

Date of Report: May 18, 2006

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 DESCRIPTIONA. Fire Name: BlackerbyB. Fire Number: ID-MC5-042014C. State: IdahoD. County: IdahoE. Region: 01 (Northern)F. Forest: 17 (Nez Perce)G. District: 04 (Clearwater)H. Date Fire Started: August 7, 2005I. Date Fire Contained: August 19, 2005J. Suppression Cost: as of 18 August 2005 was \$4,390,000

K. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 7.5 miles (Forest Service dozer line and hand line will be obliterated)
2. Fireline seeded (miles):
3. Other (identify): dozer line: 10.35 miles state and private lands, and 3.5 on NFS lands

L. Watershed Number:

M. Total Acres Burned: 4974 acres

NFS Acres(3407 acres) Other Federal () State (440 Acres) Private (1127 acres)

N. Vegetation Types: grand fir, Douglas fir, ponderosa pine

O. Dominant Soils: Ultic Haploxerolls, Typic Dystrochrepts

P. Geologic Types: Batholith granitics, Columbia River basalts

Q. Miles of Stream Channels by Order or Class: 1st order – 11.3 miles, 2nd order 1.2 miles, 3rd order 2.2 miles, 6th order South Fork Clearwater River – 4 miles

R. Transportation System

Trails: 1 mile Roads: 31 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): NFS lands – 1225 acres, All other ownerships - 523 acres (low) NFS lands – 1924 acres All other ownerships – 305 acres (moderate) NFS lands – 217 acres All other ownerships – 739 acres (high), NFS lands – 43 acres (unburned)

B. Water-Repellent Soil: 995 acres (20% of burned area);

C. Soil Erosion Hazard Rating (acres):
-0- (low) 4797 acres (77%) (moderate) 177 acres (23%) (high)

D. Erosion Potential: 0.90 tons/acre

E. Sediment Potential: 122 tons/ 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): 10

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches): 1.3

F. Design Flow, (cubic feet / second/ square mile): 27.8

G. Estimated Reduction in Infiltration, (percent): 20

H. Adjusted Design Flow, (cfs per square mile): 92.1

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

Threat to life and private property:

Some potential exists for debris torrents and high water flows to impact road traffic or a private residence on State highway 14. Water and debris flowing down Mt. Idaho grade could damage the ditch and possibly undercut the pavement, damage Highway 14 and flood Blackerby day use area with water and debris. A residence at lower end of watershed #1 could be damaged if a debris torrent occurred.

McAllister Trail 481 was burned over in the fire and 20 waterbars and a treated timber retaining wall were consumed. The trail is now eroding and the fill unstable due to the loss of support and poor drainage.

Threat to water quality deterioration:

Blackerby fire is located in the South Fork of the Clearwater River drainage and tributaries. Four small watersheds on state and private land (all located above the Mt Idaho road grade) experienced the highest severity burn. Other small areas of high severity burn occurred on other face drainages along the west side of Highway 14. An emergency exists due to projected water yield and sediment increases from the fire resulting in increased risk of debris torrents in the four watersheds with high burn severity. The fire extends south up river from the junction of Mt Idaho Grade and Highway 14, to the mouth of Earthquake Creek on both the sides of the highway. This area burned at low to moderate severity with inclusions of high severity. The high severity inclusions within these watersheds are traversed by the 2021 road on National Forest lands, which has increased risk of failure due to unstable cut and fill slopes, and one culvert at risk for failure. The terrain in the fire area is dominated by steep breaklands, which are unstable and have high gradient channels that are susceptible to debris torrents. The Mt Idaho grade, which is a major travel route to Elk City, is at some risk from increased runoff and debris torrents, which could plug culverts, overflow down the road ditches, or damage the road fill slopes. Accelerated road drainage and ditch maintenance, culvert cleaning and replacement, and slope treatments to reduce runoff can reduce the severity of these effects.

See also the reference to Trail 481 above.

Threats to ecosystem integrity:

Approximately 90% of the Blackerby Fire area on National Forest Land is classified as highly susceptible to invasive weeds. Highly susceptible lands, which total 2000 acres, risk loss of ecological integrity from further spread of invasive weeds.

On the Blackerby Fire spotted knapweed and yellow star thistle populations occur on the warm and dry habitat types. Sulfur cinquefoil also occurs within the area. The increase of exposed mineral soil from burned areas, fire lines, roads, trails and fire camp areas greatly increase the risk of invasive weed spread as a result of fire disturbance.

