USDA-FOREST SERVICE FS-2500-8 (7/00)

Date of Report: 12/8/2000

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[ ] 1. Funding request for estimated WFSU-SULT funds
[X] 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

[X] 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: B S Fire

B. Fire Number: P35333

C. State: New Mexico

D. County: Catron

E. Region: Southwester Region

F. Forest: Gila

G. District: Glenwood/Reserve

H. Date Fire Started: 09/28/1998

I. Date Fire Controlled: 10/28/1998

J. Suppression Cost: 1,124,250

K. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 8.5
2. Fireline seeded (miles): 8.5
3. Other (identify): Main access roads bladed

L. Watershed Number: 15040004 – 125, 136, and 132

M. Total Acres Burned: 6930
NFS Acres(**6930**) Other Federal ( ) State ( ) Private ( )

N. Vegetation Types: Ponderosa Pine/Gambel Oak
White Fir/Douglas Fir/Ponderosa Pine/Gambel Oak

O. Dominant Soils: Eutric Glossoboralfs, LCS, 6,0 loamy-skeletal mixed, mod. deep
Typic Argiborolls, LSC 5, 0, loamy-skeletal, mixed, mod deep

P. Geologic Types: Basalt

Q. Miles of Stream Channels by Order or Class: 12 miles/1st order, 6 miles/2nd order

R. Transportation System

Trails: 4 miles Roads: 15 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 4360 (low) 640 (moderate) 1930 (high)

B. Water-Repellent Soil (acres): 1930

C. Soil Erosion Hazard Rating (acres):
1900 (low) 2000 (moderate) 3000 (high)

D. Erosion Potential: 50-75 tons/acre

E. Sediment Potential: --- 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): 2

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches): 4.0-4.6

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

G. Estimated Reduction in Infiltration, (percent): 30

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

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

The fire started on September 28,1998 as a lightning-caused fire, which was initially allowed to burn 200 acres as a prescribed natural fire. On October 15, very high winds occurred and the fire burned several thousand acres. This prompted a change to full suppression strategy. The fire eventually burned 6,930 acres before being controlled. Within the burn area, over 40% of the area had moderate to high burn intensity. In the high burn area, all of the canopy was consumed and most of the vegetative ground cover was removed. The soils within this area were slightly to moderately hydrophobic. In the moderate burn area, some of the canopy cover remained and some of the vegetative ground cover remained. Elevations within the fire ranged from 7800 to 9800 feet. At the lower elevations the vegetation type was ponderosa pine/Gambel oak. At the higher

elevations the vegetation type was white fir/Douglas fir/Ponderosa pine/Gambel oak. The tree density and canopy cover was very high. Very little grasses or forbs were in the understory. Slopes within the high/moderate areas ranged from nearly level ridge tops at the lower elevations to very steep mountain land at the higher elevations.

The soils in the area were formed from basalt and have a high amount of surface rock which ranges from 20-60% cover on the surface. Due to the lack of vegetative ground cover and the presence of hydrophobic soils, the soil productivity in the timbered land was at risk due to potential soil loss.

The fire burned into three fifth code watersheds. Approximately 2/3 of the fire drained towards the southwest into the Middle San Francisco River fifth code watershed. It drains into Deep Creek, which is approximately 1 mile below the fire and has ephemeral to intermittent flow. No known T & E Species are in this stream segment. Deep Creek drains into the San Francisco River approximately 12 miles below the fire. The San Francisco River has been identified as habitat for T & E Species loach minnow and is in non-attainment from a state water quality standpoint. Approximately 1/3 of the fire drains to the north into the Negrito fifth code watershed. The South Fork of Negrito Creek has intermittent to perennial flow and is approximately 2 miles below the fire. The South Fork of Negrito Creek is also in non-attainment from a state water quality standpoint. The lower portion of Negrito Creek just above the confluence with the Tularosa River has been identified as habitat for T & E Species loach minnow. This section of stream with T & E species is approximately 12-14 miles below the fire. A very small portion of the fire drains to the east into the Middle Gila River Fifth Code Watershed. It is at least 10-12 miles before any perennial streams are encountered.

