Date of Report:

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[X] 1. Funding request for estimated emergency stabilization funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[X] 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)

[ ] 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: Horse Creek Fire

B. Fire Number: WY-BTF-0004

C. State: Wyoming

D. County: Sublette

E. Region: 4-Intermountain Region

F. Forest: Bridger Teton Nataional Forest

G. District: Big Piney Ranger District

H. Fire Incident Job Code: P4DJ48

I. Date Fire Started: 6-21-2007

J. Date Fire Contained: 7-2-2007

K. Suppression Cost: 2.8 Million on 7-2-2007

L. Fire Suppression Damages Repaired with Suppression Funds

Dozer line total 4.9 miles with 0.75 miles of new line and the remainder existing old roads

1. Fireline waterbarred and ripped (miles): 4.9 miles
2. Fireline seeded (miles): Planning 1.5 miles
3. Other (identify):

M. Watershed Number:
140401010501- Upper Horse Creek-Green River (24% burned)
140401010502- South Horse Creek (6% burned)

N. Total Acres Burned: 8,514
NFS Acres (8,413) Other Federal (0) State (0) Private (101)

O. Vegetation Types: The burned area is composed of mixed sub-alpine and lodgepole pine at the higher elevations which are the western and northern portion of the fire. Toward the lower elevation the vegetation transitions into mixed aspens and pine with sage/grass with willow and sedges lining the riparian corridors.

P. Dominant Soils: Major soil types in the area affected by the wildfire are primarily in the haplocryalf (Alfisols) and argicryoll (Mollisols) soil taxonomy great groups, with particle size classes ranging from fine-loamy to clayey-skeletal. Soils in these great groups have an argillic subsurface horizon, which is an increase in clay content in the subsoil. The Mollisols have a mollic surface horizon, which is dark colored and rich in organic matter. The Alfisols typically have a thick litter layer and a thinner dark surface horizon.

Q. Geologic Types: The geology in the Horse Creek drainage is primarily red sandstones, siltstones, mudstones, and some conglomerates. The soils in this drainage developed in the residuum, colluvium, and slopewash resulting from the influence of time, water, ice, and gravity on these materials.

R. Miles of Stream Channels by Order or Class:
Intermittent stream miles - 16.2 Perennial stream miles – 5.9

S. Transportation System

Trails: 2.1 miles (Indian and Mill Trails) Roads: 7.1 miles (approximately 2 miles are close)

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 1,548 (unburned) 2,753 (low) 4,213 (moderate) 0 (high)

B. Water-Repellent Soil (acres):

National Forest	Private land
1954 (23%)	33 (33%)

C. Soil Erosion Hazard Rating (acres):

	Ownership Acres	
Soil Erosion Hazard Rating	National Forest	Private land
Low	0	*
Moderate	209 (3%)	*
High	8210 (97%)	*

* Sublette County WY soil survey not available on Web Soil Survey.

D. Erosion Potential: 1.0 tons/acre

E. Sediment Potential: 6.6 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 3-5

B. Design Chance of Success, (percent): 80-90%

C. Equivalent Design Recurrence Interval, (years): 25 year

D. Design Storm Duration, (hours): 0.5 hrs

E. Design Storm Magnitude, (inches): 0.59 Inches

F. Design Flow, (cubic feet / second/ square mile): 36 csm

G. Estimated Reduction in Infiltration, (percent): 23%

H. Adjusted Design Flow, (cfs per square mile): 55csm

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

The Horse Creek Fire started on June 21, 2007 on the Big Piney Ranger District within Sublette County. The cause has not been determined. The fire was contained on July 2, 2007 and the BAER team effort was initiated. The team conducted aerial reconnaissance and on the ground investigation within the burn assessing emergency threat to life, property, and resources. The following values and types of risks were evaluated.

Ecological Integrity:

The risk of increased off road vehicle travel into non-motorized areas is increased due to the fire consuming vegetation barrier. The expected increase in illegal OHV poses a threat to soil productivitiy, soil erosion, water quality and assoicated fisheries impacts, native plant communities, and spread of noxious weed.

