Date of Report: 5/27/2021

BURNED-AREA REPORT

PART I - TYPE OF REQUEST

A. Type of Report

☒ 1. Funding request for estimated emergency stabilization funds
☐ 2. No Treatment Recommendation

B. Type of Action

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

☐ 2. Interim Request #___
☐ Updating the initial funding request based on more accurate site data or design analysis

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Biesterfeld

B. Fire Number: NDDPF-210049

C. State: ND

D. County: Ransom

E. Region: 01

F. Forest: Dakota Prairie

G. District: Sheyenne RD

H. Fire Incident Job Code: P1NWS3

I. Date Fire Started: 03/29/2021

J. Date Fire Contained: 04/01/21

K. Suppression Cost: $74,974

L. Fire Suppression Damages Repaired with Suppression Funds (estimates):

1. **Fireline repaired (miles):**
2. **Other (identify):**

M. Watershed Numbers:

Table 1: Acres Burned by Watershed

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
090202040502	Saint Paul Cemetery-Sheyenne River	39,114	444	1.1%
090202040503	090202040503	12,918	2,452	19.0%
090202040505	City of McLeod	27,966	196	0.7%

N. Total Acres Burned:

Table 2: Total Acres Burned by Ownership

OWNERSHIP	ACRES
NFS	2,380
TNC	216

OWNERSHIP	ACRES
STATE	
PRIVATE	496
TOTAL	3,092

O. Vegetation Types:
R056XY096ND-Subirrigated Sands (1,027 ac. 43%)
R056XY090ND-Sands (833 ac. 35%)
R056XY102ND-Wet Meadow (217 ac. 9%)
R056XY104ND-Choppy Sands (168 ac. 7%)
R056XY087ND-Limy Subirrigated (136 ac. 6%)

P. Dominant Soils:
The top four most prevalent soil series by area within the Biesterfeld fire perimeter on NFS lands were Aylmer (43%), Serden (40%), Rosewood (7%), and Ulen (7%). Aylmer soils are derived from eolian deposits on slopes of 4%. Serden soils are derived from eolian deposits on slopes of 10-25%. Ulen soils are derived from sandy glaciolacustrine deposits on slopes of 1%. Rosewood soils are derived from sandy glaciolacustrine deposits on slopes of 0.50%.

Q. Geologic Types:
The fire boundary is within the Oahe Formation. The Oahe Formation sediment consists of a variety of clay, sand, silt, and gravel deposits that accumulated during Holocene and latest Wisconsinan (75,000 to 11,000 years ago) time. It consists of river, pond, windblown, and mass-movement sediment. In Ransom and Sargent Counties, two main components are a clay beds and a sand and silt beds.

R. Miles of Stream Channels by Order or Class:
There are no stream channels within the Biesterfeld fire boundary.

S. **Transportation System:**
Trails: *National Forest (miles):* 0.23[1] *Other (miles):* 0.0
Roads: *National Forest (miles):* 1.76 *Other (miles):* 0.0

PART III - WATERSHED CONDITION

A. Burn Severity (acres):

Table 3: Burn Severity Acres by Ownership[2]

Soil Burn Severity	NFS	TNC	State	Private	Total	% within the Fire Perimeter
Unburned	351	4		90	445	14%
Low	2,029	211		406	2,646	86%
Moderate						
High						
Total	**2,380**	**216**		496	3,092	

B. Water-Repellent Soil (acres):
Due to low burn severity, water-repellent soils were not analyzed or modelled.

C. Soil Erosion Hazard Rating:
Due to low burn severity, soil erosion hazard ratings were not analyzed or modelled.

D. Erosion Potential:

[1] North County National Scenic Trail
[2] Available imagery was poor. The burn severity may not be reliable, so a single class of low severity was used.

Based on data from other fires on the DPG, it was assumed that there would be an extremely small amount of high soil burn severity areas. Erosion potential was not modeled or estimated using other means.

E. Sediment Potential:
Based on data from other fires on the DPG, it was assumed that there would be an extremely small amount of high soil burn severity areas. Sediment potential was not modeled or estimated using other means.

F. Estimated Vegetative Recovery Period (years):
1-3 years

G. Estimated Hydrologic Response (brief description):
The Biesterfeld fire was reported the evening of March 29th. Due to poor image quality, soil burn severity was "unburned" or low on the entirely of the fire area. Hydrologic response is expected to be insignificant.

Figure 1: Biesterfeld fire burn severity map

PART V - SUMMARY OF ANALYSIS

Introduction/Background

A. Describe Critical Values/Resources and Threats (narrative):

Table 4: Critical Value Matrix

Probability of Damage or Loss	**Magnitude of Consequences**		
	Major	Moderate	Minor
	RISK		
Very Likely	**Very High**	**Very High**	**Low**
Likely	**Very High**	**High**	**Low**
Possible	**High**	**Intermediate**	**Low**
Unlikely	**Intermediate**	**Low**	**Very Low**

1. **Human Life and Safety (HLS): NA**
2. **Property (P): NANatural Resources (NR):**
   Federally listed species critical habitat affected by the fire: High Risk
   The fire burned through an area listed as critical habitat for the Dakota Skipper, a butterfly, and the Prairie Fringed Orchid. Roughly 630 acres of the area burned is Dakota skipper habitat in the Milton allotment. It should be noted that the Dakota Skipper does not occupy this area, but this is critical habitat and may be used for reintroduction of the species. The Western Prairie Fringed Orchid does occupy the burned area, mostly in wet meadows. The orchid will also spread into subirrigated sands and limy ecological sites on wet years. The main areas within the burn area affected include 1350 acres: 419 acres in the Core, 859 in the Satellite and 72 acres in other allotments. Collectively, the amount of acreage affected for both the butterfly and the orchid is 1350 acres.

