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

Date of Report: 07/26/2002

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[X] 1. Funding request for estimated WFSU-SULT funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[X] 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: Lost Cabin Fire

B. Fire Number: P47837

C. State: Nevada

D. County: Clark

E. Region: 04

F. Forest: Humboldt-Toiyabe

G. District: Spring Mountains National Recreation Area (SMNRA)

H. Date Fire Started: 07/14/2002

I. Date Fire Contained: 07/20/2002

J. Suppression Cost: $1,387,000 as of 07/23/2002

K. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 1
2. Fireline seeded (miles): 0
3. Other (identify):

L. Watershed Number: 16060015 Pahrump Valley

M. Total Acres Burned: 4,308
NFS Acres(4,284) Other Federal ( ) State ( ) Private (21)

N. Vegetation Types: Pinyon-Juniper Woodland

O. Dominant Soils: No soil survey in the area. Surface soils are gravelly to very gravelly loams, soil depths are shallow to moderately deep. The steeper slopes have a high amount of rock outcrop.

P. Geologic Types: Limestone with a small amount of sandstone.

Q. Miles of Stream Channels by Order or Class: 19 miles of ephemeral

R. Transportation System

Trails: 1/4 miles Roads: 2 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 100 (low) 0 (moderate) 4,200 (high)

B. Water-Repellent Soil (acres): 4,200 in top ½ to 1 inch

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

D. Erosion Potential: 7.5 tons/acre in 24 months Estimated using Disturbed WEPP and 16 inches of precipitation.

E. Sediment Potential: 1125 with a 30% delivery ratio cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 10-20

B. Design Chance of Success, (percent): 50

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

D. Design Storm Duration, (hours): 24

E. Design Storm Magnitude, (inches): 3.4

F. Design Flow, (cubic feet / second/ square mile): 288

G. Estimated Reduction in Infiltration, (percent): 20

H. Adjusted Design Flow, (cfs per square mile): 297

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

The fire started by lightning on July 14, 2002 and was in Sec. 12, T21S, R56E. It burned mainly in a Pinyon-Juniper Woodland and had several hot burning days. On July 18 the fire received a rain of approximately ½ inches and this storm helped to contain the fire. There was some black ash flow in the drainages from the storm. The fire was called contained on July 20, 2002 and had burned approximately 4,308 acres. Most of the fire had a high burn intensity with some small areas of low burn intensity. The fire mainly burned on national forest property. It did burn close to private land in the Coal Springs area, which is just north of the fire, and

Torino Ranch, which is near the northeastern portion of the fire. Approximately 21 acres burned on the private land of Torino Ranch.

The elevation of the fire ranged from 5,600 to 6,800 feet. The fire burned at the top of a mountain and ridges. As a result the fire drains in all directions towards the west, north, east, and south into several small watersheds. There are no perennial streams in the area and all of the drainages are ephemeral. The topography of the fire ranges from very steep mountain lands near the top of the mountain, low hills, and some small alluvial drainages.

The fire area does not have a soil survey. The soils have formed from limestone with a small amount of sandstone. The soil surface is a gravelly to very gravelly loam and soil depths are shallow to moderately deep. The steeper slopes have a high amount of rock outcrop. Before the fire there was a thick pinyon- juniper woodland overstory. In the understory there was some shrubs of gamble oak, wrights silk tassel, cliff rose, mountain mahogany, sagebrush, and rabbitbrush. There were very little grasses or forbs. The vegetative ground cover (vegetation plus litter) was <25% and was mainly litter under the trees. On areas of slopes above 15% there was evidence of high amounts of soil erosion due to the lack of ground cover. Soil was being caught on uphill sides of trees, shrub, rock, and logs. Many trees and shrubs had their tree roots exposed.

In the areas of high burn intensity all of the trees and shrubs were killed, the entire canopy was consumed, and most of the litter on the ground was consumed. The upper ½ to 1 inches of the soils are moderately to strongly hydrophobic. Below this layer the water would infiltrate into the soils. The soils were also tested in some unburned areas. The upper ½ to 1 inches of the soils were slightly hydrophobic. There will be a moderate potential for increased water runoff and soil erosion due to the loss of the tree and shrub canopy, loss of most of the vegetative ground cover, and there is an increase to moderately to strongly hydrophobic soils.

