

Date of Report: October 15, 2004

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/Request
 ☐ 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: CannonB. Fire Number: P47532C. State: CaliforniaD. County: MonoE. Region: FourF. Forest: Humboldt-ToiyabeG. District: BridgeportH. Date Fire Started: June 15, 2002I. Date Fire Contained: June 28, 2002J. Suppression Cost: \$8,100,000

K. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 50.6 miles.
2. Fireline seeded (miles): 0 miles.
3. Other (identify): Vegetative cover pulled onto 30 miles of fire line.

L. Watershed Number: 160503020201, 160503020202, 160503020203, 160503020204, 160503020205M. Total Acres Burned: 21,533

NFS Acres(17,758) Other Federal (2,455) State (2,281) Private (521)

N. Vegetation Types: Jeffery pine, pinyon-juniper woodland, sage and bitterbrush, and native grasses.O. Dominant Soils: On BLM – Rodriguez, Centennial and Ginser FamiliesP. Geologic Types: The foothills of the sierras – pre-Cretaceous metasediments and Mesozoic granitics, in the Sweetwaters – mesozoic basic intrusives and Mesozoic granitics.

Q. Miles of Stream Channels by Order or Class: 23.0 Miles of perennial stream and 15.0 miles of intermittent streams.

R. Transportation System

Trails: 11 miles Roads : 27 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 4,266 (low) 8,848 (moderate) 4,556 (high) 5,094 (unburned)

B. Water-Repellent Soil (acres): 3,856

C. Soil Erosion Hazard Rating (acres):
8,116 (low) 3,000 (moderate) 10,405 (high)

D. Erosion Potential: 8 tons/acre (3 year return interval) WEPP model used

E. Sediment Potential: 1920 cubic yards / square mile (3 year return interval)
Disturbed WEPP Model used.

PART IV - HYDROLOGIC DESIGN FACTORS

- | | |
|---|---|
| A. Estimated Vegetative Recovery Period, (years): | 5 years understory/15-20 years conifers |
| B. Design Chance of Success, (percent): | 80% |
| C. Equivalent Design Recurrence Interval, (years): | 25 Years |
| D. Design Storm Duration, (hours): | 6 Hours |
| E. Design Storm Magnitude, (inches): | 2 inches |
| F. Design Flow, (cubic feet / second/ square mile): | 14 cfsm |
| G. Estimated Reduction in Infiltration, (percent): | 20% |
| H. Adjusted Design Flow, (cfs per square mile): | 16.8 cfsm |

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

Based on the BAER Teams' field survey and analysis, the following emergencies exist on federal, State, and private lands.

Threat to life and private property: Two homes are at risk from increased watershed efficiency within and directly downstream of the Cannon Fire within the Town of Walker. California State Highway 395 is at risk of rock falls, flooding, and debris flows. The Birchum Road (on federal lands, maintained by Mono County) is also at risk of rock fall, flooding, overland flows, and debris deposited on the road.

Threat to life and Federal property: On Federal lands, several roads are considered to be at-risk from additional runoff and sediment expected from post-fire conditions. Improper road drainage can exacerbate the expected accelerated hillslope erosion. The roads are Birchum Road (see above) and Mill Creek Road. Burned, dead trees also exist along the Terry Canyon Road.

Threat to soil loss and loss of productivity: High severity burn occurred on 4,557 (21%) acres of the Cannon Fire creating localized water repellent conditions while removing overstory vegetation and organic duff cover. The majority of the high burn severity area is in the Mill Creek, Rock Creek, and Antelope watersheds. The majority of the of high burn severity areas are on very steep slopes, and/or have a high surface gravel, cobble, and stone content. The very gravelly and cobbly surfaces effectively mulch the soil surface (see the soils report for more details). Highly productive soils exist in Terry Canyon and are sensitive to erosion which could degrade their productivity. High burn severity areas are also source areas for increased soil erosion, sedimentation and runoff affecting water quality as well as threatening long-term site productivity and quality. Most areas of high burn severity are in remote, inaccessible terrain, especially in the Rock Creek drainage.

See Hydrologist and Soil Scientists specialists reports for details in specific watersheds.

