USDA-FOREST SERVICE FS-2500-8 (7/00)

Date of Report: 09-06-02

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

THIS REPORT ONLY COVERS THE NATIONAL FOREST PORTION OF THE PASS CREEK FIRE

A. Type of Report

[X] 1. Funding request for estimated WFSU-SULT funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[X] 1. Initial Request (Best estimate of funds needed to complete eligible rehabilitation)
[ ] 2. Interim Report
[ ] Updating the initial funding request based on more accurate site data or design analysis
[ ] Status of accomplishments to date
[ ] 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Pass Creek

B. Fire Number: WY-SHF-0351 P27374

C. State: Wyoming

D. County: Fremont

E. Region: 02

F. Forest: Shoshone

G. District: Washakie

H. Date Fire Started: 8/24/02

I. Date Fire Contained: 9/3/02

J. Suppression Cost: $4,000,000 (estimated)

K. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): Unknown as lines are being kept open until moisture arrives
2. Fireline seeded (miles): Unknown
3. Other (identify): Unknown

L. Watershed Numbers: 100800030102 (Little Popo Agie); 100800030103 (Cherry Creek)

M. Total Acres Burned: 13,433 NFS Acres (7,820) Other Federal (4,725) State (101) Private (787)

N. Vegetation Types: PICO/CARO; PSME/BERE; PSME/SYOR; PIFL/LEKI; POTR5; SALBOO; ARTR-V/FEID; FEID/AGSP; ARTRI/FEID; PUTR/FEID

O. Dominant Soils: Loamy skeletal, mixed Typic Cryolls; Loamy, mixed Lithic Cryolls; Loamy skeletal, mixed Typic Cryoboralfs; Loamy skeletal, mixed Typic Cryolls; Fine loamy, mixed Cumulic Cryolls; Fine loamy, mixed Typic Cryalfs

P. Geologic Types: Flathead (Cambrian) sandstone; Madison (Mississippian) limestone; Bighorn/Gros Ventre (Ordivician) dolomitic limestone, limestone, shales; Tensleep/Amsden (Pennsylvanian) sandstone, limestone, dolomite, shales; Quaternary alluvium, till, colluvium

Q. Approximate Miles of Stream Channels by Order or Class: Perennial = 11.1 miles; Intermittent = 4.6 miles; Crenulated = 19.5 miles

R. Transportation System: Trails: 0 miles Roads: 14 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 118 (unburned) 5,392 (low) 766 (moderate) 1,544 (high)

B. Water-Repellent Soil (acres): 1,544

C. Soil Erosion Hazard Rating (acres): 4,144 (low) 2,085 (moderate) 1,591 (high)

D. Erosion Potential: <2 tons/acre on 0-15% slopes; 2-14 on 15-40% slopes; 3-25 on slopes greater than 40%

E. Sediment Potential: <64 cubic yards / square mile on 0-15% slopes; 102-718 on 15-40% slopes; 288-2400 on slopes greater than 40%

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years):	2 (riparian); 3 (rangeland); 5 (forestland)
B. Design Chance of Success, (percent):	80
C. Equivalent Design Recurrence Interval, (years):	25
D. Design Storm Duration, (hours):	1
E. Design Storm Magnitude, (inches):	1.0
F. Design Flow, (cubic feet / second/ square mile):	25
G. Estimated Reduction in Infiltration, (percent):	reference hydrology report
H. Adjusted Design Flow, (cfs per square mile):	65

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency

- Water Quality, Fisheries, and Aquatics, both within the fire area and downstream.

  Much of the riparian area along Pass Creek burned, as did a forested north facing slope that drains into the riparian area. Due to the intensity of the burn, vegetative recovery, both on the uplands and within the riparian area, is expected to take 5 and 2 years, respectively. During this time, sediment from the uplands may be delivered to Pass Creek and lateral channel migration may occur due to unvegetated banks.

  This riparian area, prior to the burn, was a management concern due to historical livestock grazing. It was on an upward trend due to recent allotment management plan changes, but was still functioning at-risk. Because it was not at proper functioning condition, any post-fire use by livestock will hamper recovery. Therefore, such use should be excluded from this riparian area for a few years, either in the form of non-use or temporary exclosure (fencing).

  It is unknown at this time if livestock grazing will be permitted in the burn area for the next few years. Forest staff will be meeting with the grazing permittee during late September, 2002 to discuss this issue. If a decision is made to not allow grazing for a few years then temporary fencing will not be necessary. If grazing is permitted, the Forest should submit an interim burned area report to request dollars to install a temporary fence. It is estimated this fence will cost $44,000 if done via contract. If the Forest Service purchases materials and the permittee provides labor the cost will be approximately $12,000.

- Threats to Long-term Soil Productivity and Ecosystem Integrity

  Long-term soil productivity could be threatened by erosion if the existing road and trail system were to expand from uncontrolled motor vehicle use. Of particular concern is expansion by ATV use because many areas that were inaccessible due to ground cover before the fire are now easily accessible because the ground cover was consumed. Therefore, it is recommended motorized vehicle use be controlled through area closure.

