

United States
Department of
Agriculture

Forest Service

Nez Perce N.F.

REPLY TO: Watershed Protection and Management

DATE: AUGUST 22, 1988

SUBJECT: Green Creek Point Burned Area Report

TO: Regional Forester

Enclosed is the Burned Area Report for the Green Creek Point Fire. This is an amended request for \$19,830 in emergency rehabilitation funds to mitigate the high potential for erosion and sedimentation of Sears Creek, a tributary of the South Fork of the Clearwater River.

Intense fire on one portion of this burn has resulted in conditions that threaten water quality, and pose a threat to downstream homes, Forest Road 1106 and Idaho State highway 13. Without sediment mitigation, timber harvest in the Sears Creek watershed could be constrained in the next decade because of sediment resulting from this fire.

Initial sediment control features, including the sediment basin, was installed on August 20.

Rehabilitation measures foregone in this request include mulching the seeded area (\$3000), planting shrubs in the riparian area (\$8800), additional log check dams in channels (\$2175), sediment removal (\$1500), and log structures on lower slopes (\$780). Other sources of funding will be sought for these projects.

/S/David Fischer for

TOM KOVALICKY
Forest Supervisor

Funded at the amended level

DATE: 19 AUGUST, 1988

BURNED AREA REPORT

PART I - TYPE OF REQUEST

1. A. Funding Request
2. A. Amended

PART II - FIRE LOCATION

1. Fire name: GREEN CREEK POINT
2. Supervisors Fire Number: 025
3. State: IDAHO
4. County: IDAHO
5. Region: R-1
6. Forest: NEZ PERCE
7. Ranger District: CLEARWATER
8. Date Started: 15 AUGUST, 1988
9. Date Controlled: 18 AUGUST, 1988
10. Estimated suppression costs: \$150,000
11. Fire suppression damage repaired with FFF 102 funds:
 - a. 2.4 . miles of firelines waterbarred
 - b. 2.2 . acres of firelines seeded
 - c. .X. . other (identify) 1.4 MILES OF SKID ROAD CLOSED, 2.3 MILES
SYSTEM ROAD CLOSED
12. Fire intensity 12 % low 34 % medium 54 % high

PART III - NATIONAL FOREST SYSTEM PROBLEM INVENTORY

1. Watershed Number: 17070305-07-02 SEARS CREEK
2. NFS acres burned: 98
3. Water repellent soil: 88 % NFS acres burned at high intensity
4. Vegetation types: GRAND FIR/CLINTONIA 80%, CEDAR/CLINTONIA 20%
5. Geologic types: GNEISS AND GRANITE
6. Soil erosion hazard rating: 0 % low 34 % medium 66 % high
7. Erosion potential: 309 cu.yd./sq.mi. TOTAL FOR FIRST 2 YEARS.
8. Miles stream channel by regional order or class: .8 MILES 1ST ORDER
9. Miles FS trails: 0
10. Miles FS roads by maintenance level:
 - a. 2.3 (level I)
 - b. (level II)
 - c. (level III, IV, V)

BURNED AREA REPORT

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PART IV - CALCULATED RISK AND CLIMATIC EVALUATION

1. Est. veg. recovery period: 3 years
2. Chance of success desired by management: 95 %
3. Equivalent design recurrence: 100 years
4. Related design storm duration: 1/2 hours
5. Related design storm magnitude: .90 inches
6. Related design flow: 55 cfs
7. Estimated reduction in infiltration: 50 %
8. Adjusted related design flow: 83 cfs

PART V SUMMARY OF SURVEY AND ANALYSIS

1. Skills represented on burned area survey team (list as appropriate):
1.SOILS 2.HYDROLOGY 3.TIMBER 4. ECONOMICS
2. Describe emergency: VERY HIGH INTENSITY BURN ON 60-100 PERCENT SLOPES AND IN FIRST ORDER DRAINAGE HAS LEFT 60 ACRES VERY SUSCEPTIBLE TO EROSION ON SIDESLOPES AND SEDIMENTATION AND CHANNEL SCOURING IN THE DRAINAGE.
3. Emergency rehabilitation objective: 1) PRESERVATION OF DOWNSTREAM WATER QUALITY 2) PRESERVATION OF DOWNSTREAM ROADS AND STRUCTURES 3) MAINTENANCE OF SOIL STABILITY AND PRODUCTIVITY.
4. Probability of completing treatment prior to first major damage producing storm:
Land 75 % Channel 90 % Roads 90 % Other %
5. Net Environmental-quality benefit index: SIGNIFICANT (1.0)
6. Net Social-well-being benefit: SIGNIFICANT
7. Benefit/cost ratio: 23.42
8. Net benefits: \$ 444,664
9. Cost effectiveness index (choose one): a. I

BURNED AREA REPORT

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PART IV ELIGIBLE EMERGENCY REHABILITATION MEASURES OR TREATMENTS AND SOURCE OF FUNDS

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

NFS LANDS

	Units	Unit cost	Units #	FFF 092 \$	other \$
A. LAND	.	.	.	.	.
SEEDING	Acres	37.5	60	2250	.
FERTILIZING	Acres	17.0	60	1000	.
LOG STRUCTURES	Each	1.0	1000	1000	.
B. CHANNELS	.	.	.	.	.
CHECK DAMS	Each	120.0	70	8400	.
LOG STRUCTURES	Each	19.0	220	4180	.
C. MAJOR STRUCTURES	.	.	.	.	.
SEDIMENT BASIN	Each	3000.0	1	3000	.
D. TOTAL	.	.	.	19830	.

