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

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

[X] 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)

[X] 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:Trail Creek (Middle Fork Complex) B. Fire Number: ID-SCF-6004

C. State: Idaho D. County:Custer

E. Region: Intermountain, R4 F. Forest :Salmon-Challis National Forest

G. District: Middle Fork District H. Fire Incident Job Code: P4C3GP

I. Date Fire Started: August 7, 2006 J. Date Fire Contained:September 20, 2006

K. Suppression Cost :$1,174,608 for Trail Creek (Middle Fork Complex $2,601,480)

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles)3.3 miles rehabilitated
2. Fireline seeded (miles):
3. Other (identify): Rehabilitate water pumping sites

M. Watershed Number:170602051001 170602051002 170602051005

N. Total Acres Burned: 35,122 Trail Fire (Middle Fork Complex 41,978)
NFS Acres(35,122) Other Federal ( ) State ( ) Private ( )

O. Vegetation Types:South facing slopes with Mountain big sage with bluebunch wheatgrass or Idaho Fescue; Douglas-fir with pinegrass or elk sedge; Lodgepole pine with elk sedge or grouse whortleberry

P. Dominant Soils: Soils are typically loamy skeletal to sandy skeletal Cryoboralls and Haploxerolls

Q. Geologic Types:The burned area is located in the Northern Rocky Mountain physiographic province. The geology is derived from igneous extrusive Challis Volcanics and the intrusive Idaho Batholith. Dominant landforms include moderately dissected mountain slopelands formed from Volcanic parent materials and moderately dissected mountain slopelands formed from granitic parent materials. Along the major drainages the landforms are predominately oversteepened canyonlands in both volcanic and granitic geologic types.

R. Miles of Stream Channels by Order or Class: Total of approx. 78 miles of stream

S. Transportation System

Trails:23 miles Roads:15.5 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 7025 (low) 13346 (moderate) 7025 (high) 7726 (unburned)

B. Water-Repellent Soil (acres): Estimate at less than 1,500 acres.

C. Soil Erosion Hazard Rating (acres):
722 (low) 17,200 (moderate) 17,200 (high)

D. Erosion Potential: 10 to 15 tons/acre

E. Sediment Potential: 3,500 to 5,500 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 1 to 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): 7.8

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

H. Adjusted Design Flow, (cfs per square mile): 9.4

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

Background: The Trail Creek Fire is part of the Middle Fork Complex. All of the fires in this complex are within the Frank Church River of No Return Wilderness Area. Other fires within this complex include the Cub Fire

(3,908 acres), Woodtick Fire (480 acres) and the Sheldon Fire (2,384 acres). The Cub and Woodtick Fires were Wildland Use Fires. The Sheldon Fire was a suppression fire because of a concern that it could burn a private land inholding, the Hidden Valley Ranch. The Sheldon Fire did not reach the Hidden Valley Ranch and the entire fire was contained within the wilderness. Based on an office evaluation of the Sheldon Fire and discussion with the District Ranger it was determined that the Sheldon Fire did not pose a threat to life or property outside of the wilderness and that this fire was part of the ecological process in the wilderness. For these reasons there was no BAER assessment of the Sheldon Fire.

The Trail Creek Fire is also within the wilderness but there is a non-wilderness corrider within the fire perimeter that contains the Loon Creek Guard Station, the Diamond D Ranch (private land), the Upper Loon Creek Airstrip, the Tincup Campground, the Loon Creek Road (#007), the Indian Springs Road (#004) and the Pinyon Peak Road (#172). Because of these values at risk a BAER assessment was completed for the Trail Creek Fire.

Summary of Issues:
1) **Human Life and Safety**. The Loon Creek Road (#007) and the Loon Creek trail (#101) are major access routes for recreationists and hunters entering the Wilderness area. The Upper Loon Creek Airstrip also provides an important access facility for wilderness users. The Tincup Campground and numerous dispersed recreation sites in the fire area are heavily used during hunting season.

