USDA-FOREST SERVICE FS-2500-8 (7/08)

Date of Report:

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

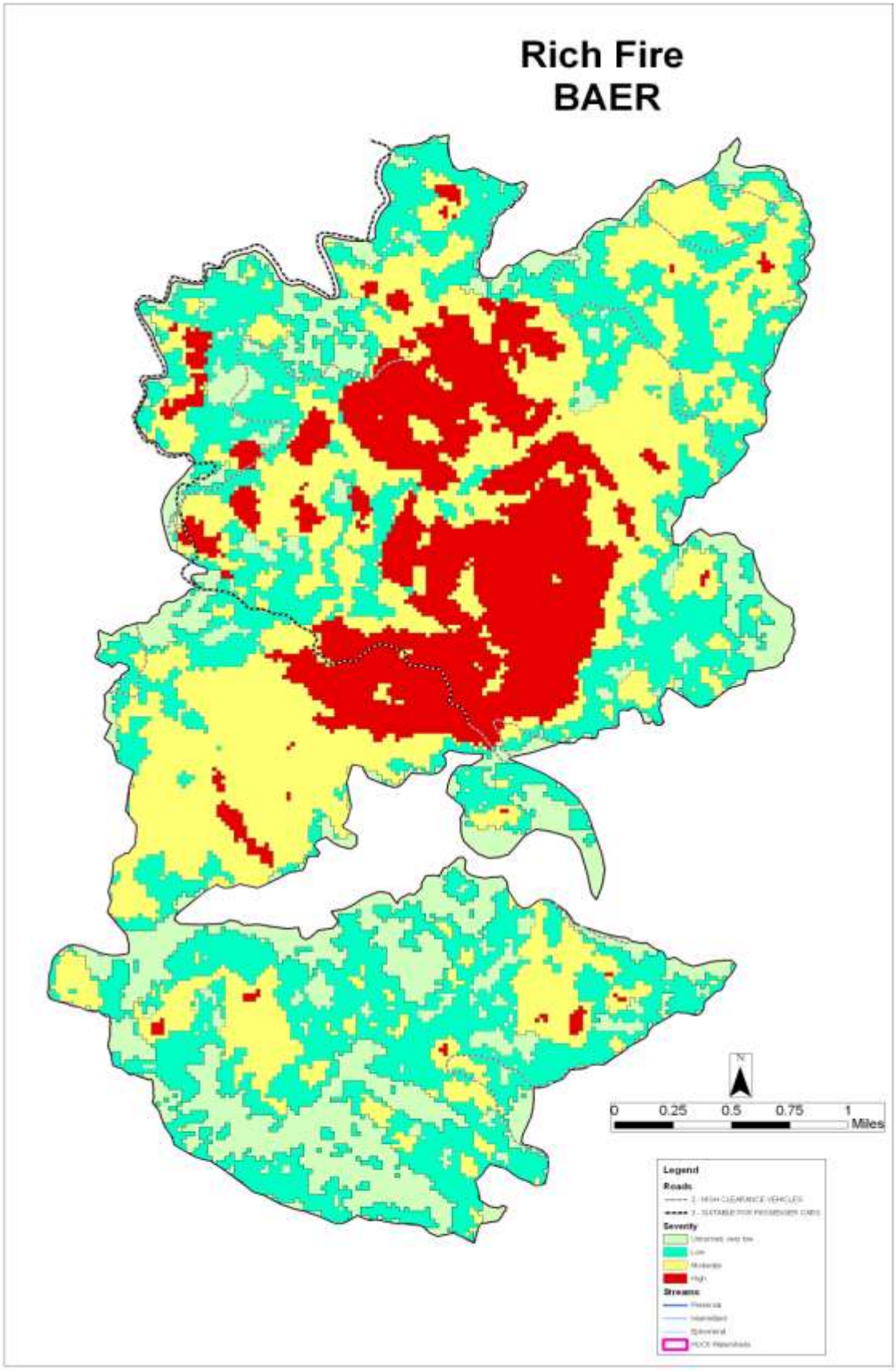
[x] 1. Funding request for estimated emergency stabilization funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

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)



Red=High Yellow=Moderate Green=Low

Rich Fire Soil Burn Severity Map

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Rich Fire

B. Fire Number: CA-PNF-000784

C. State: CA

D. County: Plumas

E. Region: 5

F. Forest: Plumas

G. District: Hough

H. Fire Incident Job Code: P5ED7R

I. Date Fire Started: July 29, 2008

J. Date Fire Contained: 8/10/2008

K. Suppression Cost: $12,174,157

L. Fire Suppression Damages Repaired with Suppression Funds not available as of this date as supression on other fires within the Rich Fire and Canyon Complex is still on going. Suppression rehab is currently underway.

