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

Date of Report: 6 August 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: Egley Complex

B. Fire Number: OR-BFZ-7148

C. State: Oregon

D. County: Harney

E. Region: 6

F. Forest: Malheur

G. District: Emigrant Creek RD

H. Fire Incident Job Code: PDDNG9

I. Date Fire Started: 07/06/2007

J. Date Fire Contained: 07/22/2007

K. Suppression Cost: 16,648,047

L. Fire Suppression Damages Repaired with Suppression Funds (being accomplished with contract)
1. Fireline waterbarred (miles): 150
2. Fireline seeded (miles): 150 (this fall)
3. Other (identify):

M. Sub-basin Watershed Number: Silver Creek (17120004); Silvies (17120002); South Fork Crooked (17070303).

N. Total Acres in Burn: **140,341**
NFS Acres (**98,494**) BLM (**34,036**) Private (**7,806**) State (**5**)

O. Vegetation Types: Forested acres impacted by the fire, were primarily in the Dry Ponderosa Pine Plant Association Group (see below). Non-forested areas are a minority, and mostly brush (Mountain Mahogany, Bitter Brush, Big Sage) and grass (Idaho Fescue and bluebunch wheatgrass). There are also scattered small acreages of western juniper, moist pine, and Douglas-fir plant associations.

Dry Pine Plant Associations:

Ponderosa Pine/Mountain Mahogany/elk sedge - PIPO/CELE/CAGE
Ponderosa Pine/Bitterbrush/Ross's sedge – PIPO/PUTR/CARO
Ponderosa Pine/Mountain Mahogany/Idaho fescue – bluebunch wheatgrass - PIPO/CELE/FEID-AGSP
Ponderosa Pine/Bitterbrush/elk sedge - PIPO/PUTR/CAGE
Ponderosa Pine/elk sedge - PIPO/CAGE
Pondersoa pine/Idaho fescue – PIPO/FEID
Ponderosa pine/bluebunch wheatgrass – PIPO/AGSP

P. Dominant Soils: Shallow to moderatelt deep Argixerolls, Haploxerolls and Xerochrepts with high rock content.

Q. Geologic Types (approximate acres) for for entire Egley Complex (all ownerships): volcanic ash-flow welded tuffs (87,200 acres) Basalt (30,100 acres); volcanic vent rocks (10,100 acres); sedimentary (7,700 acres); undivided volcanic and sedimentary rocks (2400 acres); unconsilidated silt & clay, alluvium and alluvial fan deposits (1,900 acres); pyroclastic rock (1,200 acres).

R. Miles of Stream Channels by Category: Category 1 – 70.1 miles; Category 2 – 29.6 miles; Category 3 – 115.4 miles; Category 4 – 209.5 miles. Total = 424.6 miles.

S. Transportation System

Trails: 3 miles Roads: 495 miles

PART III - WATERSHED CONDITION

A. Burn Severity. Acres by ownership: **total = 140,190**

Land Ownership	Unburned	Low	Moderate	High
Forest Service	**21,397**	**30,614**	**39,870**	**6,539**
BLM	**18.673**	**12,635**	**2,552**	**125**
Private	**3,756**	**2,829**	**1,010**	**185**
State	**3**	**2**		
totals	**43,829**	**46,081**	**43,431**	**6,849**

B. Water-Repellent Soil (acres): Only slight repellency was detected on approximately 680 acres -FS land only.

C. Soil Erosion Hazard Rating (acres): FS land only.
60,804 (low) 46,448 (moderate) 33,038 (high) total 140,290

D. Erosion Potential: 1.3 tons/acre/year (5.2 tons/ac/yr in high severity)

E. Sediment Potential: 27 cubic yards / square mile (104 cu yds in high severity0

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

E. Design Storm Magnitude, (inches): 0.6”

F. Design Flow, (cubic feet / second/ square mile): 0.3csm

G. Estimated Reduction in Infiltration, (percent): 10%

H. Adjusted Design Flow, (cfs per square mile): 8.7csm

PART V - SUMMARY OF ANALYSIS

A. The Egley Complex Fire included 140,341 acres within the burn perimeter. Over 96,512 acres burned with intensity levels ranging from low to high. In terms of watershed stability, most of the watershed that burned will recover on its own. There are areas, however, that will need BAER treatment measures due to a combination of severe burn intensity, steep slopes and the amount of sub-watershed area impacted. If not treated these areas would result in excessive runoff, soil erosion, sedimentation and debris that may negatively impact soil productivity, fisheries, water quality and roads. There is a hightened threat that known noxious weed populations adjacent to and within the burn aera will colonize more area if detection and spot treatment are not implemented. The Districts infrastructure for managing the Forest has been severely compromised due to the fire. There are now dead trees along roads which presents a hazard to public safety. There are many miles of fence that have been destroyed which has resulted in no reasonable way of keeping livestock off the burned area in some areas until vegetative recovery can occur. If no action is taken to reduce the risk from the above conditions, hillslope erosion, flooding, debris flows and water quality degradation due to sediment and ash could further impact portions of the burn area, and allowing for vegetative recovery on some portions of the burn would be unattainable.

