

BURNED AREA REPORT

(Reference FSH 2509.13, Report FS-2500-A)

Date of Report

July 14, 1985

PART I — TYPE OF REQUEST

1. Type of Report

A. ☒ Funding (Request for estimated FFF funds)B. ☐ Accomplishment Report

2. Type of Action

A. ☒ Initial (estimated funding is first requested)B. ☐ Interima. ☐ Updating the initial funding requestb. ☐ Supplying information for accomplishments to date on emergency work underwayC. ☐ Finala. ☐ Best estimate for funds needed to complete eligible rehabilitation measureb. ☐ Following completion of funded work

PART II — FIRE LOCATION

1. Fire Name (From Form FS-5100-29)

Sand Point

2. Forest Supervisor's Fire No. (From FS-5100-29)

715505

3. State

MT

4. County

Judith Basin

5. Region

1

6. Forest

Lewis & Clark

7. Ranger District

Judith

8. Date Fire Started

7/3/85

9. Date Fire Controlled

7/12/85

10. Estimated Suppression

\$1,524,000

11. Fire Suppression Damages Repaired with FFF 102 Funds

a. 25.3 miles (firelines waterbarred)b. 32 acres (firelines seeded)c. Other (identify) Helispots and
roads seeded 31 acres

12. Fire Intensity

a. 10 % (low)b. 70 % (medium)c. 20 % (high)

PART III — NATIONAL FOREST SYSTEM PROBLEM INVENTORY

1. Watershed No.

1004-010318

2. NFS Acres Burned

11,300

3. Water Repellant Soil

90 % of NFS acres burned

4. Vegetation Types

Douglas fir and lodgepole pine cover types
on AF/Libo and DF/AMV H.T.'s

5. Geologic Types

Limestone w/inclusions of rhyolite and sandstone

6. Soil Erosion Hazard Rating

a. 80 % (low)b. 20 % (medium)c. 0 % (high)

7. Erosion Potential

20,650 cu. yds/sq. miles

8. Miles of Stream Channels By Regional Order or Classes

Order 3 0 1.5 miles; order 2 3.5 miles; order 1 - 15.0 miles

9. Miles of Forest Service Trails

8.3

10. Miles of Forest Service Roads By Maintenance Levels

a. 1 miles (Level I)b. 0 miles (Level II)c. 0 miles (Levels III, IV, V)

PART IV — CALCULATED RISK AND CLIMATIC EVALUATION

1. Estimated Vegetative Recovery Period (Years)

5 years

2. Chance of Success Desired By Management (Percent)

80%

3. Equivalent Design Recurrence Period (Years)

24 years

4. Related Design Storm Duration (Hours)

0.5

5. Related Design Storm Magnitude (Inches)

1.04"

6. Related Design Flow (cfs)

44 cfs

7. Estimated Reduction In Infiltration (Percent)

80% (short term)

8. Adjusted Related Design Flow (cfs)

Not applicable

PART V - SUMMARY OF SURVEY AND ANALYSIS

1. Skills Represented on Burned Area Survey Team (x appropriate boxes)

- a. ☒ Hydrology b. ☒ Soils c. ☐ Geology d. ☐ Range e. ☒ Timber f. ☒ Wildlife
g. ☐ Fire Mgmt. h. ☐ Engineering i. ☐ Contracting j. ☒ Local Mgmt. k. ☐ Research l. ☒ Other

2. Describe Emergency

fisheries (Identify)

Lightning caused fire degraded watershed condition creating hazard to upper Missouri Cutthroat population (a species of special concern to Montana Fish, Wildlife & Parks).

3. Emergency Rehabilitation Objective

Stabilize watershed and minimize effects on fish habitat and population.

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

a. 80 % (land) b. % (channel) c. % (roads) d. % (other) (identify)

5. Net Environmental Quality Benefit Index

a. ☒ Significant b. ☐ Not Significant

6. Net Social Well Being Benefit Index

a. ☒ Significant b. ☐ Not Significant

7. Benefit/Cost Ratio

.76

8. Net Benefits

\$9890

9. Cost Effectiveness Index

a. ☐ I b. ☒ II c. ☐ III d. ☐ IV

PART VI - ELIGIBLE EMERGENCY REHABILITATION MEASURES OR TREATMENTS & 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.