1. Fireline waterbarred (miles):
2. Fireline seeded (miles):
3. Other (identify):

M. Watershed Number: 180201210,180201220

N. Total Acres Burned: 6112
NFS Acres(5352) Other Federal ( ) State ( ) Private (760)

O. Vegetation Types: Pine, shrub, oak

P. Dominant Soils: Haploxeralfs, Haploxerults, Xerochrepts, Xerumbrepts

Q. Geologic Types: Shoo-fly formation with Andesite

R. Miles of Stream Channels by Order or Class: 41 ephemeral, 20 intermittent, 3 perennial

S. Transportation System

Trails: 5 miles Roads: 18.7 miles

PART III - WATERSHED CONDITION

A. Burn Severity by total and FS (acres)

Huc_6 ID	HUC_6 Name	Acres Within Fire	High	Moderate	Low	Unburned
180201210502	BELDEN	801	5.5%	23.4%	48.8%	22.2%
180201220801	HALSTEAD FLAT	125	0.9%	16.9%	52.9%	29.3%
180201220802	MILL CREEK	2672	35.9%	34.4%	22.7%	7.0%
180201210501	SENECA	188	0.4%	61.1%	29.5%	9.0%
180201220803	SERPENTINE CANYON	2323	2.4%	33.2%	36.8%	27.5%
	Total	6110	17.4%	33.0%	32.3%	17.3%

B. Water-Repellent Soil by total and FS (acres): 621

C. Soil Erosion Hazard Rating by total and FS (acres):

	High	Moderate	Low	Unburned
FS	740	1789	1826	998
Private	323	227	148	58

D. Erosion Potential: 26.15 tons/ac over 2 years

E. Sediment Potential: 11524 cubic yards / square mile over 2 years

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 2

B. Design Chance of Success, (percent): 90

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

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches): 2.4

F. Design Flow, (cubic feet / second/ square mile): 265

G. Estimated Reduction in Infiltration, (percent): 35 for higher frequency, lower magnitude events

H. Adjusted Design Flow, (cfs per square mile): 358

PART V - SUMMARY OF ANALYSIS

A. Critical Values/Resources and Threats: On the afternoon of July 29, an unidentified, human caused fire ignited on the south side of the North Fork Feather River (NFFR), near the Union Pacific Railroad across from the confluence of Rich Gulch and the NFFR. The fire spread rapidly to the south, up the ridge above the ignition point, and was wind driven north, across the NFFR and State Highway 70. As fire suppression resources were engaged with the near-by Canyon and Butte Lightning Complexes, aerial and ground resources were able to respond rapidly to the new incident and were able to achieve containment of the 6,112 acre fire within 8 days. Historically dry fuel conditions contributed to the large acreage of high and moderate soil burn severity. The Rich fire BAER team was able to obtain good access from the ground to this burned area. The Rich fire burned area includes tributaries to the Upper North Fork Feather River hydropower project, which will receive some sediment and ash from the burned area, in addition to slightly higher flows during runoff events that would produce small semi-annual floods. Vegetative cover, soil and watershed runoff recovery is expected to occur cheifly within the first two years post fire. There are several private year round residences within the burned area that are surrounded by NFS lands. There are no Fish and Wildlife Service threatened and endangerd listed species in the burned area. The following emergencies have been identified within the Rich Fire burned area:

1. **A Threat to Human Health and Safety exists** **Loss of control of water within the road drainage systems** may result in complete or partial washout of the road prism. This would result in an emergency threat to forest recreationists who may be unexpectedly stranded in remote country during high intensity rainstorms, and to local

residents on private "in-holding" property that is located within the burned area perimeter. Private year round residents use NFS system roads to access their property, which is located in remote areas that will be subject to changes in runoff and sedimentation, needing immediate access to evacuation routes, in case of emergency.
Increased flood flows – Increased flows often occur following wildfire due to a combination of: loss of ground cover, decreased infiltration, a reduction in transpiration, reduced water storage, and snowmelt modification. Although the magnitude of increase varies, moderate to high severity burn areas often produce an increase in runoff. The potential for late fall thunderstorm and winter frontal rainstorm events could cause flooding within and downstream of the burned areas. Rich Gulch discharge is predicted to increase 35% in response to the fire. Residences within the burned area appear to be located above the flood prone areas. However, there is a concern that information regarding stream flows above the normal expected for a precipitation event should be shared with frequent visitors to those stream channels.

2. **A Threat to Forest Service Property exists**. Costly damage to system roads within the burned area is likely to result from a loss of control of water due to disruption or plugging of road drainage features.