Noxious weeds have been documented within the Sherman C&H located within the fires area. Two noxious weeds documented within this area are Canada Thistle (*Cirsium arvense L.*) and Musk Thistle (*Carduus nutans L.*). The ability of noxious weeds to rapidly spread and threaten the continuity and health of native plant communities increases within burned areas and areas impacted by suppression activities.

There are 24.4 acres of Canada Thistle inventoried and treated along Pass Creek Road, Number 10390. Canada thistle was seen along the hillside to the west of the cattleguard entering Pass Creek, along much of Pass Creek Road, and beyond the road closure. Significant increases in traffic along this road and beyond the road closure, creation of hand lines, dozer lines, and fire impacted vegetative communities all may contribute to the rapid spread of invasive species throughout the Pass Creek drainage.

Water quality within and downstream of the burned area could be reduced from the increases in stream flow and soil erosion from thunderstorms and snow melt due to the loss of ground cover and altered soil properties.

North and South Horse Creek are identified in the Conservation Agreement for Colorado River Cutthroat Trout (UDWR, 2003) as having core conservation populations of Colorado River Cutthroat trout (*Oncorhynchus clarki pleuriticus*. The Conservation Agreement identifies 4.0 miles of the South Fork North Horse Creek as having a pure population that maintains an adult population of 200 fish. Colorado River Cutthroat trout have been stocked in the South Fork and Brook trout (*Salvelinus fontinalis*) are present. Habitat limitations include low stream flows, and land management activities (livestock). Brook trout are known to compete with cutthroat trout limiting populations through direct competition and predation (Behnke 1992).

South Horse Creek is also identified as a pure Conservation Population with 8 miles of stream that maintains an adult population of 300 adults. South Horse creek has not been stocked with supplemental Colorado cutthroat trout but Brook trout and Snake River cutthroat trout are present. The Horse Creek Fire had a high impact to conifer vegetation and very little impact to riparian vegetation. Riparian vegetation and stream corridors remain in very good condition. A high number of beaver dams and healthy riparian areas will reduce and filter sediment and debris coming off the fire reducing downstream negative impacts to the fishery and aquatics.

Culverts on FSR 10389 (N Horse Creek Rd) and 10390 (Pass Creek Rd) in the burn area have a high likelihood of becoming plugged as a result of ash and debris from the fire. If this were to occur long-term (5-10 yr) damage to downstream fish and fish habitat could occur.

Transportation Infrastructure:

Public roads and road/stream crossings are susceptible to increased erosion due to the loss of ground cover and altered soil properties, potentially causing plugging and/or washout. The lost of these structures could also cause resource damage (e.g., soil loss, water quality degradation, Colorado Cutthroat Trout, etc.) The roads and drainage features (4 main culverts, numerous cross drain features) at risk are located on the North Horse Creek road (FSR 10389) along the NW portion of the fire and the Pass Creek road (FSR 10390). The 4 concerned culverts have been calcuated to have sufficient capacity to handle increase in peak flows that may be caused convective storms or spring runoff from the fire area. Since a majority of the concerned drainage leading to these four culvert burned to a moderate burn severity with moderate to high hydrophobicity at he surface sediment and debris movement poses a high risk of movement to plug and cause the culverts to fail.

B. Emergency Treatment Objectives:

OHV Closures/Signing: The risk of increased off road vehicle travel into non-motorized areas is increased due to the fire increasing accessibility. Recommended treatments to reduce this risk include; increased signing, placing additional barrier rocks at road closures, and falling of snags to decrease accessibility. The objectives are to protect water quality, soil productivity, soil erosion, fisheries/aquatic impacts, native plant communities, and against the spread of noxious weed to an acceptable threshold level.

Noxious Weeds: The treatment and monitoring of noxious weeds are to protect native vegetation composition in and around the fire area. by treating the expansion of know populations into the fire area.

