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

Date of Report: 26 September 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

[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: Shake Table Complex

B. Fire Number: OR-MAF-000442

C. State: Oregon

D. County: Grant

E. Region: 6

F. Forest: Malheur

G. District: Blue Mountain

H. Fire Incident Job Code: P6C4YX

I. Date Fire Started: 08/22/2006

J. Date Fire Contained: 09/21/2006

K. Suppression Cost: 14,000,000

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 41 miles -
2. Fireline seeded (miles): 41 miles
3. Other (identify):

M. Watershed Number: 170702011104 (Dry Creek), 170702011103 (Fields Creek), 170702010404 (Todd Creek) and 170702010403 (Duncan Creek)

N. Total Acres Burned: 14,527
NFS Acres (13,536) BLM (55) Private (936)

O. Vegetation Types: Those plant associations impacted by the fire included the grand fir/falsebugbane, grand fir/queen's cup beadlilly, grand fir/birchleaf spirea, grand fir/pinegrass, grand fir/elk sedge, lodgepole pine (grand fir)/big huckleberry –twinflower, Doulglas-fir/elk sedge, ponderosa pine/elk sedge, western juniper/Idaho fescue-bluebunch wheatgrass, mountain big sagebrush/Idaho fescue-bluebunch wheatgrass, and ponderosa pine/Idaho fescue plant associations.

P. Dominant Soils: Soils with 6-12" thick volcanic ash overburden (4,400 acres); soils with 12-24" thick volcanic ash overburden (4,100 acres); shallow (less than 20" deep to bedrock) non ash soils (3,200 acres); Moderately deep and shallow non ash soils (1,700 acres).

Q. Geologic Types: Basalt (7,000 acres); sedimentary (1,500 acres); serpentine (1,800 acres); volcanic breccia (1,500 acres); meta-volcanic (500 acres); old landslides (1,200 acres).

R. Miles of Stream Channels by Order or Class: 1st order – 44 miles
2nd order – 16 miles
3rd order – 14 miles
4th order – 1 mile
5th order – 1 mile

S. Transportation System

Trails: 1 miles Roads: 33.5 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres):

Forest Service	6663	(unburned/low)	3311	(moderate)	3561	(high)
BLM	49	(unburned/low)	6	(moderate)	0	(high)
Private	761	(unburned/low)	175	(moderate)	0	(high)
Total	7473	(unburned/low)	3492	(moderate)	3562	(high)

B. Water-Repellent Soil (acres): severe repellency 3,600 acres; moderate repellency (850 acres) -FS land only.

C. Soil Erosion Hazard Rating (acres): FS land only.
200 (low) 3,200 (moderate) 10,100 (high)

D. Erosion Potential: 13 tons/acre

E. Sediment Potential: 666 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

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

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

C. Equivalent Design Recurrence Interval, (years): 10-years

D. Design Storm Duration, (hours): 30-minute/ 6-hour

E. Design Storm Magnitude, (inches): 0.6"/ 1.2"

F. Design Flow, (cubic feet / second/ square mile): 0.1csm/ 4.0csm

G. Estimated Reduction in Infiltration, (percent): 90%

H. Adjusted Design Flow, (cfs per square mile): 39csm/ 62csm

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats: The Shake Table Fire burned 14,527 acres and resulted in a high severity burn in most of the upper drainages of Widows and Todd Creeks, and much of upper Fields Creek. These high severity burn - steep headwater areas serve as the main collection points for storm water runoff. Predicted storm flows, including associated hillslope erosion, and sedimentation and debris accumulation in these drainages will be excessive and may negatively impact both soil productivity, fisheries and downstream values such as roads, fish spawning habitat, several structures and irrigation systems. Widows and Todd Creeks are actively managed for steel head. There is a high potential for increased runoff, erosion, debris flows and landslides being generated from the fire. If no action is taken to reduce the risk from these events, hillslope erosion, flooding, debris and sediment could damage significant portions of the above mentioned values.

