

Date of Report: 02/04/05

**BURNED-AREA REPORT**  
(Reference FSH 2509.13)**PART I - TYPE OF REQUEST**

## A. Type of Report

- ☐ 1. Funding request for estimated WFSU-SULT funds  
☒ 2. Accomplishment Report  
☐ 3. No Treatment Recommendation

## B. Type of Action

- ☐ 1. Initial Request (Best estimate of funds needed to complete eligible rehabilitation 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: Smokehouse ComplexB. Fire Number: P53485C. State: CAD. County: Lake & MendocinoE. Region: 05F. Forest: 08 MendocinoG. District: Upperlake & CoveloH. Date Fire Started: 3 Sep 2003I. Date Fire Contained: 10 Sept 2003J. Suppression Cost: \$2,300,000

K. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 4.8 miles of dozer line and 6.2 miles of hand line  
2. Fireline seeded (miles): 0  
3. Other (identify): Closed Roads reopened-2.9 miles

L. Watershed Numbers: 1801010301 (Upper Main Eel), 1801010402 (Black Butte)M. Total Acres Burned: 1217

NFS Acres(1134 )    Other Federal ( 0 )    State ( 0 )    Private ( 117 )

N. Vegetation Types: Mixed conifer, chaparral, grassland/type conversion, oak woodlandO. Dominant Soils: Hugo-Madonna and Sheetiron SoilsP. Geologic Types: Franciscan

Q. Miles of Stream Channels by Order or Class: Order 1=6.8 miles, order 2=4.7 miles

R. Transportation System

Trails: 0.25 miles      Roads: 11.2 miles

### **PART III - WATERSHED CONDITION**

A. Burn Severity (acres): 300 (low) 393 (moderate) 524 (high)

B. Water-Repellent Soil (acres): 454

C. Soil Erosion Hazard Rating (acres):  
162 (low) 600 (moderate) 455 (high)

D. Erosion Potential: 3.1 tons/acre

E. Sediment Potential: 1945 cubic yards / square mile

### **PART IV - HYDROLOGIC DESIGN FACTORS**

A. Estimated Vegetative Recovery Period, (years): 7 (max) (3 avg)

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

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

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches): 2-2.3

F. Design Flow, (cubic feet / second/ square mile): 95 to 133

G. Estimated Reduction in Infiltration, (percent): 1 to 6

H. Adjusted Design Flow, (cfs per square mile): 96 to 133

### **PART V - SUMMARY OF ANALYSIS**

A. Describe Watershed Emergency:

The Smokehouse Complex burned in multiple sub-divisions with Boardman, Bear and Logan sub-divisions accounting for 88% of the acreage burned by the fire. The Boardman and Bear sub-divisions burned within the Upper Main Eel River 5<sup>th</sup> Field Watershed (draining into Lake Pillsbury) and the Logan sub-division burned with the Black Butte River Watershed (draining into the Black Butte River). While the Boardman sub-division burn intensity was light and moderate with patchy areas of high burn intensity, there were no soils within the burn area that had soil erosion hazard rating of high or very high; within the Bear sub-division approximately 60 percent of the burn area had a high burn intensity, however the soil erosion hazard in these areas that sustained a high burn intensity had soils with a high rock content. From past experience on the Mendocino National Forest and the San Bernardino National Forest indicates that soils within brush fields have a high rock content and are not prone to high or very high erosion rates from a high burn intensity.

Threat to road stream crossings: Due to the location of the roads within the sub-divisions, only the Boardman and small areas of the Bear sub-divisions are at risk to have the culverts blocked or the ability of the culverts to pass the storm flows compromised. The fire has had only a minor impact to the stabilizing large woody debris in some portions of stream channels upstream from road crossings. However 5 crossings in Boardman and 2 in Bear are vulnerable to plugging, with associated road damage and sedimentation of Lake Pillsbury, a PG&E managed reservoir that also supplies water to Sonoma County. Potential road damage is \$20,300; the value of potential loss of reservoir capacity is \$3,500.

Two additional stream crossings on Bear sub-div were found to need upgrading to ensure passage of post-fire flows. Potential road damage is \$5,800; the value of potential loss of reservoir capacity is \$1,000.

Threat of sediment delivery to sensitive stream reaches: Portions of the Logan sub-division that have a high burn intensity and high or very high soil erosion potential are hydrologically connected to a perennial tributary (White Horse Creek) to the Black Butte River. The in-channel network of woody debris within a tributary to White Horse Creek has been consumed by the fire and this tributary has the potential to deliver significant levels of sediment (148 cu yd) to Black Butte River and is considered to be at risk of degradation. Black Butte River contains habitat for Chinook salmon and Steelhead Trout, and is at risk of degradation of habitat from a large pulse of sediment influx from the first winter storms. The dollar value of the fish is small, but the intrinsic value of the endangered Chinook may be sufficient to justify the cost of mitigating the sediment pulse.

