

Date of Report:08/07/2012

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

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

B. Type of Action

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: Ash Creek

B. Fire Number: NE-NBF-120743

C. State: NE D. County: Dawes

E. Region: R02 F. Forest: Nebraska National Forest and Grasslands

G. District: Pine Ridge

H. Fire Incident Job Codes: P2G3EC (0207)

I. Date Fire Started: 7/22/2012

J. Date Fire Contained: 7/27/2012

K. Suppression Cost:

*** Type 3 Incident Management Team still assigned to fire as this report was being completed*

L. Fire Suppression Damages Repaired with Suppression Funds

*** Rehabilitation of fire suppression line is currently ongoing. The fire was still in a “contained” status at the time of this assessment with some active internal burning.*

Fireline waterbarred (miles):

Dozer: **

Handline: **

Fireline seeded (miles): *Expected to be seeded this fall (** miles)*

Other (identify): Road Damage ** miles

M. Watershed Number(s):

HUC 12	Watershed Name	Watershed Acres	Watershed Acres Burned	Watershed Acres Unburned	Percent Burned (Fire)	Percent Unburned
101402010501	Ash Creek	30,715	1,327	29,388	4%	96%
101402010502	Indian Creek	14,682	849	13,833	5%	95%
101500031004	Cottonwood Creek	35,522	6	35,516	0.01%	99%
101500031005	Pebble Creek	20,671	12	20,659	0.01%	99%

N. Total Acres Burned: 2,193 acres

NFS: 1,749 acres NPS: 0 acres

Private: 444 acres

O. Vegetation Types:

Ponderosa pine/forest understory; Grassland mix Western Wheatgrass, Blue Grama, Blue stem species, Riparian (Cottonwoods, Green Ash, Box Elder)

P. Dominant Soils:

***Dominant soils – did not include areas mapped as water. Soils were lumped together instead of splitting them out by percent slope.*

Soil Name	Sum of Acres	% of Fire Area
Alliance silt loam	4.13	0.2
Bankard loamy fine sand, frequently flooded	4.72	0.2
Bridget silt loam	290	13
Jayem and Vetal loamy very fine sands	15.56	0.7
Keith and Ulysses silt loams	4.87	0.2
Keith silt loam	255.36	12
Oglala – Canyon loams	18	0.8
Oglala loam	120.91	5.5
Richfield silt loam	0.93	0.01
Rosebud – Canyon loams	22.44	1

Rosebud silt loam	30.93	1
Sarben and Vetal loamy very fine sands	8.66	0.4
Tassel – Ponderosa – Rock outcrop association	1,379.44	63
Tassel Soils	31.62	1
Vetal and Bayard soils	6.13	0.2
TOTAL	2,193	

Q. Geologic Types:

Arikaree and White River

R. Miles of Stream Channels by Order: **within the fire perimeter only; totals below do not include other stream channels downstream of contributing burned areas*

Perennial: 0.45 miles

Intermittent: 0.18 miles

Ephemeral: 13.25 miles

Total = 13.88 miles

S. Roads and Trails:

Trails (non-motorized): 1.84 miles

National Forest System Roads: 0.49 miles

Two-track: 3.25 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres):

* approximate acreages based on field reconnaissance and mapping; BARC product ordered and awaiting post-fire image capture.

Low/Unburned: 1,793 Moderate: 300 Moderate/High: 100 High: ---

B. Water-Repellent Soil acres: 100 acres, scattered in Moderate/High soil burn severity polygons

A thin water repellent layer (2mm or less) was found at the soil-ash interface in moderate burn severity areas. Below this layer, water infiltrated into soils within 10 seconds or less.

Hydrologic Soil Group D dominates the fire area which is soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. Group D is associated with the Tassel – Ponderosa – Rock outcrop association

C. Soil Erosion Hazard Rating (acres):

** Soil erosion hazard acreage is based on individual map units that comprised more than 1% (generally more than 90 acres) of the burned area. Erosion Hazard Ratings for this assessment were obtained from accessing <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx> for Hazard of Erosion on Roads and Trails. An erosion hazard rating for burned conditions is not currently available on that web site. In recent past assessments in the southern Hills, the “Hazard of Off-Road or Off Trail Erosion was used, however, in observing erosion occurring before incidents are controlled or soon thereafter within the first year, (fire removing overstory canopy, shrubs and herbaceous material), seemed to better reflect a higher erosion hazard during precipitation events. Using the information rating provided under “Hazard of Erosion on Roads and Trails” for the first season following fire is likely more realistic on what we expect during that first year “emergency”. Then after the area begins to drop conifer needles, snags and has some vegetation regrowth, the landscape systems begin to exhibit more of a similarity to the ratings identified in the “Hazard of Off-Road or Off-Trail Erosion in years 2-4 following the fire.

