

Date of Report: 8/5/2000

**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: South GrizzlyB. Fire Number: P27656C. State: ColoradoD. County: GarfieldE. Region: Rocky MountainF. Forest: White RiverG. District: RifleH. Date Fire Started: 07/23/2000I. Date Fire Controlled: 07/31/2000J. Suppression Cost: 2.2 Million

K. Fire Suppression Damages Repaired with Suppression Funds

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

L. Watershed Number: 140100012903M. Total Acres Burned: 340

NFS Acres (x)    Other Federal ( )    State ( )    Private ( )

N. Vegetation Types: Spruce/Fir, Forested wetland complexesO. Dominant Soils: Dateman, Sapphire, Secondset and Pineisle, Nimerick, ClinetopP. Geologic Types: Ordovician and Cambrian Rocks

Q. Miles of Stream Channels by Order or Class: 0.5 1<sup>st</sup>, 0.5 2<sup>nd</sup>

R. Transportation System

Trails: 4 miles      Roads: 3 miles

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

A. Burn Severity (acres): 132 (low) 48 (moderate) 170 (high)

B. Water-Repellent Soil (acres): 25

C. Soil Erosion Hazard Rating (acres):  
140 (low) 100 (moderate) 100 (high)

D. Erosion Potential: 23 tons/acre

E. Sediment Potential: 1500 cubic yards / square mile

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

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

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

C. Equivalent Design Recurrence Interval, (years): 25

D. Design Storm Duration, (hours): 1

E. Design Storm Magnitude, (inches): 1.5

F. Design Flow, (cubic feet / second/ square mile): 260 (81.2 for actual burned area)

G. Estimated Reduction in Infiltration, (percent): Factored in above calculation

H. Adjusted Design Flow, (cfs per square mile): 260 (81.2 for actual burned area)

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

A. Describe Watershed Emergency:

Grizzly Creek Watershed is a municipal supply for the city of Glenwood Springs. No treatment may result in longer shutdown of the diversion, as water with high turbidity may not be able to be treated to domestic standards.

B. Emergency Treatment Objectives: Reduce potential of sheet and rill erosion delivering sediment to Grizzly and South Grizzly Creeks by creating log erosion barriers on the contour. Treatments will be applied on areas with moderate to high burned severity with direct potential flowlines into the stream channel network.

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

Land 80 % Channel N/A % Roads 50 % Other     %

D. Probability of Treatment Success

Years after Treatment			
	1	3	5
Land	80	90	90
Channel	N/A		
Roads	50	90	90
Other	N/A		

E. Cost of No-Action (Including Loss):\$60,000

F. Cost of Selected Alternative (Including Loss):\$35,000

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 checked="" 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 checked="" type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input type="checkbox"/> GIS	

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H. Treatment Narrative:

Land Treatments: Log erosion barriers will be created using existing downed woody debris and snags felled for safety. Locations will be in areas that drain directly into the stream channel network to reduce sediment delivery potential during the remainder of the rainy season.

Channel Treatments: None recommended.

Roads and Trail Treatments: Road opened for access will be closed with fire suppression dollars when it is determined that access is no longer needed. Trails used for access will be treated using fire suppression dollars.

Structures: None recommended

This is version 3. 08/05/2000

(NOTE: This document is a work in progress and should be treated as a draft for information purposes only. Since this is related to an ongoing wildland fire, information can be constantly changing.)

A full scale BAER evaluation may not be warranted based upon field reconnaissance and projected burned area severity. The fire size within the established direct line is still one of question that is mostly resolved. The perimeter that includes the spots and main burn area is 534 acres, with 483 acres within the line with 340 acres within the burn. Draft fire intensity mapping is 50% high, 14% moderate, and 36% low. Realizing that a mosaic has been created by this fire results in an actual burned area being less than 340 acres. The current estimate is 200 acres of burned lands.