Noxious Weeds: Dozer lines, hand lines, staging areas / drop points, safety zones, and heliports all have the potential to become sites of noxious weed infestation. Fire camp and the helibase were located in yellow star thistle areas. Also, equipment was not washed prior to work on the fire.

Heritage Resource Sites: Within the Boardman Sub-division of the Smokehouse Complex the fire resulted in the removal of the natural barriers associated with the 49 road (i.e. vegetation barriers). Access to the burned area within the Boardman Sub-division would result in damage to 2 HR sites, as well as aggravated short and long term erosion (from rutting). Within the Bear subdivision a HR site is threatened by accelerated erosion of a channel affecting the site, due to loss of vegetation and anticipated increased post-fire surface runoff. The potential damage at the Boardman sites is \$97,000; at the Bear site \$48,500.

Increased Surface Water on Road: Within the Boardman Sub-division increased post-fire flows at a spring threatens to cause perennial wet conditions on a segment of road, which would result in road damage and erosion on about a 0.25 mile of road. Potential road damage is \$500; value of lost reservoir capacity is \$150.

Within the Bear sub-division, existing surface drainage control structures have been damaged by the fire or need improvement to handle the expected surface runoff. Also, the existing structures, even after repair, are expected to be inadequate to prevent erosion of the road surface from expected surface runoff. Additional cross-drainage structures are needed to prevent damage to the road surface and fill slopes, and delivery of sediment. Potential road damage of \$7,500 and lost of reservoir capacity of \$3,450.

## B. Emergency Treatment Objectives:

Road stream crossing protection: 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. Provide for 'least damage' diversion of overflow in the event of culvert failure by constructing dips down-grade from crossings.

Noxious Weeds: Monitor dozer lines, hand lines, staging areas / drop points, safety zones, and heliports for noxious weeds. Destroy any infestations found during monitoring activities if possible.

Threat to sediment delivery to sensitive stream reaches: Install in channel structures to control grade and reduce or store the anticipated sediment that would be delivered to White Horse Creek until recovering vegetation can re-stabilize the channel. Same design structures were effective when used in Mendenhall fire.

Heritage Resource Sites: Prevent unauthorized cross-country OHV use with temporary barriers until natural vegetation recovery can replace the vegetative barriers. Armor channel in Bear subdivision to stabilize it and prevent site damage until vegetation recovers.

Increased Surface Water on Road: Install a cross drain, reconstruct the inside drainage ditch, install a rolling dip and rock affected road segment to ensure cross drainage of spring water (49 road, Boardman sub-div).

Upgrade crossdrainage on segment of 20N18 (Bear sub-div) subject to high surface flow from upslope burned areas by repairing existing features, and adding dips as needed.

C. Probability of Completing Treatment Prior to First Major Damage-Producing Storm:

Land      % Channel 80 % Roads 80 % Other 80 %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel			
Armor arch site	80	90	90
Silt Fences / Wattles	90	90	90
Roads			
Mitigate Stream Xings	95	99	99
Rock/drain Wet Section	95	95	95
Other			
OHV Barriers	95	97	99

E. Cost of No-Action (Including Loss): \$117,390

F. Cost of Selected Alternative (Including Loss): \$82,340

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input type="checkbox"/> Range	<input type="checkbox"/>
<input type="checkbox"/> Forestry	<input 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 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: Peter Adams

Email: pladams01@fs.fed.us

Phone: 707 275 2361

FAX: 707 275 0676

## 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.)

Channel Treatments: Armor an in-channel archeological site located within the Bear sub-division to prevent further damage to an arch site. Install 10 grade control structures within the tributary to White Horse Creek within the Logan sub-division, and approximately 10 straw wattles on the hillsides in areas that are near the White Horse Creek within the Logan sub-division. To keep the sediment delivery to White Horse Creek closer to natural levels until the upland and channel vegetation recovery has occurred.

Roads and Trail Treatments: Clean out, re-establish basin and armor the inlets for 7 stream crossings within the Boardman and Bear (2) sub-divisions; install a cross drain, reconstruct an inside ditch, clean out the inlet structure for an existing pipe and rock a short stretch of the 47 road with the Boardman Complex that is adjacent to a spring that was impacted by the fire (0.25 miles).

