

Date of Report: 8/25/2005

B.Rieffenberger final 10/18/2006

j.bruggink edit 8/30/2005

E-received at RO 8/26/2005 with e-signed cover letter dated 8/26/05
Revisions (pink) R.Helzner, 8/26/05 pursuant to phone conversations with Betsy Rieffenberger

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: Hale Gulch

B. Fire Number: ID-SCF-000003 P4B3F6

C. State: Idaho

D. County: Lemhi

E. Region: 4

F. Forest: Salmon-Challis N.F.

G. District: North Fork

H. Date Fire Started: 08/07/2005 1923

I. Date Fire Contained: 08/19/2005

J. Suppression Cost: \$4,300,000 to date

K. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 7 miles (handline)
2. Fireline seeded (miles): N/A
3. Other (identify): handline renaturalized

L. Watershed Number: 170602030801

M. Total Acres Burned: 2,643

NFS Acres(2,623) Other Federal () State () Private (20)

N. Vegetation Types: Ponderosa Pine, Douglas Fir with a bunchgrass understory

O. Dominant Soils: Landtypes include: Strongly Dissected and Moderately Dissected Mountain Slope Lands In Granite, rocky Steep Canyon Lands in Granitics

P. Geologic Types: Granitic

Q. Miles of Stream Channels by Order or Class: 5.25 miles ephemeral

R. Transportation System

Trails: 0 miles Roads: 2 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 2,398 (low) 245 (moderate) 0 (high)

B. Water-Repellent Soil (acres): None

C. Soil Erosion Hazard Rating (acres):
0 (low) 1,523 (moderate) 1,120 (high)

D. Erosion Potential: 15 tons/acre

E. Sediment Potential: **3000** cubic yards / square mile (to ephemeral channels)
0 cubic yards / square mile (to Salmon river)

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 1-5

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): 1.4

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

G. Estimated Reduction in Infiltration, (percent): 10

H. Adjusted Design Flow, (cfs per square mile): 14

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

The Cadagan Complex Fire burned 2,643 acres in several small watersheds tributary to the Salmon River. A privately owned High Adventure Boy Scout Camp is located on the large fan at the mouth of Hale gulch (Figure

1). The boy Scout Camp is seasonally occupied during the summer months. Additionally there are four seasonally occupied homes in the Rivers Edge subdivision and one year-round residence on the Gazebo property. An assessment of the threats to life and property has been conducted based on a review of fire maps and a field review of the fire area. The only property that is considered to at risk of flooding is the High Adventure Boy Scout Camp. This camp is usually occupied from June through early August during the period of high intensity summer thunderstorms. Hale Gulch is an ephemeral stream with a defined channel. (Figure 2) Evidence of past debris flows was observed along Hale Gulch during the field review. This drainage is located in a high intensity storm track along the Salmon River. High intensity storms are frequent in this area and produce frequent debris flows in both burned and unburned drainages. The majority of the fire area (approximately 90%) is either unburned or a low severity burn. Approximately 10% of the burned area, located in the headwaters of Hale Gulch and Sawlog Gulch, has a moderate fire severity. The moderate fire severity areas are located on steep slopes (50 – 70%) with erosive granitic soils. (Figure 3)



Figure 1. Overview of Cadagan Complex and High Adventure Scout Camp.



Figure 2. Hale Gulch channel and Upper tent platforms.

B. Emergency Treatment Objectives:

Land treatments are recommended on the moderate severity burn areas (Figure 3) located at the head of Hale Gulch to reduce the risk of flooding and debris flows at the Boy Scout Camp. The objective of the requested RAWS station is to provide an early warning system to be used in conjunction with a flood evacuation plan for the Boy Scout Camp



Figure 3. Moderate burn severity near the head of Hale Gulch.

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

Land **100** % Channel ___ % Roads ___ % Other ___ %

D. Probability of Treatment Success N/A

	Years after Treatment		
	1	3	5
Land	80	85	90
Channel	N/A	N/A	N/A
Roads	N/A	N/A	N/A
Other	N/A	N/A	N/A

E. Cost of No-Action (Including Loss): Human Life and Safety, \$500,000 (Structures at Boy Scout Camp)

F. Cost of Selected Alternative (Including Loss): \$200,400 Cost of treatments plus 20% loss of no-action given 80% probability of treatment success in year 1

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 type="checkbox"/> Engineering	<input type="checkbox"/>
<input type="checkbox"/> Contracting	<input type="checkbox"/> Ecology	<input type="checkbox"/> Botany	<input type="checkbox"/> Archaeology	<input type="checkbox"/>
<input type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input type="checkbox"/> GIS	

Team Leader: Betsy Rieffenberger

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FAX: 208-756-5151

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: Hand Application of Long-Strand Erosion Control Material from Forest and Urban Wood. Wood strand material would be spread on moderate severity burn areas in the headwaters of Hale gulch and an unnamed tributary of Hale gulch. The placement of these materials would increase rainfall infiltration and reduce soil erosion and the risk of flooding at the Boy Scout camp.