The northeastern corner of the fire is near the Torino Ranch, which is on private land. Approximately 21 acres burned on the private land of Torino Ranch. The portion of the fire that burned east of the Lovell Canyon Road is in a Wilderness Study Area. The watershed above the private land was delineated and has a total acreage of 1,645 acres. Of the watershed approximately 290 acres burned and is approximately 18% of the watershed. There are several houses and cabins on this property and most are in the alluvial drainage of Lovell Canyon. Seven small cabins and one house are located near the eastern portion of the property. It looks that some of alluvial channel was leveled for the cabins to be built on. As a result the drainage channel was narrowed. A small dike using alluvial material was placed between the channel and the cabins. The fire burned a portion of the watershed east of the property. There is a moderate potential to have high water flows from the watershed and damage the cabins and house. Just below this the channel goes along the main access to the Torino Ranch entrance. There is a moderate potential for a high water flow to wash debris on to the roadway or to cut the roadway. It was recommended to talk to the private land owner to put protection in the drainage by the cabins, and to clean and widen the drainage.

There are three roads in the area. Forest Road 539 is a paved road, which goes up Lovell Canyon and is the main access to Torino Ranch. Approximately 1 mile of this road is within the fire. There are no culverts on the road and there are several low water crossings. There is a low potential for damage to this roadway unless there is very high water flows from the watershed. No treatment of the roadway was recommended.

Forest Road 536 is a gravel road, which goes through Lovell Summit and accesses the Coal Springs private lands and eventually goes to Trout Canyon Road. The Coal Springs area has one small cabin and a travel trailer in the alluvial drainage. Also there are several travel trailers on low hills. There is a low potential for high water to impact the cabin and travel trailer in the drainage bottom due to the size of the fire within the watershed and distance from the fire. Some of the fire will drain into the Coal Springs area and roadway, which has several low water crossings. No treatment of the roadway was recommended.

Forest Road 538 goes towards CC Spring and was used as a fire line for the fire. A short spur and foot trail goes from the end of the Forest Road 538 to CC Springs. During the rainstorm on July 20 there was some runoff onto the roadway and trail with fire ash. Portions of this roadway and trail need more drainage features installed to prevent erosion.

CC Spring is located in southeastern portion of the fire. The spring is located in a drainage, just below a rock water fall area, and has a 4 inch plastic pipe in the ground, which drains into a historic cement and rock trough about 10 feet long, 6 feet wide, and 2 feet deep. This trough is located close to the south slope, which is very steep and was burned. There is a moderate to high potential for the soil on the slope above the trough to erode down into the trough, fill it up, and have water run down the trail. Portions of the plastic pipe were above ground and was charred and melted. Fire ash has flowed over the waterfall and into the area where the pipe draws water from. Before the fire the pipe had water flowing into the trough. Now there is none and this may be due to the fire ash sealing the inlet off. This spring is a very important water source for wildlife, sensitive Palmer's Chipmunk, and four endemic butterfly species in the area.

The CC Spring area has a high visitor use with dispersed camping and hiking. Due to the fire and burning of the trees and shrub there is a moderate to high potential for off road ATV use. This ATV use may cause increased erosion in the area.

Cultural resources within the burn included two previously recorded prehistoric sites which were visited and the site records updated. One previously recorded site was mis-mapped and found to be outside the burn area. The CC Spring rock/cement trough is an historic site still in use. Erosion control measures around this trough are discussed under H. Treatment Narrative. Since the suppression hand-lines were of a very light touch or not needed, and there were no other suppression activities that caused ground disturbance, minimal inventory was conducted for the fire. Three large modern debris dumps associated with prior owners of the Torino Ranch property were observed and recorded near the ranch as they were visible from the Lovell Canyon Road. No erosion impacts or BAER treatments are expected at any of these sites except the CC Springs trough site.

Within the fire area there are the Sensitive Palmer Chipmunk and four endemic butterfly species. There are no known Threatened and Endangered Species within the fire.

