

Date of Report: 10/13/06

BURNED-AREA REPORT

(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

- ☒ 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)

☒ 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 DESCRIPTIONA. Fire Name: HunterB. Fire Number: CA-MNF-894C. State: CAD. County: Mendocino, GlennE. Region: 05 Pacific SWF. Forest: 08 MendocinoG. District: 56 Covelo, 53 GrindstoneH. Fire Incident Job Code: P5C1HDI. Date Fire Started: 24 Jul 2006J. Date Fire Contained: 16 Aug 2006K. Suppression Cost: \$13.3 million as of 28 Aug

L. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 57.9 (32.5 dozer & 25.4 hand)2. Fireline seeded (miles): 03. Other (identify): Stream crossing repair, toxic spill cleanup (minor), repair of damage to road surface and drainage features (waterbars, culvert inlets, ditches)M. Watershed Number: 18 01 01 04 02 Black Butte RiverN. Total Acres Burned: 16296

NFS Acres(15371) Other Federal (0) State (0) Private (925)

O. Vegetation Types: mixed conifer, true fir, conifer hardwood, annual glade & savana, oak woodland, chaparral

P. Dominant Soils: Sheetiron, Maymen, Madonna

Q. Geologic Types: Franciscan formation

R. Miles of Stream Channels by Order: Order 1: 78.9 ; Order 2: 31.6 ; Order 3: 13.3 ; Order 4+: 14.7

S. Transportation System

Trails: 13.2 miles

Roads: 69.6 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 13110 (low) 2340 (moderate) 850 (high)

B. Water-Repellent Soil (acres): 1000

C. Soil Erosion Hazard Rating (acres):
9700 (low) 5600 (moderate) 1000 (high)

D. Erosion Potential: 4 tons/acre

E. Sediment Potential: 700 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 4

B. Design Chance of Success, (percent): 95

C. Equivalent Design Recurrence Interval, (years): 2

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches): 2.4

F. Design Flow, (cubic feet / second/ square mile): 52

G. Estimated Reduction in Infiltration, (percent): 3

H. Adjusted Design Flow, (cfs per square mile): 53

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

The Hunter fire burned about 16% of the Black Butte River HUC5 key watershed in its upper reaches. Black Butte River provides habitat for steelhead and Chinook salmon listed under the Endangered Species Act (ESA). It and its tributaries also provide habitat for resident trout. Property/infrastructure values within the burn area include two privately owned recreation residences (Hays Place & the Russel cabin (McCoy Ridge), and Forest Service roads and trails

(the trails have been abandoned but still show on the inventory). Many prehistoric archaeological sites are located within the burn area.

The fire burned predominantly at lower severity, with most moderate and high severity burns being of limited size (average & maximum polygon sizes: moderate severity – 27 & 167 acres; high severity 27 & 127 acres). See photos in the supplemental information attachment. Soil hydrophobicity was noted in the red fir stands around Ocean View and Little Baldy. This is a natural occurrence but overland flow can be expected since the duff layer was consumed by fire. No hydrophobicity was measured on Skidmore or McCoy Ridges. Analysis of burn severity on areas within 300 feet of stream channels of all orders indicates 3.2% of the area within affected subwatersheds had high severity burn, and 10.0% had moderate severity burn. Based upon these factors, large flood source areas requiring land treatments are not present. However, certain post-burn conditions pose threats to some of the identified values. The specifics are described below.

