application rates and species selection rationale.)

Land Treatments:

Channel Treatments:

Roads and Trail Treatments: While much of the Jocko Lakes fire was of low to moderate severity, Some areas did burn with high severity. Most of the high severity areas occurred in narrow band along the length of the riparian area of Placid Creek and in the headwaters of Grouse Creek, Buck Creek and Finley Creek; all tributaries to Placid Creek.

Road treatments, then, are designed to address higher runoff and debris accumulation in existing drainage features and install additional water bars as needed. The fire induced runoff increases in these and other drainages were modeled and routed through the main crossing structures at the mouths of the watersheds. The Lolo NF Culvert Database contains sufficient quantitative data to calculate whether existing structures have the capacity to accommodate the increased runoff. Our calculations revealed that for seven structures, the post-fire “headwater-to-depth ratio exceeded ‘1’; meaning in an average runoff year the culvert would be over topped with a high likelihood of failing. In several instances the increased discharge would reach the top of the road fill virtually ensuring failure and severe water quality impacts. The three culverts proposed for replacement are at particularly high risk of failure for several years.

Because there is a high risk of introducing invasive weeds from the perimeter of the fire into vulnerable areas within the fire, ground-based herbicide treatments are proposed on roads leading into previously weed-free areas within the burn. There will be approved NEPA before any treatments occur. Finally, to also discourage the invasion of weeds, areas receiving mechanical treatment will be seeded and fertilized.

Road treatments designed for the Jocko Lakes fire area include:

1. Preventive maintenance-type activities to ensure proper drainage. These activities include cleaning existing culverts, re-shaping drainage ditches, cleaning and reshaping drivable dips, and constructing new drivable type dips where needed. Clearing of burned over small trees and brush will be required for access in some areas.

2. Replacement of undersized culverts on Road 349 at Slippery John Creek and an unnamed tributary to Placid Creek; and on Road 4347 at Grouse Creek. The post-fire flow increases range from 85 to 350 percent producing post-fire headwater depth ratios of 0.85 to 1.45 The culvert inlets are damaged, the pipe lengths are too short and fill volumes at-risk are high. Emergency dips will be installed temporarily if replacement can not occur this fall.

Protection/Safety Treatments: The wind driven high intensity fire that severely burned the riparian area of Placid Creek created numerous hazard trees within a tree length of the parallel road (NFSR 349). These hazard trees were fallen toward the stream for riparian protection and stream habitat. The fire also revealed multiple historic access roads into the broad rolling valley bottom easily accessed by OHV's. This area already receives moderate-to-high OHV use. Although there is an area closure to any off road travel additional education and warning signs may provide additional protection to vulnerable soils and large down trees enticing to firewood cutters. Two types of signs are proposed, one for each threat. About 1,000 signs are proposed at a cost of about $6.00 each.

To ensure compliance with these restrictions, additional patrolling emphasizing public education and personal contact during Fall hunting seasons and firewood gathering season is proposed. Patrolling would resume next summer. Law enforcement personnel and recreation technicians would conduct the patrolling at the rate of twice per week for a total of 20 days this Fall and 30 days next summer.

I. **Monitoring Narrative:**

(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)

Monitor effectiveness of noxious weed treatment by standard vegetation plot transect methodology and road surveys. Survey would be conducted mid-to-late summer 2008. Monitor high potential infestation sites for noxious weed species in the burned area; determine need and extent of follow-up control treatment to be implemented. Data gathered will be used to facilitate prompt re-treatment to control weed populations for the purpose of protecting native plant diversity and ecological integrity of the plant communities in the burned area. Estimated cost of monitoring is ten work-days ($2,500).

Part VI – Emergency Stabilization Treatments and Source of Funds **Interim # 1**

			NFS Lands				Other Lands			All
		Unit	# of		Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER $	$	units	$	Units	$	$
A. Land Treatments										
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$0	$0		$0		$0	$0
B. Channel Treatments										
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$0	$0		$0		$0	$0
C. Road and Trails										
Add'l Culvert Cost #1	Each	4616	1	$4,616	$0		$0		$0	$4,616
Add'l Culvert Cost #2	Each	11532	1	$11,532	$0		$0		$0	$11,532
Add'l Culvert Cost #3	Each	26800	1	$26,800	$0		$0		$0	$26,800
Administration				$1,500	$0		$0		$0	$1,500
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Subtotal Road & Trails				$44,448	$0		$0		$0	$44,448
D. Protection/Safety										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Subtotal Structures				$0	$0		$0		$0	$0
E. BAER Evaluation										
				---	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Subtotal Evaluation				$0	$0		$0		$0	$0
F. Monitoring										
				$0	$0		$0		$0	$0
Subtotal Monitoring				$0	$0		$0		$0	$0
G. Totals				$44,448	$0		**$0**		**$0**	**$44,448**
Previously approved										
Total for this request				**$44,448**						

PART VII - APPROVALS

1. */s/ Gary F. Garthwait (for)* *07-14-2008*
   Forest Supervisor (signature) Date

2. _____ _____
   Regional Forester (signature) Date