

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
☒ 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: Lake FireB. Fire Number: P34732C. State: New MexicoD. County: CatronE. Region: SouthwesternF. Forest: GilaG. District: ReserveH. Date Fire Started: April 30, 2000I. Date Fire Controlled: May 3, 2000J. Suppression Cost: \$125,000

- K. Fire Suppression Damages Repaired with Suppression Funds
 1. Fireline water barred (miles): 2
 2. Fireline seeded (miles): 0
 3. Other (identify):

L. Watershed Number: Middle Fork of Gila 150400001125M. Total Acres Burned: 250

NFS Acres (250) Other Federal () State () Private ()

N. Vegetation Types: Ponderosa pine/Gambel oakO. Dominant Soils: Typic Ustochrepts, loamy-skeletal, mixed, frigid on slopes, and Typic Argiborolls, fine and clayey-skeletal, mixed on the ridge tops or mesas.

P. Geologic Types: Gila conglomerate on lower portions of the slopes and toe slopes. Basalt on the ridge tops or mesas.

Q. Miles of Stream Channels by Order or Class: Within the fire boundary there is only ephemeral channels. Approximately 1/8 mile south of the fire is Gilita Creek which has perennial flow. Just east of the fire is the Middle Fork of the Gila River which drains out of Snow Lake and has perennial flow.

R. Transportation System

Trails: 1/2 miles Roads: 0 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 165 (low) 40 (moderate) 45 (high)

B. Water-Repellent Soil (acres): 85 with moderate repellency

C. Soil Erosion Hazard Rating (acres):
100 (low) 65 (moderate) 85 (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): 70

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): 40-60

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

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

The fire started on April 30, 2000 at Dipping Vat Campground just south of Snow Lake. Someone had left a campfire at a camping spot and did not put it out. A fire pumper crew was there in the campground and saw the fire start. A small gust of wind blew a spark out of the fire ring. Grass just outside of the fire ring started to burn and within a few minutes the fire was beyond control. The fire burned south through a small grassy area into a steep slope with Ponderosa pine/Gambel oak vegetation. The pumper crew could not control the fire

and a fire team was called in on the fire. The fire was called contained on May 3 and had burned approximately 250 acres. Approximately 135 acres of the fire drained directly into Snow Lake and approximately 85 of these acres burned with high/moderate intensity. Within most of this high/moderate burn area the slopes average 35% slopes. The top of the slope near a mesa or ridge top has basalt soils with 30-50% cobble size rock on the surface. About 1/3 of the way down the slope the geology changed to Gila conglomerate. There was less surface rock (10-25% rock fragment) and the surface texture is sandy loam. The soils formed from Gila conglomerate are highly erosive.

The high burn had all of the tree canopy consumed and all of the litter layer on the soil surface burned. All of the grasses were entirely consumed and probably killed. The soils were moderately hydrophobic to a 2-4 inch depth. Approximately 45 acres had hot burn intensity.

The moderate burn was hot enough to kill most of the tree needles, and consume most of the litter layer on the surface. Grasses were entirely consumed and may have been killed. The soils were moderately hydrophobic to a 2-4 inch depth. Approximately 40 acres had moderate burned intensity.

The remainder of the fire had a low intensity burn. It burned mainly in the understory with very little tree damage. Grasses had the tops burned but were not all consumed. The soils were not hydrophobic.

Snow Lake is one of four small lakes on the forest. It is regularly stocked with trout and is a very popular lake. It is 75-100 acres in size and set at a high elevation of 7500 ft. The State of New Mexico, Water Quality Control Commission, Water Quality and Water Pollution Control in New Mexico-1998 report has identified the lake as not fully supporting designated or attainable uses. The probable cause of non-support is nutrients, nuisance algae, and siltation. Due to this fire and its close location to the lake there is a high probability to move sediment/ash into the lake and reduce water quality. If high amounts of ash are moved into the lake it could kill fish. Also if high amounts of sediment go into the lake it may need to be drained and cleaned. The lake has been filling in with sediment and is a major concern. A few years ago some sediment structures were build just north of the lake to reduce sediment going into the lake.

