USDA-FOREST SERVICE FS-2500-8 (6/06)
Edited by B.Rieffenberger 10/24/2007

Date of Report: October 20,2007

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

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

A. Fire Name: Cascade Complex- Salmon/Challis **B. Fire Number**: ID-BOF-000635 DR27

C. State: Idaho **D. County**: Custer and Valley

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

G. District: Middle Fork **H. Fire Incident Job Code**: DR27

I. Date Fire Started: 07/17/2007 @ 1700 hrs **J. Date Fire Contained**: Not to date

K. Suppression Cost: $50,000,000

L. Fire Suppression Damages Repaired with Suppression Funds:
1. Fireline waterbarred (miles): None

M. Watershed Numbers: 1706020504 (U MF Salmon R- Elkhorn Cr), 1706020505 (Rapid R), 1706020506 (U MF Salmon R- Lit Loon Cr), 1706020507 (Pistol Cr)

N. Total Acres Burned: Total Acres 31,013 (Salmon-Challis portion of the Monumental Fire)
NFS Acres(31,013) Other Federal ( ) State ( ) Private ( )

O. Vegetation Types: In the higher elevations the dominant habitat types are subalpine fir/grouse whortleberry and Douglas-fir/beargrass. At lower elevations Douglas-fir/pinegrass is a common habitat type. Ponderosa Pine with a bunch grass understory is found in the lower elevations of the fire area, particularly along the Middle Fork corrider and in the valley bottoms of the tributaries.

P. Dominant Soils: Soils in the fire area are primarily skeletal sandy loam textures. Soils are generally shallow to moderately deep on the mountain side-slopes or ridges and moderate to deep in the lower

elevations. Higher elevations have moderate to high inherent erosion, mass movement, and debris slide hazards.

Q. Geologic Types: The dominant geologic materials present in the Monumental Fire are the granites of the Idaho Batholith. The landforms include overstepened canyonlands, cirque basins, glacial troughs, streamcut valleys, and flood terraces. Alpine glaciation and cryoplanation have been the dominant geomorphic processes that have created these landforms.

R. Miles of Stream Channels by Order or Class: Monumental Fire (Salmon/Challis)- 130 miles of stream channel

S. Transportation System
Trails: 31.5 miles Roads: 0 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 8,162 (low) 10,460 (moderate) 3,275 (high) 9,116 (unburned)

B. Water-Repellent Soil (acres): 1,637

C. Soil Erosion Hazard Rating (acres): 8,162 (low) 10,460 (moderate) 3,275 (high)

D. Erosion Potential: 7 – 13 tons/acre (2 years after the fire)

E. Sediment Potential: 3,200 – 5,486 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

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

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

C. Equivalent Design Recurrence Interval, (years): 5

D. Design Storm Duration, (hours): 0.5-1.0

E. Design Storm Magnitude, (inches): 0.5-1.0

F. Design Flow, (cubic feet / second/ square mile): 8.0 (debris flow up to 300 with bulking)

G. Estimated Reduction in Infiltration, (percent): none observed

H. Adjusted Design Flow, (cfs per square mile): 8.0 (debris flow up to 300 with bulking)

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

Background: The Cascade Complex burned approximately 300,000 acres to date in southwest Idaho through private and Forest service jurisdictions. The Cascade Complex Fire burned lands administered by the Boise, Payette and Salmon-Challis National Forests both within the Frank Church River of No Return Wilderness Area and outside of the wilderness area. The Cascade Complex was divided into three areas for field review and analysis of post-fire effects. The three areas are the Cascade Complex- South End, the Cascade Complex-North End and the portion of the Monumental Fire within the Wild and Scenic River corridor and east

of the Middle Fork of the Salmon River. This assessment covers the portion of the Monumental Fire within the river corridor and east of the river corridor on the Salmon-Challis National Forest. The assessment area for this portion of the Monumental Fire is approximately 78,000 acres.

Summary of Issues:

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1. **Human Life and Safety**
   The Middle Fork of the Salmon River trail is a major trail accessing the Frank Church River of No Return Wilderness area (FCRNR) The Middle Fork trail runs from Boundary Creek down river to Big Creek (approximately 78 miles) providing access to numerous connecting trails. This trail is open to both stock and pedestrian use.. The Monumental Fire burned along the Middle Fork of the Salmon River corrider for approximately 14 miles. Within the river corrider there are 20 campsites that are used by recreationists floating the Middle Fork of the Salmon River that is renowned for its adventure whitewater.

   - Trail hazards include the potential for injury to people and stock due to increased instability of the trails. In some sections the trails are located on unstable talus slopes that are susceptible to dry ravel. The loss of any vegetation along these trails 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 the steep sideslopes in the river canyon because there is no opportunity for packers with a pack string to turn around or go around the obstacle without putting themselves and the stock at risk.