B. Emergency Treatment Objectives:

To help stabilize soil, control water, sediment, and debris movement, to prevent impairment of ecosystem structure and function, and to mitigate significant threats to health, safety, life and property, or downstream values. To monitor the implementation and effectiveness of the prescribed emergency treatments.

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

Land NA % Channel NA % Roads and Trails 30 % Structures 30 %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	NA	NA	NA
Channel	NA	NA	NA
Roads and Trails	60	75	80
Structures	50	75	80

E. Cost of No-Action (Including Loss): 62,300

F. Cost of Selected Alternative (Including Loss): 60,300

G. Skills Represented on Burned-Area Survey Team:

[X Hydrology	[X] Soils	[ ] Geology	[ ] Range	[X] Revegetation Specialist
[ ] Forestry	[X] Wildlife	[ ] Fire Mgmt.	[X] Engineering	[ ]
[ ] Contracting	[X] Ecology	[ ] Botany	[X] Archaeology	[ ]
[ ] Fisheries	[ ] Research	[ ] Landscape Arch	[X] GIS	

Team Leader: Charles Souders, Forest Soil Scientist, Gila National Forest, Silver City, New Mexico

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District Resource Advisor for the Fire

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BAER Team Members

Sally Champion, Hydrologist
Lance Dutton, Engineer
Jennifer Sigler, Archeologist
Indre Antanaitis-Jacobs, Archeologist
Steve DeRicco, Revegetation Specialist
Bob Taylor, GIS
Kyle McKelvey, Recreation Specialist

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:

No treatments. See Appendix A.

Seeding of the fire was not recommended due to the low revegetation potential of the area and the potential to introduce non-native species in the area. Native seeds that would grow in the area are very expensive, in short supply, and past broadcast seeding projects in the area have had low success rates.

Channel Treatments:

No treatments

Roads and Trail Treatments:

Approximately 15 signs will be placed along the roads and in the CC Spring area, which will say that the area of the fire is closed for ATV use for protection of the resources. Total cost of the signs and installation will be $4,000.

Forest Road 538 Protection

Sec 12, R57E, T21S

Condition:

Due to the expected increase runoff from the burned area above the roadway there is a need to install more drainage.

Description:

Restore sheet flow drainage across Forest Highway 358 [CC Springs Road] by installing shallow swales at three locations in the existing road. Swales will be approximately ten feet wide and a center depth of three inches. On the upslope side of the road right of way channelization of about twenty five feet and a dispersion area about fifteen feet wide on the down slope side of the road.

Cost estimate: One Crew day of work with equipment $800.00
Travel, per diem and mobilization of $500.00
$1,300.00 total.

CC Spring Access Trail Protection

Sec 12, R57E, T21S

Condition:

The fire destroyed the vegetation that protected and limited access to the CC Spring. The increased sediment and increased water runoff will damage the foot trail, which is adjacent to a naturally occurring normally dry channel. The lack of vegetation will allow vehicle traffic to gain access to the spring, which could increase erosion and impact the wildlife. The existing trail is approximately one-quarter mile long from the forest road to the spring site.

Description:

Construct water bars on the upslope side of the trail to reduce runoff velocity to the channel. Construct low height water bars in the existing channel in about four places. Install rock barriers to vehicle traffic adjacent to Forest Road 538 and along potential access routes to the spring site.

Cost estimate: Four Crew days @ $500 per day $2,500.00
Equipment Mobilization and materials $200.00
Equipment Costs@ $250.00 per day $2,000.00
$4,700.00 total.

Structures:

CC Spring Protection

Sec 12, R57E, T21S

Condition:

The natural vegetation that protected the slope above the historically significant trough and spring box has been destroyed. The spring box has been plugged with ash and sediment that occurred during the rainstorm of

July 18. The trough will be filled with sediment and ash in future rain. The four-inch plastic pipe between the spring box and trough was melted during the fire.

Description:

Construct slope protection to a height of eight feet above the trough. This protection is to consist of uncut rocks closely spaced together. The width will be to about five feet on either side the trough. On the upslope side and adjacent to the trough cut a drain swale about one foot wide to a depth six inches and daylight the swale downhill and to the east side of the trough. Clean out the sediment and ash from the spring box. Install the plastic pipe, with intake screen and gravel, from the spring box to the trough for ecosystem protection for sensitive and endemic species.