B. Emergency Treatment Objectives: The primary objective of Burned Area Emergency Restoration is to take prompt actions deemed necessary and reasonable to protect, reduce or minimize significant threats to human life and property and prevent unacceptable resource degradation. The emergency treatments recommended by the BAER Assessment Team are specifically designed to achieve the following:

(1) Encourage soil stabilization and recovery of hydrophobic soil conditions through vegetative regeneration to maintain long term productivity and watershed hydrologic function.

(2) Reduce the possibility that flooding and debris flows could threaten infrastructure within the Malheur National Forest and residential and commercial developments in Widows, Fields and Todd Creek drainages.

(3) Encourage recovery of critical habitat for steel head salmon.

(4) Provide for public safety and promote fire recovery by communicating the post fire hazards to the public, most noticeably – flooding hazards.

(5) Limit colonization of noxious weeds and invasive plant species onto Forest System lands.

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

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

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	80%	90%	95%
Channel	75%	80%	85%
Roads/Trails	80%	90%	95%
Protection/Safety	90%	90%	90%

E. Cost of No-Action (Including Loss): using cost/risk work sheets (12/92_McCammon) = $2,860,000
F. Cost of Selected Alternative (Including Loss): using cost/risk work sheets = $1,397,215

G. Skills Represented on Burned-Area Survey Team:

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

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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: Conduct aerial seeding of winter wheat for 1st year vegetative cover on a total of 3,227 acres of all high burn severity areas in the upper watersheds of Widow, Fields and Todd Creek watersheds. Estimated cost is $79,900 (see aerial seeding – winter wheat specification sheet).

Conduct aerial seeding with a native species mix on 1000 acres in high severity burn areas in Widows, West Dry and Wickiup Creeks. Estimated cost is $85,600 (see aerial seeding – native species specification sheet).

Heli-mulch 324 acres of high severity burn on highly erosive soil in along the upper reaches of Widows Creek watershed with straw for immediate soil cover and reduction of predicted storm flow. Estimated cost is $229,280 (see helicopter straw mulching specification sheet).

Construct 4.5 miles of temporary range fence along Road 21 in Fields Creek watershed to exclude livestock grazing in the entire burn area until the watersheds have healed and plants have successfully re-established. Fence will keep cattle confined to the 35 sq. miles of unburned area in an approximately 50 square mile allotment. Also since perimter fence burned in the fire cattle would alos be able to access the entire burn area potentially compromising proposed BAER treatments. Estimated costs is $32,300

Monitor for, and spot treat, areas of noxious weed colonization in the burn. Estimated cost is $13,900 (see noxious weeds specification sheet)

Stabilize 2 heritage resource sites from excessive erosion by seeding and straw mulching. Estimated cost is $3,300 (see cultural resources site protection specification sheet).

Channel Treatments: Fell dead trees in an upstream herring-bone fashion in several ephemeral and intermittant drainages in Widows Creek, West Dry Creek and Wickiup watersheds to slow runoff and trap debris and sediment. Estimated cost is $22,800 (see in-channel tree felling specification sheet).

Roads and Trail Treatments: Improve road drainage in Widows Creek by regrading 5 miles of FS road 2140 to an improved outslope, installing cross drainage dips and pulling several undersize culverts. Improve road drainage on FS roads 038 and 074 in Fields Creek Watershed by pulling some culverts, unplugging culvert inlets, installing cross drainage reverse grades, stabilizing fillslopes, and storm patrolling and maintenance after major storm events. In addition, the entire burn area (with the exception of FS road 2150 which will be open to through traffic) will be closed all vehicular travel. Estimated cost is $ 118,400 (see hazard tree felling road drainage specification sheet).

Protection/Safety Treatments: Alert downstream residents, ODF and NRCS of potential flooding risks and possible mitigation measures to take. Estimated cost is part of the BAER Assessment costs.

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.)