Accomplishment: Aerial straw mulching was accomplished on 84 acres in 2005. Originally the treatment was to be hand application of wood strand mulch, however due to costs and lack of wood mulch availability the treatment proposal was modified. Aerial application became more economical when the logistics of straw delivery to the upper fire area were evaluated in detail. In addition the safety consideration of hand application on some of the steeper slopes was a factor in changing the application method. Contacts with the supplier of the wood strand mulch were made to see if the enough wood material was available for the project. The supplier was not able to provide sufficient quantities of the material in 2005. The project was accomplished with Forest helitack crews and an helicopter that was on contract for fire suppression. Agricultural straw was purchased through a contract for the project.

Channel Treatments: **None**

Roads and Trail Treatments: **None**

Structures: **None**

Hazard Removal, Warning, and Controls: Install RAWS station as part of an early warning and emergency evacuation system at the Boy Scout Camp.

Accomplishment: A Remote Automated Weather Station (RAWS) was installed in the fire area above the High Adventure Boy Scout Camp. This station was operated from June through September 2006 to provide an early warning of high intensity storms with the potential to cause flooding and debris flows at the Boy Scout camp.

Forest Service personnel, Betsy Rieffenberger and David Deschaine, and Ray Nickless from the National Weather Service (NWS) in Missoula met with the camp manager and counselors in June to discuss the early warning system and flooding risks at the camp. We provided them with copies of the fire report, maps of the mulch treatment areas, a news release on the mulching project and a Forest Service radio to be able to access data from the RAWS station.

During the meeting we told the camp leaders not to totally rely on the weather station due to the potential for the equipment to malfunction and that the gage might not capture a rain event falling in another portion of the watershed. We impressed on them that it was their responsibility to be aware of the weather and to be alert to the high intensity storms and the flooding risk.

We walked both drainages that flowed through the camp from the upper end of the camp downstream to assess structures and camp areas at risk. We told the scouts that each area of the camp needed to have identified safety zones for them to go to in the event of a high intensity storm in the area. We told the camp manager that it was their responsibility to prepare and practice an evacuation plan. We identified steep slopes adjacent to various areas of the camp that would be suitable safety zones.

Ray Nickless told them that the NWS would keep an eye out for high intensity storm warnings in the camp vicinity and would call the camp if there was a storm watch for this area. He also told the group that the NWS office in Missoula was open 24-7 and that they could call the office for storm information if they saw thunderstorms developing in the river canyon.

This meeting was very productive and provided the camp managers with valuable information on the flooding potential at the camp. Because the streams in the camp were ephemeral they were unaware of the flooding potential prior to our meeting. We were able to show them signs of past debris flows in the camp area and this was very helpful in educating them on the flooding and debris flow potential.

I. 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.)

Visual and photographic monitoring of the wood strand mulch will be conducted during implementation and during the summer of 2006. Objectives are to inspect for adequate coverage in needed areas and effectiveness for erosion control (whether rills observed, etc.).

A detailed monitoring plan will be submitted as an interim request.

Accomplishment: In September 2006 a field evaluation of the effectiveness of the aerial mulch treatment was conducted in two of the four treatment units. A monitoring report for this project will be submitted in a separate document.

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

control material	Acres	1,200	80	\$96,000	\$0		\$0		\$0	\$96,000
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Land Treatments				\$96,000	\$0		\$0		\$0	\$96,000
B. Channel Treatments										
				\$0	\$0		\$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
Subtotal Channel Treat.				\$0	\$0		\$0		\$0	\$0
C. Road and Trails										
				\$0	\$0		\$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
Subtotal Road & Trails				\$0	\$0		\$0		\$0	\$0
D. Structures										
Early warning system	each	2,000	1	\$2,000	\$0		\$0		\$0	\$2,000
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Structures				\$2,000	\$0		\$0		\$0	\$2,000
E. BAER Evaluation										
Salary	days	600	3	\$1,800	\$0		\$0		\$0	\$1,800
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Evaluation				\$1,800	\$0		\$0		\$0	\$1,800
F. Monitoring										
Effectiveness	days	600	1	\$0	\$0		\$0			\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Monitoring				\$0	\$0		\$0		\$0	\$0
G. Totals										
				\$99,800	\$0		\$0		\$0	\$99,800

PART VII - APPROVALS

1. /s/ Lyle E. Powers
Forest Supervisor (signature)

8/26/2005
Date

2. /s/ William P. LeVere for
Regional Forester (signature)

8/30/05
Date