

Date of Report: 8/31/04

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 DESCRIPTIONA. Fire Name: Campbell FireB. Fire Number: CO-UPD-076, PDA9P8C. State: ColoradoD. County: MontroseE. Region: R-2F. Forest: GMUGG. District: NorwoodH. Date Fire Started: 7/30/04I. Date Fire Contained: 8/23/04J. Suppression Cost: \$550,000 (as of 8/5/04)

K. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 9 mi.
2. Fireline seeded (miles): 9 mi.
3. Other (identify):

L. Watershed Number: 6th level HUCs' 140300036702 Shavano Cr., 140300036703 Campbell Cr.M. Total Acres Burned:

NFS Acres(2885) Other Federal BLM (1303) State () Private (2)

N. Vegetation Types: This fire started in a lower pinyon/juniper situation at around 6,500-6,800 ft and burned up into a mountain shrub situation of Oak Brush, Mountain Mahogany, Service Berry, Mountain Big Sage and Manzanita around 7,500-8,000 ft. A small bench of Ponderosa Pine of around 300 acres also burned.

O. Dominant Soils: The soils information was found in the Uncompagre Area Soil Survey, and the San Miguel Soil Survey. The dominate units on the NFS areas are the Misc. land unit #32-Ustortents-Ustocrepts-Rock

Outcrop Complex and Unit # 26 Mirand-Callan Family-Chilson variant Complex. Within the other parts of the fire the dominate units are #95-Skein-Rock Outcrop Complex and unit # 88-Rock outcrop-Orthents Complex. For the most part the soils on the steeper slopes are mostly shallow, with cobbly, very cobbly and gravelly loams and sandy loam surfaces. The flatter areas are deeper, with less coarse fragments ,with loamy surfaces and fine textured subsoils.

P. Geologic Types: Within the lower and mid portions of the fire the Morrison(Jmse) and the Dakota and Burro Canyon formations(Kdb) occur as sandstones, conglomerates and some interbedded shales. The upper portion consists of a steep scarp slope made up of Precambrian granites(Yxg).

Q. Miles of Stream Channels by Order or Class:

1st order-11.9mi, 2nd order-6.5 mi, 3rd order-1.5, 4th order-.8 mi

R. Transportation System

System

Trails: 0 miles Roads: 0 miles , (non system ,abandoned road/trail about 2mi)

PART III - WATERSHED CONDITION

A. Burn Severity (acres)*: 84 acres(2%) (low) 4106 acres (moderate*) <1% (high)

* Estimated based on aerial observations, field traverses throughout burn and reference to BAER white paper "Burn/Fire Severity Definition". The areas defined as moderate would best be described as ranking on the upper end of moderate and maybe a low end of high.

B. Water-Repellent Soil (acres): All areas evaluated showed low hydrophobic reactions*

*Based on field traverses on upper, mid and lower portions of the fire on.

C. Soil Erosion Hazard Rating (acres):

1494 (low) 1908 (moderate) 788 (high)

D. Erosion Potential: 4.34 t/a on flatter areas to 14.69 t/a on the steeper slopes* tons/acre

* Worst case situation based on Disturbed Wepp calculations adjusted for local textures and climate

E. Sediment Potential: 275-400 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 3-5yrs for grass ,forbs and shrubs, 20-30 yrs for Pinion/ Juniper tree recovery.

B. Design Chance of Success, (percent): 60-80%

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

D. Design Storm Duration, (hours): 6hr

E. Design Storm Magnitude, (inches): 1.5 inches

F. Design Flow, (cubic feet / second/ square mile): 8-12

G. Estimated Reduction in Infiltration, (percent): 8

H. Adjusted Design Flow, (cfs per square mile): 64 (+/- 10)

PART V - SUMMARY OF ANALYSIS

A. Describe the burn situation

This lightning ignited fire started below the National Forest land on adjacent BLM land. It burned through lower PJ Woodland and sage situations on the BLM lands and into the PJ Woodlands on National Forest System Lands and eventually into a portion of mountain Shrub-Gambel Oak ponderosa Pine communities. This fire occurred on very isolated remote rugged terrain 14 miles north west of Nucla Colorado. All drainages are intermittent.

