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

Date of Report: 9-22-03
Revised: 03/35/2004
Revised 04/08/2005

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
[X] Status of accomplishments to date

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

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Blackfoot Lake Complex

B. Fire Number: P14466

C. State: Montana

D. County: Flathead

E. Region: 01

F. Forest: Flathead

G. District: Hungry Horse and Spotted Bear

H. Date Fire Started: 8-20-2003

I. Date Fire Contained: Expected 9-30-2003

J. Suppression Cost: $20,000,000 as of 9-19-03

K. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): unknown (110 miles were built)
2. Fireline seeded (miles): unknown
3. Other (identify): helispots, safety zones, camp

L. Watershed Number: 170102090601, 170102090602, 170102090603, 170102090606, 170102090607, 170102090608,

M. Total Acres Burned:
NFS Acres(30,014) Other Federal (0) State (0) Private (0)

N. Vegetation Types: Spruce/sub-alpine fir, Larch/Douglas-fir, Grass/forb/shrub

O. Dominant Soils: Udifluvents, Eutroboralfs, Cryoboralfs, Cryochrepts, Haplocryands

P. Geologic Types: Precambrian meta-sedimentary residual parent materials (argillite, siltite, quartzite, limestone), Permian limestone, Tertiary siltstone, and glacial till, outwash and lacustrine deposits

Q. Miles of Stream Channels by Order or Class: Perennial = 48 miles, Intermittent = 33 miles

R. Transportation System

Trails: 24 miles Roads: 81 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 22,905 (low) 6,688 (moderate) 421 (high)

B. Water-Repellent Soil (acres): 7,109

C. Soil Erosion Hazard Rating (acres):
0 (low) 4,931 (moderate) 25,082 (high)

D. Erosion Potential: 29 tons/acre

E. Sediment Potential: 17,337 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 3-5

B. Design Chance of Success, (percent): 80

C. Equivalent Design Recurrence Interval, (years): 100 (flow)

D. Design Storm Duration, (hours):

E. Design Storm Magnitude, (inches):

F. Design Flow, (cubic feet / second/ square mile): 36-60

G. Estimated Reduction in Infiltration, (percent): 40

H. Adjusted Design Flow, (cfs per square mile): 39-86

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

Threats to Life and Property

A significant portion of the heavily used Jewel Basin Hiking Area, an area managed and devoted to foot travel only, was burned by the fire. A comprehensive field review of trails that access and are within this special area indicates segments traversing high and moderate burn severity polygons are at risk from erosion due to loss of drainage stuctures, damage to trail tread and expected contribution of overland flow. The review also indicates stream crossings within or downstream of high and moderate burn severity areas are at risk from flooding. Additionally, there are also many hazard tree concerns. Most of the hazard tree concerns are in the moderate

and high severity burn polygons, but there are concerns in the low burn severity areas as well because many of the tree species in the burn area are susceptible to low intensity burn and thus will probably not survive.

Much of the burn area is managed for wood products and thus has a comprehensive network of logging and jammer roads. Exhaustive field review of these roads indicates some are at risk from erosion, mass failure and flooding due to several factors. There are stream crossings that have undersized pipe, plugged pipe, or pipe not installed at grade. There are drainage structures that need maintenance. There are segments of road that lack adequate drainage or traverse unstable terrain.

Threats to Water Quality, Fisheries, and Aquatics

Field review indicates water quality and fishery/aquatic resources are threatened by sedimentation due to potential increases in erosion and mass failure from certain moderate and high severity burn area polygons and certain roads, and possible failure of certain road crossings. Of particular concern are impacts to bull trout and west slope cutthroat trout habitat and populations. Bull trout is a federally listed specie, while Westslope cutthroat trout is a sensitive fish specie. Streams of most concern are Sullivan, Knief and Goldie Creeks. Sullivan Creek was recently proposed by the U.S. Fish and Wildlife Service as critical for bull trout. Knief and Goldie Creeks are important streams for management of Westslope cutthroat trout.

Threats to Long-term Soil Productivity and Ecosystem Integrity

The burn area presently contains numerous noxious weed species of concern. The most abundant and widely distributed species are spotted knapweek and St. John's wort. These species occur along most of the road system, at gravel pits, and in other disturbed sites. Other existing species of concern include Canada thistle, orange hawkweed and meadow (yellow) hawkweed. Canada thistle is common in riparian areas and wet meadows. Orange and meadow (yellow) hawkweed occur along the primary access road into the burn and along several tributary roads. These two species are of great concern as they are known to be rapidly spreading across the Flathead National Forest.