   - Risk of flooding, debris flows, rock fall and hazard trees at campsites along the Middle Fork of the Salmon River. A total of 20 river campsites along the Middle Fork of the Salmon River have been determined to have some level of risk associated with potential post-fire effects.

   - The risk to the health and safety of float boaters from log obstructions in the Middle Fork of the Salmon River. Approximately 30 large trees were observed in the river through the Monumental Fire area from approximately River Mile 5 to River Mile 20. Additional trees are expected to fall into the river before the next high water event. Most of these trees are expected to be carried downstream during snowmelt runoff next spring. Some of these trees will end up in eddies but some are likely to lodge in areas where the river channel narrows or on large rocks. There is a potential for these trees to restrict or totally block the river channel. Depending on the location of the blockages the log jams have the potential to create serious safety hazards for float boaters.

1. **Property**.
   The Middle Fork of the Salmon River Trail is a major trail accessing the Frank Church River of No Return Wilderness area (FCRNR) This trail goes from Boundary Creek downstream to the confluence of the Middle Fork with Big Creek (approximately 78 miles) and is a major trail that is used by backpackers, horseback riders and hunting outfitters. The Middle Fork trail provides access to many other trails that access tributaries to the Middle Fork.

   - 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. The current investment in the Middle Fork of the Salmon River trail is estimated at well over thirty million dollars.

   - Due to the steepness of the terrain,the erosive granitic soils and the decrease in vegetative cover and root structure along the trails there is high risk of loss of Forest trail infrastructure.

2. Critical Natural Resources.

Heritage: A total of eleven heritage sites were identified within the assessment area. The degree of risk of fire effects on these sites was evaluated based on the fire severity maps. These sites include a powerhouse, mining properties, cabins, and prehistoric sites.

Structures were destroyed at the Powerhouse site and the remaining artifacts have been stabilized. The other sites were burned to varying degrees. Each site was determined to be stable and is not expected to require emergency rehabilitation. Monitoring is planned to evaluate the no treatment recommendation at the Greyhound mining site to determine if adverse impacts are occurring.

Aquatic Resources: 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 aquatic 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.

Trail treatments are proposed to protect water quality and aquatic resources. Though fire is a natural processes within the wilderness, the trails are not a natural feature and can cause accelerated erosion and concentrate runoff from the burned areaa. Because of the steep terrain, trails within the burn perimeter generally occur on the lower portions of the slopes, in close proximity to streams. Water bars, dips and retaining walls on all trails are sufficient only for pre-burn runoff conditions. To reduce erosion from trails that could adversely impact water quality and aquatic resources it is necessary to ensure full functionality of existing water bars and dips and to construct additional temporary water bars on the steeper trail sections and sections in close proximity to streams.

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. 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: Within the burned area there are 3 known noxious weed infestations varying in size from 0.04 to 0.11 acres for a total of 0.25 acres. These infestations are comprised of Spotted Knapweed. Other significant impacts include a dramatic increase in the number of acres of susceptible habitat and the disturbance of existing seedbeds associated with several vectors, including trails and numerous dispersed recreation sites. Areas of the fire in which high-intensity burning took place generally have higher levels of disturbance. It is expected that an invasive species will colonize these areas before a desirable plant community can be established.

B. Emergency Treatment Objectives:

- Reduce the potential for expansion of noxious and invasive weed infestations into highly susceptible burned areas, and prevent an increase in weed density and growth of existing infestations
- Reduce the risk to health and life of emergency response workers and forest users.
- To protect property and high watershed and aquatic resource values.

- Reduce the risk to life and health for float boaters camping in the assigned campsites along the river corridor.

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	80	60	50
Channel	N/A		
Roads/Trails	80	60	50
Protection/Safety	90	80	70

infrasructure

E. Cost of No-Action (Including Loss): **$2,503,000**
F. Cost of Selected Alternative (Including Loss): **$148,910**
G. Skills Represented on Burned-Area Survey Team:

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

Betsy Rieffenberger, Team Leader
Dave Deschaine, Hydrology/Soils
Tom Gionet, Weeds Specialist
Cavan Fitzsimmons, Trails
Stacey Weems, Soils
John Rose, Archaeologist
John Haugh, Wilderness/Rivers
Sheri Hughes, Rivers
Linda Walton, Rivers

Team Leader: Betsy Rieffenberger

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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

Implement an aggressive Early Detection Rapid Response program (EDRR).

Description:

- Implement an aggressive Early Detection Rapid Response program (EDRR) emphasizing the detection and treatment of new invaders targeting known weed spread vectors and areas of high-intensity burn.

Design/Construction Specifications:

- Select herbicide, application rate, and application timing based in the specific weed being treated, and access to the location of the infestation.
- Consideration for TES species habitat and sensitivity when selecting appropriate herbicide.
- 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.
- New infestations 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. Rapid response to fire affected weed populations is paramount to efficiently eradicate noxious and invasive species and maintain healthy native vegetative communities.