This was a fast moving, rather high intensity burn in Pinyon Pine /Utah Juniper ,Mountain Shrub and lower Ponderosa Pine plant communities. In the Pinyon/Juniper areas the fuels were dry, the foliage, small twigs, and most of the woody debris of all sizes on the surface was consumed. The duff under the trees and the sparse ground cover was burned, leaving ash. The ash ranged in color, from light gray to dark gray, and ranged in depth from just a surface char to 2-3inches. In most cases the soil surface appeared unaltered. Tests for hydrophobicity were conducted on points throughout the fire and all fit the definition for weak hydrophobicity (a water drop that lasts less than 10 seconds on the surface of the soil).

In the Mountain shrub areas, there was more fuel moisture, but the brush canopy, along with small twigs and small woody debris were consumed. The surface of the soils also had a low hydrophobicity in these shrub areas.

Based on these ground observations and conditions, it was estimated that the burn severity category on a majority of the burned over area would best be described as a mid to high moderate burn severity. Knowing that there would be some variability in a natural burn such as this, it felt reasonable to estimate that 2% of the area (84 acres) could be described as being in the low severity category and <1% of the area may react as though it were in a high severity category. Overall, other than removing the vegetative cover, there appeared to be no long-term damage to the soil resource.

During this BAER evaluation it was determined that there will be increased runoff, erosion and sedimentation. However, due to the remoteness of the area, lack of developed facilities around or below the fire, and the arid nature of the terrain, it is estimated that the major value at risk would be a potential loss of ecosystem integrity due to potential expansion of Cheat Grass and other invasive species into this burned landscape.

There is a real risk that cheatgrass (*Bromus tectorum*) will expand into this area of the National Forest that has burned. There are other Invasive species known to occur in the vicinity and probably within the burned areas. These include ; Russian knapweed (*Centaurea repens* L.), White top (*Cardaria draba*), and Canada thistle (*Cirsium arvense*).

Studies and observations from past burns in the vicinity and in similar plant communities, have shown that cheatgrass can dominate burned areas when there is little competition from other plants in the first two years following a burn. An area just above the fire in the vicinity of Round Mountain that has had a prescribe fire a few years ago has been observed to have incurred an invasion of Cheat Grass. (personal observations from various individuals on the Norwood Ranger District.

This situation presents a real risk for the loss of ecological integrity to this plant community, if Cheat Grass and other invasives expand into the burned area. It is our concern that unless native vegetation is quickly re-established, the invasion of these non native species, especially Cheat grass, will significantly alter the fire regime on this area and reduce the native productivity and ecological integrity of this section of the National Forest.

B. Emergency Treatment Objectives:

To establish native perennial vegetation as soon as possible to prevent a large invasion of cheat grass and other invasive species into this burn area. This will also help to reduce erosion and protect soil productivity. Noxious weed monitoring will occur to determine any if there is any post fire increases in the noxious weed populations, which will then be treated. Baer treatments will be protected from unauthorized grazing of livestock or trailing of livestock that may occur as a result of grazing surrounding areas.

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

Land % Channel % Roads % Other %

D. Probability of Treatment Success

Years after Treatment			
	1	3	5
Land	70%	80%	90%
Channel			
Roads			
Other			

E. Cost of No-Action (Including Loss): \$1,116,250 (over 5 yr period)

F. Cost of Selected Alternative (Including Loss): \$223,000 initial cost plus loss

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"/>
<input type="checkbox"/> Forestry	<input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input 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 type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS	

Team Leader: Terry J Hughes, Forest Soil Scientist GMUG Natl. Forest

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H. **Treatment Narrative:** We propose to aerially seed the NF portion of the burn this fall (October 2004) possibly in conjunction with BLM seeding. We propose to use a seed mix containing a variety of species to create a more advanced seral stage rather than an early seral stage. It is less likely for cheatgrass to enter a vegetative community in a later seral stage. Also , the mature Pinion/Juniper vegetative communities that burned likely have limited seed banks. We have been working very closely with the BLM District office in Montrose Colorado on a number of similar situations. Their experience has shown that it is best to seed with what is believed to a desirable species, so as to prevent Cheat Grass from dominating a site. This is also based on discussions with Dr. Alan Stevens, Professor with

the Agronomy Dept at Snow College, in Ephraim Utah., who has been working on the Uncompahgre Plateau, mapping areas of Cheat grass as part of the UP(Uncompahgre Project).