   Leafy spurge threatens to degrade the critical habitat for both these federally listed species due to its observed vigorous regrowth after prescribed fire. Postfire sprouting is common for mature leafy spurge, and leafy spurge abundance can be greater on burned than unburned sites. Fire's effect on leafy spurge seeds and seedlings is more variable (https://www.fs.fed.us/database/feis/plants/forb/eupesu/all.html).

   Another noxious weed that threatens the critical habitat of the butterfly and orchid is Canada thistle. This species can resprout from its extensive root system and recolonize rapidly. Abundant evidence of postfire establishment of Canada thistle suggests that managers need to be aware of this possibility, especially if a known seed source is in the area, and take measures to prevent the establishment of Canada thistle after prescribed burning and wildfires (https://www.fs.fed.us/database/feis/plants/forb/cirarv/all.html).

Despite heavy investment in decreasing these noxious weeds, their presence persists and thus theres a **Likely** probability of damage to the Dakota Skipper and Prairie Fringed Orchid critical habitat. The magnitude of consequences is **Moderate** given the current grassland vegetation composition.

Native Plant Communities: High Canada thistle and leafy spurge also pose a general threat to native grassland species. With declines in native grassland, summarily effects to wildlife habitat, ecosystem function and landscape appearance occur. Similar to the threatened and endangered species, the probability of damage is **Likely** with **Moderate** consequences. The risk is highest along the roadway buffer where fire equipment was used and weed seeds and propagules could spread onto the adjacent burned area. However, the fire did not actively use dozers or handlines to control; therefore no fire suppression activities directly contribute to weed risk.

4. Cultural and Heritage Resources: NAEmergency Treatment Objectives:
Minimize the establishment and spread of noxious weed infestations that will occur in the next 12 months.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:
Land: 50

D. Probability of Treatment Success

Table 5: Probability of Treatment Success

	1 year after treatment	*3 years after treatment*	*5 years after treatment*
Land			
Noxious weed treatment	80	85	85

E. Cost of No-Action (Including Loss):
The DPG has invested heavily into restoring the critical habitat and grassland. Based on past years data, the not treating the invasives and protecting the critical habitat could cost twice as much as not treating it now because of the aggressive colonization of leafy spurge that is present. Thus, treatment one year after fire could be $119,520 two seasons after fire.

F. Cost of Selected Alternative (Including Loss):
Weed treatment for 1350 acres of critical habitat and 1.8 miles of road buffer (8 acres) = $59,760

G. Skills Represented on Burned-Area Survey Team:

☒ Soils	☒ Hydrology	☐ Engineering	☒ GIS	☐ Archaeology
☒ Weeds	☐ Recreation	☐ Fisheries	☐ Wildlife	
☒ Other: Range				

Team Leader: Nick Semenza
Email: nicholas.semenza@usda.gov **Phone(s)** (701)989-7311

Forest BAER Coordinator: Nick Semenza
Email: nicholas.semenza@usda.gov **Phone(s):** (701)989-7311

Team Members:*Table 6: BAER Team Members by Skill*

Skill	**Team Member Name**
Team Lead(s)	
Soils	
Hydrology	

Skill	Team Member Name
Engineering	
GIS	Phil Sjursen
Archaeology	
Weeds	Stacy Swenson
Recreation	
Other	Stacy Swenson

H. Treatment Narrative:

Land Treatments:
The herbicide Facet L (rate of 64 oz/ac) will be applied using a ground rig or UTV depending upon the terrain. The ecological sites targeted for treatment would be subirrigated sands, and limy subirrigated sites; focus will occur on threatened and endangered species habitat. Treatments would be timed to not interfere with Dakota Skipper lifecycle (driving and spraying) and Fringed Prairie Orchid growth. Treatments will follow conservation measures along with terms and conditions to comply with Endangered Species Act. Invasive species monitoring next year will determine if weeds spread is occurring in the burned area.

Channel Treatments: NA

Roads and Trail Treatments: NA

Protection/Safety Treatments: NA

I. Monitoring Narrative:

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										
Invasives	Acres	44	8	$352	$0		$0		$0	$352
Critical Habitat	Acres	44	1350	$59,400	$0		$0		$0	$59,400
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$59,752	$0		$0		$0	$59,752
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 Treatments				$0	$0		$0		$0	$0
C. Road and Trails										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road and Trails				$0	$0		$0		$0	$0
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 Protection/Safety				$0	$0		$0		$0	$0
E. BAER Evaluation										
Initial Assessment	Report			---	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				$0	$0		$0		$0	$0
F. Monitoring										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$0	$0		$0		$0	$0
G. Totals				$59,752	$0		**$0**		**$0**	**$59,752**
Previously approved										
Total for this request				**$59,752**						

PART VII - APPROVALS

1. BENNIE SOUTH Digitally signed by BENNIE SOUTH Date: 2021.05.27 16:37:36 -05'00'

Forest Supervisor Date

Appendix: Soil burn severity map of Biesterfield fire.