There is a concern existing weed populations will expand considerably if not controlled in a timely fashion. Of particular concern is spread along approximately 60 miles of roads that were used during suppression activities. These roads traverse through much of the burn area and may serve as conduits for spread of weeds along them and into adjacent low and moderate burn severity polygons. If the threat materilizes long-term soil productivity and ecosystem integrity will be compromised.

B. Emergency Treatment Objectives:

Mitigate effects of the fire on human safety.

Mitigate effects of the fire on bull trout and Westslope cutthroat trout habitat and populations.

Mitigate effects of the fire on roads and trails.

Mitigate effects of the fire on the spread of noxious weeds.

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

Land **80** % Channel **N/A** % Roads **80** % Other **80** %

D. Probability of Treatment Success (see cost/risk assessment for treatment by treatment probabilities)

	Years after Treatment		
	1	3	5
Land	80	85	85
Channel	NA	NA	NA

Roads/Trails	85	85	85
Weeds	80	75	70

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

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H. **Treatment Narrative:**

The following narrative is a summary of proposed emergency treatments. Full details of each treatment may be found in individual treatment specification sheets, which include maps, that accompany this burned area report. **ALL TREATMENTS EXCEPT "CLEAN AND INSTALL EROSION CONTROL STRUCTURES" AND "HAZARD TREE TREATMENT – TRAILS" SHOULD BE IMPLEMENTED DURING THE FALL OF 2003. THE TWO TREATMENTS IN ITALICS SHOULD BE IMPLEMENTED DURING THE SUMMER OF 2004.**

Land Treatments:

Noxious Weed Control/Treatment: Apply immediate herbicide and/or cultural and mechanical control treatments on known noxious weed infestations (Spotted Knapweed and St. John's Wort) along identified roads, campgrounds, parking areas, administrative facilities, and trailheads disturbed by fire as well as decommissioned roads reopened for suppression activities that are within the fire perimeter. Treatment sites have been ground truthed and pose a threat for noxious weed establishment, seed set, and spread into vulnerable areas within the fire perimeter. NEPA for weed treatment is in place.

All of the proposed weed work described above has occurred. In addition, the forest Botanist has monitoried all of the treatment areas and is concerned about the risk of weed spread and new establishment within the burned areas. Of particular concern is the increased presence of the Hawkweeds. These weeds are capable of alterinf our cool-moist habitat plant communities within the fire area. Our experience in the Little Wolf Fire areas that burned in 1994 was after mostly controlling Tansy Ragwort (a new invader) we now have a huge population of Hawkweeds, which are a Category 2 weed in Flathead County. Wer need to treat the hawkweeds in the Blackfoot fire area and monitor the results of our treatments. At this time no known biological agents exist for the hawkweeds, so treatments will concentrate on chemical applications.

Critical Area Seeding: Barley-Native Seed Mix: Conduct additional seeding in **360 acres** in Sullivan Creek within select high severity burn areas that pose a threat to downstream critical resource values including Bull Trout habitat, Hungry Horse Reservoir and Road 895. Treatment areas will be seeded with a non-invasive, non-persistent cereal grain combined with a perennial native seed mix. OAS certified contract aircraft and pilots will be used. The following seed mixture will be used: This work is completed.

Common Name	Scientific Name	Application Rate (PLS)	Total Pounds Pure Live Seed
Barley	Hordeum vulgare	50	10,000
	Sub-total	50 (14 seeds/ft2)	10,000

Idaho fescue	Festuca idahoensis	2.5	500
Bluebunch wheatgrass	Pseudoroegneria spicata	5	1,000
Blue wildrye	Elymus glaucus	7.5	1,500
Mountain brome	Bromus marginatus	10	2,000
	Sub-total	25 (70 seeds/ft2)	5,000

Seed will be tested for purity and germination rates. Before accepting delivery the contractor will provide written evidence of purity and germination. Application rates will be closely monitored.

Contour Straw Wattle Slope Treatment: Place 3000 linear feet of straw wattles within select moderate and high severity burn polygons along Sullivan Creek to control erosion and sedimentation. This work is completed.

Site Stabilization – Shrub Planting: Plant approximately 5,225 cottonwood and alder seedlings on 2 acres of road cut slope in the Goldie Creek area and 1 acre of high severity burn in the Sullivan Creek area to stablize slopes that threaten the stability of Road 895 and a stream crossing on Road 547.

