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

Date of Report:

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: Elk Hill

B. Fire Number:

C. State: Montana

D. County: Teton

E. Region: R1

F. Forest: HLC

G. District: D1 Rocky Mountain

H. Fire Incident Job Code: P1J7YD

I. Date Fire Started: 4/8/2016

J. Date Fire Contained: 4/15/2016

K. Suppression Cost: $630,000

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

M. Watershed Number:

N. Total Acres Burned: 1296
NFS Acres(1089) Other Federal ( ) State ( ) Private ( )

O. Vegetation Types: Elevations within the burned area perimeter range from 4,900' to 5,820'. Primary vegetation types include meadow grasses and lodgepole Pine. Primary conifer species include Douglas-fir, lodgepole pine, subalpine fir and whitebark pine. Aspen also occurs throughout most forest types. Brush and grass areas primarily consist of mountain big and low sagebrush, bitterbrush, and a variety of grasses (Idaho fescue, bluebunch wheatgrass).

P. Dominant Soils:

Soils on the Elk Hill Fire consist of one primary Landtype, which is not described in the Lewis & Clark National Forest landtype database: *1b*. This landtype is dominated by typic cryoborolls, andic cryochrepts. The parent material consists primarily of glacial till as well as sandstone and siltstone. A hydrologic soil group (HSG) for this unit was not determined.

Q. Geologic Types:

The Elk Hill Fire burn area is underlain by Mississippian age Madison Group limestone sediments. However, the main source of surficial deposits within the burn area are derived from Pleistocene glaciation consisting of till and outwash deposits.

R. Miles of Stream Channels by Order or Class:

S. Transportation System

Trails: __ miles Roads: __ miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 1244 (low) 52 (moderate) ___ (high)

B. Water-Repellent Soil (acres):

C. Soil Erosion Hazard Rating (acres):

1244 (low) 52 (moderate) ___ (high)

The overall soil burn severity pattern is mosaic and patchy. Within the large meadow areas of the fire, burn severity is estimated to be low. Low burn severity is normally associated with grasses and cool moist soils associated with early spring soil conditions. Moderate soil burn severity is generally associated with consumption of lower slopes of lodgepole pine.

D. Erosion Potential: ____ tons/acre

E. Sediment Potential: ____ cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

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

B. Design Chance of Success, (percent): 100

C. Equivalent Design Recurrence Interval, (years): 10

D. Design Storm Duration, (hours): 1

E. Design Storm Magnitude, (inches): 1

F. Design Flow, (cubic feet / second/ square mile): 26.5

G. Estimated Reduction in Infiltration, (percent): 56

H. Adjusted Design Flow, (cfs per square mile): 165

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

WEEDS

The Elk Hill fire occurred in portion of the Bob Marshall wilderness that receives steady high levels of recreational use from March through November. Additionally most of this use has associated grazing by recreational livestock. The area is an important forage source for the local elk herd and seasonal closures are managed to allow elk to utilize this area.

Noxious weeds/invasive plant species pose a serious threat to the composition, structure, and function of native plant communities. Depending on burn severity and site potential, fire as a disturbance process has the potential to greatly exacerbate infestations of certain noxious weed species. Soil disturbance resulting from all levels of burn severities in a wildfire incident and fire suppression related activities (hand lines, structure protection, drop spots, etc.) that cause vegetation and soil alteration provide the optimum conditions for noxious weed invasion.

The potential for accelerated expansion of noxious weed species within the fire perimeter, especially within and adjacent to already infested areas is high. Moderate and high intensity burned acres provide ideal seedbeds for noxious weed establishment with little competition from native vegetation.

Herbaceous vegetation, forests and riparian habitats are crucial for a variety of terrestrial and aquatic species. These areas and soil stabilization are the emergency values at risk found on National Forest.

B. Emergency Treatment Objectives:

- Treat invasive plants that are a threat to naturalized ecosystems by minimizing the expansion of existing populations in the burned area and control of expected invasion of noxious weeds within and adjacent to the area where soils/vegetation was disturbed as a result of fire suppression activities.

In accordance with the revised Forest Service manual, the risk matrix below, Exhibit 2 of Interim Directive No.: 2520-2014-1 was used to evaluate the Risk Level for each value identified during the Spotted Eagle Fire BAER assessment. Only treatments directly addressing FS Values at Risk with a rating of High or above are being requested for BAER authorized treatments.

Probability of Damage or Loss	**Magnitude of Consequences**		
	Major	Moderate	Minor
	RISK		
Very Likely	**Very High - Native Veg/Weeds**	**Very High**	**Low**
Likely	**Very High –**	**High -**	**Low**
Possible	**High**	**Intermediate**	**Low**
Unlikely	**Intermediate Health and Safety**	**Low-Trails,**	**Very Low**

,

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

Land 70- % Channel NA- % Roads/Trails NA– % Protection/Safety NA– %

D. Probability of Treatment Success

Years after Treatment

	1	3	5
Land	70%	*	*
Channel	NA	NA	NA
Roads/Trails	NA	NA	NA
Protection/Safety	NA	NA	NA

E. Cost of No-Action (Including Loss):

F. Cost of Selected Alternative (Including Loss):

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader:

Email: wgreen@fs.fed.us Phone: 407 791-7740 FAX:

H. **Treatment Narrative:**

Land Treatments:

Noxious weed control with herbicides is recommended for current and new invader infestations within the Elk Hill Fire. Herbicide applications will follow the requirements and mitigation outlined under the latest NEPA and Biological Assessment for listed fish species.

