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Ken entered.

FS-2500-8 (8/93)

USDA-FOREST SERVICE Date of Report: 3/8/95

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[ ] 1. Funding request for estimated EFFS-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)

[X] 2. Interim Report
[ ] Updating the initial funding request based on more accurate site data and design analysis
[X] Status of accomplishments to date

[ ] 3. Final report - following completion of work

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Copper Butte B. Fire Number: WA-COF-056

C. State: Washington D. County: Ferry
E. Region: R6 F. Forest: Colville
G. District: Republic & Kettle Falls

H. Date Fire Started: 07/23/94 I. Date Fire Controlled: 8/19/94
J. Suppression Cost: $ 5,400,000 (estimated)

K. Fire Suppression Damages Repaired with EFFS-PF12 Funds:
1. Fireline waterbarred (miles) 39
2. Fireline seeded (miles) 18
3. Other (identify) 8 mi. trail rehab, 12 miles road rehab, 0.75 mi fence repair

L. Watershed Number: 1702000272 (Curlew Creek); 1702000493 (Sanpoil Creek)
1702000262 (Boulder Creek)

M. NFS Acres Burned: 8,672 Total Acres Burned: 10,580
Ownership type:
(66)State (1,342)BLM (500)PVT ( )

N. Vegetation Types: Sub-alpine Fir/Lodgepole Pine

O. Dominant Soils: Andic Cryumbrepts; Typic Cryandepts: Mollic Vitrandepts; Andic Xerochrepts; Typic Cryorthods, & Entic Cryandepts

P. Geologic Types: Granitic rocks, chert bearing metamorphic rocks, and glacial till in the lower elevations

Q. Miles of Stream Channels by Order or Class:
I: 0 miles II: 0.5 mi III: 15.8 mi IV: 22.1 mi

R. Transportation System:
Trails: 29.5 miles Roads: 28.3 miles

PART III - WATERSHED CONDITION

A. Fire Intensity (acres): 4,460 (low) 3,315 (moderate) 2,785 (high)

B. Water-Repellent Soil (acres): None identified

C. Soil Erosion Hazard Rating (acres):
3,168 (low) 4,366 (moderate) 3,026 (high)

D. Erosion Potential: 2.9 tons/acre
E. Sediment Potential: 1700 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period: 5 years
B. Design Chance of Success: 80 percent
C. Equivalent Design Recurrence Interval: 25 years
D. Design Storm Duration: 6 hours
E. Design Storm Magnitude: 1.5 inches
F. Design Flow: 31 cubic feet per second per square mile
G. Estimated Reduction in Infiltration: 2 percent
H. Adjusted Design Flow: 32 cubic feet per second per square mile

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency: **Fire burned in high elevation headwaters of several streams on both sides of the Kettle Crest. Soils in the area exhibit rapid run-off and severe to very severe erosion potentials, especially on steeper slopes. Some of the intensively burned areas (Lambert Creek drainage) contain numerous steep, confined channels prone to gullying and debris torrents. Several debris jams are already present in N. Fork Lambert Creek. Potential damages include 19 road crossing failures, stream channel destabilization, and damage to downstream fisheries.**

B. Emergency Treatment Objectives: **Accelerate recovery and stabilization of steep, intensively burned slopes through revegetation; minimize identified potential for debris torrents in steep, confined 1st and 2nd order channels by stabilizing stream adjacent slopes with grasses and sediment control structures; remove road crossings with high risk of failure.**

C. **Probability of Completing Treatment Prior to First Major Damage-Producing Storm:**
Land 90 % **Channel** 90 % **Roads** 90 % **Other** 90 %

D. **Probability of Treatment Success**

	<----Years after treatment-----> 1	3	5
Land	50	90	N/A
Channel	90	90	90
Roads	90	90	90
Other	90	90	N/A

E. Cost of No-Action (Including Loss): $ 281,268

F. Cost of Selected Alternative (Including Loss): $ 185,988

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: James E. McGowan
Phone: 509-684-7210 Electronic Address: R06F21A

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 following treatments are proposed to mitigate potential damages to site productivity, stream channel stability, and downstream resources (roads, fisheries, and riparian habitat.

Land Treatments: Purpose: minimize soil loss and/or reductions in site productivity (including noxious weed establishment), reduce introduction of additional sediment and debris into stream channels, and protect rehabilitation efforts until vegetative recovery has been initiated.

Treatment #1: Aerial seed all high-intensity burned areas (2,785 acres) with a mixture of soft winter wheat and sheep fescue at a combined rate of 43 pounds per acre. Hand seed approximately 10 acres (same seed mix and application rate) along the Kettle Crest Trail to allow avoidance of known Phacelia franklinii sites (This R-6 Sensitive Species is disturbance dependent, and expected to recover naturally if competition with re-seeded grasses is minimized.)

INTERIM COMPLETION REPORT: Both hand and aerial seeding were used in the rehabilitation. A mixture of winter wheat and sheep fescue mixed at 28:2 was used.

Aerial seeding of the high intensity burned areas was started Sept 19 and completed Sept 22. The above seed mixture was applied 30 pounds per acre. Heavy application rates were used because of the steepness of slopes and the weight of the wheat seed. Seeding occurred on approximately 1900 acres of steeply sloped intensely burned forest where little vegetation was resprouting. Some intensively burned areas were not seeded due to excessively rocky soils or vegetation regrowth. Four treatment plots were set up off the 2165-300 road to test the effectiveness of seeding in that area. The plots will be monitored by the Forest Botanist. On November third, reports are that the fescue had sprouted on the middle slopes of Lambert creek. The wheat had not sprouted yet. Cost of aerial seeding: $29953.