Threat to water quality deterioration: Sediment yield is expected to increase from moderate and high severity burn areas. Key streams considered to be at risk from increased sediment yields are Mill Creek and Rock Creek (including the South Fork). Irrigation ditches from Lost Cannon Creek and the West Walker River can expect an increase in ash and debris. The West Walker River can expect an increase in ash, storm flow sediment, and debris.

Threat to aquatic ecosystem integrity: The Lahontan cutthroat trout are found in Mill Creek. Any proposed emergency restoration treatments would be completed through consultation with USFWS as outlined in the Endangered Species Act of 1973, as amended; and FSM 2670 policy. Within the fire area, 3.7 miles of occupied LCT stream were burned. On the West Walker River 6.3 miles of potential recovery stream for LCT was burned. Dead fish were found throughout the area that burned with high severity. (See USF&W report by Chad Mellison for detail).

Threat to terrestrial ecosystem integrity: Invasive weed expansion (cheat grass) into much of the burned area is expected to occur. This threat is real, known, and apparent, not speculative. A cheat grass invasion specialist from the Intermountain Research Station (Rocky Mountain Research Station) was brought in to evaluate this potential. In pinyon and juniper tree woodlands, cheat grass has increased dramatically over the past 130 years, replacing sagebrush shrub steppe, riparian, and aspen plant communities. Mountain big sage habitat has had the largest impact from this invasion. Prior to human settlement, the typical fire regime was 12-25 years, but with human settlement and the invasion of pinyon and juniper forests, the fire regime has increased to about every 100 years. Due to the change in plant structure and fuel loads, fires often burn much hotter. These more intense fires can promote the invasion of exotics, most commonly cheat grass (*Bromus tectorum*). At elevations below 6300 feet, cheat grass can begin to out-compete native shrubs and perennial grasses. If there is a reoccurring fire before native vegetation has had an opportunity to re-establish itself, the plant community may become entirely dominated by cheat grass so that a type conversion takes place. A more frequent fire cycle will then become established that will be a consistent threat to life and property.

Fire suppression lines may act as invasive highways carrying noxious weeds and invasive plants into uninfested wildland areas. Following fire, soil nutrient conditions are more favorable towards noxious weeds and invasive species thus promoting their introduction over native plant species. In the case of pinyon pine, sagebrush, and bitterbrush habitats, fire increases these areas susceptibility to invasion by cheat grass. The vegetation and range specialist report contains additional information.

B. Emergency Treatment Objectives:

The emergency treatment objectives are to protect life and property, maintain soil productivity and water quality to protect high value fisheries, and prevent the invasion of noxious weeds, specifically cheat grass. Specifically we are concerned with the potential for:

1. Flooding in Mill, Tollhouse, and “North Canyon” creeks;
2. Loss of soil productivity, surface erosion, and sediment and ash delivery in Mill Creek;
3. Invasion of cheat grass in all watersheds where elevations are below 6300 feet.

Treatments designed to reduce the risk of the potential adverse effects of the fire include:

1. Replacement and cleaning of culverts on the Birchum Flat, Terry Canyon, and Mill Creek roads;
2. Log erosion barriers (LEB's);
3. Straw wattles check dams in gullies;
4. Lop and scatter of burned pinyon pine;
5. Straw mulch; and
6. Seeding with native and annual grasses and brush planting.

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

Land 80% Channel 80% Roads 80 % Other ____ %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
LEB	80%	85%	90%
Seeding	40%	60%	60%
Channel			
Clearing	80%	90%	90%
Straw wattles	80%	80%	80%
Roads	80%	85%	90%
Other			

E. Cost of No-Action (Including Loss):

Four parameters were used to determine the loss of resources if no treatment were applied. These include loss of the Lahontan cutthroat trout valued at \$2,000,000, loss of structures in Walker due to flooding valued at \$2,000,000, loss of site productivity valued at \$200,000, and loss of roads valued at \$150,000. Total cost of the no action is **\$4,350,000**.

A hidden cost of the no action alternative also includes the anticipation of cheat grass invasion into the burned areas. Much of the cost of the action alternative is associated with revegetation of native species.