Threats to threatened and endangered fish

Effects to fish are likely to derive from debris torrents delivered to the South Fork Clearwater River. The other streams do not have fish except Cove Creek, and only two fish were found. Short-term, a large event delivered to the South Fork Clearwater River would deliver fine and coarse sediment and would be considered negative in terms of fish habitat because of the existing degraded condition of the river. If the event occurred after steelhead have spawned in the main river, redds in the river could be destroyed, and pool habitat could fill. Long-term, such events could be beneficial to fish habitat, adding woody debris and forming debris jams, except that roads and culverts would impede delivery of large material.

B. Emergency Treatment Objectives: Primary objective of the slope treatments are to reduce the level and amount of runoff, and erosion on steep slopes above the Mt. Idaho Grade and Highway 14. In this setting and condition of severe burn, the risk of debris torrent and slope failure is high. The large basins that exist above culverts on the Mt. Idaho grade on the severely burned watersheds will better serve as storage for floods and runoff events with the following emergency treatments: accelerated culvert cleaning and maintenance in all

burned watersheds, removal of culverts and fill in an old skid trail and an old road template in severely burned watershed #2, and upsizing the culvert on watershed #3 on State highway 14. The weed treatments are designed to minimize the spread of noxious weeds, and recontouring Forest Road 2021 will decrease the chance of road failure and risk to water quality. Aerial seeding of pelletized native seed is expected to increase resistance to weed invasion on one area with high public use and high weed susceptibility. Stabilizing Trail 481 will reduce erosion and improve trail safety.

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

Land 80 % Channel % Roads 70 % Other %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	70	80	85
Channel			
Roads	70	80	85
Other			

E. Cost of No-Action (Including Loss): \$200,000 to replace 4 large culverts with very deep fills if they fail, plus \$35,000 to treat weed expansion with herbicides as a result of not treating immediately after the fire. Total \$235,000

F. Cost of Selected Alternative (Including Loss): \$82,130 for all treatments on all lands plus cost of lost topsoil. Some risk of road damage still exists from extreme events.

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input type="checkbox"/> Range	<input type="checkbox"/>
<input type="checkbox"/> Forestry	<input type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input type="checkbox"/> Engineering	<input type="checkbox"/>
<input type="checkbox"/> Contracting	<input checked="" type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input type="checkbox"/> Archaeology	<input type="checkbox"/>
<input checked="" type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS	<input checked="" type="checkbox"/> Recreation

Team Leader: Marci Nielsen-Gerhardt

Email: mgerhardt@fs.fed.us

Phone: 208-926-1950

FAX:

Team Members

Pat Green – Soils and Ecology

Marci Nielsen-Gerhardt - Soils and Hydrology

Nick Gerhardt – Hydrology

Leonard Lake - Botany and Weeds

Katherine Thompson – Fisheries
John Fantini - Recreation

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:

Weed Treatments

Objective:

The purpose of this treatment is to maintain ecosystem integrity by treating sites where fire has exposed soil on burned areas and included nearby roads that act as vectors. Yellow star thistle, spotted knapweed and sulfur cinquefoil populations are located within and close to the disturbed areas which become sites for new infestation of invasive weeds. By reducing the amount of weed seed in the area, and treating new populations, native plant communities can have time to recover, and disturbed sites will have more opportunity to recover with native plants instead of invasive weeds. Weed management strategy within the Clearwater Basin Weed Management Area, an interagency cooperative, is currently in place. Concurrence for Noxious Weed Control has been received from Fish and Wildlife Service and is pending from National Fisheries. A current weed EA (1988) covers the weed treatments on NFS lands.

Methods:

- Treat satellite infestations of spotted knapweed along Road 451A leading into the burned area and associated spur roads that burned. The knapweed population along the road system is contributing a seed source and the road system is acting as a spread corridor for further expansion into the burned areas – 10 acres/two treatments
- Treat Yellow starthistle infestation along the lower slope adjacent to Cotter Bar – 40 acres/one treatment. This is the only infestation of Yellow starthistle found along this portion of the South Fork Clearwater subbasin.
- Treat all new invasive weeds within and adjacent to the fire perimeter – 2 acres/two treatments.
- Treat spotted knapweed within the area of aerial seeding 5 acres/two treatments

Aerial Seeding of Pelletized Native Grass Seed

Objective:

Reestablish native perennial grass in a timely fashion in order to reduce or eliminate a threat to long-term soil productivity and protect the ecological integrity of the ecosystem. The treatment will minimize long term soil erosion on steep breaklands with moderate burn severity, and reduce the potential for increases in invasive annual grasses as a result of fire.