Within the Bear sub-division upgrade 2 additional stream crossings, and repair/upgrade surface drainage on 20N18 (Graves Cabin Road). Surface drainage work includes cleaning existing drop inlet structures and catch basins, constructing rolling dips, and and armoring erodible discharge points.

Complete storm patrolling to determine effectiveness and repair as necessary for the treated crossings.

Structures: Install peeler post temporary barriers along a 1.1 mile stretch of the 49 road to prevent OHV's from travelling cross country into the Boardman sub-division during the recovery period.

## I. Monitoring Narrative:

Conduct search and destroy type noxious weed monitoring in spring and late summer. If weeds are detected in year 1, request authority to extend monitoring one additional year. Target areas for monitoring are firelines, staging areas, drop points and helispots.

### **Monitoring/Assessment Results:**

During FY04, treatments were monitored for effectiveness.

#### Channel Treatments:

Logan Fire – in-channel single fence structures were effective in stopping channel downcutting in a burned intermittent channel. Woody debris that was holding back sediment was burned leaving material that could easily erode downstream into the Black Butte River, an anadromous stream. The structures also slowed the water velocity and prevented channel scour.

Bear Fire – a gully through an archeological site was not stabilized. The gully has enlarged and will be treated this year using watershed improvement funds.

#### Roads and Trail Treatments:

Bear Fire – Road drainage improvement was mostly effective in this fire area. One segment of road had rolling dips placed too far apart creating rilling on the burned area below the dip. This summer road maintenance will correct the drainage problem.

Boardman Fire – Extra drainage structures and roadbed drainage worked effectively as no plugged culverts or erosion problems were noted in 2004. Also on this fire, orange fencing was installed to restrict OHV vehicles from using dozer lines and entering archeological sites. The fencing was very effective and was removed in 2004.

### Invasive Weeds:

Invasive weeds were assessed on five fires during 2004. Two inspections were conducted, early summer and early fall. Twenty six miles of fireline, dozer and handline, were walked. Weeds that were found are common to the area. No noxious weeds were located. See attached botanists report.

## **Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership – Smokehouse Complex**

Line Items	Units	Unit Cost	NFS Lands		Jan. 05	Other Lands				Jan. 05
			# of Units	Interim 1 SULT \$	Final \$	# of units	Fed \$	# of Units	Non Fed \$	Final \$
<b>A. Land Treatments</b>										
Wattles	job	2000	1	\$2,000	\$2,231		\$0		\$0	\$2,231
Project Supervision	job	300	1	\$300	\$275		\$0		\$0	\$275
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Land Treatments</b>				\$2,300	\$2,506		\$0		\$0	\$2,506
<b>B. Channel Treatments</b>										
Armor arch site	job	500	1	\$500	\$500		\$0		\$0	\$500
Grade ctl structures	job	6875	1	\$6,875	\$2,900		\$0		\$0	\$2,900
Project Supervision	job	1100	1	\$1,100	\$1,000		\$0		\$0	\$1,000
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Channel Treat.</b>				\$8,475	\$4,400		\$0		\$0	\$4,400
<b>C. Road and Trails</b>										
Mitigate stream xings	job	12500	1	\$12,500	\$11,257		\$0		\$0	\$11,257
Impr road drainage	job	8820	1	\$8,820	\$7,824		\$0		\$0	\$7,824
Storm patrol	job	2500	1	\$2,500	\$1,200		\$0		\$0	\$1,200
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Road &amp; Trails</b>				\$23,820	\$20,281					\$20,281
<b>D. Structures</b>							\$0		\$0	\$58,693
Temp OHV barriers	In ft	6.03	5800	\$34,974	\$23,719		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Structures</b>				\$34,974	\$23,719					\$23,719
<b>E. BAER Evaluation</b>							\$0		\$0	
Initial survey	job	4500	1	\$4,500	\$5,746		\$0		\$0	\$5,746
Admin/reporting	job	1500	1	\$1,500	\$1,600		\$0		\$0	\$1,600
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Evaluation</b>				\$6,000	\$7,346					\$7,346
<b>F. Monitoring</b>										
Nox weed	yr	2800	1	\$2,800	\$4,082		\$0		\$0	\$4,082
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<b>Subtotal Monitoring</b>				\$2,800	\$0					\$4,082
<b>G. Totals</b>				\$78,369	\$62,335					\$62,335

## **PART VII - APPROVALS**

1. /s/ James Fenwood  
Forest Supervisor (signature)

2/14/05  
Date

2. \_\_\_\_\_  
Regional Forester (signature)

\_\_\_\_\_  
Date