B. Emergency Treatment Objectives:

The main objective was to reduce the potential to move sediment/ash into Snow Lake. The second objective was to reduce the potential for soils loss and maintain soil productivity. The 85 acres with hot/moderate burn intensity was to be treated. The area would be seeded hand seeded. The fire may have burned hot enough to kill most of the viable seeds in the soils in the hot/moderate burn area. Due to the small size of the seeding area it was determined to be not cost effective to aerial seed the area. The lower portions of the slope could be seeded using a seeder on a four-wheeler. Trees would be fallen on the contour to help hold soil in place and reduce the slope lengths. Within the drainages log or straw bale structures would be built to catch sediment and ash. A trail just below the fire near Snow Lake would be treated. More drainage would be installed on the trail to reduce the potential for sedimentation into the lake.

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

Land 80 % Channel 60 % Trails 60 % Other %

D. Probability of Treatment Success

| | Years after Treatment | | |
|-----------------------|-----------------------|----|----|
| | 1 | 3 | 5 |
| Land | | | |
| Seeding | 50 | 60 | 70 |
| Contour falling | 80 | 70 | 60 |
| Channel | | | |
| Straw bale Structures | 60 | 50 | 50 |
| | | | |

| | | | |
|---------------------|----|----|----|
| Trails | | | |
| Drainage structures | 80 | 70 | 60 |
| Other | | | |
| | | | |

E. Cost of No-Action (Including Loss): \$210,000

F. Cost of Selected Alternative (Including Loss): \$150,000

G. Skills Represented on Burned-Area Survey Team:

| | | | |
|---|--|--|---|
| <input checked="" type="checkbox"/> Hydrology | <input checked="" type="checkbox"/> Soils | <input checked="" type="checkbox"/> Geology | <input checked="" type="checkbox"/> Range |
| <input checked="" type="checkbox"/> Forestry | <input checked="" type="checkbox"/> Wildlife | <input checked="" type="checkbox"/> Fire Mgmt. | <input type="checkbox"/> Engineering |
| <input type="checkbox"/> Contracting | <input checked="" type="checkbox"/> Ecology | <input checked="" type="checkbox"/> Botany | <input checked="" type="checkbox"/> Archaeology |
| <input checked="" type="checkbox"/> Fisheries | <input type="checkbox"/> Research | <input checked="" type="checkbox"/> Landscape Arch | <input 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.)

The fire burned 250 acres. Approximately 135 acres of the fire drained directly into Snow Lake. Of the 135 acres, 85 acres had high/moderate burn intensities. There was a need to treat the 85 acres to help hold the soils in place and prevent sedimentation into Snow Lake. The following treatments were accomplished:

Land Treatments:

1. Contour Falling of Trees: Within the 85 acre block the plans were to fall at least 30-40 trees per acres on the contour of the slope. These trees would be 8-10 inches in diameter. The limbs would be removed and the trunk of the tree would be cut in shorter length to put more of the tree in contact with the soil. Smaller material would be cut up and placed on the up hillside of the logs. Branches with needles would be placed on the uphill side of the logs. This would reduce the potential for soil erosion by shorting the slope length and make a small catchment for sediment.

Funding for this work was approved on May 5th but work did not start until mid June. The project was delayed by consultation with the Fish and Wildlife Service. A portion of the planned treatment area had been a Spotted Owl Core Area. Approval was received early in June. May and June had high amounts of fire activity in the Southwest Region. The availability of qualified crews to fall trees was very limit. Fire crews first priority was fire suppression and were not available to do BAER work. Glenwood Ranger District put four-person trail crew on the project in mid June. They were limited in their chainsaw qualifications and training. Progress was slow. Eventually, a twelve-man fire crew from the Los Luna Prison was put on the fire. This crew camped out at the Dipping Vat Campground. Meals were delivered to the crew from Negrito Fire Base or Reserve, New Mexico. They worked four days on the fire and treated most of the area. The area was inspected in September. Some of the trees were in contact with the soil and catching sediment. Many logs were setting on small rock fragments and the water runoff had gone under the logs. The treatment would have been more effective if fewer trees would have been cut and more time spent on bedding the logs.

If the treatment was to be done again, fewer trees would have been cut and more time spend on bedding the trees would have been more effective.

