USDA-FOREST SERVICE FS-2500-8 (6/06)

Date of Report: **04-11-2016**

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: **Cold Fire**

B. Fire Number: **SD-BKF-160153**

C. State: **SD**

D. County: **Custer**

E. Region: **R02**

F. Forest: **Black Hills**

G. District: **Hell Canyon**

H. Fire Incident Job Codes: **P2J7NH**

I. Date Fire Started: **04-02-2016**

J. Date Fire Contained: **04-09-2016**

K. Suppression Cost: **$1,300,000 (as of 04-07-2016 - total not yet available at this time)**

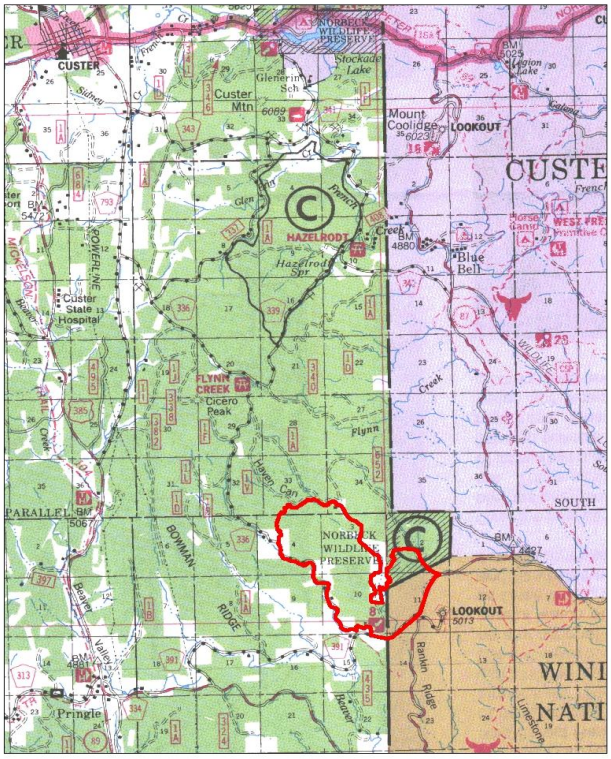
L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): **Dozer – 3.0 miles; Handline – 0 miles**
2. Fireline seeded (miles): **3.0 miles**
3. Other (identify): **Road damage, 0.1 miles**

Fire Suppression Repair - Line Type	Feet (miles)
Dozer Line (Rehab and Close)	15,822 (3.0)
Gravel Road (County/NPS/PVT)	28,320 (5.4)
System Road (Rehab to Standard)	7,014 (1.3)
Total	51,156 (9.7)

M. Watershed Number:

HUC 12	Watershed Name	Watershed Acres	Acres Burned	Acres Unburned	Percent Burned	Percent Unburned
101201090201	Upper Beaver Creek	22,753	611	22,142	2.7	97.3
101201090202	Middle Beaver Creek	21,927	1,054	20,873	4.8	95.2
101201090203	Highland Creek	14,143	230	13,913	1.6	98.4

N. Total Acres Burned: **1,896**
Acres: NFS (1,323); NPS (316); State NA; Private (256)



O.VegetationTypes: **Ponderosa Pine Forest, Grassland**

P. Dominant Soils**:**

Map Unit Symbol	Soil Map Unit Name	Erosion Hazard	Acres
Q0001E	Buska-Mocmont-Rock outcrop complex, 10-40% Slope	Severe	526.0
Q0005G	Mocmont-Rock outcrop complex, 40-80% Slope	Severe	695.8
Q0006E	Shirttail channery loam, 10-40% Slope	Severe	317.2
Q0300C	Bullflat-Cordeston, dry silt loams, high mica, 2-9% Slope	Moderate	108.2
Q0304D	Buska-Virkula, high mica loams, dry, 2-15% Slope	Severe	6.0
Q0307B	Cordeston, dry-Marshbrook loams, 0-6% Slopes, flooded	Moderate	12.9
Q0315E	Pactola-Virkula-Rock outcrop complex, dry, 10-40% Slope	Severe	0.2
Q0608B	Bullflat silt loam, 3-6% Slopes	Slight	112.9
Q0629B	Hilger cobbly loam, 0-6% Slopes	Slight	83.2
Q0629E	Hilger cobbly loam, 6-40% Slopes	Moderate	32.4

Q. Geologic Types: **Crystalline Hills and Ridges (dominant)**

R. Miles of Stream Channels by Order: **Stream Order 1 – 1.8 miles; Order 2 – 6.5 miles**

S. Transportation System (miles): **Level 1, 2.18; Level 2, 1.16; Level 3, 1.02; Level 4, 2.57; Level 5, 0.88**

PART III - WATERSHED CONDITION

A. Burn Severity (acres):

The Cold Fire was generally a mosaic burn, dominated by low to moderate soil burn severity with scattered, limited isolated patches of high soil burn severity (approximately 100 acres).

