

Date of Report: 09/26/2001

**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)

NOTE: This report updates 9/25 report with changes highlighted in blue. No changes to total dollars or work requested.

**PART II - BURNED-AREA DESCRIPTION**

- A. Fire Name: South Hollow B. Fire Number: P48122  
C. State: Utah D. County: Wasatch  
E. Region: 04 F. Forest: Uinta  
G. District: Heber  
H. Date Fire Started: 08/17/2001 I. Date Fire Contained: 08/24/2001  
J. Suppression Cost: \$900,000 (as of 08/27/2001)  
K. Fire Suppression Damages Repaired with Suppression Funds  
1. Fireline waterbarred (miles): 8.1  
2. Fireline seeded (miles): 8.7  
3. Other (identify):  
L. Watershed Number: 160202030104 (Little South Fork Provo River)  
M. Total Acres Burned:             
NFS Acres( 989) Other Federal ( ) State ( ) Private ( )  
N. Vegetation Types: spruce fir, aspen  
O. Dominant Soils: loams, silt loams, clay loams, sandy loams  
P. Geologic Types: Landslide deposits, Keetley volcanics, Conglomerate

Q. Miles of Stream Channels by Order or Class:            Perennial: order 1=2.5, order 2=1.5, order 3=1.5;  
Intermittent: order 1=2.7

R. Transportation System

Trails: 5.1 miles          Roads: 0 miles

**PART III - WATERSHED CONDITION**

A. Burn Severity (acres): 72 (low) 339 (moderate) 578 (high)

B. Water-Repellent Soil (acres): 578

C. Soil Erosion Hazard Rating (acres):  
72 (low) 339 (moderate) 578 (high)

D. Erosion Potential: 44.75 tons/acre

E. Sediment Potential: 1170 cubic yards / square mile

**PART IV - HYDROLOGIC DESIGN FACTORS**

A. Estimated Vegetative Recovery Period, (years): 10

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

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

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches): 0.18

F. Design Flow, (cubic feet / second/ square mile): 20

G. Estimated Reduction in Infiltration, (percent): 4.6

H. Adjusted Design Flow, (cfs per square mile): 20.7

**PART V - SUMMARY OF ANALYSIS**

A. Describe Watershed Emergency: On August 17, 2001 around 9:30 PM, a fire started on the ridge between Camp Creek and Buck Hollow in the SE quarter of Section 5. The fire spread to the east and north of this point and fire fighting crews and dozers began constructing dozer and handlines around the fire perimeter. On August 20-21, storms came in and rain put most of the fire out. Rains fell steadily for about 2 hours at a time with intense rain occurring at times. Between August 23-27, the BAER team field observed soil and water conditions in the burned area and the soils did not show any movement of soil or ash from the storm that occurred on August 21-22. Also, the ash was quite wet to the point where it was gooey when stepped on and was easy to slip on steep slopes, and the soils under it was quite moist in most areas. These same areas that had moist ash and soils showed high hydrophobicity in areas that had high intensity burns. About 989 acres in the headwaters of the South Fork Provo River have been burned with about 578 acres of soil with high

intensity burn and hydrophobic conditions located mostly on north facing hillsides up to 40% slope gradient. Most of the fire occurred in aspen/conifer stands composed primarily of aspen and alpine fir. Damage to roads are addressed under fire suppression rehabilitation.

#### Threats to Human Life or Property

None. A few homes are located about three miles below the fire at the confluence of the Little South Fork and the South Fork of the Provo River. The amount of burned area within this watershed is small (4.6%) compared to the entire Little South Fork watershed. Increased flood potential resulting from burn conditions is unlikely since the burn occurred as a mosaic and flow modeling shows a small increase in discharge over existing conditions from 20 cfs/square mile to 20.7 cfs/square mile.

#### Threats to Water Quality

This watershed supplies drinking water to several communities along the Wasatch Front. The fire burned in only a small part of the riparian area and buffers occur between the burns and the stream channel. With treatment of high intensity burned areas, very little stream sedimentation is expected to occur.