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 through vegetative establishment and regeneration to maintain long term productivity and watershed hydrologic function.

(2) Reduce the possibility that flooding and debris flows could threaten road infrastructure within the Malheur National Forest, or threaten fisheries and water quality in the burned area.

(3) Provide for public safety and promote fire recovery by communicating the post fire hazards to the public, most noticeably – flood hazard and hazard trees along roads and trails.

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

(5) Provide for vegetative recovery of the burn by placement of some temporary fences to restrict livestock.

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

Land **80**% Channel **75**% Roads/Trails **80**% Protection/Safety **90**%

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) = **$3,692,000**
F. Cost of Selected Alternative (Including Loss): using cost/risk work sheets = **$1,629,000**

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	[X] 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: **Aerial seeding** of winter wheat, Paiute orchard grass, Ladak alfalfa and Idaho fescue for 1st year vegetative cover on a total of 2,620 acres of high severity burn on highly erosive soil areas of the burn. Seeding with the proposed seed mix will serve as a temporary ground cover to help stabilize the slopes and decrease erosion, add nitrogen to the soil for plant growth, and provide for long lasting cover once the winter wheat goes out of the system. Estimated cost is $108,600 (see aerial seeding – winter wheat specification sheet).

Straw mulch (with helicopter) 56 acres of high severity burn on highly erosive soil along Emigrant Creek for immediate soil cover to reduce the amount of accellerated storm flow, sediment and ash from entering the Emigrant Creek which is a fishery. Estimated cost is $43,700 (see helicopter straw mulching specification sheet).

Construct 2 miles of temporary range fence to protect BAER treatment areas for watershed stabilization purposes within the Blue Creek and Emigrant Creek Watersheds from livestock that might trespass onto the burned area from private property where administrative closure and enforcement cannot be reasonably performed. BAER treatments to be protected include in-channel structures, temporary head cut stabilization, seeding and mulching to reduce post-fire erosion and sedimentation and allow these watersheds to recover. Estimated cost is $14,828 – see temporary fence spec sheets)

Inventory and spot treat, areas of noxious weed colonization in the burn for 3 years. Estimated cost is $18,600 (see noxious weeds specification sheet).

Channel Treatments: **Fell dead trees in an upstream herring-bone** fashion in several ephemeral and intermittant drainages in Stinger Creek and an un-named tributary just north of Stinger Creek to slow runoff and trap debris and sediment. Estimated cost is $5,375 (see in-channel tree felling specification sheet).

Install stream channel grade control structures in Blue Creek, Mutton Creek and Dodson Creek using available onsite materials (logs, rock) and straw bales. The purpose of these structures is to reduce the water velocity, thereby reducing the in-channel erosive force to prevent down cutting and capture sediment of the stream-flow. Estimated cost is $11,230 (see Stream grade control structure specification sheet).

Install head-cut stabilization on Blue Creek to temporarily stabilize the active head-cut from accelerated runoff due to the fire. Erosion fabric and large rock will be used. This treatment will be effective at limiting the potential for the fire to exacerbate the soil erosion and stream channel destabilization situation in the short-term. Estimated cost is $4,250 (see head cut stabilization specification sheet).

Road Treatments (see Forest Roads specification sheet): **Hazard Tree Felling**. Ongoing identification and felling of danger trees on open roads (Maintenance Level 2-5) as they reach the point of imminent failure potential over the next year. (Estimated cost $15,390)

Install road drainage dips, clean ditches and rock fall, and outslope roads where needed. Based on predicted runoff increases resulting from wildfire effects, drainage improvements are needed on many of the roads in the burned areas, including constructing armored dips over several major culverts, blading to outslope design where needed and installing drivable cross ditches on Maintenance Level 1 and 2 roads, ditch cleaning and rock fall removal from Maintenance Level 3-5 roads. Estimated cost is $157,904.

Repair cattleguards. Three cattleguards were identified that have had portions of their wood foundations consumed by fire. These are located on collector roads (roads 4310, 3745, and 4770); their foundations will need to be replaced in the near future to provide for user safety. These particular cattleguards do not have readily accessible by-pass gates and present a safety issue if the foundations are not replaced. Other alternatives would include constructing suitable access to the bypass gates (which would cost more than foundation repairs) or close the collector roads. Estimated cost is $ 11,592.

Replace road closure pole barricades. Three barricades were identified that were destroyed or consumed by the fire. One of the barricades is located on road 4300329, and the other two are located at each end of road 4310822. The primary reason the roads were closed with this type of barrier rather than an earth-berm or other type barrier, is that they provide quick access for potential wildfire responses. Forest records on the closures are incomplete, but it appears these roads are closed for both wildlife and resource protection needs. The objective of replacing the barricades is to provide the same level of resource protection that the original barriers provided. Estimated cost is $2,385.

Protection and Safety. **Area Closure Signs**. The District is closing most of the burned areas for the short term primarily for resource protection. The biggest concerns are hazard trees, potential for accelerated erosion, to allow for vegetative recovery, off-road motorized vehicle use in areas with sensitive, erodible soils, and the lack of cover for wildlife, particularly big game animals. The objective of the proposed treatments (area closures and applicable signing) is to address those concerns. The District has identified 6 major entry points to the restricted areas where they plan to place large public information/map board displays and 30 other locations where advisory signs will be posted to inform the public about the nature of the closures and why they are needed for resource protection purposes. Estimated cost is $ 10,200.