Hazard Tree Treatment

Remove hazard trees from eleven designated campsites along the Middle Fork of the Salmon.

Description:

- Nineteen campsites along the Middle Fork of the Salmon River were visited during the field review to evaluate the risk to life from burned hazard trees at the campsites. Eleven campsites had hazard trees in and immediately adjacent to the campsites.

Design/Construction Specifications:

- Treat hazard trees at the eleven campsites to reduce the risk to life and health for float boaters camping in the designated campsites along the river corridor. An archeologist will be present during hazard tree treatment to prevent adverse impacts to heritage resources and to provide input on tree placement to protect heritage resources where possible.

Purpose of Treatment:

- Reduce the risk to life and health for float boaters camping in the assigned campsites along the river corridor.

Roads and Trail Treatments:

Trail Hazards Removal

Description:

- Ensure the safety of emergency response workers by removing hazards along the trails that are a result of the fire. Trails in the fire area will need to be used to access the river campsites for hazard tree removal.

Location (Suitable) Sites:

- Trail sections on the Middle Fork of the Salmon River Trail (10 miles) where significant loss of trail tread

width or retaining structures would present a safety risk for emergency response workers or where downed trees or stump holes are a potential hazard.

Design/Construction Specifications:

- 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 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 emergency response workers using the trails to perform erosion control work and to access river camps for the removal of hazard trees.

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 and reinforce switchbacks along portions of trails where threat to water quality and aquatic resources is greatest. Clean existing waterbars and dips, on all trails before damaging storms to reduce erosion and protect trail infrastructure. 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 on the Middle Fork of the Salmon River Trail 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.

Design/Construction Specifications:

- Install 30 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.
- Reinforce switchbacks in 5 locations that present a risk to water quality and aquatic resources.
- 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 high watershed and aquatic resource 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.

Other Treatments:

Boater Safety

Description:

- There is a high potential for a log jam in the river channel in the location of the debris flow from Lake Creek. In 2006 a high intensity storm caused a debris flow from Lake Creek that blocked the Middle Fork of the Salmon River with a large log jam that was subsequently removed. The river has not cut through the Lake Creek fan and the river is flowing in a new channel that was cut into the adjacent streambank. Currently there are several standing trees (trees that were growing on the opposite bank from Lake Creek) in the active channel that will likely catch trees from the Monumental Fire area creating a new log.
- Prepare an informational packet for river users alerting them to the risks in the fire area from flooding, debris flows, hazard trees, and log obstructions.

Design/Construction Specifications:

- In the event of a log jam that threatens the safety of river users, an evaluation will be conducted to determine the feasibility and method of removing the obstruction, as well as consistency with wilderness management policy.
- Distribute safety information to all successful applicants in the river lottery system and to river outfitters.

Purpose of Treatment:

- Reduce the risk to life and health for float boaters along the river corridor.

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.)

Heratige Monitoring

Description:

- Monitoring is planned to evaluate the no treatment recommendation to determine if adverse impacts are occuring to heritage sites. This includes funds for the assessment of an area that could not be visited during the initial assessment.

Location (Suitable) Sites:

- Greyhound mining site

Part VI – Emergency Stabilization Treatments and Source of Funds

			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										
Weeds EDRR	days	533	30	$15,990	$0		$0		$0	$15,990
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$15,990	$0		$0		$0	$15,990
B. Channel Treatments										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$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										
Trail erosion control (s	each	340	5	$1,700			$0		$0	$1,700
Trail erosion control (w	each	100	30	$3,000			$0		$0	$3,000
Trail hazard treatments	miles	5000	10	$50,000	$0		$0		$0	$50,000
Trail hazard treatments	feet	40	500	$20,000	$0		$0		$0	$20,000
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$74,700	$0		$0		$0	$74,700
D. Protection/Safety										
Hazard tree removal at	each	1600	11	$0	$0		$0		$0	$0
Log jam removal	each	35000	1	$0	$0		$0		$0	$0
Boater risk awareness	days	400	10	$4,000	$0		$0		$0	$4,000
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$4,000	$0		$0		$0	$4,000
E. BAER Evaluation										
Team	days	2492	6	$14,952						
Consultation	days	367	10	$3,670			$0		$0	$0
Insert new items above this line!					$0		$0		$0	$0
Subtotal Evaluation				$18,622	$0		$0		$0	$0
F. Monitoring										
Heritage monitoring	days	324	5	$1,620	$0		$0		$0	$1,620
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$1,620	$0		$0		$0	$1,620
G. Totals				$96,310	$0		**$0**		**$0**	**$96,310**
Previously approved										
Total for this request				**$96,310**						

PART VII - APPROVALS

1. */S/ LYLE E. POWERS* for
WILLIAM A. WOOD
Forest Supervisor (signature)

October 23, 2007
Date

2. William P. LeVere for
Regional Forester (signature)

10/24/07
Date