Date of Report:4-24-2013

BEAR CUB FIRE
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:**Bear Cub Fire**

B. Fire Number: WY-BTF-000005

C. State:WY

D. County:Teton

E. Region: 4

F. Forest:Bridger-Teton

G. District:Buffalo Ranger District

H. Fire Incident Job Code:P4G0N9

I. Date Fire Started:7-20-2012

J. Date Fire Contained: 10-4-2012

K. Suppression Cost: $500,000 (estimated)

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 0
2. Fireline seeded (miles): 0
3. Other (identify): hazard tree removal

M. Watershed Number: 170401010601 (Upper South Buffalo Fork); 170401010602 (Blue Lakes); 170401010603 (Lower South Buffalo Fork)

N. Total Acres Burned: 6493
NFS Acres(x) Other Federal (X) State ( ) Private ( )

O. Vegetation Types: 946 acres MU30 - alpine vegetation. Moist areas support arctic willow and marsh marigold. Drier sites support alpine bluegrass and American bistort. Isolated krummholz stands of subalpine fir, Engelmann spruce, and whitebark pine are present. 5543 acres MU32 - Subalpine fir, lodgepole pine, and

Engelmann spruce are the dominant timber species. Undergrowth is dominated by grouse hortleberry and huckleberry. Riparian zones are also associated with this map unit.

P. Dominant Soils: 946 acres MU30 Typic Cryochrepts – Lithic Cryorthents, 5543 acres MU32 Mollic Cryoboralfs, Typic Cryochepts (Teton Soil Survey).

Q. Geologic Types: MU32 is glacial till derived from volcanic conglomerate and MU30 is volcanic conglomerate.

R. Miles of Stream Channels by Order or Class: Approximately 15.8 miles 1st order; 5.4 miles 2nd order; 4.1 miles 3rd order; 4.4 miles 4th order; 1.9 miles 5th order. There are also a number of lakes and ponds within the fire perimeter.

The South Buffalo Fork River is a listed Wild river under the Wild and Scenic River system.

S. Transportation System (within fire perimeter)

Trails: 9.9 miles Roads: 0 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 844 (low) 2597 (moderate) 1169 (high)

B. Water-Repellent Soil (acres): 1169

C. Soil Erosion Hazard Rating (acres):
___ (low) 946 (moderate) 5543 (high)

D. Erosion Potential: 2.51 tons/acre

E. Sediment Potential: 5948 cubic yards / square mile (based on an erosion rate of 2.51 tons/acre modeled from ERMIT, clay loam, 20% rock, 0%,50%,30% slope, 300ft, high soil burn severity)

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 2-10

B. Design Chance of Success, (percent): 75%

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

D. Design Storm Duration, (hours): 0.5

E. Design Storm Magnitude, (inches): 0.90

F. Design Flow, (cubic feet / second/ square mile):
Wildcat4 was run on two different watersheds to determine runoff from the design storm (30-minute, 25-year storm = 0.90 inches). Two watersheds were used due to differences in watershed characteristics. First, the Upper South Buffalo Fork 6th field HUC was used to its outlet (confluence with Lake Creek). This is the

location of most of the fire and is steeper than the lower portion of the overall watershed. Design peak flow here was 7.04 cfs/sq mile. The second watershed used was the entire upper South Buffalo Fork headwaters, including the Blue Lakes HUC (down to the lowest end of the fire). Design peak flow for this watershed was 2.46 cfs/sq mile.

G. Estimated Reduction in Infiltration, (percent): 34 (based on % area with water repellent soil)

H. Adjusted Design Flow, (cfs per square mile): Peak flow increase for the smaller watershed is 239.2 cfs per 33.99 sq mi = 7.04 cfs/sq mi. The increase for the larger watershed is 166.6 cfs per 67.79 sq mi = 2.46 cfs/sq mi.

PART V - SUMMARY OF ANALYSIS

The lightning caused Bear Cub Fire was discovered in the Teton Wilderness approximately 22 miles east of Moran, Wyoming on the afternoon of July 2nd, 2012.

A short BAER Team was assembled on 10/11/2012 to conduct an assessment. Members of the BAER team flew the fire in a helicopter to get an overview of the fire from the air and to review the burn severity. The flight path and dozens of photos were recorded. A BARC map was ordered and received however the map had significant data gaps. A subsample of the BARC data was clipped from the intack portions of the image and estimates of severity classes were extrapolated for the whole fire area. Maps, photos and analysis associated with this report can be found on the O drive at:

O:\NFS\BridgerTeton\Program\2500WatershedAirMgmt\BURD\2520WatershedProtectionMgmt\D6

A. Describe Critical Values/Resources and Threats:

Human Life and Safety:
As a result of the fire, hazard trees along the trail system in the fire area present a threat to human life and safety, however some existing hazard trees were identified by fire crews and were dealt with accordingly. Decision point signs warning the public of this threat are in place at the trailhead and area closures associated with the fire have been lifted by the District Ranger due to the popularity of this area for hunting.