Division B is where most of the low intensity burning is mapped. This north facing slope contains numerous forest wetland complexes, seeps and small water bodies. The upland pockets of "jackpot fuels" is what mostly burned. The fire severity in these pockets was moderate to high. Large woody debris remains as well as discernable litter. The heat generated coupled with the fuels did result in strong hydrophobic soil conditions. Beading, in places, exceeded two minutes at depths to 2 centimeters. With more unburned than burned and no hydrologic continuity with the channel network treatment may not be warranted. One of the few treatments that I would recommend is generating more contact with the ground, on the contour, using jackstrawed logs and remaining woody material. I estimate that there are 25 acres of soils with strong hydrophobic conditions.

#### SUPPRESSION ACTIVITY RECOMMENDATION

IF IT WOULD NOT RESULT IN COMPROMISING FIREFIGHTER SAFETY OR PRODUCTION RATES – MOP-UP OPERATIONS THREE CHAINS IN FROM THE LINE SHOULD TRY TO RESULT IN ARRANGED WOODY DEBRIS ON THE CONTOUR WITH AS MUCH CONTACT WITH THE GROUND AS IS POSSIBLE.

Division B also needed to develop cofferdams and better crossings for engine access. The cofferdams were used for water pumping operations. This was necessary and the result was the discharge of dredge or fill material into "waters of the United States". This is covered under the provisions of a Nationwide 404 Permit for emergency actions.

#### SUPPRESSION ACTIVITY RECOMMENDATION

MATERIAL PLACED IN PONDS, LAKES, WETLANDS AND CHANNELS NEEDS TO BE REMOVED FROM "WATERS OF THE UNITED STATES" AS SUPPRESSION PULLS OUT OF THOSE AREAS. IE, THESE MATERIALS NEED TO BE PLACED IN UPLANDS.

The south-facing slope above South Grizzly Creek (Division A) also burned in a mosaic but was mostly a backing fire. The fire intensity has been mapped as moderate and high and wetland complexes as well as uplands were burned. Hydrophobic conditions in these wetland complexes is low to nonexistent with rich organic material under the ash and burned litter. There is sufficient buffering between most of this division and

South Grizzly Creek that treatments may not be needed. If during mop-up, opportunities allow for contour placement, all the better.

Due to current fire behavior and ongoing suppression activity I have not surveyed the mapped high intensity burning on the ridge top in the center of the fire. This is gentler topography with limited wetland complexes so the resulting burned area is more contiguous. From an aerial reconnaissance flight there is still plenty of large woody debris on the forest floor. Only the western most area may end up with hydrologic continuity with an intermittent tributary of Grizzly Creek. While there are pockets of burned areas near this drainage, the channel itself is still in pre-fire condition.

From aerial reconnaissance, there is an area in Division C, which burned with high intensity and directly drains into South Grizzly Creek. I survey this area on 08/04/2000. While mapped as having high burn intensity there were virtually no hydrophobic soil conditions. The fire did back down to South Grizzly Creek. This steep slope is rocky with no potential for successful treatment. Most of this area still has significant large woody debris on the ground with some increasing ground cover due to post fire needle cast. Three chains of mop-up (200 feet) resulting in woody debris placed on the contour may suffice for the time being.

Traditionally, contour treatments of some fashion are applied in these areas. With safety being the number one concern, this wasn't a safe place to be, before the fire. The snag safety problem has just gotten worse.

The areas that could benefit from seed application are too steep to hold seed in a rainfall event of any kind.

The erosion potential is high; most of the soils in the burned area are in hydrologic group C with k-factors ranging from 0.24-0.37. In the areas of high burn intensity, remaining ground cover is predominantly large woody debris with active recruitment in progress (falling snags). There has been some rain on the fire but nothing that resulted in runoff from burned areas.

The areas that drain directly into Grizzly and South Grizzly Creeks (Division C) that will contribute ash do not lend themselves to successful BAER treatments, as they are steep and rocky with no large woody material. Toe of slope treatments are not practicable given proximity of the drainages.