- The Loon Creek Trail is heavily used by backpackers, horseback riders and packers entering the wilderness area. It is one of the trails that access the wilderness that do not require significant gains or losses in elevation and thus provides access for Forest users of all fitness levels. This trail continues downstream and accesses several other major trails, including the Warm Springs Trail and the main Middle Fork of the Salmon River trail and the Falconberry Guard Station that is located further down Loon Creek. This trail is also a major access trail for Forest Service trail crews maintaining trails in the wilderness

- Direct fire effects to recreationists include increased instability of the Loon Creek trail due to vegetation loss above and below the trail. This trail is primarily 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.

- The Upper Loon Creek Airstrip is used to access the wilderness and provides for emergency evacuation of injured recreationists and hunters. This is a USFS airstrip and the Forest is responsible for its' maintenance. The fence around the airstrip was burned in the fire. This fence is used to keep livestock off the airstrip as it is located within a permitted allotment for horse grazing. The fire burned the bench where the airstrip is located and post-fire vegetation recovery in this area will attract livestock. Loss of this fence will allow livestock on the airstrip and increase the potential of a landing accident due to their presence.

2) **Property.** The fire did not burn any structures at the Loon Creek Guard Station, the Diamond D Ranch or the Tincup Campground. Toilet facilities were burned at the Upper Loon Creek Airstrip and the Phillips Creek trailhead where the Loon Creek Road ends and the Loon Creek Trail begins. Fire burned above and below segments of the Loon Creek Road and along the majority of the Indian Springs Road and the Pinyon Peak Road. There are five major trails within the fire area that receive high use: Loon Creek Trail, Deer Creek Trail, Rat Creek/South Cottonwood Trail, Trail Creek Trail and Cottonwood Trail. These trails represent a significant investment by the Forest Service and are used by both stock and pedestrians.

- Fire effects on property include increased runoff from burned areas onto roads causing accelerated surface erosion and the potential for the failure of culverts.

- Fire effects on 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.

- Increased runoff from the upper Deer Creek drainage has the potential to damage the irrigation/hydropower intake on private land. Though the upper Deer Creek drainage burned at high severity the lower half of the drainage burned at low severity or was unburned. The potential for flooding and debris flows from the upper watershed causing damage to this facility or downstream on private land is expected to be reduced by the lower gradient stream reaches in the lower watershed and the very thick brush in the riparian area that will serve to slow and trap some of the debris material from the upper watershed. The potential for damage to downstream property is not imminent and does not warrant slope treatments in the wilderness.

3) **Critical Natural Resources.**

- Aquatic resources of concern include Loon Creek and tributaries within the fire area. Loon Creek has 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 in Loon Creek 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 in the Loon Creek drainage and 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 sedimentaion until vegetative recovery has restored ground cover to pre-fire conditions. This potential is highest in the Deer Creek, Rat Creek and Cottonwood Creek drainages as these watersheds have the largest percentage of high fire severity. 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 both within the burned area and adjacent to it. Since a majority of the Trail Creek Fire burned with a moderate to high intensity and the nature of noxious weeds is to respond aggressively to this level of disturbance, concerns about the expansion of existing infestations and the pioneering of new infestations is high. Due to the disturbance of existing seed beds along travel routes, within pastures and on both forested and rangelands the potential is high that new infestations of noxious weeds, as well as the expansion of existing infestations, will become a significant environmental issue. Noxious Weed species known to exist within and adjacent to the Trail Creek Fire are: Rush Skeletonweed, Spotted Knapweed, Leafy Spurge, Canada Thistle, and Musk Thistle. In addition to the noxious weed species, there is at least one invasive species of concern, Hoary Alyssum. There is a significant concern over invasion of Rush Skeletonweed into the fire area because this species has a wind-blown seed.

B. Emergency Treatment Objectives:

- Reduce the risk of injury to forest visitors.
- Reduce the risk of an aviation accident due to livestock on the Upper Loon Creek Airstrip.
- Reduce the risk of damage to roads and 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 **N/A** % 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): $855,000

F. Cost of Selected Alternative (Including Loss): $ 250,801

G. Skills Represented on Burned-Area Survey Team:

[x] Hydrology [x] Soils [ ] Geology [ ] Range [x] Weeds Specialist
[ ] Forestry [ ] Wildlife [ ] Fire Mgmt. [x] Engineering [x] Recreation-Trails
[ ] Contracting [ ] Ecology [ ] Botany [ ] Archaeology [x]Wilderness Mgmt.
[x] Fisheries [ ] Research [ ] Landscape Arch [x] 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:

Noxious & Invasive Weed Treatment of Existing Infestations

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

Description:

- Perform appropriate treatment activities to documented noxious and invasive weed infestations that have resprouted in the burned area as early as possible. This early detection and rapid response strategy allows managers to asses the extent that fire related disturbance has affected known infestations. Rapid response to known small populations will reduce the need and costs to control expanded populations due to the fire.
- 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.
- To the extent possible establish an early detection rapid response strategy for the detection and treatment of noxious or invasive weed species.