The seed mix we are proposing for this fire area is:

Indian Ricegrass	15%
Needle & Threadgrass	2%
Bottlebrush Squirreltail	15%
Western Wheatgrass	36%
Slender Wheatgrass	32%

This will be applied at a rate of 15.39 lbs/acre, striving for a density of 46 seeds/sq.ft.

In addition, reconstruction of 2 miles of fence that burned, is recommended to minimize the opportunities for trespass grazing from BLM, and also to provide better control of livestock on NFS lands and exclude them from the burned and seeded areas during the 2005 and 2006 grazing seasons. Due to terrain and access limitations, reconstruction of the burned over portions of the existing permanent fence is recommended over construction of new temporary fence. Range betterment funding is available for purchase of fence materials.

Thorough monitoring of likely sites of infestation and spread should be done in years 1 and 2 following the burn. Aggressive weed control work is recommended for all newly detected noxious weed infestations that are becoming established as a result of the fire in the first two growing seasons. Targeted plants include Russian knapweed, musk thistle, white top, and Canada thistle; although other noxious weed species will be monitored for and treated. Work will be conducted jointly using force account and private contractors.

Monitoring for and then treating with the appropriate herbicides should be done to infestations of noxious weeds along access roads to the burn, around the perimeter, and within the burn to reduce the weed seed coming into the burned area during the fall of 2004 and spring 2005. This preventative action will be done to reduce the spread of cheatgrass, white top, Canada thistle and Russian knapweed.

Channel Treatments: No treatments planned

Roads and Trail Treatments: No treatments planned

Structures:None planned

I. Monitoring Narrative:

Monitoring will be carried out in years 1, 2 and 3 following seeding and weed control measures. Studies will be designed and located to evaluate overall seeding performance and response of the individual species seeded so that the effects of ecological site, climate variations and the seeding itself can be distinguished. Photopoints, ocular macroplots, and cover frequency transects as described in the Rocky Mountain Region Rangeland Analysis and Management Training Guide will be established within burned and unburned areas. Herbivore use will be documented using pellet group transects.

Digital photos, or print photos will be taken and stored on the network. All hardcopies of the data will be stored in traditional paper files.

Thorough monitoring of likely sites of weed infestation and spread will be conducted in years 1, 2, and 3 following the burn. Inventory will occur along roads, drainages, and other probable areas of infestation. Infestations will be GPS'd using format established in Terra Invasives database.

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

Line Items	Units	Cost	Units	SULT \$	\$	units	\$	Units	\$	\$
A. Land Treatments										
Seed Purchase	acre	50	2885	\$144,250	\$0		\$0		\$0	\$144,250
application	acre	10	2885	\$28,850	\$0		\$0		\$0	\$28,850
weed treatment	days	280	10	\$2,800	\$0		\$0		\$0	\$2,800
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Land Treatments				\$175,900	\$0		\$0		\$0	\$175,900
B. Channel Treatments										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Channel Treat.				\$0	\$0		\$0		\$0	\$0
C. Road and Trails										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Road & Trails				\$0	\$0		\$0		\$0	\$0
D. Structures										
Fence,contract,const	miles	5000	2.5	\$12,500	\$0		\$0		\$0	\$12,500
contract admin	days	253	10	\$2,530	\$0		\$0		\$0	\$2,530
heritage clearance	each	1500	1	\$1,500	\$0		\$0		\$0	\$1,500
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Structures				\$16,530	\$0		\$0		\$0	\$16,530
E. BAER Evaluation										
Hughes	days	328	7	\$2,296	\$0		\$0		\$0	\$2,296
McKeever	days	250	2	\$500	\$0		\$0		\$0	\$500
Liston	days	253	7	\$1,771	\$0		\$0		\$0	\$1,771
Subtotal Evaluation				\$4,567	\$0		\$0		\$0	\$4,567
F. Monitoring										
Pesonel	activity	12,298	1	\$12,298	\$0		\$0		\$0	\$12,298
Mileage all	total	1000	1	\$1,000	\$0		\$0		\$0	\$1,000
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Monitoring				\$13,298	\$0		\$0		\$0	\$13,298
G. Totals				\$210,295	\$0		\$0		\$0	\$210,295

PART VII - APPROVALS

- /s/ Kevin T. Riordan for
Forest Supervisor (signature)

8/31/04
Date
- /s/ Stephen C. Sherwood for
Regional Forester (signature)

09/09/04
Date