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

Date of Report: 03/04/2003

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: Darnell

B. Fire Number: AZ-CNF-234

C. State: Arizona

D. County: Cochise

E. Region: 3

F. Forest: Coronado

G. District: Douglas

H. Date Fire Started: June 28, 2002

I. Date Fire Contained: July 17, 2002

J. Suppression Cost: $785,000

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

L. Watershed Number: 1504000602 (San Simon River – Cave Creek), 1504000601 (San Simon River – Deer Creek)

M. Total Acres Burned:
NFS Acres(5,220) Other Federal (0) State (0) Private (722)

N. Vegetation Types: grassland and mixed juniper-oak woodland

O. Dominant Soils: Typic Haplustalfs, Lithic Ustochrepts, Fluventic Ustochrepts

P. Geologic Types: Volcanic

Q. Miles of Stream Channels by Order or Class: 4 miles of first order streams, 1 mile of second order streams

R. Transportation System

Trails: 0 miles Roads: 0 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 4457 (low) 0 (moderate) 1485 (high)

B. Water-Repellent Soil (acres): 1485

C. Soil Erosion Hazard Rating (acres):
4457 (low) 0 (moderate) 1485 (high)

D. Erosion Potential: 3.73 tons/acre

E. Sediment Potential: 1593 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 3 to 10 years

This estimate is based on previous fires in the same area. Chaparral recovers in 3 years of less due to vigorous sprouting of the various chaparral species.

Oak Woodland will recover in 3 to 5 years based on leaf fall and grass recovery. Litter layer is expected to recover to pre-burn conditions in 10 years.

Grasslands are expected to recover in 2 years, grass litter is expected to return in 5 years under moderate grazing (based on observations made following changes in grazing management to moderate grazing after many years of heavier grazing).

B. Design Chance of Success, (percent): 100

Treatment is limited to eliminating grazing until grass has recovered (2 years).

C. Equivalent Design Recurrence Interval, (years): 10

D. Design Storm Duration, (hours): 24

E. Design Storm Magnitude, (inches): 2.6

F. Design Flow, (cubic feet / second/ square mile): 85

G. Estimated Reduction in Infiltration, (percent): 40

H. Adjusted Design Flow, (cfs per square mile): 120

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

The Darnell Fire burned very slowly through very rocky terrain.
Most of the area within the identified perimeter burned at low to moderate intensity.

As a result of a recent evaluation of the site 9/27/02, a watershed emergency still exists for a small portion of the fire. About 130 acres on the north facing slope of Sulphur Draw was a dense patch of manzanita. The grass component of this area was sparse to nonexistant prior to the fire, and no vegetation has germiniated. Other parts of the fire have responded with good stands of grass and annual forbs. Accelerated erosion has not yet occurred in this area, and we do not anticipate storms that will produce accelerated erosion until next summer. There is time to treat this area before the next damage producing storms.

Seeding completed 6/2003

Erosion Control Structures: No channel structures are proposed. There will be some local erosion and sedimentation that will change the character of some short reaches of riparian areas downstream from the fire. However, attempts to mitigate these situations would have a high risk of failure and are not proposed.

Road Channel Crossings: Major channels such as Horseshoe Canyon and Sulphur Draw are crossed with fords, and thus there are no known culverts or bridges to lose. If damage caused by burned area runoff or erosion to roads in these canyons is observed, an interim request for funds will be made if such a project is deemed necessary.

Trails: There are no trails within the fire.

Range Improvements:
Several fences have burned up. These are not damages that can be repaired with BAER money. Once these are inventoried, a request for funds under the appropriate authorities will be made.

The entire fire will require some rest from grazing. Two years of rest is recommended.

B. Emergency Treatment Objectives: Recovery of upland vegetation.

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

Land **80** % Channel **n/a** % Roads **n/a** % Other **n/a** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	N/a	80	N/a
Channel		N/a	

Roads		N/a	
Other			

E. Cost of No-Action (Including Loss): **$12,000**

F. Cost of Selected Alternative (Including Loss): $3,900

G. Skills Represented on Burned-Area Survey Team:

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

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H. **Treatment Narrative:**

The objectives are to encourage a return to pre-fire hydrologic conditions by encouraging growth of grasses. The return to pre-fire hydrology will be accomplished by seeding an unvegetated area and keeping cattle off the burned area.

As a result of the recent evaluation of the site, seeding is now recommended as a treatment for 130 acres of the Darnell Fire where a watershed emergency still exists. Seeding will be accomplished by a hand crew.

The proposed seed mix is:

Sideoats grama (Bouteloua curtipendula)	3.0 lbs/acre
Sand dropseed (Sporobolous cryptandrus)	1.0 lb/acre
Arizona fescue (Festuca arizonica)	1.0 lbs/acre
Barley(Hordeum vulgare)	4.0 lbs/acre

Land Treatments: The entire fire will require some rest from grazing. Two years of rest is recommended.

Channel Treatments: n/a

Roads and Trail Treatments: n/a

Structures: n/a

I. **Monitoring Narrative:**

Monitoring will be done as part of our Forest Plan and Range Allotment monitoring. We have riparian data from near the fire area that we can use to compare pre- and post-fire condtions.

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										
seed and application	acres	30.77	130	$4,000			$0		$0	$4,000
				$0			$0			
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Land Treatments				$4,000			$0		$0	$4,000
B. Channel Treatments										
		0	0	$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
Subtotal Road & Trails				$0			$0		$0	$0
D. Structures										
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Structures				$0			$0		$0	$0
E. BAER Evaluation										
Robert Lefevre	days	350	1	$350			$0		$0	$350
				$0			$0		$0	$0
				$350						$350
F. Monitoring				$0			$0		$0	$0
G. Totals				**$4,350**			**$0**		**$0**	**$4,350**

PART VII - APPROVALS

1. /s/ Jeanine A. Derby — 4/19/2004
   Forest Supervisor (signature) — Date

2. _____ _____
   Regional Forester (signature) — Date