A Burned Area Emergency Rehabilitation team inspected the fire in October 1998. The team decided not to treat the area due to the time of the year the fire burned, not being able to establish ground cover until next spring with seeding, question of the seeding success, rocky basalt soils, and the distance to streams with values at risk. It was decided to monitor the fire. Two monitoring sites were located and set up in November 1998. At each location a Daubenmire plot, erosion bridge, sediment catchment structure, photo points, and soil seed bank samples were completed.

The results from the seed bank samples showed very little viable seed in the soils. The monitoring sites were inspected in May and September 1999. The winter of 1998/1999 was very dry and the area had no snow pack. In May there was very little new vegetative plant growth and the soils had high amounts of bare soil. The area received several storms during the summer monsoon period of July to September. These storms moved high amounts of soil off the fire and into the drainages. The monitoring sites were inspected again in September. The monitoring plot with a south aspect had 7% ground cover which was mainly moss. The north aspect had 31% ground cover which was mainly moss. Only scattered grasses and forbs were noted. The site on the north slope had some young aspen sprouts. Both plots still had 50-65% bare soils. The erosion bridges indicated approximately 60-140 tons/acres of soil moved in a years time.

A zig-zag transect to determine the particle size in the drainage was set up just below the confluence of Stub Canyon and Deep Creek approximately 1½ miles below the fire. In November 1998 some silt and fire ash had washed into the drainage and had approximately 48% silt/sand particle size. In May 1999 more silt and fire ash had washed into the drainage and had approximately 61% silt/sand particle size. In September 1999 the area had received several very high flows from the fire. The silt and fire ash in the drainage had been washed away and in many places the drainage had cut down several feet. The silt/sand particle size was reduced to 19%.

In the lower elevations in the Ponderosa pine/Gambel oak vegetation type there was some new plant growth occurring. The soil loss looked to be lower than in the mixed conifer vegetation type. Two small areas were seeded in 1998 to evaluate seeding success and compare to unseeded areas. The seeded plot in the Ponderosa pine/Gambel oak vegetation area had more new vegetative growth than the seeded plot at the higher elevation in the mixed conifer vegetation.

B. Emergency Treatment Objectives:

Results from the year's monitoring indicated that natural recovery was not sufficient to protect the values at risk and the burned area would require BAER treatment especially in the higher mixed conifer vegetation to increase the vegetative ground cover, to maintain soil productivity, and to reduce sedimentation into downstream areas.

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

Land NA % Channel __ % Roads ___ % Other ___ %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Seeding	50	60	70
Slashing	60	70	70
Channel			
Roads			
Other			

E. Cost of No-Action (Including Loss): $1,860,000

F. Cost of Selected Alternative (Including Loss): $870,000

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology	[**X**] Soils	[X] Geology	[x] Rang
[X] Forestry	[**X**] Wildlife	[ ] Fire Mgmt.	[X] Engineering
[ ] Contracting	[**X**] Ecology	[ ] Botany	[X] Archaeology
[X] Fisheries	[ ] Research	[ ] Landscape Arch	[ ] 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 area to be treated was the mixed conifer vegetation type within the fire which had hot/moderate burns. Monitoring had shown that this area lacked viable seed in the soils and had high amounts of soil loss. This area consisted of approximately 1500 acres. Funding to do the treatments was approved on October 14,

1999. A total of $208,000 was received. Of this amount, $191,000 was for land treatments, $5,000 was for administration, and $12,000 was for monitoring.

Seeding:

Approximately 21,400 pounds of seed was ordered at a cost of $24,000. The seed mixture was: 36% annual rye, 19% perennial rye, 18% intermediate wheat grass, 18% orchard grass, 4% Arizona fescue, and 5% yellow sweet clover. Plans were to seed the area late in the fall just before the expected snowfall. The seed was received on November 16, 1999 and put into two rental trucks. Seeding was started the following day using a contract helicopter and a seed bucket from the forest. Four helitack personnel were used to fill the seed buckets and work with the helicopter. Seeding distribution was monitored on the ground by two people on 4-wheelers. High winds occurred during the first day and the seeding operation was shut down for 4 hours. Seeding was completed on November 19th. Approximately $41,000 was spent to treat 1500 acres.