Threats to and from roads, which would impact fish and water quality:

The fire has consumed stabilizing large woody debris in most stream channels upstream from road crossings. Partial consumption of small diameter woody debris has produced abundant mobilizable debris that is long enough to bridge culvert inlets, some of which show evidence of previous partial plugging. This factor, combined with abundant mobilizable sediment has great potential for culvert plugging and overflow, with resulting facility and resource damage. Resource damage would include sediment from fill and hillslope gully erosion at locations where overflow exits the road prism, potential channel-scouring debris torrents, and increased stream sedimentation. Such effects would adversely impact achievement of Aquatic Conservation Strategy objectives related to sediment regimes and channel stability. Some road segments are located below moderate and high intensity burn areas and are predicted to receive abnormal surface flow from these areas. Even areas of green trees had a sufficient ground fire to destabilize debris in the channels. See photos in supplemental info attachment. This poses a risk of erosion damage to the road surface and sedimentation impacts on the Black Butte River, which contains steelhead and Chinook salmon listed under the Endangered Species Act (ESA). Potential road damage is estimated @ \$434210.

The dollar value of the threat to the steelhead and salmon cannot be quantified as typical costing methods don't apply. USFS is tasked with making reasonable management decisions to protect these species and help provide for their future de-listing under ESA in the long-term. For the purpose of having a cost calculation, we valued the cost of sediment production @ 5 times the cost of lost reservoir storage on other MNF fires which equates to \$379855 potential lost.

Heritage Resource Sites

Three sites within the fire perimeter have been exposed by the fire and each is vulnerable to one or more of: erosion, vandalism (looting), livestock trampling or vehicle damage. The site that is subject to livestock trampling and vehicle damage was protected by a fence that was damaged by the fire. The sites are valued at \$106,000 together.

Potential New Noxious Weed Infestations

There is a potential threat to ecosystem integrity with respect to the potential introduction of invasive plants. Staging areas, safety zones, drop points, spike camps, and fire line are potential introduction sites (noxious weed assessment plan attached).

Private Property

There is no significant threat to the Hays Place structure. It is located on a sub-watershed divide about 150 feet from an un-named intermittent channel with an upstream catchment area of about 575 acres. About 6 acres of high severity and 148 acres of moderate severity burn occurred in the upper part of the watershed. The estimated infiltration reduction is 10%. The predicted increased flow in the channel for the design storm would not threaten the structure.

The Russel Cabin is located on an old landslide bench about 400 feet in elevation above the Black Butte River. Burned vegetation above the cabin consists of brown and green trees. No active

slides are in proximity to the cabin nor are streams, so there is no post-fire threat to the cabin from burned NFS lands. The road through private land has culverts that may be subject to plugging from debris.

Neither property is occupied during most of the wet season, due to access being blocked by snow at higher elevations. Therefore there is very low risk to human life even if a more severe event than the design storm should occur during the fire recovery period.

Safety

Hazard trees along roads were felled during suppression activities. However, burned trees continue to fall across roads and they will be a concern during the road drainage improvement projects.

B. Emergency Treatment Objectives:

Threats to and from roads

Reduce risk of culvert plugging by improving debris-passing capacity of inlets, by reducing readily mobilized woody debris, and by providing for inter-storm detection and removal of culvert obstructions (storm patrol). Provide for 'least damage' diversion of overflow in the event of culvert failure by constructing dips down-grade from crossings as a back-up treatment. Reduce risk of excessive erosion and road damage from high rates surface runoff affecting road surfaces and discharge of road runoff onto burned slopes below roads by constructing additional dips between existing cross drains.

Heritage Resource Sites

Protect heritage sites from erosion, vandalism, livestock, and vehicle damage by mulching two sites and repairing protective fencing on one site.

Potential New Noxious Weed Infestations

Deferred noxious weed threat assessment is needed to detect and destroy any incidental infestations of invasive plants introduced by suppression actions, and to determine need for treatment beyond incidental removal. Assessment to occur beginning of 2007 growing season, prior to 1 year anniversary of fire.