PART VII - APPROVALS

for Forest Supervisor approval and date: /s/ .David Fischer 24 August 1988.
Regional Forester approval and date: /s/

Green Creek Point Fire
FSH 2509.13 - Burned-Area Emergency Rehabilitation
Cost Effectiveness Analysis
Chapter 30

ECONOMIC-BENEFIT INDEXES

note: a discount rate of 8.625% is used.

Costs of Rehabilitation

Measure/Treatment	Cost	Present Value
Year 0 (1988)	\$ 8,400	\$ 8,400
Stream channel structures	4,180	4,180
Draws needing structures	3,000	3,000
Sediment basin	1,000	1,000
Log structures across lower slopes	2,250	2,250
Seeding	1,000	1,000
Fertilizing		
	\$ 19,830	\$ 19,830
Total	\$ 19,830	\$ 19,830
Total Costs		

Benefits of Rehabilitation

Year 3 (1991)		
Resource related damage -	\$ 0	\$ 0
Timber w/o treatment	1,057,446	825,028
Timber w/ treatment	\$ 1,057,446	\$ 825,028
expected damage reduction		

Based on the following assumptions:

5 MMBF stumpage valued at \$124.58/MBF (TECALC)	= \$ 622,900
4.0 miles of road reconstruction priced at \$5400/mile	= < 21,600 >
360 acres of sale prep/admin costs at \$16.54/acre	= < 5,954 >
Total undiscounted timber benefits foregone	= \$ 595,346

Benefit Cost Summary

Discounted Benefits (discounted at 8.625%)	\$ 464,494
Discounted Costs	19,830
Present Net Value	\$ 444,664
Benefit-Cost Ratio	23.42
Project Favorability	Favorable (F)

ENVIRONMENTAL QUALITY

Environmental Quality Benefit Index

1 Environmental Quality Criteria	2 Weighting Factor 1-10	3 Without Adverse Effect Index (0-2)	4 Treatment Weighted Value	5 With Treatment Adverse Effect Index (0-2)	6 Treatment Weighted Value	7 Net Difference Benefit Index (0-2)	8 Weight. Value
Erosion and Sediment	10	2	20	0	0	2	20
Aesthetic Land Quality	2	1	2	0	0	1	2
Water Quality	10	2	20	1	10	1	10
Site Productivity	4	1	4	0	0	1	4
Fish Habitat	6	1	6	0	0	1	6
Wildlife Habitat	3	1	3	0	0	1	3
Total	35		45		10		45
Average Weighted Index =			1.3		.3		1.0

Net Environmental Quality Benefit Index = 1.0 (significant)

Significance Index

0.7 or higher = Significant Benefit (S)
 Less than 0.7 = No Significant Benefit (NS)

Adverse Effect Index (with and without treatment)

0 = Little or no expected damage
 1 = Moderate potential damage
 2 = High potential damage

RISK OF EROSION AND SEDIMENT DAMAGE

Type of Damage	Unit	Risk
Sheet and gully	60 Acres affected	high
Streambank disturbance (soil and vegetation)	.4 miles of stream	high
Channel scour	.4 miles of channel	high
Sediment deposition in channel affecting capacity	.4 miles of channel	moderate
Soil erosion, loss of soil results in permanent loss of onsite productivity. Some degree of recovery possible.	60 Acres affected	high
Damage to downstream roads structures due to debris flows	2 roads (1 is a state highway) 1 home	moderate

SOCIAL WELL-BEING

Security of life, health, and safety - One home could potentially be effected by debris flows if the proposed measures are not implemented. Without treatment there would be a moderate potential effect. With treatment there would be no or little expected effect.

The remaining social well-being criteria will not be effected by the rehabilitation measures proposed:

Employment - the effect on local employment will be insignificant

Recreational opportunity - there are no recreational facilities in the burn area.

Economic stability - there will be no disruption of normal business patterns.

Income distribution - the proposed measures could potentially effect a lower average income family if not implemented.

Preservation of special uses - there are no cultural, historical, or scientific sites that will be affected by implementation of the proposed measures.

Social Well-Being Benefit Index

Because of the moderate potential effect of flooding an existing home downstream, the social well-being index is significant (S).

Putnam and I have reviewed the Green Creek Point burned area report and have some reservations about the proposal. Its hard to believe that 60 acres of severely burned headwaters watershed can threaten downstream structures. Some specific problems with the report:

You can't plant shrubs as an emergency treatment, benefits take too long.

You can't maintain structures with emergency funds.

The discount rate is 8.625%.

The economic benefits to timber look strange. Apparently the site will have no future benefit for timber production if not treated. Is the concern protection of soil productivity?

We suggest you scale the project back to land treatments minus planting shrubs. The structural channel treatments proposed should be reevaluated. Ninety log check dams in 0.8 miles of channel is one every 35 feet. The sediment trap could be a future maintenance problem. Six hundred dollars per acre treatment costs seem excessive. It would be a good idea to keep project costs within the Regional Forester's \$20M approval authority.