

Date of Report: 9-27-2006

Edited JBruggink 9/29/2006

Edited JBruggink 10/13/2006

BURNED-AREA REPORT
(Reference FSH 2509.13)**PART I - TYPE OF REQUEST****A. Type of Report**

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

B. Type of Action

- ☐ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)
☒ 2. Interim Report # 1
☐ 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: Boundary Creek (Boundary Complex) B. Fire Number: ID-SCF-006336
C. State: Idaho D. County: Valley County
E. Region: Intermountain, R4 F. Forest: Salmon-Challis National Forest
G. District: Middle Fork and Yankee Fork H. Fire Incident Job Code: P4C28E
I. Date Fire Started: August 8, 2006 J. Date Fire Contained: September 20, 2006
K. Suppression Cost: \$4,531,989 for entire Boundary Complex
L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 6.5
2. Fireline seeded (miles):
3. Other (identify): Rehabilitation of 8 Pumping Sites, reseed and mulch the Dry Creek Helibase, and grade Roads #203 and #579.
M. Watershed Number: 170602050401 170602050402 170602050407 170602050408 170602050502
N. Total Acres Burned: 11,005 Boundary Fire (Boundary Complex 26,888)
NFS Acres(10,905) Other Federal () State () Private (100)
O. Vegetation Types: Subalpine Fire, White Bark Pine, Lodgepole Pine and Spruce with elksedge and grouse whortleberry understory.
P. Dominant Soils: Soils are typically sandy skeletal and loamy skeletal Cryumbrepts and Cryoborolls.

Q. Geologic Types: The burned area is located within the Northern Rocky Mountain physiographic province. The geology is derived from intrusive granitics of the Idaho Batholith. Dominant landtypes include moderately dissected glacial sideslopes and moderately dissected mountain slopelands formed in granitic parent materials. Glaciation and fluvial action are the primary landforming processes.

R. Miles of Stream Channels by Order or Class: Total 25 miles of stream

S. Transportation System

Trails 18 miles Roads: 0.5 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 2205 (low) 3300 (moderate) 3300 (high) 2200 (unburned)*

* Burn Severity based on BARC map, however field review of trails has identified areas of moderate and high burn severity particularly in the Soldier Lakes area that are shown as unburned on BARC map. Trail treatments are based on field review of trails.

B. Water-Repellent Soil (acres): approx. 10% or 1,100 acres

C. Soil Erosion Hazard Rating (acres):
2,750 (low) 4,070 (moderate) 4,075 (high)

D. Erosion Potential: 5 tons/acre

E. Sediment Potential: 2,500 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 1- 3 years for grasses, 2-5 years for woody species and 15 to 50 years for conifers

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): 0.51

F. Design Flow, (cubic feet / second/ square mile): 14

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

H. Adjusted Design Flow, (cfs per square mile): 16.8

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

Background: The Boundary Creek Fire is part of the Boundary Complex. The fires in this complex are either wholly or partially in the Frank Church River of No Return Wilderness, except for the Knapp 2 fire. Other fires in this complex include the North Elk Fire (6099 acres) and the Mountain Meadow Fire (9151 acres) that burned together and the Knapp 2 Fire that burned 633 acres. The North Elk and Mountain Fires were wildland use fires that became suppression fires because they threatened private land inholdings; the Sulphur Creek and Morgan Ranches. These fires did not reach the ranches and were contained within the wilderness. Based on an office review and discussion with the District Ranger it was determined that these fires did not pose an imminent threat to life or property outside the wilderness and there was no BAER assessment of these fires. The Knapp 2 fire was located primarily on a ridge and did not pose a threat to life, property or critical natural resources and there was no BAER assessment for this fire.

The Boundary Fire is primarily within the wilderness but it did burn some private land in the vicinity of the Greyhound Mine. This fire also burned across some major trails including the main Middle Fork of the Salmon River trail and trails leading to the high lakes in the Soldier Creek drainage. A BAER assessment was done to evaluate effects on trails and weeds for the Boundary Fire.

Summary of Issues:

1) **Human Life and Safety.** There are five major trails within the burned area that receive high use: Middlefork of the Salmon River Trail, Cutthroat Trail, Soldier Creek Trail, Soldier Lake Trail and Patrol Ridge Trail. These trails are open to both stock and pedestrian use and connect to the Middle Fork of Salmon River, the highly used Soldier Lakes area and the historic Big Soldier Lookout.

- Direct fire effects to recreationists include increased instability of the Middle Fork of the Salmon River Trail due to vegetation loss above and below the trail. In some sections this trail is located on unstable talus slopes that are susceptible to dry ravel. The loss of any vegetation along this trail increases the rate and incidence of dry ravel and the potential for failure of the existing trail retaining structures. Other effects include downed fire-killed trees across the trails, danger from falling snags, burned out tree roots and narrowed trail tread. The downed trees present a unique safety hazard on trails located on steep sideslopes because there is often no opportunity for packers with a pack string to turn around without putting themselves and the stock at risk.