Line Items (1)	Units (2)	Unit Cost (3)	NFS Lands			Other Lands			All Lands Total \$ (10)
			No. of Units (4)	FFF 092 \$ (5)	Other \$ (identify) (6)	No. of Units (7)	Federal \$ (identify) (8)	Non-Federal \$ (identify) (9)	
A. LAND	a. Seeding	Acres	19	700	12900				12900
	b.								
	c.								
	d.								
	e.								
B. CHANNELS	a. Opening water courses	Miles							
	b. Stabilizing Streambanks	Miles							
	c.								
	d.								
	e.								
C. ROADS & TRAILS	a.								
	b.								
	c.								
	d.								
	e.								
D. MAJOR STRUCTURES									
a. Preplanned - from Forest Plans									
E. TOTAL									

PART VII - APPROVALS

1. Forest Supervisor (Signature)

[Signature]
Supervisor

2. Date

3. Regional Forester (Signature)

[Signature] 7/23/85

2. Date

7/15/85

EXAMINING IMPACTS OF MANAGEMENT ALTERNATIVES FOR AN EMERGENCY PROGRAM

(Reference FSH 2509.13)

Fire Name

Sand Point

Date of Report
July 14, 1985

A. ENVIRONMENTAL QUALITY BENEFIT INDEX

Environmental Factor (a)	Weight Factor (b)	Without Treatment		With Treatment		Difference	
		Actual (c)	Weighted (d)	Actual (e)	Weighted (f)	Actual (g)	Weighted (h)
1. Erosion and sediment	8	2	16	1	8	1	8
2. Aesthetic land quality	1	2	2	0	0	2	0
3. Water quality	8	2	16	1	8	1	8
4. Site productivity	1	0	0	0	0	0	0
5. Wildlife habitat	1	0	0	0	0	0	0
6. Fish habitat	10	2	20	1	10	1	10
7. Other	NA						
8. TOTAL	29		54		26		26
9. Average weighted index			1.86		.9		.9
10. Net environmental quality benefit index							

B. SOCIAL WELL-BEING BENEFIT INDEX

Social Criteria (a)	Weight Factor (b)	Without Treatment		With Treatment		Difference	
		Actual (c)	Weighted (d)	Actual (e)	Weighted (f)	Actual (g)	Weighted (h)
1. Life, health, safety	NA						
2. Employment	NA						
3. Recreational opportunity	9	2	18	1	9		9
4. Economic stability	NA						
5. Income distribution	NA						
6. Preserve special sites	10	1	10	0	0		10
7. Other Prevent loss of upper Missouri Cutthroat pop.	9	2	18	1	9	1	9
8. TOTAL	28		28		9		19
9. Average weighted index			1.5		.5		1.0
10. Net social well-being benefit index							1.0

C. REMARKS

D. EXPECTED DAMAGE REDUCTION BENEFIT SUMMARY

Note: At current Water Resources Council interest rate _____ percent

Economic Benefit Indices (a)	Units of Measure (b)	Damage Expected				Expected \$ Damage Reduction (g)
		Without Treatment		With Treatment		
		No. of Units (c)	Present Value (\$) (d)	No. of Units (e)	Present Value (\$) (f)	
I. Watershed Impacts Sediments						
1. Downstream water storage						
2. Sediment removal						
3. Fish habitat	* Fisherman RVDs	See Remarks				
4. Water quality						
II. Flood Water						
1. Land						
2. Water Improvements						
3. Subtotal, Watershed						
III. Resource Related Impacts						
1. Range						
2. Wildlife and recreation						
3. Timber						
4. Subtotal, Resource Related						
IV. Other Impacts						
1.						
2. Subtotal, Other						
V. TOTAL DOLLARS						

E. REMARKS

- * 1. Assume 800 fisherman days over 16 miles of stream at \$15/day for \$12,000 total value.
- 2. Assume recovery in year 3 with treatment (20% yr 1) (75% yr 2).
- 3. Assume recovery in year 5 without treatment with 20% recovery each year.

Year		With Treat.		w/o Treatment		Damage Reduction
1		2400		2400		0
2	.92	9000	8280	4800	4416	3864
3	.86	12000	10320	7200	6192	4128
4	.79	12000	9480	9600	7584	1896
5	.73	12000	8760	12000	8760	0

Total Damage Reduction = \$9888

ON-SITE AND OFF-SITE DEVELOPMENTS SUBJECT TO HAZARDS¹

(Reference FSH 2509.13)

Fire Name Sand Point			Date of Report 7/14/85
Line Items (a)	Type of Units (b)	Number of Units (c)	Estimated Value \$ (d)
1. Community and urban development	People		
2. Municipal and domestic water supply	People Served		
3. Transportation systems	Miles		
4. Water distribution systems (irrigation)	Miles		
5. Agricultural development (crops, facilities)	Acres		
6. Industrial development (dams, power, manufacturing)	Number		
7. Power and communication lines	Miles		
8. Recreation development	PAOT		
9. Fish habitat	Miles	16	12,000/yr
10. Other (specify)			
11. Total Hazard Potential ²			12,000/yr
12. Narrative (Optional - if additional space is needed, attach another sheet.)			