## **FIRE SUPPRESSION REHABILITATION**

**ROAD TO DROP POINT 1. THIS ROAD WILL BE THE BEST ACCESS TO THE BURNED AREA ONCE THE FIRE IS CONTROLLED. IT NEEDS TO REMAIN OPEN UNTIL THE DISTRICT FEELS THAT MONITORING AND ACCESS IS NOT NEEDED. IT WILL BE A PROBLEM IF OPEN DURING HUNTING SEASON. ROAD WILL NEED DRAINAGE AND EROSION CONTROL TREATMENT WHILE IT IS OPEN.**

**ROAD TO DROP POINT 2. THIS OPEN ROAD NEEDS DRAINAGE AS WE WITHDRAW FROM THE AREA.**

**TRAIL FROM DROP POINT 2. STANDARD DIPS AND WATERBARS AS NEEDED TO PREVENT TRAIL EROSION. NOT NEEDED IN WETLANDS, AS THEY WILL RECOVER.**

**FIRELINES NEED DRAINAGE STRUCTURES TO PREVENT EROSION ESPECIALLY ON STEEPER SLOPES DIRECTLY DOWN THE FALL LINE.**

**RESTORATION OF WHITE OWL SPIKE CAMP AS DIRECTED BY RESOURCE ADVISOR AND/OR EAGLE RD.**

Notes on the 2500-8.

Burned area is less than a square mile. Values were determined for the burned area and then factored to be represented in square miles. Actual values for the fire are in parenthesis.

Runoff was calculated using a weighted runoff, not a weighted runoff curve number. Given the nature of burned soils, traditional weighted runoff curve numbers underestimates flows. The estimated reduction in infiltration Part IV.G was built into the calculation of Part IV.F by using a RCN of 90 for the hydrophobic soils. Runoff increases are not proportional and applying a percentage to the entire burned areas may result in a false value. There are approximately 25 acres of burned are with strong hydrophobic conditions.

Given the downstream aquatic resources and use as a municipal water supply, the immediate threat is response to runoff from heavy rains over the next two months. The area naturally revegetates well. It is recommended that contour structures be installed (log erosion barriers) in areas with high fire intensity that can deliver sediment into the stream channel network.

#### **H. Monitoring Narrative:**

Evaluate runoff and sediment delivery during the remainder of the rainy season and after snowmelt. Photo points before and after treatment as well as areas with hydrophobic conditions.

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

Line Items	Units	Unit Cost	# of Units	WFSU SULT \$	Other \$	# of units	Fed \$	# of Units	Non Fed \$	Total \$
<b>A. Land Treatments</b>										
Contour mop-up	acres	100		\$0		25	\$2,500		\$0	\$2,500
Contour terraces	acres	200	40	\$8,000			\$0			\$8,000
				\$0			\$0		\$0	\$0
				\$0			\$0		\$0	\$0
Subtotal Land Treatments				\$8,000			\$2,500		\$0	\$10,500
<b>B. Channel Treatments</b>										
				\$0			\$0		\$0	\$0
				\$0			\$0		\$0	\$0
				\$0			\$0		\$0	\$0
				\$0			\$0		\$0	\$0
Subtotal Channel Treat.				\$0			\$0		\$0	\$0
<b>C. Road and Trails</b>										
Road closure	miles	1000		\$0		3	\$3,000		\$0	\$3,000
Trail Maintenance	miles	500		\$0		4	\$2,000		\$0	\$2,000
Road Maintenance	miles	500		\$0		4	\$2,000		\$0	\$2,000
				\$0			\$0		\$0	\$0
Subtotal Road & Trails				\$0			\$7,000		\$0	\$7,000
<b>D. Structures</b>										
				\$0			\$0		\$0	\$0
				\$0			\$0		\$0	\$0
				\$0			\$0		\$0	\$0
				\$0			\$0		\$0	\$0
Subtotal Structures				\$0			\$0		\$0	\$0
<b>E. BAER Evaluation</b>										
				\$0			\$0		\$0	\$0
BAER	each	3000	1	\$3,000			\$0		\$0	\$3,000
<b>G. Monitoring Cost</b>	each	4000	1	\$4,000			\$0		\$0	\$4,000
<b>H. Totals</b>				<b>\$15,000</b>			<b>\$9,500</b>		<b>\$0</b>	<b>\$24,500</b>

The amount shown in other federal dollars are suppression expenditures on rehabilitation.

**PART VII - APPROVALS**

1. /s/ Martha J. Ketelle  
Forest Supervisor (signature)

8/7/2000  
Date

2. /s/ Tom Thompson for  
Regional Forester (signature)

8/7/2000  
Date