3. **A Threat to Water Quality exists**. Water quality will be reduced by increases in organic carbons, ash, and sediment. Initial (1-3 years) upland erosion and sediment delivery directly to stream channels is expected in areas of moderate and high burn severity with little potential needle cast. The likely loss of control of water along Forest Service roads in the burned area due to increased peak flows and woody debris flows presents an emergency threat to water quality in Rich Gulch and Rush Creek due to the potential loss of hundreds of tons of sediment from road fill slopes or crossings.
Debris Flow Potential – Increased streamflows may be combined with debris flows of ash, floatable material (e.g. wood), and transportable material. Several debris flow lobes, particularly at the mouth of smaller tributary streams, exist throughout the burned area. The BAER geology report for the Rich Fire concludes that debris flows are possible within the burned area, particularly upstream of Forest Service road 26N22 in the burned areas of the Rich Gulch watershed. However, these tributaries intersect Rich Gulch at angles that are close to perpendicular. As a result, the debris flow energy would be dissipated quickly and the debris would not run far into the creek. Therefore, potential debris flows originating in the burned area pose a minimal threat to water quality in Rush Creek and East Branch North Fork Feather River. See Geology report for more information.

4. **A Threat to Ecosystem Integrity exists from**: The unknowing introduction of invasive noxious weeds into areas disturbed by fire suppression and rehabilitation has the potential to establish persistent weed populations. These persistent populations could affect the structure and habitat function of plant communities within the burn area. Forest Service direction is to minimize the establishment of non-native invasive species to prevent unacceptable degradation of the burned area. Consequently, delayed assessment of roads, dozer lines, drop points, helispots, and safety zones is necessary to detect the spread and introduction of weeds in the first year after fire. Assessing the establishment of weeds and treating small outlying populations before they expand will prevent the weeds from becoming serious threats to the recovery of native plants. Any new noxious weed populations established in the fire area also threaten all nearby public and private lands. Agricultural lands around the fire area may be degraded due to noxious weed spread. Water quality may also be threatened when noxious weeds

displace native riparian and wetland plant species. Many native wetland plants prevent riparian soil erosion while some noxious weeds do not.

B. Emergency Treatment Objectives: The treatments proposed will help reduce the risk to life and property, the affects on water quality and the infrastructure (roads) investments, within the fire area. The treatments will also help reduce the threat to ecosystem integrity from the introduction and spread of invasive weeds.

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

Land __ % Channel ___ % Roads/Trails **80** % Protection/Safety **100** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel			
Roads/Trails	80	90	95
Protection/Safety	70	80	90

E. Cost of No-Action (Including Loss): **$1,650,000 +cost of human life, water quality, and ecosystem integrity**

F. Cost of Selected Alternative (Including Loss): $ 586,781

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Cheryl Mulder

Email: cmulder@fs.fed.us Phone: (530) 283-7771 FAX: (530) 283-7746

H. **Treatment Narrative:**

Protection/Safety Treatments: Protection of public safety will be provided through administrative means. Signs will be utilized to inform the public of increased risk from entering the burned area, and natural barriers will be used to provide protection from hazards in areas where administrative means require additional protective measures. Safety Patrol will be used to inform potential users, especially those who have active mining claims, and residents with property, that are accessed by roads through

the burned area, of administrative measures that are in place, and of the current hazards that exist in the area.

Roads and Trail Treatments: The following treatments were identified as BAER treatments for the Rich Fire burn area:

A. Restore and Improve Drainage Function
B. Install Roadway Dips
C. Construct Hardened Crossings
D. Install Culverts and Catch Basins
E. Install Culvert Inlet Treatments (Metal End Sections, Risers, Trash Racks)
F. Install Drainage Armor
G. Storm Patrol
H. Install BAER Warning and Information Signs for Administrative Closure
I. Specific treatments are as follows:

25N20K

Intersection 25N20/25N20K
Construct dip
Install 24"x40' CMP
Construct hardened crossing with outlet riprap
Construct hardened crossing with outlet riprap
Construct hardened crossing with outlet riprap
Construct hardened crossing with outlet riprap
Construct hardened crossing with outlet riprap (existing 12" CMP)
Clean CMP, Construct dip below drainage
Construct hardened crossing with outlet riprap
Construct hardened crossing with outlet riprap
Construct hardened crossing with outlet riprap

26N22

Mile	Intersection PC 317/26N22
0.07	Existing 18" and 24" CMPS. Replace with 6' arch pipe with trash rack. Construct hardened crossing below culvert.
0.09	Existing 76"x44" CMPA with concrete headwalls, toe walls, and gabions (Rich Gulch Creek). Install 48" culvert next to existing culvert. Stabilize creek banks at inlet with concrete matting. Construct hardened crossing below culverts. Install trash racks on both culverts.
0.56	Place riprap at existing CMP (5 CY)
0.72	Install 36"x60' CMP with outlet riprap
0.78	Place riprap at existing CMP
1.01	Install 24" metal end section
1.18	Place riprap at existing CMP
1.46	Install riser on 24" CMP, place riprap at outlet
1.53	Install 24" metal end section, place riprap at outlet
1.64	Install 18" riser
2.53	Place riprap at existing CMP (5 CY)
2.97	Install 36" metal end section
3.75	Install 36" riser
4.47	Trim damaged inlet of existing CMP
6.25	Intersection 26N22/26N67