2) **Property.** There are five major trails within the burned area that receive high use: Middlefork of the Salmon River Trail, Cutthroat Trail, Soldier Creek Trail, Soldier Lake Trail and Patrol Ridge Trail. These trails are open to both stock and pedestrian use and connect to the Middle Fork of Salmon River, the highly used Soldier Lakes area and the historic Big Soldier Lookout.

- Fire effects on the trails include loss of trail tread width due to vegetation burning below the trail, loss of water bar structures and the loss of some retaining structures.

3) Critical Natural Resources.

- Aquatic resources of concern include the Middle Fork of the Salmon River and tributaries within the fire area, including Soldier Creek. The Middle Fork of the Salmon River and its tributaries have populations of three Federally listed fish species including Bull Trout, Chinook salmon and Steelhead trout. These waters also support Westslope Cutthroat, a Region 4 sensitive species. Fire effects on these resources include a potential for increased stream sedimentation from surface erosion in the fire area and from potential debris flows from burned watersheds. This could adversely impact spawning areas within the fire area and downstream. Despite these potential impacts no slope or channel treatments are proposed to mitigate this risk because these effects are part of the natural ecological processes in the wilderness. In addition there is a high degree of stream connectivity within the Middle Fork of the Salmon River subbasin thus providing spawning fish other suitable spawning areas outside of the fire effects area.

- Soil Productivity and Water Quality: Fire effects include the potential for increased soil erosion and stream sedimentation until vegetative recovery has restored ground cover to pre-fire conditions. No slope treatments are proposed to mitigate these effects because they do not pose a level of risk sufficient to warrant slope or channel treatments within the wilderness. Effective slope treatments such as mulching or seeding have the potential for weeds or other non-native species to be introduced to the wilderness.
- Native Vegetation Communities/ Weeds: Noxious weed infestations are known to exist outside of the fire area. There is a concern that locations within the fire area that burned with a moderate to high severity have a high potential for noxious weed invasion. Since noxious weeds respond aggressively to this level of disturbance, concerns about the pioneering of new infestations in the fire area is high. Noxious Weed species known to exist adjacent to the Boundary Creek Fire are: Rush Skeletonweed, Spotted Knapweed and Canada Thistle. There is a significant concern over invasion of Rush Skeletonweed into the fire area because this species has a wind-blown seed and following the fires of 2000 there was a significant invasion of Rush Skeletonweed in the wilderness.

B. Emergency Treatment Objectives:

- Reduce the risk of injury to forest visitors.
- Reduce the risk of damage to trails to protect investments in infrastructure.
- Prevent invasive plant species from out competing desirable plant communities post-fire.

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

Land 90 % Channel % Roads/Trails 80 % Protection/Safety 90 %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	90	80	70
Channel			
Roads/Trails	90	80	70
Protection/Safety	100	90	70

E. Cost of No-Action (Including Loss) \$140,000

F. Cost of Selected Alternative (Including Loss): \$103,269

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 checked="" type="checkbox"/> Weeds Specialist
<input type="checkbox"/> Forestry	<input type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input type="checkbox"/> Engineering	<input checked="" type="checkbox"/> Recreation-Trails
<input type="checkbox"/> Contracting	<input type="checkbox"/> Ecology	<input type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology	<input checked="" type="checkbox"/> Wilderness Mgmt.
<input checked="" type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS	

Team Leader: Betsy Rieffenberger

Email: brieffenberger@fs.fed.us Phone: 208 756-5108

FAX: 208 756-5151

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:

Reconnaissance, inventory and treatment of burned area for new infestations of noxious and/or invasive weeds

Description

- To the extent possible establish an early detection and treatment rapid response strategy for the detection and treatment of noxious or invasive weed species.
- Approximately 150 person days are needed to cover the minimum area that is expected to have a high potential for increased weed infestations due to the fire. This represents approximately 3000 acres of burned area that is in need of detection and potential treatment.

Design/Construction Specifications:

- This strategy would prioritize areas of the fire where fire severity has been identified as moderate or high for reconnaissance and along travel routes where seed beds may have existed prior to disturbance.
- If new infestations are found they will be documented and the appropriate management response will be initiated as soon as possible to prevent establishment.

Purpose of Treatment:

- Reduce the potential for the establishment of noxious and/or invasive weed infestations into highly susceptible burned areas, and along travel routes.

Channel Treatments: N/A

Roads and Trail Treatments:

Trail Hazards Removal

Description:

- Ensure emergency response workers and visitor safety by removing hazards along the trails that are a result of the fire.

Location (Suitable) Sites:

- Trail sections on the Soldier Creek Trail (est. 1.5 mile), the Patrol Ridge Trail (est. 1.2 mile), the Cutthroat Trail (1.5 miles) and the Middle Fork of the Salmon River Trail (est. 1.8 mile) where BAER erosion control structures will be constructed and where significant loss of trail tread width or retaining structures would present a safety risk for trail users or where downed trees or stump holes are a potential hazard.

