USDA-FOREST SERVICE Date of Report: July 8, 1996

BURNED-AREA REPORT
(Reference FSH 2509.13, Report FS-2500-8)

PART I - TYPE OF REQUEST

A. Type of Report

[ ] 1. Funding request for estimated WFSU-FW22 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 and design analysis
[ ] Status of accomplishments to-date

[X] 3. Final report - following completion of work

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Peaks Complex B. Fire Number: P-32640

C. State: Arizona D. County: Coconino
E. Region: Southwestern (R-3) F. Forest: Coconino
G. District: Peaks

H. Date Fire Started: June 20, 1996 I. Date Fire Controlled: 07/03/96
J. Suppression Cost: $2,822,100.00

K. Fire Suppression Damages Repaired with WFSU-PF12 Funds:
1. Fireline waterbarred (miles) 30
2. Fireline seeded (miles) 30
3. Other (identify) Fire Camp (3 acres), Helispot (4 acres)

L. Watershed Number: 1502001616

M. NFS Acres Burned: 15,950 Total Acres Burned: 16,400
Ownership type:
(0)State (0)BLM (450)PVT (0)____ _____

N. Vegetation Types: Ponderosa Pine/Gambel Oak/Screwleaf Muhly; Douglas Fir/ Ponderosa Pine/Gambel Oak: Ponderosa/Pinyon Pine; JUMO
O. Dominant Soils: Typic Argiborolls; Mollic Eutroboralfs;Vitrandic Usto-chrepts; Mollic Eutroboralfs: Eutric Glossoboralfs
P. Geologic Types: Basalt, Cinders and Kaibab Limestone

Q. Miles of Stream Channels by Order or Class:
1 - 20.1 MI 2 - 8.0 MI 3 - 2.7 MI 4 - 0 MI

R. Transportation System:
Trails: 6.6 (miles) Roads: 17.8 (miles)

PART III - WATERSHED CONDITION

A. Fire Intensity (Acres): 10,764 (low) 1,859 (moderate) 3,327 (high)

B. Water Repellant Soil (Acres): 500

C. Soil Erosion Hazard Rating (Acres):
11,380 (low) 872 (moderate) 3,698 (high)

D. Erosion Potential: 11.0 tons/acre
E. Sediment Potential: 1,408 cu. yds/sq. mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period: 3 years.
B. Design Chance of Success: 50 percent.
C. Equivalent Design Recurrence Interval: N/A years.
D. Design Storm Duration: N/A hours.
E. Design Storm Magnitude: N/A inches.
F. Design Flow: N/A cfsm.
G. Estimated Reduction in Infiltration: 5 percent.
H. Adjusted Design Flow: N/A cfsm.

PART V - SUMMARY OF ANALYSIS

The Hockderffer Fire (later called the Peaks Complex) began June 20, 1996 and burned approximately 15,950 and 450 acres of National Forest System and private lands, respectively. The burn occurred within five vegetation types which included Douglas Fir, ponderosa pine/aspen, ponderosa pine/Gambels Oak, ponderosa pine/pinyon pine, and one-seed juniper. The fire is located entirely within Peaks District, Coconino National Forest and is located approximately 20 miles northwest of Flagstaff, Arizona within the Little Colorado Drainage System. The fire was fueled by record low fuel moistures and very strong winds. Fire intensities were high in portions of the burned area, but due to the fast moving nature of the fire, the development of water repellent soils was limited. In areas where fire intensities were high, the fire resulted in complete consumption of ground fuels and live vegetation; and a complete loss of protective vegetative ground cover.

The fire burned entirely within the Cedar-Deadman Watershed which is considered the upper portion of the Little Colorado System (approximately 237,000 acres in size) which eventually drains into the Colorado River. Even though the burned area does not contain any perennial waters, severely burned areas on moderately steep and steep slopes within the fire, especially those associated with Hockdeffer, Walker, and White Horse Hills, could generate substantial amounts of sediment into the Little Colorado System and effect water quality. The southern portion of the fire, which includes the aforementioned hills, is a popular area noted for its hunting and view of the San Francisco Peaks Wilderness Area. It visited each year by many hikers, hunters, and campers. The smoke created by the event did close State Highway 180 for a period of time. It was reopened once the threat of fire and highway smoke passed and fire suppression activities subsided within the area.

The major landform impacted by the fire (roughly 20 percent of the burn area), is the steep and very steep slope inclinations associated with White Horse Hill, Walker Lake, and Hockdeffer Hill. Soils are typically derived from cinders with inclusions of limestone parent materials. These soils were identified by the Coconino National Forest Terrestrial Ecosystem Survey has having a severe erosion hazard as well as soil loss rates exceeding the tolerance value once the vegetation and overstory is removed. The greatest potential for losses in site productivity and potential downstream impacts originates on these landforms.