Design/Construction Specifications:

- Select herbicide, application rate, and application timing based on the specific weed being treated, and access the location of the infestation.
- Consideration for TES species habitat and sensitivity when selecting appropriate herbicide.
- 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 expansion of noxious and invasive weed infestations into highly susceptible burned areas, and prevent increase in weed density in existing infestations.

Channel Treatments: N/A

Roads and Trail Treatments:

Trail Hazards Removal

Description:

- Ensure visitor safety by removing hazards that are a result of the fire.
- Sixteen miles of trail are within the burn perimeter and within moderate to severly burned areas or downstream from moderate to severely burned drainages.

Location (Suitable) Sites:

- Trail sections on the Deer Creek Trail (est. 1.5 mile), the Rat Creek/South Cottonwood Trail (est. 1.2 mile) and the Loon Creek Trail (est. 1.8 mile) where 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 capacity for turn-around.
- Identify sections of trail that have sloughed as a result of loss of vegetation along outsloped 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 Deer Creek Trail, the Rat Creek/South Cottonwood Trail and the Loon Creek Trail.

Design/Construction Specifications:

- Install 83 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.

Culvert Addition

Description:

- Install a larger culvert at 2 locations that are at risk for flooding and/or debris flows as a result of burned conditions above the culvert.

Location (Suitable) Sites:

- Locations are for one unnamed tributary to Grouse Creek on the Indian Spring Road (#004) and White Creek on the Loon Creek Road (#007).

Design/Construction Specifications:

- Survey, design, and contract administration by USFS.
- Forest Service Specifications for Construction of Roads and Bridges and Special Contract Provisions.

Purpose of Treatment:

- The purpose of these treatments is to increase culvert capacities to accommodate increased water flows and associated bedload and debris, restore road template drainage, and decrease the chances of washing road fill into adjacent streams.

Culverts Monitor and Clean

Description:

- Clean debris from the entrance of six culverts to prevent blockage from fire debris. Monitor these six culverts to reduce the threat to water quality and fish habitat after high intensity precipitation events, prior to snowfall, and as soon as possible after the start of spring snowmelt. Ensure the culverts retain maximum flow capacity throughout the season because spring melt-off, summer thunderstorms, or a rain-on-snow event could prove catastrophic for the road, drain-down pipe, and downstream beneficial uses.

Location (Suitable) Sites:

- Culverts proposed for cleaning and monitoring are the Grouse Creek culvert on the Loon Creek Road and tributaries to Grouse Creek along the Indian Springs Road.

Design/Construction Specifications:

- Mechanically shovel and flush debris from culverts and place excess material outside of bankfull channel where it cannot re-enter stream channels.
- Remove debris and fill from channel and around culvert.
- Manually remove woody debris around catch basin and in channel upstream or downstream from culvert and place material outside of the floodplain.

Purpose of Treatment:

- To maximize culvert and channel capacity to handle flood flows, protect road beds and mitigate impacts to downstream beneficial uses.

Treatment Effectiveness Monitoring:

- Inspect culverts after major precipitation events, after spring runoff, and prior to snowfall to ensure maximum capacity of the culvert is maintained throughout the year.

<u>Protection/Safety Treatments</u>:

Airstrip Safety

Description:

- Construct a fence around the Upper Loon Creek Airstrip.
- Work with the State Department of Transportation, Aeronautics Department to replace the mast (if needed) and windsock and seek volunteers to assist in cleaning up airstrip and painting rocks around airstrip and possibly obtain volunteers to work on fence construction.

Location Site:

- Upper Loon Creek Airstrip adjacent to the Loon Creek Road.