Note: Construct 11 dips with outlet riprap in hot burned area below culverts. No mileposts were identified. These dips will require new road base surfacing after construction (4”x22’)

26N22K

Mile	
0.00	Intersection 26N22/26N22K
0.19	Place riprap at existing dip outlet
0.23	Place riprap at existing dip outlet
0.37	Place riprap at existing dip outlet
0.43	Construct dip with outlet riprap
0.53	Place riprap at existing dip outlet
0.66	Replace 24”x40’ CMP, construct catch basin
1.01	Place riprap at existing dip outlet
1.08	Construct dip with outlet riprap
1.30	Place riprap at existing dip outlet

Land Treatments: Inspect all areas and monitor for newly established weed occurrences. Monitoring will include documentation and hand pulling small new weed occurrences at the time of inspection. New weed occurrences will be pulled to root depth, placed in sealed plastics bags, and properly disposed.

Documentation of new infestations will include:

- GPS negative and positive inspection results
- Incorporate data into GIS spatial database
- Establish photo points
- Map perimeter of new infestation
- Estimate number of plants per square meter
- Treatment method
- Dates of treatment
- Evaluate success in subsequent inspection

Inspections and monitoring should be accomplished during June, July, and August of 2009. Based upon findings in the first year’s survey, additional surveying may be requested for up to three years.

I. **Monitoring Narrative:**

No monitoring is requested at this time.

Part VI – Emergency Stabilization Treatments and Source of Funds Interim

Click red icons for notes.	NFS Lands					Other Lands				All
Line Items	Units	Unit Cost	# of Units	BAER $	Other $	# of Units	Fed $	# of Units	Non Fed $	Total $
A. Land Treatments										
botanist gs 11	ea	$350	2	$700			$0		$0	$700
botanist gs 9	ea	$250	5	$1,250			$0		$0	$1,250
botanist gs 7	ea	$180	5	$900			$0		$0	$900
botanist gs 5	ea	$120	5	$600			$0		$0	$600
Subtotal Land Treatments				$3,450	$0		$0		$0	$3,450
B. Channel Treatments										
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Channel Treatments				$0	$0		$0		$0	$0
C. Road and Trails										
drainage func ML2	mi	$1,800	7	$12,456			$0		$0	$12,456
drainage func ML3	mi	$900	2	$2,025			$0		$0	$2,025
repair culv. Inlet	ea	$150	1	$150			$0		$0	$150
culvert relief dip	ea	$500	15	$7,500			$0		$0	$7,500
rd base for new dips	tons	$50	1,600	$80,000			$0		$0	$80,000
24" metal end sec	ea	$2,000	2	$4,000			$0		$0	$4,000
36" metal end sec	ea	$3,500	1	$3,500			$0		$0	$3,500
hardened xing	ea	$2,000	10	$20,000			$0		$0	$20,000
Drainage Armor	cu yd	$250	106	$26,500			$0		$0	$26,500
storm patrol	lump	$10,000	1	$10,000			$0		$0	$10,000
36" culvert	ea	$6,000	3	$18,000			$0		$0	$18,000
60" culvert	ea	$17,500	2	$35,000			$0		$0	$35,000
catch basin	ea	$300	1	$300			$0		$0	$300
riser 18"	ea	$2,000	1	$2,000			$0		$0	$2,000
riser 24"	ea	$2,800	1	$2,800			$0		$0	$2,800
riser 36"	ea	$3,500	1	$3,500			$0		$0	$3,500
trash racks	ea	$3,000	3	$9,000			$0		$0	$9,000
concrete block mat	ea	$10,000	1	$10,000			$0		$0	$10,000
	ea			$0			$0		$0	$0
Subtotal Road & Trails				$246,731	$0		$0		$0	$246,731
D. Protection/Safety										
hazard signs	ea	$1,100	2	$2,200			$0		$0	$2,200
admin signs	ea	$300	8	$2,400			$0		$0	$2,400
public safety patrol	days	$500	4	$2,000			$0		$0	$2,000
				$0			$0		$0	$0

PART VII - APPROVALS

1. /s/ Alice B. Carlton — 8/19/2008
   Forest Supervisor (signature) — Date

2. _____ — _____
   Regional Forester (signature) — Date