United States Department Of Agriculture | Forest Service | Shasta-Trinity National Forest

Rock 91

Date: September 14, 1992

Reply To: 2520/6520

Subject: Rock Fire BAER Final Report

To: Regional Forester
Attn: Andrew Leven

The Rock fire Burned Area Emergency Rehabilitation project goals and objectives were completed in early November, 1991. Additional funding beyond the interim request is needed to effectively cover the additional costs of materials and salaries needed to complete the burned area rehab work.

Riparian seeding was increased to 11 acres because additional opportunities were found in treatment areas. These areas were also mulched to decrease the chance of surface runoff. Helicopter commercial land and non commercial land seeding was more costly due to the need of field verifiers. The actual amount of stream structures installed was slightly increased to 598. Several culvert armorment/energy dissipators along road drainage structures were added as an additional erosion prevention opportunity. Field inspections found there was a need for 2 more metal aprons to be installed and debris removed from the road and road drainage structures. A gate was installed, closing off a road system to reduce surface erosion, rilling, and surface runoff caused by winter traffic.

Field reconnaissance of the BAER work this winter has shown relatively high success. The aerial and riparian seeding has generated sprouts with a 89% coverage rate. Riparian areas that were seeded and mulched have a coverage rate of 98%. Channel structures were very successful in trapping and holding on site approximately 500 cubic yards of mobilized sediment. The gate installed has successfully kept winter traffic off the road and prevented damage to the road, road cutbanks and loading of stream channels with road related sediment.

The total additional request for final funding is just under $12,000 for a total cost of $93,071. Please feel free to contact Annetta Mankins, Scott Miles, or Darrel Ranken regarding this request if you have any questions or comments. Thank you.

WILLIAM V. CARPENTER
FOREST SUPERVISOR (Acting)

USDA-FOREST SERVICE Date of Report: **September 14, 1992**

BURNED AREA REPORT
(Reference FSH 2509.13, Report FS-2500-8)
R5 DG 7/90 rev.

PART I - TYPE OF REQUEST

1. Type of Report

   [X] A. Funding (Request for estimated FFFS-FW22 funds)
   [X] B. Accomplishment Report

2. Type of Action

   [ ] A. Initial (estimated funding is first requested)
   [ ] B. Interim

      a. [ ] Updating the initial funding request.
      b. [ ] Supplying information for accomplishments to date on emergency work underway.

   [X] C. Final

      a. [ ] Best estimate for funds needed to complete eligible
      b. rehabilitation measure.
      [X] Following completion of funded work.

PART II - FIRE LOCATION

a. Fire Name (from Form FS-5100-29): **ROCK**
b. Forest Supervisor's Fire No. (from Form FS-5100-29): **237**
c. State: **CALIFORNIA**
d. County: **TRINITY**
e. Region: **5**
f. Forest: **SHASTA-TRINITY**
g. Ranger District: **HAYFORK**
h. Date Fire Started: **9/18/91**
i. Date Fire Controlled: **9/22/91**
j. Estimated Suppression Costs: **$ 1.8 MILLION**
k. Fire Suppression Damages Repaired with FFFS-PF12 Funds:

   1. **7.5** miles (firelines waterbarred)
   2. **0** acres (firelines seeded)
   3. **10** acres (fireline mulched)

l. Fire Intensity: **12** % (low) **38** % (medium) **50** % (high)

PART III - NATIONAL FOREST SYSTEM PROBLEM INVENTORY

a. Watershed No.: **18-01-02-12-01**

b. NFS Acres Burned: **1199** Total Acres Burned: **1290**
Ownership type: (list acres if known)
( )State; ( )BLM; (**91**)PVT;( )Other_____ c. Water Repellant Soil: **73** % of NFS acr burned

d. Vegetation Types: **BRUSH, BRUSH/MINOR CONIFER, MIXED CONIFER, MINOR GRASS**

e. Geologic Types: **META-ANDESITES, SHALES, CONGLOMERATES, MINOR** DIORITE AND ULTRAMAFICS.

f. Soil Erosion Hazard Rating:

5 % (low) **33** % (medium) **62** % (high)

g. Erosion Potential: **1750** cu. yds/sq. miles

h. Miles of Stream Channels by Regional Order or Classes: **(13) 1ST, 2ND, 3RD**

i. Miles of Forest Service Trails: **0**

j. Miles of Forest Service Roads by Maintenance Levels:

.35 miles (Level I) **2.33** miles (Level II)
1.40 miles (Levels III, IV, V)

PART IV - CALCULATED RISK AND CLIMATIC EVALUATION

a. Estimated Vegetative Recovery Period: **10** years.
b. Chance of Success Desired by Management: **80** percent.
c. Equivalent Design Recurrence Period: **25** years.
d. Related Design Storm Duration: **6** hours.
e. Related Design Storm Magnitude: **2.23** inches.
f. Related Design Flow **121** cfsm.
g. Estimated Reduction in Infiltration: **20** percent.
h. Adjusted Related Design Flow: **143** cfsm.