Soil Map Unit Name	Sum of Acres	% of Fire Area	Erosion Hazard
Alliance silt loam	4.13	0.2	SLIGHT
Bridget silt loam	290	13	SEVERE
Jayem and Vetal loamy very fine sands	15.56	0.7	MODERATE
Keith silt loam	255.36	12	MODERATE
Oglala – Canyon loams	18	0.8	SEVERE
Oglala loam	120.91	6	SEVERE
Richfield silt loam	0.93	0.01	SLIGHT
Rosebud – Canyon loams	22.44	1	MODERATE
Rosebud silt loam	30.93	1	SLIGHT
Sarben and Vetal loamy very fine sands	8.66	0.4	SEVERE
Tassel – Ponderosa – Rock outcrop association	1,379.44	63	SEVERE
Tassel Soils	31.62	1	SEVERE
Vetal and Bayard soils	6.13	0.2	SLIGHT
TOTAL	2,184		

D. Erosion Potential:

Erosion potential for areas mapped as low/unburned within both fire areas is not expected to be much higher than the inherent erosion rate prior to the fire. However, areas mapped as having moderate to high soil burn

severity occurred on the eastern side of the fire in isolated areas ranging from low to steep slopes. Higher soil burn severity was seen in areas where large wood debris was concentrated due to the Roberts Tract Fire, 2006. A lot of the trees that had not been consumed in the 2006 fire had fallen down and added to the potential fuel for the Ash Creek Fire. Thus a relatively small change in the hydrologic characteristics of these hillslopes may be seen in the first couple of years. This will continue until ground cover can be established.

E. Sediment Potential: *based on ERMiT modeling

Moderate soil burn severity areas: 2 - 4 ton/acre

Moderate/High soil burn severity areas: 4 - 6 tons/acre

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 1-3 years for the grassland areas; longer for the Ponderosa pine and areas mapped as moderate to moderate/high soil burn severity.

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

C. Equivalent Design Recurrence Interval, (years): 2-10 year*
** high intensity, short duration thunderstorms*

D. Design Storm Duration, (hours): 30 – 60 minutes

E. Design Storm Magnitude, (inches): 1 inch or greater*

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

G. Estimated Reduction in Infiltration, (percent): < 15% *

**due to the absence of soil water repellency; due to rock outcrops and the nature of the short duration, high- intensity thunderstorms typical in the burned area, infiltration of rainfall is generally expected to be limited in moderate to high soil burn severity areas. Moderate and high soil burn severity areas are limited throughout the fire and are predominately located where heavy dead and down fuels were.*

H. Adjusted Design Flow, (cfs per square mile): N/A

PART V - SUMMARY OF ANALYSIS*

A. Describe Critical Values/Resources and Threats:

Human Life and Safety:

Hill slope runoff, ash wash, may occur causing blockage and damage to roads and stream crossings. Because of this, there is a **HIGH RISK** for threats to human life and safety where roads on Forest and private land cross stream channels and drainages that now have a substantially greater potential for flash floods during short duration/high intensity precipitation events.

Property:

The loss of stabilizing vegetation will increase the likelihood of severe soil erosion and sedimentation associated with intense precipitation events (“typical” thunderstorm events that occur during late spring and summer). Deep rutting, rilling, and partial to full washout of fill material on and around existing culverts may also occur. Once fill material on and around culverts is lost, there is an increased potential for the culvert to become part of debris flow following high intensity precipitation events, thus increasing the risk to human life and property downstream. There is an **INTERMEDIATE RISK** for culverts and the associated Ash Creek road.

Natural Resources:

Water Quality

No emergency conditions threatening drinking water quality or municipal supplies were identified within the burned area or downstream. No watersheds are known to be sources of surface drinking water in this area. There are several springs and wetlands within stream channels and drainage bottoms throughout the fire area. These sites serve as water sources for livestock and wildlife throughout the fire area. These water features will experience flooding, localized scour, sedimentation, and ash deposition as a natural part of post-fire flood pulses through the stream systems. However they are not expected to be permanently impacted or impaired.