Straw Mulching Along Road 895: Blow straw mulch on slopes along 0.75 miles of Road 895 that traverse high and moderate severity burn to provide ground cover for establishment of vegetation. Revegetation of this area is critical to mitigate fire effects on active mass failures that threaten the stability of the road.

Channel Treatments:

No channel treatments are proposed.

Roads and Trail Treatments:

Road 10349 Drainage: Construct drainage on portions of road 10349 to reduce the risk of runoff traveling down slope and creating gullies that would result in sediment delivery to Sullivan Creek, a critical bull trout spawning area. **(NOTE: THIS TREATMENT WAS APPROVED IN ADVANCE ON SEPTEMBER 18, 2003 BY THE REGIONAL BAER COORDINATOR AND THE WORK WAS COMPLETED ON SEPTEMBER 21, 2003)**.

Area Wide Road Maintenance: Along targeted roads within the burn, spot road grade, repair drain dips, clean ditches and clean culverts (particularly several large culverts) to make road features function as designed to accommodate anticipated runoff.

Install Flared Inlet for 36" Corrugated Metal Pipe and Pipe Inlet Armoring: At five locations within the burn, install flared inlets on 36" pipe to accommodate anticipated runoff. Armor the inlets with riprap as well.

Install Flared Inlet for 48" Corrugated Metal Pipe and Pipe Inlet Armoring: At two locations within the burn, install flared inlets on 48" pipe to accommodate anticipated runoff. Armor the inlets with riprap as well.

Install 24" CMP Culvert Pipe: At three locations within the burn, install 24" CMP's to increase roadway cross drains and/or to provide overflow pipe near existing culverts. Seed disturbed areas as well.

Remove Existing 48" CMP Culvert: At one location within the burn along Knieff Creek, remove an existing dilapidated 48" pipe that is approximately 48' in length to allow passage of anticipated runoff and passage of Westslope cutthroat trout. Reshape the channel to match existing channel in the vicinity of the pipe.

Remove Existing 18" CMP Culvert: At two locations within the burn remove existing 18" pipe to allow passage of anticipated runoff and prevent further channel degradation. Reshape the channel to match existing channel in the vicinity of the pipe.

Riprap Armoring of CMP Culvert: Riprap the outlet, ditch line, and shoulder of one 24" CMP road crossing within the burn area to reduce the risk of anticipated flows scouring the hillside.

Install Diversion Dips on Roads: At two road crossings within the burn, install diversion dips in the road to facilitate passage of anticipated flows. Riprap the outlet side of the dip. Seed any newly disturbed areas.

Special Inlet Riprap Armoring: At one road crossing riprap the inlet of a pipe as well as the ditchline upstation of the inlet. Also construct a riprap check dam on the ditch line downstation.

Clean Drainage Structures on Trails: Install and maintain waterbars and drain dips on six trails that traverse moderate and high severity burn areas to prevent erosion that may occur during spring runoff. This work is needed immediately to protect these trails next spring.

Clean and Install Erosion Control Structures: Within one year of containment, install and maintain waterbars and drain dips on six trails that traverse, primarily, moderate and high severity burn areas to prevent erosion. This work is needed within one year, but after spring runoff, to protect these trails over the long term.

Hazard Tree Treatment – Trails: Within one year of containment, cut and remove standing, leaning, and fallen hazard trees along six trails **(23.4 miles**), primarily within moderate and high severity burn areas, that were weakened by the fires. Wait until summer of 2004 to allow seasonal winds and snow to bring down much of the imminent hazards and allow for a safer work environemnt, as well as a more natural appearance.

Install Hazard Warning Signs: Install 31 hazard warning signs and replace 7 burned directional signs along roads and trails and at one camp associated with the Jewel Basin Hiking Area to provide for public safety.

Goldie Modular Bridge - The bridge would replace a fish passage culvert. The treatment is proposed to expand the amount of available habitat for westslope cutthroat trout to increase population resiliancy to habitat changes caused by fire and reduce potential for localized extinction.

Remove Existing 48" CMP Culvert - The existing culvert had a rust line that indicates even prior to the fire the culvert was running at about 45% of its capacity indicating that it is risk of failure now. The purpose of the treatment is to prevent further channel siltation and degredation as well as to remove a blockage to the passage of west slope cutthroad trout along John Creek.

Structures:

No structural treatments are proposed.

I. **Monitoring Narrative:**

Known and high potential noxious weed infestation sites within the burn area will be monitored. As required by current policy, **this monitoring will occur during the first year after fire containment**. If the monitoring indicates the fire has exacerbated the existing weed problem funding avenues for treatment will be pursued.