#### Threats to Long-term Soil Productivity and Ecosystem Integrity

The Little South Fork contains a confirmed population of Bonneville Cutthroat trout that is on the Region 4 Forest Service sensitive species list. Without treatment, soils on highly burned areas are likely to erode, form rills and gullies, and sediment could be delivered in to stream channels. Noxious weeds such as musk thistle and Canada thistle are present in the area and spread to disturbed soil areas. Without control treatments, these weeds will quickly spread to new areas within the watershed.

#### Threats to Heritage Resources

No historic or heritage resources are known to exist in the burn area and no range or recreation facilities were damaged from the fire.

#### B. Emergency Treatment Objectives: Treatment objectives are:

- Prevent loss of site productivity
- Minimize erosion from high intensity burned areas
- Minimize rill and gully formation
- Reduce potential sedimentation of stream channels
- Minimize adverse effects to water quality
- Minimize spread of noxious weeds

These objectives will be met by seeding the high intensity burned areas in order to protect the ground surface by getting ground cover established as soon as possible. Seed would be sowed in the early fall since it is best time for seed establishment.

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

Land 80 % Channel NA % Roads NA % Other NA %

#### D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	90	95	98
Channel	NA	NA	NA
Roads	NA	NA	NA
Other	NA	NA	NA

E. Cost of No-Action (Including Loss): \$150,000. By taking no action, erosion could be severe because of the steep slopes and lack of ground cover. The aquatic ecosystem including Bonneville Cutthroat trout and Bull trout populations, could be severely affected by the deposition of sediment into the streams. Costs up to hundreds of thousands of dollars may be required to stabilize eroded slopes and rehabilitate aquatic conditions.

F. Cost of Selected Alternative (Including Loss): \$46,005 (\$61,835 – Initial BAER Team survey and report costs). With treatments implemented to get ground cover established as soon as possible, it is expected that no further actions will be needed than what is described in the Treatment Narrative and Monitoring.

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

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#### **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: The objective is to improve ground cover on severely burned areas by aerial seeding of quick cover producing vegetation prior to the onset of runoff producing storms that usually occurs in October. The objective is also to control the spread of noxious weeds in the area by spraying weeds in the burn area the summer after the fire. Management of livestock to exclude grazing through 1-2 grazing seasons will be considered to protect rehabilitation of burned areas.

Specifically,

- Using a helicopter, seed 578 acres of high intensity, high hydrophobic soil areas as delineated on attached map with about 20 lbs/acre seed mix in order to get ground cover established as soon as possible and minimize soil erosion and sedimentation of streams. The seed mix is:

Species	Amount Needed (lb/acre)	Burned Area (acres)	Seed Needed (lb)	Estimated Cost (\$/lb)	Estimated Cost (\$)
Mountain Brome – <i>Bromus marginatus</i>	5	580	2900	\$2.00	\$5,800
Slender Wheatgrass – <i>Agropyron tracycalum</i>	4	580	2320	\$1.10	\$2,552
Blue Wildrye – <i>Elymus glauca</i>	6	580	3480	\$6.00	\$20,880
Western Yarrow	0.1	580	58	\$13.00	\$754
		totals	8,758		\$29,986

- Using a seasonal crew, spray for noxious weed outbreaks identified through monitoring in order to prevent spread of these weeds.

#### Dozer Fire Line Rehabilitation

Additional work is planned for the rehabilitation of 9.1 miles (13.2 acres) of dozer fire lines that were constructed around portions of the fire. Fire suppression funds (P48122) will be used do this work. Equipment needed is 4 track hoes and 1 dozer (used as an anchor on the west line). One Forest Service person will be needed to supervise each piece of heavy equipment. The method for rehabilitating the fire lines will be:

- Pull soil back on the dozer fire lines to original contour.
- Construct water bars.
- Pull aspen and other vegetation over the soil.
- Spread seed over the line.

Water bars will be constructed as described in the publication, Ski Area BMPS (Best Management Practices) Guidelines for Planning, Erosion Control, and Reclamation (USFS 2000). Work is planned to be done in mid September.