Soil Productivity and Hydrologic Function

Numerous small areas within the Ash Creek fire have been identified as having moderate or moderate/high soil burn severity. These areas have a **HIGH RISK** of producing increased post-fire runoff and gully erosion.

Threatened/Endangered Species

No Threatened or Endangered wildlife or botanical species are known to occur within the burned area. There are no Region 2 Sensitive or Forest Species of Local Concern (SOLC) plant species currently known to occur within the burned area. There is **NO RISK** associated with T&E status species for the fire area.

Plant Communities - Noxious Weeds

The post-fire threat of increased spread and/or establishment of noxious weeds is a major concern for fires in the Nebraska National Forest. Private lands within and adjacent to the burned area may also contain established populations of noxious weeds.

There is also a potential risk for establishment of introduced noxious weed species from other regions due to fire suppression equipment from other areas in the U.S. The potential noxious weed increase on Forest administered lands were rated as **HIGH RISK**.

Cultural and Heritage:

For the remaining sites, no post-fire threats were identified, resulting in a **VERY LOW RISK**.

B. Emergency Treatment Objectives:

- To protect USFS employees, Forest users, and the public working and traveling along roads open to the public yearlong.
- To prevent expansion of existing noxious weeds and establishment of introduced species in the burned area.

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

Land (weeds) N/A* Land (hill slopes) N/A% Channel N/A Roads/Trails 80 %
Protection/Safety N/A % Archeology N/A %

D. Probability of Treatment Success

Treatment Type	Years after Treatment		
	1	3	5
Land/hill slope	-	-	-
Weed Treatment	60 - 70%	-	-
Channel	-	-	-
Roads/Trails	80%	70 %	%
Protection/Safety/signs	-	-	-
Archeology	-	-	-

E. Cost of No-Action (Including Loss): The cost of the No-Action alternative ranges from \$34,000.

F. Cost of Selected Alternative (Including Loss): the proposed treatments have been designed to have the best possible chances of success to protect human life, property, and critical natural and cultural resources. Complete loss, despite implementation of proposed treatments, is not expected to occur. Refer to the cost summary table for the cost of the proposed treatments associated with the selected alternative.

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Matt Lucas

Email: mrlucas@fs.fed.us Phone: 308-432-0327 FAX: 308-432-0309

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:

Soils/Hill Slope Treatments

Archeological

Roads

East Ash Road #706 was the only Maintenance Level 3 road affected by the fire, beginning at the property

boundary cattleguard (MP 0.0) and running south for 1.59 miles to a creek crossing.

--At MP 0.07, an east to west running drainage flows into an 18" dia. alum. cmp running under the road at right angles.

--At MP 0.79, an east to west running drainage flows into an 18" dia. alum. cmp running under the road at right angles.

AT MP 1.39, an east to west running drainage flows into 18" dia. alum. cmp running under the road at right angles.

At all three of the drainage crossing, straw waddles could be placed upstream from the road at strategic locations to slow the movement of debris that will happen on a heavy rain event. This would give the native grass vegetation time to re-establish itself and help keep the cmp's from plugging up, thus keeping the runoff from overtopping the road.

Noxious Weeds Detection and Treatment

Invasive Species Control and Monitoring – Fall of 2012 treat all existing populations of Canada thistle, Houndstongue and other species in the burn area to reduce potential spread. Survey for new infestations fall 2012, monitor disturbed sites such as dozer lines, hand lines, roads, etc. for new infestations. Treat all known infestations in 2013 growing season, monitor all disturbed sites for new infestations.

Detection surveys and treatment of new infestations that are accessible within the fire boundary is recommended. Detection and treatment of weeds in the burned area may occur multiple times within the next year. Treatment will be accomplished using integrated pest management and may be completed by Forest employees or through other options such as contracting.

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.

Roads

Monitoring will include visual inspections by driving or walking down the road after each storm or rain event to see if soil erosion is occurring.

Soil Stabilization

Archeology Resources

Noxious Weeds

Monitoring of known population will be performed in addition to the detection surveys for additional noxious weed species or areas. Treatment effectiveness monitoring will also be done to determine any retreatment needs to occur within the twelve month period.

Part VI – Emergency Stabilization Treatments and Source of Funds

PART VII - APPROVALS

1.

Jane Darnell
Forest Supervisor (signature)

Aug. 10, 2012

Date

2.

Regional Forester (signature)

Date