Flood warning signs. Flash flood warning signs will be placed along Forest Service roads 43, 45 and 4310 to provide for public safety by alerting Forest users to potential danger in the burn area. Estimated cost is $ 2,520 (see flood warning sign specifications sheet).

Trail closure and hazard signs. Install a trail closure sign at the entrance to the Delintment Creek trail off FR 41. Install hazard warning signs throughout the campground at points where campers would venture off into the burn area south of the lake. Signs would warn of the hazards in the burn area such as hazard trees and stump holes. Estimated cost is $ 2,050 (see trail closure and campground hazard specification sheet).

Alert 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 noting pounds of seed applied to each seed unit and Ag Nav tracking on GIS map, and by visual observation, and/or performing seed counts/unit area. 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 that received no straw mulch, and noting evidence of sheet, rill or gully erosion by end of years 1, 2 and 3.

(c) Channel tree felling, channel structures and head cut stabilization implementation monitoring by daily supervising falling and construction crews. Channel tree felling channel structures and head cut stabilization effectiveness monitoring by noting evidence and amount of debris/sediment retained by end of years 1, 2 and 3 and head cut migration upslope. In Emigrant Creek water temperature, fish population surveys,redd counts, pool/riffle ratio and Wolman pebble counts will be conducted.

(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 monitoring. Monitor for user safety on roads that remain open to administrative and public use through periodic identification of danger trees that have imminent potential to fall into the roadway, and having those trees felled to provide for user safety during BAER implementation and monitoring activities. Road drainage, stabilization and closure implementation monitoring by inspecting that treatments were performed and met specifications. Road drainage, stabilization and closure effectiveness monitoring by reviewing incidence and costs for maintenance needs, and evidence of vehicular traffic use.

(f) Heritage Resources. Twenty critical heritage resource sites will be monitored within one year of the fire to insure that damage from looting, vandalism and erosion is not occuring. During monitoring significant diagnostic artifacts should be recorded and collected to protect data from loss through looting. If unacceptable site degradation is identified, implement site protection and data recovery measures as warranted. Forest Service law enforcement will be involved in the monitoring of these sites (see cultural resource site protection specification sheet).

(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 $20,200, $ 15,200 and $ 15,900 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	acre	$39	2,620	$108,600	$0	3200	$230,200		$0	$338,800
Aerial mulching	acre	$780	56	$43,680						$43,680
Temporary fence	mile	$7,414	2	$14,828			$0		$0	$14,828
Weed detection/tmt	year	$6,200	3	$18,600	$0		$0		$0	$18,600
				$0						$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$185,708	$0		$230,200		$0	$415,908
B. Channel Treatments										
Headcut stabilization	ea	$4,250	1	$4,250	$0		$0		$0	$4,250
In-channel tree felling	mile	$1,075	5	$5,375	$0		$0		$0	$5,375
In-channel structures	ea	$268	42	$11,256	$0		$0		$0	$11,256
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$20,881	$0		$0		$0	$20,881
C. Road and Trails										
hazard tree felling	mile	$114	135	$15,390	$0		$0		$0	$15,390
Armored grade dips	ea	$3,864	5	$19,320						$19,320
driveable dips	ea	$91	600	$54,600						$54,600
Cattleguard foundation	ea	$3,864	3	$11,592						$11,592
Rd closure replacemer	ea	$795	3	$2,385	$0		$0		$0	$2,385
Clean ditch and rockfal	mile	$1,102	17	$18,734						$18,734
Outsloping roads	mile	$522	125	$65,250	$0		$0		$0	$65,250
Subtotal Road & Trails				$187,271	$0		$0		$0	$187,271
D. Protection/Safety										
Closure signs (lrg)	ea	$1,200	6	$7,200	$0		$0		$0	$7,200
Closure signs (sm)	ea	$100	30	$3,000	$0		$0		$0	$3,000
Flood warning signs	ea	$252	10	$2,520	$0		$0		$0	$2,520
Trail closure sign	ea	$1,050	1	$1,050						
Hazard signs	ea	$100	10	$1,000						
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$14,770	$0		$0		$0	$12,720
E. BAER Evaluation										
Salary				$0	$42,200		$15,000			$57,200
Travel/PD				$0	$6,000		$0		$0	$6,000
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				$0	$48,200		$0		$0	$63,200
F. Monitoring										
year 1				$20,200			$30,000			$50,200
year 2				$15,200			$0			$15,200
year 3				$15,900	$0		$0		$0	$15,900
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$51,300	$0		$30,000		$0	$81,300
G. Totals				$459,930	$48,200		**$260,200**		**$0**	**$781,280**
Previously approved										

PART VII - APPROVALS

1. /s/ Gary L. Benes — 8/7/2007
   Forest Supervisor (signature) — Date

2. _____ _____
   Regional Forester (signature) — Date