Design/Construction Specifications:

- Fence will be a jack and rail fence to keep horses off airstrip. Construction will be according to design specifications in the USFS Range Handbook.

Purpose of Treatment:

- Keep livestock and large wild ungulates off the airstrip to reduce the risk of a landing accident at the airstrip

Treatment Effectiveness Monitoring:

- Regularly inspect fence for maintenance needs and replace rails as needed.

Road/Trail Hazard Signing

Description:

- Install signs at all roads, trails and 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 corrider.

Location Sites:

- Trailheads: Deer Creek Trail and Rat Creek Trail (2 signs each at upper and lower end); Loon Creek Trail, Trail Creek Trail, Mahoney Trail (1 sign each).
- Roads: Loon Creek Road, Indian Springs Road and Pinyon Peak Road.
-

Design/Construction Specifications:

- Road signs will be reflectorized wood backed signs with letter size according to USFS Handbook specifications mounted on 4”x4”x8’ posts at heights and distances mandated in USFS Handbook.
- 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.)

Weeds Monitoring

Description:

- Both implementation and effectiveness monitoring will be performed to determine if early detection rapid response is the appropriate management strategy for post fire noxious weed management as well as the effectiveness of treatment activities to manage infestations and minimize impacts.

Location Sites:

- Monitoring areas include the general fire area with an emphasis on areas identified as having burned with a moderate to high fire severity. In addition to the fire area, sites disturbed by the fire suppression activities such as helibases, helispots, drop points, heliwater spots, spike camps, staging areas and all travel routes into and through the burned area should be monitored.

Design/Construction Specifications:

- Authorized individuals will conduct all monitoring to ensure compliance with specific, detailed requirements (intensity, frequency, funding, timing, length of time, locations, etc). Monitoring will be conducted following established R4 monitoring methods.
- Monitoring will be done at intensity and frequency to identify spread or occurrence of weed infestations following the fire event and recovery. Additional treatment, reconnaissance and/or monitoring may be requested depending on the results of initial management efforts.
- Consideration for TES species habitat and sensitivity when selecting appropriate herbicide.
- Documented weed infestations include the species of Spotted Knapweed, Rush Skeletonweed, Leafy Spurge, Musk and Canada Thistle and Hoary Alssyum.

Purpose of Treatment:

- The purpose of monitoring is to determine if the appropriate management strategy has been implemented and that it is producing the desired results.

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

			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										
Weed treatment existing small populations	days	150	18	$2,700	$0		$0		$0	$2,700
Weed inventory and treatment new expansion	acres	4	3750	$15,000	$0		$0		$0	$15,000
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$17,700	$0		$0		$0	$17,700
B. Channel Treatments										
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$0	$0		$0		$0	$0
C. Road and Trails										
Culvert replacemnt	each	4150	2	$8,300	$0		$0		$0	$8,300
Culvert clean	each	200	6	$1,200	$0		$0		$0	$1,200
Trail Hazard Removal	mile	4075	4.5	$18,337			$0		$0	$18,337
Trail Eroson Control	each	91	83	$7,553			$0		$0	$7,553
Trail retaining wall	each	650	9	$5,850	$0		$0		$0	$5,850
Subtotal Road & Trails				$41,240	$0		$0		$0	$41,240
D. Protection/Safety										
Hazard Signing	each	290	10	$2,900	$0		$0		$0	$2,900
Airstrip Fencing	each	20210	1	$20,210	$0		$0		$0	$20,210
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$23,110	$0		$0		$0	$23,110
E. BAER Evaluation										
Assessment	days	23	326		$7,498					
Consultation	days	7	300		$2,100		$0		$0	$2,100
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Evaluation					$9,598		$0		$0	$2,100
F. Monitoring										
Weed Monitoring	days	225	10	$2,250	$0		$0		$0	$2,250
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$2,250	$0		$0		$0	$2,250
G. Totals				$84,300	$9,598		**$0**		**$0**	**$86,400**
Previously approved				$69,300						
Total for this request				**$15,000**	$9,598				$40	

PART VII - APPROVALS

1. /s/Lyle E. Powers for WILLIAM A. WOOD____ _10/19/2006__
   Forest Supervisor (signature) Date

2. _____ _____
   Regional Forester (signature) Date