

Date of Report:

BURNED-AREA REPORT

(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

- ☒ 1. Funding request for estimated WFSU-SULT funds
- ☐ 2. Accomplishment Report
- ☐ 3. No Treatment Recommendation

B. Type of Action

- ☒ 1. Initial Request (Best estimate of funds needed to complete eligible rehabilitation 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 DESCRIPTIONA. Fire Name: Deep CreekB. Fire Number: P1BD6PC. State: NDD. County: SlopeE. Region: 01F. Forest: Dakota Prairie GrasslandsG. District: MedoraH. Date Fire Started: September 1, 2004I. Date Fire Contained: Sep 4, 2004J. Suppression Cost: \$400,000

K. Fire Suppression Damages Repaired with Suppression Funds

- 1. Fireline waterbarred (miles): 0 of 21 miles total
- 2. Fireline seeded (miles): 0
- 3. Other (identify):

L. L. Watershed Number:

- a. 101102030409 Lower Deep Creek
- b. 101102030407 Upper Deep Creek
- c. 101102030408 unnamed
- d. 101102030805 Lower Sand Creek

M. Total Acres Burned: 3,740 acresNFS Acres(774) Other Federal () State (**234**) Private (2732)

N. Vegetation Types: Ponderosa Pines, Western wheatgrass/needle-and-thread, western wheatgrass/green needlegrass, Needle-and-threadgrass/thread-leaved sedge, Buffaloberry shrubland, creeping juniper/sideoats grama shrubland, green ash/chokecherry woodlands.

O. Dominant Soils: Brandenburg-Cabba complex, Cabba-Badland complex, Cabbart silt loam, Korchea and Havre soils, Cabbart-Badland complex, Stady loam, and Cabba-Chama complex.

P. Geologic Types: Sentinel Butte Formation and Bullion Creek Formation, both Paleocene age: These Paleocene formations are interbedded deposits of bentonite, lignite, sandstone, siltstone, claystone, and clinker. The HT Butte clinker locally defines the contact between the Sentinel Butte and Bullion Creek Formations and caps the majority of the small hills, ridges, knobs, and buttes that are covered in ponderosa pine.

Modern alluvium and Holocene alluvium in floodplains, beneath terraces, and on fans: The alluvial fill is readily eroded. Many headcuts and gullies have formed in the alluvium of the burnt watersheds.

Landslide deposits, primarily on north-facing slopes.

Q. Miles of Stream Channels by Order or Class:

 1st order (primarily subirrigated ash draws and drainage ways): approx. 30, 2nd order (sub-irrigated draws and ephemeral reaches): 12.3; 3rd order (ephemeral reaches): 5.6; 4th order (intermittent with riparian zones): 2.8; 5th order: 6.5; 6th order: 4.0; 7th order: 18.4 [NOTE: 5th order and higher is Deep Creek, which is perennial stream.]

R. Transportation System

Trails: 0 miles Roads: 5 miles

PART III - WATERSHED CONDITION

A. Burn Intensity (acres): 3,023 (low) 690 (moderate) 19 (high)

“Low” intensity is defined as burned area where ground cover remains near pre-fire levels and vegetation is generally not destroyed. Grassland burns are all “low” intensity in this fire. Moderate intensity includes mosaic burns having over 50% “low” intensity burn. “High” intensity is where all vegetation is killed.

Burn Severity (acres): 3,713 (low) 19 (moderate) 0 (high)

“Burn Severity” is defined as an interpretation of burn effects for a resource. In this case the resource effects are potential sedimentation increases to Deep Creek and delay in natural revegetation of soils. “High” burn severity means burned area that has high intensity burn, moderate or high soil impacts, and steep slopes. “Low” severity indicates it is unlikely sedimentation will increase and soils are likely to revegetate within two years.