  Noxious weed infestation, which is already a problem in portions of the burn area, is expected to increase, especially along roads, which could effect ecosystem integrity. Species of concern are bull thistle, Canada thistle, musk thistle, field bindweed, whitetop, hounds tongue, leafy spurge, mullein, Russian knapweed, and spotted knapweed. Therefore, monitoring of noxious weed spread is recommended. If monitoring indicates pre-fire weed concerns have been exacerbated by the fire, then aggressive control is recommended. Interim burned area reports will need to be submitted if control is necessary.

- Threats to Life and Property

  No significant threats to life or property were identified, however rock fall/block slides and thunderstorm related debris flow activity could occur in the Little Popo Agie River canyon, which could pose a risk to people in the canyon at those times.

  There is one ranch property located directly downstream of the burn area that was identified as potentially at risk from flooding. Post-fire flood analysis (snowmelt and thunderstorm) was conducted and it showed the risk of flood damage at this property is low. Relative to changes in the snowmelt hydrograph, research indicates 20 percent of a large watershed needs to be

affected before a measurable change is detectable, and even if such a change is detected most of the increase in flow is on the rising limb of the hydrograph, with non-significant affects on peaks. Only 12 percent of the Little Popo Agie watershed was affected by the fire.

Relative to a short duration, high intensity summer thunderstorm, modeling of the burn area indicates a 25-year, 1-hour storm would produce 305 cfs under pre-fire conditions and 710 cfs under post-fire conditions. This post-fire discharge is equivalent to the 2.25-year return interval flow. Field assessment at the private property validated such a flow would not result in flood damage.

B. **Emergency Treatment Objectives**

- Reduce erosion risk by controlling motorized vehicle use.
- Protect ecosystem integrity by monitoring, and if necessary controlling, noxious weeds.
- Allow for riparian area recovery along Pass Creek by controlling livestock use, either through non-use or temporary fencing.

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

Land **95** % (non-use or fencing) **N/A** Channel **N/A** % Roads **95** % (signing) Other **N/A** %

D. **Probability of Treatment Success**

	Years after Treatment		
	1	3	5
Land			
Non-use or riparian fencing	95%	95%	95%
Channel			
None			
Roads			
Area closure	90%	90%	90%
Trails			
None			
Other			
None			

E. **Cost of No-Action (Including Loss) See attached cost-risk analysis document.**

F. **Cost of Selected Alternative (Including Loss) See attached cost-risk analysis document.**

G. **Skills Represented on Burned-Area Survey Team**

[X] Hydrology [X] Soils [] Geology [X] Range [] NEPA Coordinator
[] Forestry [] Wildlife [] Fire Mgmt. [] Engineering
[] Contracting [X] Ecology [X] Botany [X] Archaeology
[X] Fisheries [] Research [] Landscape Arch [X] GIS

Team Leader: Greg Bevenger, Hydrologist, Shoshone National Forest

Email: gbevenger@fs.fed.us Phone: 307-578-1263 FAX: 307-578-1212

H. **Treatment Narrative**

Riparian Area Fencing - Complete by October 15, 2002 if warranted after September permittee meeting

Control livestock use on 40 acres of severely burned riparian area along Pass Creek through either non-use or temporary electric fence. See attached specification sheet for details.

Area Closure Signing – Complete by October 1, 2002

Reduce potential erosion and expansion of the existing road and trail system by implementing a short-term area closure. See attached specification sheet for details.

I. **Monitoring Narrative**

During the 2003 growing season, monitor establishment of new noxious weed populations within the burn area. Accurately map new populations. Possibly establish photo plots for documentation. Submit an interim report for additional treatment if warranted. See attached specification sheet for details.

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

			NFS LANDS			OTHER FED		OTHER LANDS		All
		Unit	# of	WFSU	Other	# of	Fed	# of	Non Fed	Total
Line Items	**Units**	**Cost**	**Units**	**SULT $**	**$**	**units**	**$**	**Units**	**$**	**$**
A. Land Treatments										
None										
Subtotal Land Treatments				$0			$0		$0	$0
B. Channel Treatments										
None										
Subtotal Channel Treatments				$0			$0		$0	$0
C. Road and Trails										
Area closure signing	Each	150.00	30	$4,500						$4,500
Subtotal Road & Trails				$4,500			$0		$0	$4,500
D. Structures										
None										
Subtotal Structures				$0			$0		$0	$0
E. BAER Evaluation										
Team (H29999 0214)				$10,000						$10,000
Subtotal BAER Evaluation				$10,000			$0		$0	$10,000
F. Monitoring										
Noxious weeds	Trips	1800	2	$3,600						$3,600
Subtotal Monitoring				$3,600			$0		$0	$3,600
G. Totals				**$18,100**			**$0**		**$0**	**$18,100**

PART VII - APPROVALS

1. **/s/ Karin J. Lancaster, for** — **9/9/02**
   Forest Supervisor (signature) — Date

2. **/s/Richard Stem (for)** — **9 Sept 02**
   Rick D. Cables — **Date**
   Regional Forester (signature)