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

Land 95 % Channel NA % Roads/Trails 95 % Protection/Safety 95 %

D. Probability of Treatment Success

| | Years after Treatment | | |
|-------------------|-----------------------|----|----|
| | 1 | 3 | 5 |
| Land | 95 | 99 | 99 |
| Channel | | | |
| Roads/Trails | 95 | 98 | 99 |
| Protection/Safety | 95 | 95 | 95 |
| | | | |

E. Cost of No-Action (Including Loss): \$386,941 (excluding assessment)

F. Cost of Selected Alternative (Including Loss):_ **\$298,021** (excluding assessment)

G. Skills Represented on Burned-Area Survey Team:

| | | | | |
|---|--|---|---|--------------------------|
| <input checked="" type="checkbox"/> Hydrology | <input checked="" type="checkbox"/> Soils | <input checked="" type="checkbox"/> Geology | <input type="checkbox"/> Range | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> Forestry | <input checked="" type="checkbox"/> Wildlife | <input type="checkbox"/> Fire Mgmt. | <input checked="" type="checkbox"/> Engineering | <input type="checkbox"/> |
| <input type="checkbox"/> Contracting | <input type="checkbox"/> Ecology | <input checked="" type="checkbox"/> Botany | <input checked="" type="checkbox"/> Archaeology | <input type="checkbox"/> |
| <input checked="" type="checkbox"/> Fisheries | <input type="checkbox"/> Research | <input type="checkbox"/> Landscape Arch | <input checked="" type="checkbox"/> GIS | |

Team Leader: Mike Van Dame

Email: mvandame@fs.fed.us

Phone: 530 934 1141 or 3316

FAX: 530 934 7384

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:

Mulch 2 prehistoric sites to protect from erosion and vandalism.

Field check staging areas, safety zones, drop points, spike camps, and fire line for noxious weed infestations in early 2007 growing season, as detailed in attached Noxious Weed Assessment Plan. Eradicate incidental infestations at time of discovery; submit request for BAER treatment funds if additional treatment is needed

Channel Treatments:

No treatments are proposed even though woody debris in the channel bottoms was burned under all three burn intensities with the potential to release ash and stored sediment towards major drainages and the Black Butte River. The 124 miles of stream (order 1-3) to be treated with log structures is not feasible. It is acknowledged that erosion of channel deposits will be very high and water quality degradation will occur in the major streams such as Rocky Basin, Hunter, Salmon, Baldy and Buckhorn Creeks. The effects on the Black Butte River will be masked by the current massive active landsliding along the river generated by last year's heavy storm runoff events.

Improving road culverts to pass the stored sediment, ash and burned material is feasible and cost effective in protecting the transportation system and in preventing additional sediment delivery from fill failure and stream diversion.

Roads and Trail Treatments

A) Upgrade 171 cross-drains and minor stream crossings to enhance passage of post-fire debris. Upgrades vary, and include opening of obstructed pipe-ends, addition of inlet sections, channel inlet cleaning, channel cleaning of floatable and culvert plugging debris 25 feet upstream of the culvert inlet, and construction of back-up diversion dips.

B) Upgrade cross drainage by constructing about 600 dips and waterbars on road segments that are either 1) subject to high surface flow from moderate and high intensity burn areas, or 2) prone to concentrate runoff onto burned hillslopes.

C) Provide for inter-storm patrol to detect and prevent potential failures.

Protection/Safety Treatments:

No further advance snag treatment is feasible. Contractors will be advised to evaluate work areas each day for imminent hazards prior to commencing work. Contract inspectors will be advised likewise, and will share BAER JHA with contractors.

Repair fence protecting one archaeological site, to prevent vehicle and livestock damage.

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 of archaeological site treatments is needed to assess the effectiveness of treatment measures designed to lessen the likelihood of adverse effects. The three sites will be monitored (two mulching; one fence) to determine the effectiveness of treatment measures. Sites will be visited prior to treatment measures and documented with both photographs/digital imaging and a narrative characterization of the sites condition. The sites will be re-visited after the first significant rain episode and documented again (using photos/digital imaging) on monitoring forms. Unless significant effects are identified requiring additional emergency treatment, there will be no subsequent visits to the site. RPA monitoring forms will be used to document observations. Monitoring results will be included in the BAER Archaeological Report (submitted to the Regional Forester and the State Historic Preservation Officer, and the Advisory Council on Historic Preservation if requested).