Design/Construction Specifications:

- Identify hazard trees that pose a threat to public health and safety along trails. Identify and repair burned out stump holes near or in the trail's tread.
- Identify fire-downed trees that pose a threat to public health and safety along trails that are routed through or below burned slopes.
- Clear fire-downed trees blocking the trail especially on stock trails routed along steep sideslopes where there is no opportunity for turn-around.
- Identify sections of trail that have sloughed as a result of loss of vegetation along outslopes

edges of trails

- Widen trail tread width where out slope edge was damaged by fire.
- Reconstruct retaining structures where trail failure is imminent.

Purpose of Treatment:

- For the safety of trail users as they pass through the burned area.

Treatment Effectiveness Monitoring:

- Visual inspection after snowmelt and high intensity thunderstorms. Regularly assess remaining trees for indications they have been weakened to the point of posing a threat and remove them when necessary.

Trail Erosion Control

Description:

- Install temporary grade dips along portions of trails where threat to water quality is greatest and clean existing bars and dips, on all trails before damaging storms. Work must be performed prior to summer heavy rain events in order to be functional for spring melt-off or a seasonal event that could prove catastrophic for the trail and downstream beneficial uses.

Location (Suitable) Sites:

- Trail sections within moderate - high severity burned areas that are greater than 5-8% grade and/or lie where existing erosion control features are not sufficient to handle increased runoff. These trail sections are located on the Soldier Creek Trail, the Patrol Ridge Trail, the Cutthroat Trail and the Middle Fork of the Salmon River Trail.

Design/Construction Specifications:

- Install 105 temporary grade dips or water bars on trails within high and moderate burn areas to ensure water is diverted to prevent erosion and to prevent failure of trail bed.
- Clean existing water bars.
- According to USFS Trails Handbook 2309.18. Installation should be designed to last no more than 3 years. Permanent structures are not part of this treatment.

Purpose of Treatment:

- To ensure drainage structures are sufficient to divert water effectively given increased runoff and increased sediment movement.
- To protect property and high watershed values.

Treatment Effectiveness Monitoring:

- Inspect trails after major precipitation events, after spring runoff, and prior to snowfall to assess effectiveness of erosion control structures at diverting water from trail surface.

Protection/Safety Treatments:

Trail Hazard Signing

Description:

- Install signs at trailheads that enter the burned area or provide access to trails within the burn warning of increased hazard from falling burned trees, debris flows and flooding. Trail signs will be located in the non-wilderness corridor.

Location Sites:

- Trailheads: Josephus Lake, Dagger Falls and Marsh Creek.

Design/Construction Specifications:

- Trail signs will be signed and mounted according to USFS handbook for trail signs.

Purpose of Treatment:

- Ensure maximum visibility and readability of signs to warn public of hazards in burned area.

Treatment Effectiveness Monitoring:

- Regularly inspect signs for visibility and ask visitors if they saw signs

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.

Part VI – Emergency Stabilization Treatments and Source of Funds

Interim #

Line Items	Units	Unit Cost	NFS Lands		Other \$	Other Lands				All Total \$
			# of Units	BAER \$		# of units	Fed \$	# of Units	Non Fed \$	
A. Land Treatments										
Weed Inventory and treatment	acres	4	3000	\$12,000	\$0		\$0		\$0	\$12,000
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Land Treatments				\$12,000	\$0		\$0		\$0	\$12,000
B. Channel Treatments										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Channel Treat.				\$0	\$0		\$0		\$0	\$0
C. Road and Trails										
Trail Hazard Removal	miles	3724	6	\$22,344	\$0		\$0		\$0	\$22,344
Trail Erosion Control	each	91	105	\$9,555	\$0		\$0		\$0	\$9,555
Trail Retaining wall	each	650	20	\$13,000	\$0		\$0		\$0	\$13,000
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Road & Trails				\$44,899	\$0		\$0		\$0	\$44,899
D. Protection/Safety										
Hazard Signing	each	290	3	\$870	\$0		\$0		\$0	\$870
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Structures				\$870	\$0		\$0		\$0	\$870
E. BAER Evaluation										
Assessment	days	329	7	---	\$2,303		\$0		\$0	\$2,303
<i>Insert new items above this line!</i>				---	\$0		\$0		\$0	\$0
Subtotal Evaluation				---	\$2,303		\$0		\$0	\$2,303
F. Monitoring										
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Monitoring				\$0	\$0		\$0		\$0	\$0
G. Totals				\$57,769	\$2,303		\$0		\$0	\$60,072
Previously approved				\$45,769						
Total for this request				\$12,000	\$2,303					

PART VII - APPROVALS

1. /s/ Lyle E Powers for WILLIAM A. WOOD 10/19/2006
Forest Supervisor (signature) Date

2. /s/ Cathy Beaty for Jack Troyer 10/23/2006
Regional Forester (signature) Date