B. Water-Repellent Soil acres: **Estimated to be less than 5%.**

C. Soil Erosion Hazard Rating (acres):

Based on inherent soil properties, the NRCS erosion hazard ratings for soils within the Cold Fire are:

Slight = 196.1 acres
Moderate = 153.5 acres
Severe = 1,545.3 acres

*Erosion Hazard (Off-Road, Off-Trail) rating from NRCS Web Soil Survey was used. From Web Soil Survey: The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance.

D. Erosion Potential:

No modeling occurred for this fire based on limited size, critical values and hazards.

E. Sediment Potential: N/A cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

Since there were no values at risk, a detailed hydrologic analysis was not completed.

A. Estimated Vegetative Recovery Period (years):

Approximately 2-3 years for grass/forb communties; ponderosa pine will take longer based on life form and in association with the previous fires.

B. Design Chance of Success, (percent): **NA**

C. Equivalent Design Recurrence Interval, (years): **NA**

D. Design Storm Duration, (hours): **NA**

E. Design Storm Magnitude, (inches): **NA**

F. Design Flow, (cubic feet / second/ square mile): **NA**

G. Estimated Reduction in Infiltration, (percent): <10%

H. Adjusted Design Flow, (cfs per square mile): **NA**

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

The Cold Fire was located approximataley 10 miles southeast of Custer, SD. Forest Service, Wind Cave National Park, and private lands were all within the fire perimeter. Portions of the fire had burned in the Cicero Peak Fire area (1990) and the Section 2 Prescribed Fire area (2014). The fire occurred on gentle to steep slopes. Elevations in the fire range from approximately 4,500 to 5,600 feet.

Human Life and Safety:

The BAER Team did not identify emergency conditions for life/safety of Forest users due to increased runoff and erosion within or adjacent to the burned Forest Service lands. The very limited potential risk or threat to life is where roads cross drainage channels that now have a some level of potential for increased flash floods during short duration/high intensity precipitation events. However, it is expected that if sufficient precipitation is received in the next few weeks to support spring vegetation growth that this would be limited. Structurally compromised burned trees presenting an immediate threat to life/safety were identified by the Fire Resource Advisor as a safety issue. Complete review of the entire burned area for hazardous trees was not completed by the BAER Team.

Property:

Post wildfire threats to roads may be associated with some increased runoff and erosion within and adjacent to the burned Forest Service lands. The fire occurred just prior to spring vegetation growth and with fire severities of low to moderate it is generally expected that the site will revegetate this spring if the area receives precipitation.

Natural Resources:

Water-
No emergency conditions were identified for drinking water quality. No watersheds are known to be sources of surface drinking water in this area. Potential impact to springs was rated at a Very Low Risk.

Soil Productivity and Hydrologic Function-
No emergency conditions were identified for changed hydrologic function, erosion or increased runnoff. Overall, these resources were rated as Low Risk.

Threatened/Endangered Species-
Northern long-eared bat is listed as a Threatened species and suitable summer foraging and roosting habitat likely occurs within and adjacent to the fire perimeter. There are no known hibernacula within or immediately adjacent to the fire area. The active season is May 16th- September 30th. Overall, these resources were rated as Low Risk. (Per conversation with Forest Wildlife Biologist)

Plant Communities-
Some level of post wildfire increased risk for spread and/or establishment of noxious weeds was identified. There are approximately 66 acres of known noxious weed infestation within the fire perimeter. This includes spotted knapweed, St. Johnswort, Canada thistle and common mullein. An estimated additional 66 acres (5% of NFS lands within burn perimeter) are at increased risk for noxious weed infestation associated with post-fire conditions and suppression activities. Plant communities on FS lands were rated as High Risk.

Cultural and Heritage-
Very little to no further impacts were identified to FS eligible Archeology sites.