PART V - SUMMARY OF SURVEY AND ANALYSIS

a. Skills Represented on Burned Area Survey Team ("x" appropriate boxes):

[X] Hydrology [X] Soils [X] Geology [ ] Range
[X] Timber [ ] Wildlife [ ] Fire Mgmt. [X] Engineering
[ ] Contracting [ ] Local Mgmt. [ ] Research [X] Other (Fisheries)

b. Describe Emergency:

The possibility exists for the loss of up to 20 domestic water users and Class I and Class fisheries habitat from anticipated sediment in the event of a R.I. 5 year storm or greater. Soil lo could be high in some of the steeper slopes with erosive meta-andesite above private residence Timber production could be reduced on up to 200 acres due to loss of soil and long term sc productivity.

c. Emergency Rehabilitation Objective:

Stabilize soil on steep slopes and prevent downcutting in stream channels therby, providir maintenance of water quality to beneficial users.

d.Probability of Completing Treatment Prior to First Major Damage Producing Storm: **Predicted to b good since there is no significant rain producing storm in the forcast and most of the importa work will be completed within the first seven days of the operation.**

Land **100** % Channel **80** % Roads **100** % Other ___ %

e. Net Environmental Quality Benefit Index:

[**X**] Significant [ ] Not Significant

f. Net Social Well Being Benefit Index:

[**X**] Significant [ ] Not Significant

g. Benefit/Cost Ratio: **4.8**
h. Net Benefits: **$ 233,975**
i. Cost Effectiveness Index: [**X**] I. [ ] II. [ ] III. [ ] IV

PART VI - ELIGIBLE EMERGENCY REHABILITATION MEASURES OR TREATMENTS AND SOURCE OF FUNDS

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 Lands
Line Items	Units	Unit Cost $	No. of Units FW22 ident.	FFFS-$	Other $ Units ident.	No. of Units identify	Federal$	Non-Federal$	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
A. LAND seeding									
a. Riparian seeding	Acres	325	11	3575					3,575
b. Non comercial	Acres	32	300	9600					9,600
c. Commercial	Acres	32	350	11200					11,200
d. Riparian Plant.	Acres	250	25	6250					6,250
B. CHANNELS									
a. Stabilizing streambanks	Miles	21M	.45	9450					9,450
c. Checkdams in streamchannels	Each	77	598	46046					52,460
d.									
C. ROADS AND TRAILS									
a. Culvert Outlet armorment	each	50	27	1350					1,350
b. Metal Aprons	each	500	7	3500					3,500
c. Debris Removal	each	100	16	1600					1,600
d. Install Gate	each	500	1	500					500
D. MAJOR STRUCTURES									
a. Preplanned - from Forest Plans	None								
E. TOTAL				$93,071			$	$	$ 99,485

PART VII - APPROVALS

Forest Supervisor (Signature) Date

Regional Forester (Signature) Date

S-2500-8

VIII - TREATMENT NARRATIVE (see Part VI)

Sediment check dams, side channel reventment walls, and head cut stabilization structures will be conconstructed to impede channel widening and downcutting. Check dams would provide additional storage locations for sediment contributed from side slopes. Many naturally occuring sediment check dams were burned out by the fire. Without reconstruction these sites will produce large quantities of sediment.

Nine acres of riparian watercourse will be planted with orchard grass, pubescent wheat grass, and timothy at the following rate:

Species	lbs. / Acre	Seeds / sqft
Pubescent Wheatgrass	15	30
Orchard Grass	2	25
Timothy	1	30
Totals	18	85

Straw mulch will be applied to improve germination at a rate 1 ton per acre.

25 acres will be planted with indigenous riparian species to provide root trapping behind check dams. Planting will be conducted after initial sediment movement and trappment behind dams.

The aerial seeding treatment will consist of application of 65000 lbs for 650 acres (100 lbs/acre) of cereal rye, if available, or another cereal grain species if unavailable. This species has been shown to have good germination rates and produce effective ground cover in less than one year. It is also acceptable from a reforestation standpoint as it does not persist in the applied area beyond 5 years.

Road work will consist of armorment of culvert outlets with rock and/or immobile woody debris. This would effectively inhibit the scouring effects of water exiting an elevated culvert opening. Metal aprons will be installed at selected culvert inlets to prevent obstruction and possible loss of fill material from debris. Selected water course reaches above culvert inlets will be cleaned of excessive channel debris to prevent obstruction in those culverts not treated with aprons.