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

| Line Items | Units | Unit Cost | NFS Lands | | Other \$ | # of units | Other Lands | | All Total \$ |
|--|-------|-----------|------------|-----------------|----------|------------|-------------|------------|--------------|
| | | | # of Units | BAER \$ | | | Fed \$ | # of Units | |
| A. Land Treatments | | | | | | | | | |
| Nox Weed Assmnt | job | 11200 | 1 | \$11,200 | \$0 | | \$0 | | \$11,200 |
| Arch Site Mulch | job | 1250 | 2 | \$2,500 | \$0 | | \$0 | | \$2,500 |
| | | | | \$0 | \$0 | | \$0 | | \$0 |
| <i>Insert new items above this line!</i> | | | | \$0 | \$0 | | \$0 | | \$0 |
| Subtotal Land Treatments | | | | \$13,700 | \$0 | | \$0 | | \$13,700 |
| B. Channel Treatments | | | | | | | | | |
| | | | | \$0 | \$0 | | \$0 | | \$0 |
| <i>Insert new items above this line!</i> | | | | \$0 | \$0 | | \$0 | | \$0 |
| Subtotal Channel Treat. | | | | \$0 | \$0 | | \$0 | | \$0 |
| C. Road and Trails | | | | | | | | | |
| X-drain improvement | job | 34250 | 1 | \$34,250 | \$0 | | \$0 | | \$34,250 |
| Adjust est x-drain | job | 20620 | 1 | \$20,620 | \$1 | | \$0 | | \$20,621 |
| Improve rd drainage | job | 150250 | 1 | \$150,250 | \$2 | | \$0 | | \$150,252 |
| Adjust est rd drain | job | 48500 | 1 | \$48,500 | \$3 | | \$0 | | \$48,503 |
| Storm patrol | job | 3000 | 1 | \$3,000 | \$0 | | \$0 | | \$3,000 |
| <i>Insert new items above this line!</i> | | | | \$0 | \$0 | | \$0 | | \$0 |
| Subtotal Road & Trails | | | | \$256,620 | \$6 | | \$0 | | \$256,626 |
| D. Protection/Safety | | | | | | | | | |
| Repair arch site fence | job | 4100 | 1 | \$4,100 | \$0 | | \$0 | | \$4,100 |
| | | | | \$0 | \$0 | | \$0 | | \$0 |
| <i>Insert new items above this line!</i> | | | | \$0 | \$0 | | \$0 | | \$0 |
| Subtotal Structures | | | | \$4,100 | \$0 | | \$0 | | \$4,100 |
| E. BAER Evaluation | | | | | | | | | |
| Initial eval | job | | | --- | 18925 | | \$0 | | \$18,925 |
| | | | | --- | \$0 | | \$0 | | \$0 |
| <i>Insert new items above this line!</i> | | | | --- | \$0 | | \$0 | | \$0 |
| Subtotal Evaluation | | | | --- | \$18,925 | | \$0 | | \$18,925 |
| F. Monitoring | | | | | | | | | |
| Arch sites | job | 1710 | 1 | \$1,710 | \$0 | | \$0 | | \$1,710 |
| <i>Insert new items above this line!</i> | | | | \$0 | \$0 | | \$0 | | \$0 |
| Subtotal Monitoring | | | | \$1,710 | \$0 | | \$0 | | \$1,710 |
| G. Totals | | | | \$276,130 | \$18,931 | | \$0 | | \$295,061 |
| Previously approved | | | | \$207,010 | | | | | |
| Total for this request | | | | \$69,120 | | | | | |

PART VII - APPROVALS

1. /s/
Forest Supervisor (signature)

10/13/06
Date

2. /s/ Thomas L. Tidwell (for)
Regional Forester (signature)

10/20/06
Date