Storm Patrol: Storm patrol along nearly 7 miles of road is recommend to prevent the failure of existing pipes and road drainage feature and the downstream impacts to water quality, stream intergity, and core conservation populations of Colorado River Cutthroat trout.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:

Land **80** % Channel ___ % Roads/Trails **90** % Protection/Safety **90** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	75	75	75
Channel			
Roads/Trails	80	75	75
Protection/Safety			

E. Cost of No-Action (Including Loss): $215,000

F. Cost of Selected Alternative (Including Loss): $61,270

G. Skills Represented on Burned-Area Survey Team:

[**X**] Hydrology [**X**] Soils [ ] Geology [**X**] Range & Weeds [ ]
[ ] Forestry [ ] Wildlife [ ] Fire Mgmt. [ ] Engineering [**X**] Recreation
[ ] Contracting [ ] Ecology [ ] Botany [**X**] Archaeology [ ]
[**X**] Fisheries [ ] Research [ ] Landscape Arch [**X**] GIS

Team Leader: Louis Wasniewski, Forest Hydrologist, Caribou-Targhee NF & Curlew NG

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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.)

Land Treatments:

Monitor and Treat Noxious and Invasive Weeds: Monitor and treat new infestations from establishing known and high potential infestation sites for noxious and invasive plants. BAER funds will be used to treat and mitigate the spread of new weed infestations within the burn and affected areas, in conjunction with existing dollars used to treat known infestations. District personnel will treat the known infestations as soon as possible to mitigate the spread of invasive species into areas impacted by this fire.

Channel Treatments:

No Channel Treatments Recommended

Roads and Trail Treatments:

Closures signing and Barrier Rock Placement: Treatments will consist of placing additional barrier road boulders to make the barriers effective in preventing unauthorized use and resource damage. In addition to boulders, closure signing stating this is a sensitive area and explaining the road closure need to be installed. This treatment will occur primarily at the end of roads 10372 and 10390.

Protection/Safety Treatments:

No Protection/Safety treatments Recommended

I. **Monitoring Narrative:**

(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)

Illegal OHV Closure Monitoring: During high use (fall hunting season) monitoring of road closure effectiveness will be conducted to ensure the protection of soil, water quality resources and preventing spread of noxious weeds during the emergency stabilization period (one year from containment). Monitoring may be conduct in conjunction with law enforcement patrol to education users of the importance of these closures and to ensue effectiveness.

Storm Patrol: Storm patrol of drainage feature on roads is recommended on the Pass Creek Road especially drainage structures associated with the West and East tributarties to Pass Creek and No Name tributary to North Horse Creek. Storm patrol is recommended following fall convective storms and during spring runoff to prevent structure washout and damage to the nearby resource including core conservation populations of Colorado River Cutthroat trout (*Oncorhynchus clarki pleuriticus).*

Part VI – Emergency Stabilization Treatments and Source of Funds **Interim #**

			NFS Lands				Other Lands			All
		Unit	# of		Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER $	$	units	$	Units	$	$
A. Land Treatments										
Noxious Weed Monitor/Treat	Days	360	5	$1,800	$0		$0		$0	$1,800
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$1,800	$0		$0		$0	$1,800
B. Channel Treatments										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$0	$0		$0		$0	$0
C. Road and Trails										
Closure/Warning signs	Each	20	6	$120	$0					$120
Barrier Rock	Each	200	6	$1,200	$0					$1,200
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$1,320	$0		$0		$0	$1,320
D. Protection/Safety										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$0	$0		$0		$0	$0
E. BAER Evaluation										
				---	$11,000		$0		$0	$11,000
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				---	$11,000		$0		$0	$11,000
F. Monitoring										
Storm Patrol	Days	235	10	$2,350	$0		$0		$0	$2,350
Illegal OHV Closure Monitoring	Days	230	10	$2,300	$0		$0		$0	$2,300
				$0	$0		$0		$0	
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$4,650	$0		$0		$0	$2,300
G. Totals				$7,770	$11,000		**$0**		**$0**	**$16,420**
Previously approved										
Total for this request				**$7,770**						

PART VII - APPROVALS

1. /s/Mike Balboni for
CAROLE 'KNIFFY' HAMILTON 07/11/2007
Date

Forest Supervisor (signature)

2. /s/ Cathy Beaty for 07/24/2007
JACK G. TROYER Date
Regional Forester (signature)