¹ Hazards from floods, floating debris, erosion, or sediment because a watershed is impaired by wildfire. (Do not include value of resources damaged or destroyed by the fire reported on FS-5100-29.)

² Indicates values threatened by design storm. Does not enter into the B/C.

Fire Name

Sand Point

SUMMARY OF EMERGENCY REHABILITATION NEEDS BY LANDOWNERSHIP

Date of Report
July 14, 1985

(Reference FSH 2509.13)

Landownership	A. Acres Burned	B. Emergency Rehabilitation Needs				C. Source of Emergency Rehabilitation Funds for Needed Work (\$)						
		(1) Land (acres)	(2) Channel (miles)	(3) Road & Trail (miles)	(4) Other	1. FFF		2. Emergency Flood Prevention	3. FR & T	4. Other Federal (Enter fund)	5. Non-Federal (Enter fund)	6. Total
						(a) 092	(b) 102					
Federal (NFS)	11,300	700				12,900						
Other (specify												
Subtotal (NFS)												
Non-Federal (State & County)												
Indian reservation												
Private												
Subtotal (Non-Federal)												
TOTAL	11,300	700				12,900						

D. Remarks

PROPOSED REHABILITATION MEASURES AND
LONG TERM MANAGEMENT ACTIONS

SAND POINT FIRE
LOST FORK JUDITH RIVER

JUDITH RANGER DISTRICT
LEWIS AND CLARK NATIONAL FOREST

Introduction

In early July, 1985, the Sand Point wildfire burned approximately 11,300 acres of the 25,000 acre Lost Fork Judith River drainage. The fire was of high intensity in extremely dry fuels, with over 6,000 acres consumed in one firestorm on July 6.

Area management objectives are to provide semi-primitive recreation opportunities in a natural setting. Livestock grazing is an established long term use. Big game hunting and fishing are popular recreational pursuits. Seasonal trailbike and snowmobile use is common. The area is included within the Middle Fork Judith River Wilderness study area.

In mid-July, 1985, an Interdisciplinary Team conducted a field investigation of the burned area and evaluated resource conditions to develop options to mitigate damage potentials. These recommendations are presented under the headings of Fire Suppression Rehabilitation (Section A) and Burned-Area Emergency Rehabilitation (Section B). In addition, the Team recommends a series of management actions that will provide significant long term resource benefits (Section C).

The following management objectives and resource management concerns were identified for the area of the burn to provide guidance for the ID Team:

1. Maintain and enhance big game habitat including summer/fall range, winter range and security habitat.
2. Mitigate adverse impacts to fisheries from sediment and potentially high run-off in Burris Creek, San Point Creek, West Fork and Lost Fork Judith River (cutthroat trout).
3. Mitigate existing and minimize new mechanical disturbance.
4. Protect soil productivity.
5. Maintain the character of the Montana Wilderness Study Act area, and provide for nonmotorized, semi-primitive recreational use.
6. Promote retention of native vegetation.
7. Manage livestock grazing to be compatible with fisheries and soil/watershed objectives.

A. Fire Suppression Rehabilitation

The Interdisciplinary Team review of rehabilitation needs associated with fire suppression actions include the following items.