Slashing:

The same block that was seeded was treated with slash. A crew of personnel was formed and slashing of trees started on October 25, 1999. Mainly GS 5/6 personnel were used. They had to be qualified to operate chainsaws. Some difficulty was encountered finding enough qualified personnel due to ongoing fires in other regions and other projects on the forest. The personnel came from most of the districts across the forest. They drove to the site on Monday and returned on Friday. Forest trucks were used for transportation. Approximately 25-40 trees per acre were fallen and were smaller than 9 inches in diameter. The trees were fallen on the contour and cut into shorter lengths to put more of the tree trunk in contact with the soil surface. Two people were assigned to a saw. One person would operate the saw during a portion of the day and the other person would operate the saw the remainder of the day. This was done mainly from a safety standpoint. The person not running the saw would act as the swamper. He would carry the fuel, help with falling trees, and placing smaller material on the uphill sides of the logs.

The crews were housed at Negrito Fire Base, which was about 30-45 minutes from the fire. Housing at the fire base was built to be mainly used in the summer months. Some plumbing damage occurred due to freezing pipes in December or January.

The fall and winter months during the treatment period were dry. Normally this high country would have been snowed out by mid November or early December. Some days were lost due to windy days or light snows. The initial plan was to treat 1500 acres. The surface rock varied widely across the treatment area. The crew leader inspected blocks of treatment areas before treating. Areas with high amounts of rock were not treated. During the treatment period there were usually 10 to 15 people working on the project each week. Work was stopped on Jan 4th due to a heavy snowfall and icy conditions. Approximately 600 acres had been treated. The crew leader estimated that 80 more acres could have been treated. The remaining acres were too rocky to treat.

No loss of time or costs were incurred due to accidents. This work was done in the fall and winter months with cold, windy, and icy conditions. Using chainsaws falling trees was dangerous work. Many vehicle miles were driven during the project.

Approximately $131,900 was spent to treat 600 acres.

Channel Treatments: None

Roads and Trail Treatments: None

Structures: None

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.)

Two new monitoring sites were set up on October 25-26, 1999. Trees were fallen within the monitoring sites. A Daubenmire plot, sediment structure, erosion bridges, and photo points were set up within each of the monitoring sites. Monitoring was done on May 22-24 and September 26-28, 1999. The fall, winter and spring months were very dry. In May very little of the seeded grass was growing. Elk were grazing on the new plants and pulling the plants out of the ground when grazed upon. Most of the aspen sprouts were grazed on. The summer monsoon rainfall was lower than normal. The fire received enough rainfall for the seeded grass to sprout and grow. In September the grass has grown to 1-2 ft tall and was providing a high amount of ground cover. A full monitoring report will be written and sent to the Regional Office in December. Approximately $5,000 has been spent for monitoring.

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

			NFS Lands				Other Lands				All
		Unit	# of	WFSU	Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	SULT $	$	units	$	Units	$	$
A. Land Treatments										
Seeding	acres	27.34	1500	$41,010			$0		$0	$41,010
Slashing	acres	219.84	600	$131,904			$0			$131,904
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Land Treatments				$172,914			$0		$0	$172,914
B. Channel Treatments										
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Channel Treat.				$0			$0		$0	$0
C. Road and Trails										
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Road & Trails				$0			$0		$0	$0
D. Structures										
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Structures				$0			$0		$0	$0
E. BAER Evaluation										
Administration				$7,500			$0		$0	$7,500
				$0			$0		$0	$0
G. Monitoring Cost				$7,760			$0		$0	$7,760
H. Totals				**$188,174**			**$0**		**$0**	**$188,174**

PART VII - APPROVALS

1. **/s/ Marcia R. Andre** — **12/08/00**
   Forest Supervisor (signature) — Date

2. _____ — _____
   Regional Forester (signature) — Date