It is the Forest's expectation there is a "Possible" (>10 to <50 percent) chance for hazard trees to fall in the vicinity of a trail; and "major" consequences to human life if a tree were to fall on someone. This would equate to a "high" level risk based on the interim BAER direction.

Property:

Trails
There are a total of 9.9 miles of system trails within the fire perimeter and 4 miles are at risk of washing out as a result of the fire. Waterbars within the high burned severity areas were consumed by the fire and need to be replaced. Additional waterbars and drainage structures need to be installed throughout the trail system in order to maintain the trails to prefire conditions.

It is the Forest's expectation there is a "Likely" (50-90%) chance for the trail system to be washed out as a result of the fire. It is anticipated that there would be "Moderate" consequences to the existing trail system if efforts are not pursued. This would equate to a "High" level risk based on the interim BAER direction.

Natural Resources:
Within the fire perimeter, short-term increases in erosion and sedimentation are expected to be within the natural range of disturbance for this landscape, and no threats outside of this natural range were identified for soil productivity/hydrologic function, water supply/water use, or federally listed TES species. There are

potential threats to native plant communities on NFS lands where invasive species or noxious weeds are absent or present in only minor amounts. Musk Thistle occurs at several locations in and around the burned area and it is expected that these infestations may increase to adjacent burned areas.

There is a high probability that noxious weed seeds – either from the immediate vicinity or from some other location - were transported into the area via firefighters and tools that were used for fire suppression operations. In addition to areas with moderate or high soil burn severity that are now lacking vegetation, trail used to for access were heavily impacted and are now ideal staging points for noxious weeds. The level of undesirable disturbance makes these locations more susceptible for invasion of noxious weeds. It is the Forest's expectation there is a "Likely" (50-90 percent) chance for noxious weeds to invade areas where they did not previously exist; and "Moderate" consequences to the existing native vegetation if early detection and rapid response (EDRR) efforts are not pursued. This would equate to a "High" level risk based on the interim BAER direction.

Cultural and Heritage Resources:
No known threats to cultural resources.

B. Emergency Treatment Objectives:

Human Life and Safety:

- Protect humans implementing BAER treatments from the threat of hazard trees caused by the fire along trails.

Property:

- Protect trail infrastructure on 4 miles of trail by placing waterbars and other drainage structures.

Land

- Prevent the spread of noxious plant species into previously unoccupied locations.

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

Land **90** % Channel **na** % Roads/Trails **50*** % Protection/Safety **na** %
*The completion of trail treatments are weather dependent and the chances of completing the work prior to a damaging storm depends on the intensity of spring runoff and intensity of summer rain events.

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	50	75	75
Channel			
Roads/Trails	100	90	90
Protection/Safety			

E. Cost of No-Action (Including Loss): **$100,000**

The cost of the no-action alternative could be significant for a variety of reasons. The trail system could wash out at one, or several, locations making it more expensive to repair in the future. If left unchecked, noxious weeds could invade areas previously not occupied by weeds and erradication costs could be significant.

F. Cost of Selected Alternative (Including Loss):$25,000

Completing the reccommended treatments within the first year would result in a much reduced cost.

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Eric Winthers

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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:

Early detection and rapid response techniques for noxious weeds will be implemented during greenup next spring and throughout the growing season. Trailheads and roadways will be monitored and weeds will be sprayed as necessary using standard truck mounted equipment. Weed treatments along trails will require a horse pack sprayer.

Channel Treatments: none

RoadsTreatments: none

Trail Treatments: For the 4 miles along the South Fork Buffalo trail and the Angles Lake Loop trail - replace burned out waterbars and place new waterbars in between, doubling the frequency as necessary. Clean out existing drainage stuctures and construct new ones as necessary. Hazard trees will be removed from work areas. The trails are within wilderness and require minumum tool techniques.

Protection/Safety Treatments:

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.)

Weed treatments will be monitored using spray records and maps completed by weed crew.

Trail treatments will be monitored by Buffalo District Trail Crew.

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										
weed treatment	days	400	5	$2,000	$0		$0		$0	$2,000
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$2,000	$0		$0		$0	$2,000
B. Channel Treatments										
				$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										
trail protection	miles	2120	4	$8,480	$0		$0		$0	$8,480
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$8,480	$0		$0		$0	$8,480
D. Protection/Safety										
	days			$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										
salary	actual	455.3	3	$1,366			$0		$0	$0
travel	actual			$0						
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				$1,366	$0		$0		$0	$0
F. Monitoring										
road and trails	each	100	4	$400	$0		$0		$0	$400
weed treatment	each	100	4	$400						$400
				$0						$0
Insert new items above this line!					$0		$0		$0	
Subtotal Monitoring				$800	$0		$0		$0	$800
G. Totals				$11,280	$0		**$0**		**$0**	**$11,280**
Previously approved										
Total for this request				**$11,280**						

PART VII - APPROVALS

1. /s/ Cheryl Probert — 04/25/2013
   Forest Supervisor (signature) — Date

2. /s/George C. Iverson(for) — 05/01/2013
   Regional Forester (signature) — Date