The remaining 80 percent of the fire burned on nearly level valley plains and was generally light or not burned at all. Soils are derived mostly from basalt or cinders and contain varying amounts of surface rock. Erosion hazard is identified as mostly slight with some soils having a moderate erosion hazard.

A. Describe Emergency:

BAER survey of the area burned by the Hockdeffer Fire indicates the following emergency conditions exist:

Threat To Long-Term Soil Productivity.

Approximately 1,987 acres of soils occurring on moderately steep and steep slopes burned very hot in which all protective vegetative ground cover, live vegetation and ground fuels were consumed. Slopes average roughly 55 percent percent. Using the Universal Soil Loss Equation, it is estimated that soil loss rates will increase from the current 2 tons/acre/year to over 36 tons/acre/year. The soil loss tolerence for these units is 3 tons/acre/year. There is a high potential that on-site soil loss rates will increase dramatically, resulting in a loss of long-term soil productivity. Erosion hazard is mostly severe.

Threat To Water Quality.

Increases in sediment and turbidity are expected from the severely burned areas over 15 percent slope within the Cedar-Deadman Watershed. It is anticipated that this condition will be manifested mostly within the first and second order drainage systems originating from or adjacent too Hockderffer Hill, Walker Lake, and especially, White Horse Hill. Eighty percent of the projected increases in soil erosion and sedimentation are tied to these three features. The establishment of vegetative cover is anticipated to reduce this hazard and impacts to water quality are expected to be temporary once ground cover conditions improve.

B. Emergency Treatment Objectives:

The treatment objectives are to prevent on-site soil loss, minimize surface runoff, and to protect long-term soil productivity of severely burned soils on steep slopes. The proposed treatments are considered viable and are consistent with Forest Plan goals and other long term management goals of the area.

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

Land 50 % Channel N/A % Roads N/A % Other 100 % (Firelines)

D. Probability of Treatment Success

	<----Years after treatment-----> 1	3	5
Land	50	60	70
Channel	N/A	N/A	N/A
Roads	N/A	N/A	N/A
Other (Firelines)	75	90	100

E. Cost of No-Action (Including Loss): $1,586,227.00

F. Cost of Selected Alternative (Including Loss): $ 878,890.00

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology	[X] Soils	[ ] Geology	[X] Range
[X] Timber	[X] Wildlife	[X] Fire Mgmt.	[ ] Engineering
[X] Contracting	[ ] Ecology	[ ] Research	[ ] Archaeology
[ ] _____	[ ] _____	[ ] _____	[ ] _____

Team Leader: Dave Brewer
Phone: (520) 635-8200 DG Address: D.Brewer:R03F07A

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.

Approximately 2,000 acres of soils occurring on steep slopes within the mixed conifer andponderosa pine forest were intensely burned. The following seed mix is proposed to be used with the objective of protecting soils against excessive on-site soil loss and sedimentation of downstream waters.

Western Wheatgrass.....50%
Mt. Brome.....30%
Blue Flax.....10%
Regreen.. .....10%

Seed at a rate of 10.0 pounds/acre to achieve approximately 20 seeds per sq ft.

Regreen is a unique hybrid selected that can be a significant aid in the establishment of perennial grasses on severely disturbed sites during the period of time when the watershed is most at risk. Due to its seed sterile characteristics, the original seedling dies out within two to three years as the slower growing perennials become established. The Blue Flax was selected due to its drought tolerant capabilities. The other grasses were selected to give site stability over time.

PART VI - EMERGENCY REHABILITATION TREATMENTS AND SOURCE OF FUNDS BY LAND OWNERSHIP

NOTE: Emergency rehabilitation is work done promptly following a wildfire and is not to solve watershed problems that existed prior to the wildfire.

			NFS Lands			Other Lands		All
Line Items	Units	Unit Cost $	Number of Units	WFSU-FW22 $	Other $ _____ ident.	Number of Units	Fed $ _____ ident.	Total $
A. LAND TREATMENTS								
Seeding (Natives)								
10 lbs/ac @ $2.35	Acres	23.45	2,000	$46,900				$46,900
Aerial Application	Acres	$4.26	2,000	$8,528				$8,528
Salary (288 Hours)	Acres	$1.60	2,000	$3,205				$3,205
B. CHANNEL TREATMENTS								
C. ROADS AND TRAILS								
D. STRUCTURES								
E. BAER EVALUATION/ ADMINISTRATIVE SUPPORT								
F. TOTALS				$58,633				$58,633

PART VII - APPROVALS

1. /s/ Fred Trevey — October 4, 1996
   Forest Supervisor (Signature) — Date

2. _____ _____
   Regional Forester (Signature) — Date