1. Responsibilities for effective implementation of rehab work rests with the Forest and all activities will be supervised directly by Forest personnel.
2. Erosion control barriers should be installed on all firelines and access roads at the earliest opportunity to minimize severe erosion potentials associated with hydrophobic nature of soils in the burned areas.
 - a. Barriers in hand fire lines will be constructed by hand (approximately 13 miles).
 - b. Barriers in dozer firelines and fuel breaks will be constructed by dozer except hand construction on steep slopes (approximately 12 miles).
 - c. Barriers and burn removal on access roads and trails will be constructed by dozers (approximately 9 miles involving Lost Fork Ridge roadway, the Sand Point Ridge roadway, and the 4 x 4 access trail to the eastern end of the fire).
3. The 4 x 4 access trail along Sand Point Ridge will be restored as a conventional Forest trail (6-8' wide outsloped surface). The trail will be further defined by periodically felling trees across and along the trail tread, then clearing to a 4' right-of-way.
4. Green trees damaged by fire access improvement actions on Lost Fork Ridge and Sand Point Ridge roadways will be bucked and limbed so majority of material is lying on the ground.
5. Slash concentrations along dozer firelines and fuel breaks will be treated to provide wildlife breaks at least every 100' with slash scattered on fuel breaks as possible.
6. Slash concentrations within cleared helispots will be dozer piled for later burning by Forest Service.
7. All dozer cleared firelines, fuel breaks, access trails, and helispots will be seeded with native grasses.

B. Burned - Area Emergency Rehabilitation

The ID Team identified the principal hazard resulting from the fire as that of increased sediment to fisheries. The fish population in the Lost Fork is the upper Missouri cutthroat trout, a species of special concern to the Montana Department of Fish, Wildlife, and Parks. Protection of soil productivity, down stream developments or water uses was not considered necessary. The hazard to fisheries results from possible introduction of sediment, ^{and} ashes to streams and channel scouring due to increased water yield.

Treatment measures considered were seeding, sediment traps, debris removal, reducing grazing use temporarily and no action. Structural treatment

measures were rejected because of technical problems in design and installation and cost. The ID team was also uncertain as to their effectiveness.

The ID team developed an alternative consisting of seeding annual grasses in a strip approximately 200 feet on either side of specified drainage channels. The seeded grass should provide an effective sediment ^{more} trap rapidly than the recovering native understory vegetation. The Team's strategy was to trap eroded soil on lower slopes before it can enter drainage channels to become sediment. The slopes in the burn have high sediment delivery efficiency and any erosion which occurs will produce sediment unless trapped. The soils in the burn have natural low erosion hazards but are susceptible to erosion while water repellent due to fire.

The economic benefit of seeding to recreation visitor days spent in fishing were calculated and found to be marginal. Both economic and social benefits were favorable. At this point the ID Team rejected the no action alternative and recommended the seeding alternative to the Forest Supervisor.

A reconnaissance survey of the fire area was conducted on July 13, 1985. Three groups of Team members covered predetermined routes down major drainages and along primary control lines. Information was collected at random sample points on burn intensity, hydrophobic condition, viability of root material, debris potential along permanent streams and delineation of unburned areas. ~~The location and condition of unburned areas.~~ The location and condition of bulldozer and hand built control lines was also recorded. The field inventory provided the basis for the treatment alternatives which were considered.

Field notes and maps resulting from the burned area survey are found in the project files (2510).

C. Long Term Resource Management Activities

1. Grazing

- a) Defer livestock grazing on Lost Fork allotment in 1985 and 1986 to facilitate vegetative recovery in area.
- b) Reconstruct allotment pasture division fences destroyed by fire and extend as necessary to provide effective livestock control (estimate 1.5 miles).

2. Commercial Hunting

- a) Require 100% use of weed-free feed for O.G. livestock in 1985 and 1986.
- b) Evaluate ^a cancellation or relocation of established O.G. permits in Lost Fork drainage.

3. Wildlife

- a) Cooperate with Montana Department of Fish, Wildlife and Parks in managing for desirable long term forage/cover ratios and security cover densities (lodgepole thickets and windfalls) from a drainage perspective.

- b) restrict area-wide use by vehicles over 40" in width year-around and all motorized use between October 15 and December 1 to enhance area big game security habitat.
- c) Review desirability of modifications to existing hunting regulations in the area with the Montana Department of Fish, Wildlife and Parks.

4. Dispersed Recreation

- a) Emphasize nonmotorized semi-primitive recreation opportunities in drainage.
- b) Provide for reasonable seasonal motorized use by vehicles under 40" in width on trails near the perimeter of the burn.

5. Fisheries

- a) Evaluate need for fish habitat improvement structures after initial sediment moving processes have slowed (1-4 years).
- b) Program desirable Fish habitat structures at earliest opportunity (rearing streams as well as major streams).
- c) Cooperate with Montana State Department of Fish, Wildlife and Parks in:
 - 1) Managing beaver populations in drainage to optimize national fish habitat.
 - 2) Determining genetic purity of Upper Missouri River cutthroat trout populations in the Lost Fork watershed.
 - 3) Assessing onsite fishery values in the Lost Fork drainage.