Critical area seeding will be closely monitored to ensure prescribed application rates are met. All other treatments will be monitored as implementation occurs. This monitoring will be done my contract administers and Forest staff. Where appropriate, anticipated monitoring needs were designed into treatment specifications. Remaining monitoring needs will be conducted as personnel are in the area.

Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership

			NFS Lands				Other Lands			All	2005 Request
		Unit	# of	WFSU	Other	# of	Fed	# of	Non Fed	Total	
Line Items	Units	Cost	Units	SULT $	$	units	$	Units	$	$	
A. Land Treatments											
Noxious Weed Control/Treatment	Package	24201	1	$24,201			$0		$0	$24,201	$21620
Critical Area Seeding: Barley-Native Seed Mix	Acres	199	500	$99,480			$0		$0	$99,480	
Contour Straw Wattle Slope Treatment	Acres	983.8	80	$78,701			$0		$0	$78,701	
Site Stabilization - Shrub Planting	Acres	4505	3	$13,515			$0		$0	$13,515	
Straw Mulching Along Road 895	Miles	5765	0.75	$4,324			$0		$0	$4,324	
Subtotal Land Treatments				$220,221			$0		$0	$220,221	
B. Channel Treatments											
None				$0			$0		$0	$0	
Subtotal Channel Treat.				$0			$0		$0	$0	
C. Road and Trails											
Road 10349 Drainage	Miles	1500	1	$1,500			$0		$0	$1,500	
Area Wide Road Maintenance	Package	11530	1	$11,530			$0		$0	$11,530	
Install Flared Inlet for 36" Corrugated Metal Pipe and Pipe Inlet Armoring	Each	1780	5	$8,902			$0		$0	$8,902	
Install Flared Inlet for 48" Corrugated Metal Pipe and Pipe Inlet Armoring	Each	2647	2	$5,294			$0		$0	$5,294	

Install 24" CMP Culvert Pipe	Each	2648	3	$7,944			$0		$0	$7,944	
Remove Existing 48" CMP Culvert	Each	6544	1	$6,544			$0		$0	$6,544	
Remove Existing 18" CMP Culvert	Each	1488	2	$2,976			$0		$0	$2,976	
Riprap Armoring of CMP Culvert	Each	4016	1	$4,016			$0		$0	$4,016	
Install Diversion Dips on Roads	Each	1178	2	$2,355			$0		$0	$2,355	
Special Inlet Riprap Armoring	Each	2020	1	$2,020			$0		$0	$2,020	
Clean Drainage Structures on Trails	Package	3,783	1	$3,783			$0		$0	$3,783	
Clean and Install Erosion Control Structures	Package	8097	1	$8,097			$0		$0	$8,097	
Goldie Modular Bridge	Each	60000	1	$60,000			$0		$0	$60,000	
Remove John Cr culvert	Each	6544	1	$6,544			$0		$0	$6,544	
Hazard Tree Treatment - Trails	Package	1510	23.4	$35,334			$0		$0	$35,334	
Install Hazard Warning Signs	Signs	449.1	31	$13,922			$0		$0	$13,922	
Subtotal Road & Trails				$180,761			$0		$0	$180,761	
D. Structures											
None				$0			$0		$0	$0	
Subtotal Structures				$0			$0		$0	$0	
E. BAER Evaluation											
Assessment Team	Teams	45000	1	$45,000			$0		$0	$45,000	
Implementation Leader	Leaders	10000	1	$10,000			$0		$0	$10,000	
				$0			$0		$0	$0	
Subtotal Evaluation				$55,000			$0		$0	$55,000	
F. Monitoring											
Noxious Weeds	Package	4712	1	$4,712			$0		$0	$4,712	$11,982
				$0			$0		$0	$0	
Subtotal Monitoring				$4,712			$0		$0	$4,712	

G. Totals				**$460,694**				**$0**		**$0**	**$460,694**	**$33,602**
											$494,296	

Interim request reflects an increase of $66,544

Changes reflected by the additional request on 3/25/04 are highlighted in yellow

Changes reflected by the additional request on 4/08/05 are highlighted in Green. We are asking for an additional $35,102. Our total project request to this time would be $492,296 with the 2005 request.

PART VII - APPROVALS

1. /s/ Cathy Barbouletos — 9/22/2003
   Forest Supervisor (signature) — Date

2. _____ _____
   Regional Forester (signature) — Date