Cost estimate: Five Crew days @ $500 per day $3,000.00
Equipment Mobilization and materials $300.00
Equipment Costs@ $250.00 per day $2,500.00
$5,800.00 total.

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.)

Monitoring the ATV signs and use will be done at least monthly for one year after the fire. If signs are damaged or removed they may need to be replaced. If there is ATV use the areas of use may be signed and blocked. Road and trail patrol will be done after each major storm for the first year after the fire. If road or trail drainage features are washed out or damaged they may need to be repaired. The CC Spring will be checked after each major storm for 1 year after the fire. If sediment is washed into the trough it may need to be cleaned out.

Monitoring money would be until the end of this fiscal year. Then at the start of the next fiscal year in October there will need to be a new request for monitoring money.

Estimate of Cost

2 days of patrol x $200 daily cost = $400
Vehicle cost $25 x 2 days = $50
Total Costs = $450

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 $
A. Land Treatments										
				$0			$0		$0	$0
				$0			$0			
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Land Treatments				$0			$0		$0	$0
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										
Forest Road 538	each	1,300	1	$1,300			$0		$0	$1,300
CC Spring Trail	each	4,700	1	$4,700			$0		$0	$4,700
Signs	each	66.67	15	$4,000			$0		$0	$4,000
				$0			$0		$0	$0
Subtotal Road & Trails				$10,000			$0		$0	$10,000
D. Structures										
CC Spring	each	5,800	1	$5,800			$0		$0	$5,800
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Structures				$5,800			$0		$0	$5,800
E. BAER Evaluation										
Salaries	total	10900	1	$10,900			$0		$0	$10,900
Per diem	total	2450	1	$2,450			$0		$0	$2,450
Vehicles & Flights	total	900	1	$900						$900
Subtotal Evaluation				$14,250						$14,250
G. Monitoring Cost				$0			$0		$0	$0
				$450						$450
H. Totals				**$30,500**			**$0**		**$0**	**$30,500**

PART VII - APPROVALS

1. /s/Ben G. Siminoe for Robert L. Vaught — 7/26/2002
   Forest Supervisor (signature) — Date

2. /s/ Liz Close for Jack G. Troyer — 8/01/2002
   Regional Forester (signature) — Date

Appendix A

The following revegetation with shrubs will not be request a for BAER funding but could be funded with National Fire Plan Money, Key Point 2:

Revegetation with shrub seedlings is recommended for three sites on the fire. This is being done to help stabilize the channel. The planting would be done in February or March when soil moisture would be high which would increase the success of survival. These sites are the wide floodplain in the watershed above the cabins on Torino Ranch, the channel floodplain along Lovell Road below the ranch property, and the small valley bottom below CC Spring. A total of about 10 acres was identified. Shrubs will be in supercells from the Nevada Department of Forestry nursery. Gambel oak is available in D-pots. It is recommended that Vexar tubing be put around each plant to protect the plants from rabbits and deer. The number of each type of species for each site is displayed in the table.

Site	Acres	Sagebrush	Gambel Oak	Wood's Rose	4-Wing Saltbush	Rabbitbrush	Mtn. Mahogany	TOTAL
Torino Ranch WS	5	1500		250	375	375		2500
Lovell Road	4	300	600			100		1000
CC Spring	1		210				90	300
TOTAL	10	1800	810	250	375	475	90	3800

Costs: Shrubs in supercells are $1.00 each. Gambel oak is available only in D-pots and are $1.60 each. Vexar tubing is approximately $.50 apiece. Labor could be provided by a NDF 12-person inmate crew. Costs for materials and labor are displayed below.

2990 supercells @ $1.00 …….. 2990
810 D-pots @ $1.60 ……. 1296
3800 Vexar tubes @ $.50 …… 1900
5 days labor @ $600 ……. 3000
Subtotal …… 9186
Administration @ 15% ……. 1378

TOTAL COST ……. 10,654