B. Emergency Treatment Objectives:

The objective of implementing Noxious Weed Detection Surveys and Treatments is to provide for recovery of native vegetation by preventing the establishment and spread of noxious weeds in the recently burned area.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:
Treating noxious weeds and detection survey will be ongoing this year. A damaging storm event does not apply to noxious weeds as it does to other treatments designed to minimize erosion and runnoff from burned areas.

Land (weeds) **N/A** % Channel **--** % Roads/Trails **--** % Protection/Safety **--** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	-	-	-
Weed Treatment	75%		
Channel	-	-	-
Roads/Trails	-	-	-
Protection/Safety	-	-	-

E. Cost of No-Action (Including Loss)**: Not calculated. Continued expanding levels of invasive weed species.**

F. Cost of Selected Alternative (Including Loss):

BAER Risk Assessment (based on probability and magnitude of consequences)

The BAER Team considered critical values and they are documented in a separate table located within the Cold Fire BAER electronic files.

Value At Risk	Probability	Mag. Consequences	Risk
Human Life and Safety (Apple Valley Ranch, Cold Springs Ranch)	***Unlikely***	***Minor***	***Very Low***
Road (County)	***Unlikely***	***Minor***	***Very Low***
Nat.Resources: Water	***Unlikely***	***Minor***	***Very Low***
Nat.Resources: Soil Productivity	***Possible***	***Minor***	***Low***
Nat.Resources: Grassland Plant Communities (Noxious Weeds)	***Likely***	***Moderate***	***High***
Cultural & Heritage Resources	***Unlikely***	***Moderate***	***Low***
Threatened and Endangered Species	***Unlikely***	***Moderate***	***Low***

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology [X] Soils [ ]Geology [X] Range (and Invasive Plants)
[ ] Forestry [ ] Wildlife [ ] Fire Mgmt. [ ] Engineering
[ ] Contracting [ ] Ecology [X] Botany [X] Archaeology
[ ] Fisheries [ ] Research [ ] Landscape Arch [X] GIS [ ] Other

On 04/04/2016, the Hell Canyon District Ranger determined that there was a need for a BAER Assessment (per electronic mail sent to Deanna Reyher, BKF BAER Coordinator). The fire exceeded 500 acres which triggered Forest Service Manual and Regional direction to complete an assessment.

Co-Team Leaders: **Les Gonyer and Matt Scott** Email: **mcscott@fs.fed.us** Phone: **605-642-4622**

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:

Noxious Weeds Detection and Treatment

Detection surveys and treatment of known and new infestations within the Cold Fire is recommended. It is expected that it will be necessary to detect and treat weeds within the burned area, perhaps more than once during the growing season. Treatment method is ground application by spraying. Most of the spraying would generally be completed with Forest crews using a truck-mounted unit and where infestations are accessible.

Item	Acres	Cost/Acre	Cost
Noxious Weed Detection & Monitoring	200	$10.00	$2000
Noxious Weed Treatment	13.1	$229.00	$3000
Total			$5000

Treatment costs developed using the Forest KV Cost Guide

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.)

Monitoring on the Cold Fire would be the detection surveys for noxious weeds and effectiveness or treatment to determine any retreatment needs to occur within the twelve month period.

Part VI – Emergency Stabilization Treatments and Source of Funds

Line Items	Units	Unit Cost	# of Units	BAER $	Other $	# of units	Fed $	# of Units	Non Fed $	Total $
A. Land Treatments										
Noxious Weed Treatment	Acres	229	13.1	$3,000	$0		$0		$0	$3,000
Noxious Weed Detection Surveys		10	200	$2,000	$0		$0		$0	$2,000
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Subtotal Land Treatments				$5,000	$0		$0		$0	$5,000
B. Channel Treatments				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$0	$0		$0		$0	$0
C. Road and Trails				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Subtotal Road & Trails				$0	$0		$0		$0	$0
D. Protection/Safety				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
E. BAER Evaluation				---	$1,500		$0		$0	$1,500
				---	$0		$0		$0	$0
				---	$1,500		$0		$0	$1,500
Subtotal Evaluation										
F. Monitoring							$0		$0	$0
				$0	$0		$0		$0	$0
Subtotal Monitoring				$0	$0		$0		$0	$0
G. Totals				$5,000	$1,500		**$0**		**$0**	**$6,500**
Previously approved										
Total for this request				**$5,000**						

PART VII - APPROVALS

1. *s/ James E. Krager* — *4/13/2016*

Forest Supervisor (signature) — Date

2. */s/ Jacqueline A. Buchanan* — *5/23/2016*

Regional Forester (signature) — Date