B. Water-Repellent Soil (acres): 180

C. Soil Erosion Hazard Rating (acres):
 3145 (low) 560 (moderate) (high)

D. Erosion Potential: 10 tons/acre

2-10 tons per acre is susceptible to wind erosion given the ubiquitous cover of silt on ground surface. Steep, moderately burned hillslopes are likely to have 20-50 tons/acre of erosion related to rilling. Lightly burned grasslands have enough root structure remaining to limit soil loss to wind erosion (2-10 tons/acre). Lightly burned ponderosa pine will lose soil due to rilling and debris flows (10-25 tons/acre), and lightly to moderately burned ponderosa pine area with long and steep slopes will lose soil due to rilling, debris flows, and mass wasting (20-50 tons/acre).

E. Sediment Potential: 300 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years):	<u>2</u>
B. Design Chance of Success, (percent):	<u>90</u>
C. Equivalent Design Recurrence Interval, (years):	<u>50 (and 100)</u>
D. Design Storm Duration, (hours):	<u>1 (and 6)</u>
E. Design Storm Magnitude, (inches):	2.8 (and 3.5)
F. Design Flow, (cubic feet / second/ square mile):	<u>320 and (480)</u>
G. Estimated Reduction in Infiltration, (percent):	<u>20</u>
H. Adjusted Design Flow, (cfs per square mile):	<u>390 and (580)</u>

PART V - SUMMARY OF ANALYSIS¹

A. Describe Watershed Emergency:

The burned area is a rolling-fluvial landscape primarily in grassland vegetation. The northern third is covered with dense ponderosa pine. This was a wind and drought driven fire, with extensive unburned area remaining in both grassland and pine areas.

Two-thirds of the burned area was on private land. Most of the steeper, forested burn was in this category. Though no BAER funds were specified for treatments on this land, the entire area was evaluated for potential values at risk.

Based on the Burned Area Map and field review there is little likelihood of sedimentation or channel change effects on Deep Creek, the only perennial stream in the area.

Though there are some steep slopes with blackened vegetation and little cover, the low-severity soil effects, presence of seed sources in surrounding unburned areas, potential for needle-cast from burned trees, and small areal extent of these areas indicates there is unlikely to be significant debris or soil movement into stream channels. Seeding is not recommended due to adequate seed sources near burned areas, low soil burn severity, and potential for weed-introduction.

There are a few blackened trees near a powerline on private land in section 19. These trees should be removed for safety purposes. There are no cultural features exposed in the burned area.

There are 21 miles of dozer, grader, or disked fire lines in the vicinity of the fire, on private (14.3 miles), state (1.7 miles), and federal (5.0 mile) lands. About 30 % of these lines should be rehabilitated to reduce exposed soil. Since noxious weeds are present in the area, these fire lines are all vectors for noxious weed invasion, particularly leafy spurge or Canadian thistle. There is a large berm in Deep Creek on State land related to fire line construction. A treatment objective is to: protect soil productivity from noxious weed invasion by 1) re-spreading topsoil in berms, and 2) patrolling and spot treating rehabilitated fire lines, 3) installing waterbars in

¹ **Note** - The R-1 BAER Kit was used to support the BAER analysis. It was discovered it needs maintenance, some programs will not run anymore, the operating system is WAY out of date with the Forest Service, the foam protective packing material is broken in places, cables are mismatched, and the INFOCUS projector is mal-functioning. It took 4 hours to re-furbish the equipment and a new bulb for the INFOCUS projector is needed.

erosive areas, and 4) discouraging further vehicle use on these areas. This treatment recommendation should be funded under suppression codes.

There are approximately 50 acres of known noxious weed infestation on NFS lands within the fire perimeter. Noxious weeds include leafy spurge and Canada thistle. Based on prior observations, these infestations can double in size after a wildfire. In order to maintain soil productivity on these sites, the infestation area should be patrolled and treated to reduce expansion of noxious weeds.

There were a limited number of hazard trees adjacent to a road on NFS land. These pose a risk to the public traveling on the road and should be felled and moved away from the roadway.

Due to the open landscape, rolling topography, and newly created travel routes, increased unauthorized vehicle travel is anticipated. Vehicle travel can increase soil compaction and create additional resource damage.

B. Emergency Treatment Objectives:

Treatment objectives are to maintain soil productivity by reducing noxious weed expansion due to the wildfire, Reduce risk to the public from hazard trees adjacent to roads, and to reduce soil compaction and resource damage from unauthorized vehicle travel.