F. Cost of Selected Alternative (Including Loss):

Implementation of the proposed treatments would have the following affect on the four selected parameters. The potential effects on the Lahontan cutthroat trout would be reduced by \$1,000,000 to \$1,000,000. The loss of structures in Walker would be mitigated to \$0. The loss of soil productivity would be mitigated to \$20,000. The loss of roads would be mitigated to \$50,000. The total value of resource loss after implementation of the proposed treatments is reduced to \$1,070,000. The cost of implementing the

proposed treatments is \$448,906. Assuming an 80% treatment success, the total value of successful implementation of treatments is $(0.8) \times (\$1,070,000 + \$448,906)$ for a total of \$1,215,124. Added to this amount is the cost of the values lost do to 20% of the treatments not being successful. This amounts to $(0.2) \times (\$4,350,000 + \$448,906)$ or \$959,781. The total cost of this alternative is the value of successful implementation (\$1,215,124) plus the value of unsuccessful implementation (\$959,781) or **\$2,174,906**.

G. Skills Represented on Burned-Area Survey Team:

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

Team Leaders: Richard M. Jones and Todd Ellsworth.

Email: rmjones@fs.fed.us

Phone: 208-476-8274

FAX: 208-476-8238

Email: tellsworth@fs.fed.us

Phone: 760-873-2457

FAX: 760-873-2458

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.)

H. 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.)

Cumulative precipitation in Terry and Tollhouse Canyons will be measured by an early-warning RAWs Station which will remain in place for a period of four years. This automatic station will be set up at the end of the road in Terry Canyon and will keep track of snow and rain. When a threshold of 1.0 inch of rain in an hour or 2.5 inches of cumulative snow melt and rain is reached, these critical thresholds could start debris torrents in both Terry and Tollhouse Canyons which could threaten lives in Walker and in vehicles passing the mouth of Tollhouse Canyon on Highway 395. When these thresholds are reached, the RAWs station will automatically send a warning to the local Sheriff's department dispatch and CalTrans. These agencies will warn people along Mill Creek in Walker and close Highway 395 to prevent a possible loss of life.

This installation was completed by Bridgeport employees and cost about \$5,000. As of the first week in December the RAWs was in place and operational with down links to the Mono County Dispatch.

Annual maintenance costs: \$1,000

Noxious Weeds. Monitoring is to determine whether treatments for noxious weeds were successful and if areas need to be retreated within the burned area along dozer lines and hand lines. Approximately 17.6 miles of dozer line and 15 miles of hand line for a total of 32.6 miles were created during fire suppression efforts. This would involve a team of two GS-5 biotechs walking the 32.6 miles once in the spring and once in the summer to ensure detection of species with different life cycles and blooming periods. Staging areas and drop points will also be inspected.

Costs:

1 pair of GS 5 biotechs	\$0
Vehicle, mileage, supplies - \$1000/year	\$0
<u>10 days of Forest Botanist's time:</u>	<u>\$0</u>

TOTAL:

\$0

Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership

Line Items	Units	Unit Cost	NFS Lands		Other \$		Other Lands		Non Fed \$	All Total \$
			# of Units	WFSU SULT \$			# of units	Fed \$	# of Units	
A. Land Treatments										
<i>Subtotal Land Treatments</i>				\$0				\$0	\$0	\$0
B. Channel Treatments										
<i>Subtotal Channel Treat.</i>				\$0				\$0	\$0	\$0
C. Road and Trails										
<i>Subtotal Road & Trails</i>				\$0				\$0	\$0	\$0
D. Structures										
<i>Subtotal Structures</i>				\$0				\$0	\$0	\$0
E. BAER Evaluation										
G. Monitoring Cost								\$0	\$0	\$0
RAWS Maintenance	Job	1,000	1	\$1,000				\$0	\$0	\$1,000
Noxious Weeds										
H. Totals				\$1,000				\$0	\$0	\$1,000

PART VII - APPROVALS

1. /s/Robert L. Vaught October 14, 2004
Forest Supervisor (signature) Date

2. /s/ Joe Kennedy for 01/06/2005
Regional Forester (signature) Date