In addition to the above rehabilitation measures the following measures should be followed:

- In areas of long straight stretches there needs to be felling of trees to one side then the other so and to do away with the unnatural straight line.
- On the west side of the fire there are a couple of areas that were leveled for water tanks. These areas need to be recontoured (not very big nor on steep slope but still should be dealt with).
- The first portion of the dozer line on the west side of the fire has been constructed like a road with cuts and fills. This needs to be recontoured and the debris brought back on the disturbed area. The berm needs to be distributed across the line also. The straight effect needs to be moderated by cutting areas of aspen along the line.
- Safety for crews carrying logs across the steep slope must be made priority and may reduce that amount of work that they can do.
- All lines need to have a series of structures that will deter vehicle travel. These structures could be log worm or buck and pole fence or debris or trees from the fire line. The structures should be established through out the stretch of the line so that people are reminded more that once that the area is closed.

- All roads including the one into ICP should be graded with the berm spread back across the road and all drainages restored.
- The camp area should be rested for one year.
- All dozer line need to be seeded by hand with a seed mix for the Aspen and one for the open areas.
- When equipment is working on rehab it should have a Forest Service Supervisor with it at all times to ensure that more damage to the resource does not occur.

Channel Treatments: NONE

Roads and Trail Treatments:

Structures: NONE

Notes from 9/25/2001:

- In addition to treatments listed above, critical areas of dozer lines need to be covered with mulch. Old unclassified roads within the fire perimeter will be treated to ensure they are not reopened (which would cause erosion problems) and these also need to be treated with water bars, seed and mulch. Lead out ditches need to be added to waterbars on roads and dozer lines. Mulch will consist of certified weed-free straw or native grass/hay.

#### **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.)

- Implementation of the seeding treatment needs to be monitored in order to determine if the seed was applied to the correct areas and in the correct amount.
- Effectiveness of the treatment needs to be monitored in order to determine if erosion and sedimentation were adequately controlled. This would be accomplished through a field review by three resource specialists GS-9 to GS-11 for three days per year during the next 3 years for:
  - Soil erosion –indicator would be adequate ground cover and presence/absence of rills/gullies.
  - Noxious weeds –indicator would be presence/absence of noxious weeds
  - Sedimentation – indicator would be presence/absence of soil deposition into the stream channels. If indicators show excessive sedimentation, then further chemical water quality and fisheries habitat monitoring will proceed.
- If the above monitoring indicates treatment has been ineffective or less than desirable, local FS staff may decide to request additional funds to re-seed with the same or alternative seed mix, spray additional acreage infested with noxious weeds.

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

										All
Line Items	Units	Unit Cost	Number of Units	WFSU-F W22	Other	Number Of Units	Fed	Number Of Units	Non-Fed	Total
		\$		\$	\$		\$		\$	\$
<b>A. Land Treatments</b>										
Aerial seeding	Acre	16	578	9,280						
Ground support to aerial seeding (safety, labor)	Day	600	3	1,800						
Seed mix and storage	Lbs	2.28	8,758	20,000						
Noxious weed Control	Acre	60	20	1,200						
Straw/native hay for mulch (price delivered)	Bale	5.50	150	825						
<i>Subtotal</i>				\$33,105						
<b>B. Channel Treatments</b>										
<i>Subtotal</i>				0						
<b>C. Road and Trails</b>										
				0						
<b>D. Structures</b>										
<i>Subtotal</i>				0						
<b>E. BAER Evaluation/Administrative Support</b>										
BAER Team (Initial survey and report)	Day	1200	8	9,600						
Initial BAER Team Travel	Day	110	8	880						
Initial BAER Team – Type III Helicopter Use	Hour	575	8	4,600						
BAER Implementation Team	Day	1100	6	6,600						
BAER Implementation Team - Travel	Day	110	20	2200						
BAER Implementation Team – Type III Helicopter	Hour	575	4	2300						
BAER Team Supplies	Misc.	750	1	750						
<i>Subtotal</i>				\$26,930						
<b>G. Monitoring Cost</b>										
Soil erosion/ Sedimentation	Day	550	2	1100						
Noxious Weed	Acre	0.70	1000	700						

Monitoring										
Subtotal				\$1,800						
H. Totals				\$61,835						

### **PART VII - APPROVALS**

1. Wm. Reese Pope (Acting For) 9/26/01  
Forest Supervisor (signature) Date
  
2. \_\_\_\_\_  
Regional Forester (signature) Date