2. Seeding: Due to the small size of the treatment area it was decided to hand apply the seed with small hand held seeders or use a four-wheeler with a seeder. The lower portion of the treatment area with slopes less than 25% slopes was seeded using a seeder on a four-wheeler. The remainder of the treatment area was seeded using hand held seeders. Approximately 10-15 young high school students from a school in Reserve, New Mexico were used. The seed had annual rye, perennial rye, intermediate wheat grass, and orchard grass. The area received several light rains after seeding. The area was inspected in September and the seeding had a good response.

3. Channel treatment: There are several small ephemeral drainages within the treatment area and they drain directly into Snow Lake. The soils in the drainages are deep and have a low amount of rock fragments. Plans were to build approximately 19 small log dam structures to help catch sediment/ash in the drainages and to prevent channel down cutting. Small logs would be cut and keyed into the drainages. They would be anchored with t-posts and filter cloth put on the uphill sides. Loose rock will be placed just below the logs. Channel width varies from 5-20 ft. After much discussion it was decided to build straw bale structures. Wooden stakes were driven into the bales to help hold them in place and loose rock was placed below the bales. Approximately 10-15 young high school students from a school in Reserve, New Mexico were used. The straw bales were hauled to the sites on a four-wheeler. The area had several small light rains during the summer. The structures worked well and had very little sediment washed into them. When last inspected in September a few of the bales were being damaged due to elk. The most of the treatment area with straw bale structures was inside the enclosure of the lake and campground.

4. Trail Treatment: There was a trail on the south side of the dam for Snow Lake. This trail section was about 300-400 ft long and drains directly into Snow Lake. Above the trail was a hot burn with gamble oak and aspen vegetation with slopes > 50%. Due to the loss of vegetative ground cover there is a need to put more drainage into this portion of the trail to prevent soil loss into the lake. Approximately 7 drainage structures were to be built on this trail. The Glenwood trail crew installed these drainage structures in mid June. They used small logs and rock for the drainage structures. When inspected in September, the drainage structures in the trail looked to be working well.

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.)

The treatments were inspected by several of the BAER members in July. Several photo points were established and photographs were taken of each treatment. The area was inspected again in September and several photographs of treatments were taken. A monitoring report will be written and sent to the regional office in December 2000.

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 | 58.82 | 85 | \$5,000 | | | | \$0 | | \$0 | \$5,000 |
| Contour Falling | Acres | 152.35 | 85 | \$12,950 | | | | \$0 | | | \$12,950 |
| | | | | \$0 | | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | | \$0 | | \$0 | \$0 |
| Subtotal Land Treatments | | | | \$17,949 | | | | \$0 | | \$0 | \$17,949 |
| B. Channel Treatments | | | | | | | | | | | |
| Straw Bale Sructures | Struct. | 371.05 | 19 | \$7,050 | | | | \$0 | | \$0 | \$7,050 |
| | | | | \$0 | | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | | \$0 | | \$0 | \$0 |
| Subtotal Channel Treat. | | | | \$7,050 | | | | \$0 | | \$0 | \$7,050 |
| C. Road and Trails | | | | | | | | | | | |
| Trail Drainage | | 214.29 | 7 | \$1,500 | | | | \$0 | | \$0 | \$1,500 |
| | | | | \$0 | | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | | \$0 | | \$0 | \$0 |
| | | | | \$0 | | | | \$0 | | \$0 | \$0 |
| Subtotal Road & Trails | | | | \$1,500 | | | | \$0 | | \$0 | \$1,500 |
| 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 | | | | \$4,100 | | | | \$0 | | \$0 | \$4,100 |
| | | | | \$0 | | | | \$0 | | \$0 | \$0 |
| | | | | | | | | | | | |
| G. Monitoring Cost | | | | \$2,800 | | | | \$0 | | \$0 | \$2,800 |
| | | | | | | | | | | | |
| H. Totals | | | | \$33,399 | | | | \$0 | | \$0 | \$33,399 |
| | | | | | | | | | | | |

PART VII - APPROVALS

1. /s/ Marcia R. Andre
Forest Supervisor (signature)

12/08/00
Date

2. _____
Regional Forester (signature)

Date