Monitoring will be conducted for 3-years using BAER funds. Monitoring will include the following:

(a) Seed implementation monitoring by transect method immediately following seeding. Seed effectiveness monitoring by noting seed germination by species and % vegetative ground cover in years 1, 2 and 3, and noting evidence of sheet, rill or gully erosion by end of years 1, 2 and 3.

(b) Mulch implementation monitoring by noting % of ground cover immediately after treatment. Monitor straw mulch effectiveness by noting change in ground covered by straw, seed germination and % cover and species vs adjacent areas receiving no straw mulch, and noting evidence of sheet, rill or gully erosion by end of years 1, 2 and 3.

(c) Channel tree felling implementation monitoring by daily supervising falling crews. Channel tree felling effectiveness monitoring by noting evidence and amount of debris/sediment retained by end of years 1, 2 and 3.

(d) Noxious weed effectiveness monitoring by reviewing yearly noxious weed project records of location, spot treatment accomplished and area extent of remaining weed populations by end of years 1, 2 and 3.

(e) Road drainage, stabilization and closure implementation monitoring by inspecting that treatments were performed and meet specifications. Road drainage, stabilization and closure effectiveness monitoring by reviewing incidence and costs for maintenance/re-construction needs, and evidence of vehicular traffic use over years 1, 2 and 3.

(f) Heritage resource protection implementation monitoring by noting if completed project work was performed to specifications. Heritage resource protection effectiveness monitoring by noting any evidence of erosion/sedimentation of site and if site had been exposed by end of years 1, 2 and 3.

(g) Temporary fence implementation monitoring by careful inspection that fence met specifications immediately after being installed. Temporary fence effectiveness monitoring by yearly inspection of integrity of fence, and noting any livestock grazing within burn area during years 1, 2 and 3.

Estimated Monitoring costs are $16,000, $ 12,400 and $ 12,100 for years 1, 2 and 3 respectively (see attached detailed monitoring plans for more specifics).

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										
Aerial seeding mix 1	acre	$25	3,227	$79,707	$0		$0		$0	$79,707
Aerial seeding mix 2	acre	$86	1,000	$85,600						$85,600
assess/treat weeds	ea	$13,900	1	$13,900			$0		$0	$13,900
helimulch	acre	$708	324	$229,282	$0		$0		$0	$229,282
Temporary fence	mile	$7,178	4.5	$32,300						$32,300
heritage stabilization	ea	$1,650	2	$3,300	$0		$0		$0	$3,300
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$444,088	$0		$0		$0	$444,088
B. Channel Treatments										
Channel tree felling	mile	$2,850	8	$22,800	$0		$0		$0	$22,800
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$22,800	$0		$0		$0	$22,800
C. Road and Trails										
Culvert removal	ea	$2,300	2	$4,600	$0		$0		$0	$4,600
Armored grade dips	ea	$3,300	16	$54,800						$54,800
driveable dips	ea	$136	55	$7,500						$7,500
culvert unplugging	ea	$91	75	$6,825						$6,825
hazard tree felling	mile	$2,250	14	$31,500	$0		$0		$0	$31,500
overhead on all road w	ea	$3,537	3	$10,610						$10,610
rocked grade sags	ea	$500	5	$2,500	$0		$0		$0	$2,500
Subtotal Road & Trails				$118,335	$0		$0		$0	$118,335
D. Protection/Safety										
				$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 Structures				$0	$0		$0		$0	$0
E. BAER Evaluation										
Salary				$0	$37,500					$37,500
Travel/PD				$0	$6,000		$0		$0	$6,000
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				$0	$43,500		$0		$0	$43,500
F. Monitoring										
year 1				$16,000						$16,000
year 2				$12,400						$12,400
year 3				$12,100	$0		$0		$0	$12,100
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$40,500	$0		$0		$0	$40,500
G. Totals				$625,723	$43,500		**$0**		**$0**	**$669,223**
Previously approved										
Total for this request				**$625,723**						

PART VII - APPROVALS

1. _____ _____
Forest Supervisor (signature) Date

2. _____ _____
Regional Forester (signature) Date