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

Land 90 % Channel NA % Roads NA % Other NA %

D. Probability of Treatment Success

Years after Treatment			
	1	3	5
Land	90	90	90
Channel	NA		
Roads	NA		
Other	NA		

E. Cost of No-Action (Including Loss):_ \$106,000

F. Cost of Selected Alternative (Including Loss):_ \$9339

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input checked="" type="checkbox"/> Geology	<input checked="" type="checkbox"/> Range	<input type="checkbox"/>
<input checked="" type="checkbox"/> Forestry	<input type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input checked="" type="checkbox"/> Engineering	<input type="checkbox"/>
<input type="checkbox"/> Contracting	<input type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology	<input type="checkbox"/>
<input type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS	

Team Leader: Darla Lenz

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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:

Treatments will include:

A. 1) Patrolling for noxious weed expansion in May and June 2005; 2) treating infestations with herbicide (Tordon) in June 2005; and 3) monitoring control efforts.

Noxious weed treatment is intended to reduce expansion of weeds and maintain soil productivity on the burned area.

B. Felling hazard trees and removing from roadway in order to decrease risks to public traveling on NFS road.

C. Signing areas to reduce unauthorized motor vehicle traffic in order to reduce potential soil compaction and loss of soil productivity on unauthorized travel routes.

Channel Treatments: None

Roads and Trail Treatments: None

Structures: None

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.)

Noxious weed infestations (leafy spurge and Canada thistle) will be monitored by patrolling the area in May or June, 2005. Infestations will be mapped using GPS. Herbicide treatments will be monitored by observing control rates in July or August, 2005. Followup treatment may be recommended for September 2005 if control is unsuccessful.

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Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership

			NFS Lands					Other Lands			All
		Unit	# of	WFSU	Other		# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	SULT \$	\$		units	\$	Units	\$	\$
A. Land Treatments											
noxious weed control	acres	72	50	\$3,600	\$0			\$0		\$0	\$3,600
noxious weed patrol	days	200	2	\$400	\$0			\$0		\$0	\$400
signs	sign	100	6	\$600	\$0			\$0		\$0	\$600
hazard tree removal	tree	25	12	\$300	\$0			\$0		\$0	\$300
Insert new items above this line!				\$4,900	\$0			\$0		\$0	\$4,900
Subtotal Land Treatments											
B. Channel Treatments				\$0	\$0			\$0		\$0	\$0
				\$0	\$0			\$0		\$0	\$0
				\$0	\$0			\$0		\$0	\$0
				\$0	\$0			\$0		\$0	\$0
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Channel Treat.											
C. Road and Trails				\$0	\$0			\$0		\$0	\$0
				\$0	\$0			\$0		\$0	\$0
				\$0	\$0			\$0		\$0	\$0
				\$0	\$0			\$0		\$0	\$0
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Road & Trails											
D. Structures				\$0	\$0			\$0		\$0	\$0
				\$0	\$0			\$0		\$0	\$0
				\$0	\$0			\$0		\$0	\$0
				\$0	\$0			\$0		\$0	\$0
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Structures											
E. BAER Evaluation	days	340	7	\$2,380	\$0			\$0		\$0	\$2,380
assessment	days	280	5	\$1,400	\$0			\$0		\$0	\$1,400
BAER Kit Maint.			1	\$650	\$0			\$0		\$0	\$650
Insert new items above this line!				\$4,430	\$0			\$0		\$0	\$4,430
Subtotal Evaluation											
F. Monitoring	days	150	2	\$300	\$0			\$0		\$0	\$300
noxious weeds	days	340	1	\$340	\$0			\$0		\$0	\$340
noxious weeds				\$640	\$0			\$0		\$0	\$640
Insert new items above this line!											
Subtotal Monitoring				\$9,970	\$0			\$0		\$0	\$9,970

PART VII - APPROVALS

1. /s/David M. Pieper _____
Grasslands Supervisor (signature)

9/21/04_____
Date

2. _____
Regional Forester (signature)

Date