Methods:

Aerially apply a pelletized seed mix on 20 acres of priority slopes where conversion and degradation by invasive weeds would be accelerated as a result of the Blackerby Fire. The mix is Idaho fescue, bluebunch wheatgrass, and Sandberg bluegrass, applied at a bulk rate of 29 lb/ac. The seed is glued to a wood fiber mulch that improves ground contact, retention on steep slopes, repels predators, and provides moisture holding capacity upon germination. With mulch, the gross application rate is 1 ton per 4-5 acres.

Contour Falling of Trees, Application of Straw Logs and Hand Mulch Straw (combined slope treatment)

Objective:

The objective is to trap sediment from steep slopes that contribute to water and debris to Mt. Idaho grade. This would decrease the sediment that would enter the ditches on the Mt. Idaho grade and the stream channels in the burned watersheds, reducing road maintenance costs and averting accidents or road closures.

Methods:

Trees will be felled and keyed into the soil on slopes less than 70 percent slope and perpendicular to the slope on about 15 acres. An estimated 30-40 logs/acre are felled and this treatment will vary depending on sediment storage needed on the slope and available log material. Straw logs will be applied where trees are not available, and straw mulch will be crimped in by hand where the soil is too rocky to apply logs. Straw mulch will be applied at one ton per acre in these areas.

Channel Treatments:

None are proposed at this time.

Roads and Trail Treatments:

Decommission Road 2021

Objective

The 2021 road is located on NFS lands on steep side slopes of breaklands where areas of moderate and hot fire have occurred above and below the road. The road is unstable and failing in several areas of the steep headwaters. One live stream culvert is located on the road in an area of hot burn. This culvert is predicted to plug and take out the road fill if in a flood or debris torrent situation. The road has been recontoured on one end and is no longer used as a travel route by the Forest. Recontouring this road would reduce the likelihood of road fill material moving down the slope as a debris torrent or debris avalanche, as well as restoring natural drainage to the headwall.

Methods

Approximately one mile of road will be recontoured to the natural slope at much as possible with an excavator. The inside one half of the road prism will be decompacted before recontour. The culvert will be pulled and drainage restored to natural stream valley bottom width and gradient. Available slash will be laid on the recontoured slope. The entire length of recontoured road will be mulched with straw and seeded with annual rye.

Objective

Stabilize McAllister Trail 481 by installing waterbars, drain dips and outsloping, and replacing burned out wood retaining wall with non-flammable material.

Treatments Recommended on State and Private Lands

The following treatments were recommended by the BAER team in coordination with NRCS, the Grangeville Road District, Idaho County, Idaho Fish and Game (which holds the state lands), Idaho Department of Transportation, and private lands that were affected by the fire. No NFS funds are being requested for these treatments.

Improve Stream Crossings

Objective

The recommended treatment applies to improvement of two stream crossings on Watershed #2. Restoration of the stream crossings by removing the road fill of the old road template above the current road, and reestablishing the stream channel, will result in reduction of risk of that fill being delivered down the stream during a debris torrent event. Erosion and sedimentation at the stream crossing will be reduced and natural revegetation will occur.

Methods

Restore the stream to the natural valley bottom location and gradient using an excavator to remove the road fill and reestablish the stream channel. Mulch the site and seed annual rye.

Culvert and Fill Removal on Old Mt Idaho Grade Template

Objective

The objective of this treatment is to remove the risk of a culvert becoming plugged and failing during a flood or debris torrent. This culvert is undersized and could easily become plugged with ash and debris moving down the stream during a debris torrent. This culvert could fail, taking the road fill with it, which would add even more sediment to the basin located in the stream above the Idaho grade.

Methods

Remove culvert on old template in Watershed#2 with an excavator and remove enough fill from the old road so that the stream can flow over the boulders that comprise the lower portion of the fill. Remove all loose consolidated fill that could wash out during a flood event and place on higher ground in a stable location.

Road Storm Patrols

Objective

There is a high safety hazard along the Mt. Idaho grade during rainstorms in the first few years after the fire and storm patrols are needed to keep culverts functioning, clear debris from the road, and, if needed, alert the public of potential danger from rolling debris.

Methods

Clean debris and sediment out of inlet basin with a backhoe or by hand and clean outlet to provide free drainage down stream channel. Clear large debris from the road. Alert the public to danger of rolling debris during rain events by using radio alerts or signing.

Install Perennial Culvert on State Highway 14 on WSHD #3.