Due to the fact that this fire burned primarily in open meadow with current infestation it is very likely that significant expansion of noxious weed acres will occur. It is recommended that the existing 11 acres of noxious weed infestation (houndstongue) as well as the anticipated additional 68 acres from expansion due to disturbance and existing seed source be treated through herbicide application. –Because of the unique situation with high use and values of this area it is recommended that monitoring and treatment occur for three years to assure success in suppressing expansion of noxious weeds. Costs per fire are below. It is anticipated that a 25% reduction in existing infestations can be accomplished each year, new infestations are anticipated to see a 50% reduction in acreage. The lower reduction for the existing infestations is due to the seed bank available within the site.

Cost of treating back country weed infestations is approximately $95.00/acre with Forest employees. If monitoring of disturbed sites and treatment of existing infestations does not take place, the likelihood of noxious invasive species expansion is very high. The increase in infestations in not only an economic factor in regards to treatment costs but there is a loss of wildlife habitat and wilderness values that is hard to put a number too.

Due to the high level of recreational use and associated grazing along with wildlife use of the area monitoring for new infestations will be extremely important. Monitoring will need to occur within the entire 1296 acres that were burned to ensure early detection and rapid response to new infestations.

EDRR

Inventory of trails and any susceptible sites for both current and new invader weed populations, and monitoring of weed control methods should be initiated to determine *potential for weed spread and effectiveness of*

treatments.

- *Treat satellite infestations of spotted knapweed along Forest Trails within the burned area. The knapweed population along the trail system is contributing a seed source and the trial system is acting as a spread corridor for further expansion into the burned areas.*

- *Monitor weed populations within and adjacent to the fire to determine if the combination of fire disturbance and susceptible habitat facilitates weed spread or increases weed densities, along with post treatment effective monitoring.*

Channel Treatments:

No Channel Treatments are proposed.

Roads and Trail Treatments:

No trail treatment requested at this time.

Protection/Safety Treatments:

Burned area within the Elk Hill Fire is estimated at 1,297 acres on the Helena-Lewis & Clark National Forest, Rocky Mountain Ranger District. File and map searches were conducted to identify heritage sites and culturally sensitive areas within the burn area on NFS system lands.

It was determined that two (2) previously recorded cultural sites are located within or very near the fire perimeter.

Site 24TT0185 is the historic Tie Hackers Road that was used between 1886-1889. It has been evaluated as Not Eligible for listing on the National Register of Historic Places with the MT SHPO concurrence date of 12/20/1989.

Site 24TT0288 is the historic Gibson Lake Trail or Forest Trail #201. It has been evaluated as Eligible for listing on the National Register of Historic Places with the MT SHPO concurrence date of 2/27/1992

There are a couple of FS routes/trails that are known to exist in the burn area but have never been recorded as a cultural resource and evaluated. These route/trail numbers are Trail 268 and 231.

Prior field inventory in the fire area is very minimal and is limited to trail routes. Prehistoric site probability in the burn area is dominated (approx. 75%) by high probability. The remaining areas are moderate to low probability due to steeper slopes on the southeastern portions of the burn area.

No treatments are proposed at this time.

I. **Monitoring Narrative:**

Weed Treatment Effectiveness Monitoring:
In 2017 all of the known areas of infestation will be re-surveyed by LCNF Weeds staff. Any noxious weed populations not effectively treated during initial 2016 treatment efforts will be targeted for additional herbicide application.

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										
Herbicide (current Infes	Acre	95	11	$1,045	$0		$0		$0	$1,045
Herbicide (Anticipated	Acres	95	68	$6,460	$0		$0		$0	$6,460
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$7,505	$0		$0		$0	$7,505
B. Channel Treatments										
				$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.				$0	$0		$0		$0	$0
C. Road and Trails										
				$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				$0	$0		$0		$0	$0
D. Protection/Safety										
				$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				$0	$0		$0		$0	$0
E. BAER Evaluation										
				---			$0		$0	$0
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				---	$0		$0		$0	$0
F. Monitoring										
Weed EDRR	year	1	500	$500	$0		$0		$0	$500
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$500	$0		$0		$0	$500
EDRR				$500	0					
G. Totals				$8,005	$0		**$0**		**$0**	**$8,005**
Previously approved										
Total for this request				**$8,005**						

PART VII - APPROVALS

1. _____ _____
Forest Supervisor (signature) Date

2. _____ _____
Regional Forester (signature) Date