Resources of cultural significence on BLM land were seeded by the BLM using the above seed mix. Seeding occurred in the following areas:

T37N, R34E, Sec. 5, NW 1/4, NE 1/4;
" " Sec. 6, NW 1/4, NE 1/4, SE 1/4;
" " " SW 1/4, SE 1/4, SE 1/4;
" " " SW 1/4, SE 1/4, SE 1/4;
" " Sec. 7, NE 1/4, NW 1/4, NE 1/4;
" " " NE 1/4, SE 1/4, NE 1/4;
" " " SW 1/4, SE 1/4, NE 1/4;
" " Sec. 8, NW 1/4, SE 1/4, NW 1/4;
" " " NE 1/4, NW 1/4, SE 1/4.

Treatment #2: Install temporary range fences and cattleguards on the east side of the Kettle Crest to prevent cattle from entering the Lambert Grazing Allotment until grasses and other vegetation have become established enough to tolerate grazing. Four miles of fence and 2 cattleguards are prescribed.

INTERIM COMPLETION REPORT: Three miles of fence were completed by the Republic and Kettle Falls range crews. The remaining fence and cattleguards will be installed before cattle are allowed on adjacent allotments.

Channel Treatments: Purpose: Control introduction and movement of sediment in stream channels; minimize movement of sediment and debris into downstream areas to reduce impacts to road crossings, fisheries, and riparian habitats.

Treatment: Install 21 gully control check dams and 2 sediment catch basins adjacent to the N. Fork Lambert Creek to control sedimentation from steep, highly erosive slopes that recieved high intensity burns.

INTERIM COMPLETION REPORT: Sediment catch basins and gully control check dams were installed Oct 12th. Check dam materials $1344.60.

Roads and Trail Treatments: Purpose: protect existing investment in roads and trails by preventing material from plugging culverts and controlling expected increases in run-off.

Treatment #1: Remove culvert from Road #250 where it crosses the unnamed drainage in Section 8, T37N, R34E. Remove fill to natural ground line and rock crossing with angular rock.

INTERIM COMPLETION REPORT: Rehab of 250/BLM road was completed by leaving an old culvert in place and constructing a drivable drain drip just north of the culvert. This was done rather than the originally planned culvert removal because of the fear that removal would create a drivable mud hole. This was completed in the beginning of November.

Treatment #2: Install additional waterbars and improve drainage on approximately 29 miles of trail.

INTERIM COMPLETION REPORT: Trail rehabilitation for the Old Stage, Marcus, Stickpin, Kettle Crest, Mt. Leona, and Midnight trails, was completed by contract. The contract inspector hand seeded the trails with the above seed mixture following contract inspection. Work was completed in early October. This work will be monitored and supplemented as needed to handle spring run-off.

Treatment #3: Remove failed crossing on Road #300 on the N. Fork Lambert Creek, restore stream channel, and stabilize stream banks to prevent further damage.

INTERIM COMPLETION REPORT: The crossing has been removed. A small amount of additional road work will be completed in the spring.

Structures: **Purpose: Control introduction of sediment and debris into stream channels until revegetation has provided sufficient ground cover to prevent overland flows of sediment.**

Treatment: Install 12 sediment fences (total length approximately 2000 feet) in swales adjacent to the unnamed drainage described above (N. side of Belcher Mountain) to control sediment flow from intensively burned side-slopes.

INTERIM COMPLETION REPORT: Eight silt fences were installed over one half mile (approximately) of the un-named creek off the BLM 250 road on Sept 13 and 14th. Three of the fences are on BLM land and five are on FS land. The fences were inspected for proper placement and installation. **The fences will need to be monitored and removed in the spring.**

REHABILITATION COSTS TO DATE (THRU JANUARY 31, 1995) = 57568.07

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

Line Items	Units	Unit Cost $	NFS Lands			Other Lands			All Total $
			Number of Units	EFFS-FW22 $	Other $ _____ ident.	Number of Units	Fed $ _BLM_ ident.	Non-Fed $ _____ ident.	
A. LAND TREATMENTS									
AERIAL SEEDING	ACRES	42	2382	100044	300	363	15246		115590
HAND SEEDING	ACRES	50	10	500	200				700
TEMP. RANGE FENCES	MILES	2000	4	8000	11200				19200
CATTLEGUARDS	EACH	3000	2	6000	1000				7000
B. CHANNEL TREATMENTS									
GULLY CONTROL CHECK DAM	EACH	750	21	15750	500				16250
SEDIMENT CATCH BASINS	EACH	75	2	150	500				650
C. ROADS AND TRAILS									
CULVERT REMOVAL	EACH	1000	1				1000		1000
WATERBAR INSTALLATION	MILES	690	29	20010					20010
ROAD CROSSING REHAB	EACH	2500	1	2500					2500
D. STRUCTURES									
SILT FENCES IN SWALES	EACH	149	9	1341	100	3	447		1888
E. BAER EVALUATION/ ADMINISTRATIVE SUPPORT									
ID TEAM SALARY				12000			600		12600
CONTRACTING & ADMIN.				1000			200		1200
F. TOTALS				167295	13800		17493		198588

PART VII - APPROVALS

1. _____ _____
Forest Supervisor Date

2. _____ _____
Regional Forester Date