Objective

The stream at this time runs down to Highway 14, flows down the ditch and eventually percolates under Highway 14. If there is a great increase in runoff on WSHD #3 due to high severity burn in a rainstorm event, the present flow patterns along the ditch and under Highway 14 will not handle the increased runoff. The objective in adding this culvert is to decrease the chance that the increased runoff in WSHD 3 would damage Highway 14.

Method

Install culvert under State Highway 14 at the mouth of Watershed #3

Install Trash Racks on Watersheds #1, 2, and 3

Objective

Trash racks should be considered on watersheds #1, 2, and 3 after further cost/benefit and feasibility consideration. The objective of the treatment is to collect large debris such as wood and rock moving down the channel toward the culvert, before it blocks the culvert. This keeps the culvert free of debris and reduces the chance of the culvert plugging and the water backing up and running down the ditch on the Idaho Grade. Periodic clean out of the trash racks gives the basins more storage capacity.

Treatments Considered, but Dropped

Aerial mulching was considered for the steep severely burned drainages on private and state land. The BAER Team contacted Pete Robichaud at the Rocky Mountain Research Station and also referred to a publication from San Dimas Technology Development Center on the "Planning and Implementation of Helicopter Straw Mulching" to make a decision whether to recommend aerial mulch treatments. The decision not to recommend the straw mulch was made due to the steepness of the slopes on the drainages within the fire. The treatment would not be effective. The slopes range from 50-90 percent and do not hold a consistent snow cover which

has been shown to help hold straw on slopes up to 70 percent. The straw would not stay on the steep slopes and could wash down the slopes during rainstorms, possibly plugging up the culverts above the Mt. Idaho grade. Hand slope treatments are recommended on the slopes that posed most threat to the Idaho grade directly above the grade (see above).

Installation of a RAWS station was considered, but was dropped because most of the threat from floods and debris torrents is on private land. The NRCS and Idaho County Disaster Coordinator were encouraged to pursue the RAWS system.

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.)

Invasive weed spraying

Objective: To determine if spraying has been effective in reducing invasive weeds in areas within and tributary to the burned area.

Methods: A two person crew will spend three field days fall 2005 (pre-spray), mid 2006, and mid 2007, establishing and reading weed frequency and density belt survey transects.

Pelletized Seed Application

Objective: To determine if seed application was well distributed within the target area.

Methods: A two person crew will put out sticky boards to sample seed delivery in fall 2005.

Objectives: to determine success of native grass establishment

Methods: A two person crew will sample seeded and adjacent unseeded areas in 2006 using frequency and density microplots.

Soil Erosion and Culvert Treatments

The focused treatments of log felling, straw logs and/or crimped straw mulch will be monitored qualitatively by interdisciplinary review of one to two field days. If no treatments occur on these lands, a review is still needed to assess the adequacy of no treatment.

Precipitation Monitoring

The objective is to characterize rainfall events that result in post-fire flooding below the Blackerby burned area. This includes installing a tipping bucket rain gage with heater and data logger and 2 days for each of three years of analysis and reporting.

Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership																	
							Other Lands										
				NFS Lands		State Lands (IDFG)		Private Lands		Local HWY District							
Line Items	Trmt. Site #	Units	Unit Cost \$	# of units	cost \$	# of units	Cost \$	# of units	Cost \$	# of units	Cost \$	Total Cost	Total Units				
Slope Treatments																	
Aerial Seeding		acres	850	20	\$17,000		\$0		\$0		\$0	\$17,000	20				
Herbicide Weed Treatment		acres	\$240	74	\$17,760		\$0	0	\$0			\$17,760	74				
Slope Treatments (combination of contour log fall, apply straw logs or hand straw mulch)		acres	\$450		\$0	6	\$2,700	9	\$4,050			\$6,750	15				
					\$0		\$0					\$0					
					\$0							\$0					
Total Slope Treatments					\$34,760		\$2,700		\$4,050			\$37,930					
Channel Treatments																	
Total Channel Treatments																	
Road Treatments																	
Improve 2 Stream Crossings on Watershed 2		each	\$150		\$0	2	\$300		\$0		\$0	\$300	2				
Culvert/Fill Removal on old Road Grade on Watershed 2		each	\$500		\$0	1	\$500		\$0		\$0	\$500	1				
Recontour 2021 road		each	\$11,000	1	\$11,000		\$0		\$0		\$0	\$11,000	1				
Storm Patrols (3per yearX2 years)		each	\$600		\$0		\$0		\$0	6	\$3,600	\$3,600	6				

[illegible]

PART VII - APPROVALS

1. _____
Forest Supervisor (signature) _____ Date _____
2. _____
Regional Forester (signature) _____ Date _____