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

Date of Report: 8/20/2016

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: Rock Creek

B. Fire Number:CA- INF-001421

C. State:CA

D. County: Mono

E. Region: R5

F. Forest: Inyo

G. District: White Mountain_

H. Fire Incident Job Code: P5KK1U

I. Date Fire Started: 8/5/2016

J. Date Fire Contained: August 10,2016,

K. Suppression Cost: 1M

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): Approximately 1.4 miles fire line.
2. Fireline seeded (miles):
3. Other (identify):

M. Watershed Number: 180901020303 Lower Rock Creek

N. Total Acres Burned:_
NFS Acres(122) Other Federal ( ) State () Private ()

O. Vegetation Types: ,Sagebrush, pinyon pine, cheatgrass, willow,

P. Dominant Soils:Atter family, Kilburn-Nanamkin, Vitrandic Torriorthents

Q. Geologic Types: Glacial Till, Quartz Monzonite of Wheeler Crest

R. Miles of Stream Channels by Order or Class:
___.3 perennial .4 Intermittent:..6 Ephemeral:..

S. Transportation System

Trails: .7 miles Roads:

PART III - WATERSHED CONDITION

A. Burn Severity (acres): __ V. Low 90 (low) 32 (moderate) ___ (high)

B. Water-Repellent Soil (acres):

C. Soil Erosion Hazard Rating (acres):
(low) ____(moderate) _____ (high)

D. Erosion Potential: tons/acre .

Wind erosion in the Eastern Sierra is a major erosional process. Wind erosion mobilizes ash and fine sediment and deposits them in swalls and drainages. This was observed during the BAER assessment. This material is highly mobile and avaiable for transport during storm events. Dust and ash can affect visibility along the Lower Rock Creek road during high wind events.

Soil Burn Severity and ancilliary characteristics:

This fire mainly burned in the footprint of the 2002 Birch Fire, therefore it contained a high grass component.

Forested: Burned forested areas were mapped ranged from low to moderate soil burn severity. Extensive removal of forest floor ground cover occurred in moderate soil burn severity areas. Soil heating effects were noticable in high severity areas. Generally, soil heating effects were low in moderate and low burn severity areas most of the area. Needle cast is likely to occur in the low and moderate soil burn severity polygons and recovery of slope stability and watershed hydrologic response will be accelerated where this occurs.

Shrub: Most of the shrub vegetation within the burned area was mapped as low to moderate soil burn severity. . Although these areas had areas of bare ground before the fire, removal of ground cover was often high and it is expected that erosion and sediment delivery to stream channels from these slopes will be high. Vegetative recovery is likely to occur through sprouting of shrubs and establishment of grasses and herbaceous vegetation Recovery of watershed hydrologic response depends on many factors and is likely to take at least 3-5 years.

Grass, Bare Ground and Rock Outcrop: Grass, bare ground and rock outcrop areas within the burn were mapped as unburned or low burn severity. Soil heating in these areas was very low and, although minimally affected by the fire, recovery of watershed response is expected to occur rapidly.

E. Sediment Potential___ cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years):

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

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

D. Design Storm Duration, (hours): ___

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

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

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

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

PART V - SUMMARY OF ANALYSIS

Introduction:
The Rock Creek Fire started the afternoon of August 5, 2016. The Fire burned almost entirely in the footprint of the 2002 Birch Fire. The fire burned in cheatgrass, sagebrush, singleleaf pinyon pine, and juniper. In general, lower elevation areas and areas with higher fire severity are more vulnerable to invasion by nonnative plants. The Rock Creek Fire burned at 6500 feet elevation. 0 acres were mapped as high fire severity, 32 acres moderate severity, and 90 acres low severity.

The soil burn severity (SBS) map shows approximately 26% burned at moderate soil burn severity. The rest of the fire was either very low, low soil burn severity or unburned. It is very important to understand the difference between *fire intensity* and *burn severity*, and *soil burn severity* as defined for watershed condition evaluation in Burned Area Emergency Response BAER analyses. Fire intensity or burn severity as defined by fire, fuels, or vegetation specialists may consider such parameters as flame height, rate of spread, fuel loading, thermal potential, canopy consumption, tree mortality, etc. For BAER analyses, mapping is not simply vegetation mortality or above-ground effects of the fire – soil burn severity considers additional surface and below-ground factors that relate to soil hydrologic function, runoff and erosion potential, and vegetative recovery. Areas of moderate soil burn severity are present throughout the fire. Areas of moderate soil burn severity can produce accelerated runoff and sedimentation affecting roads, water quality, and downstream infrastructure.

Based on historic precipitation patterns, it can be expected that late season monsoon rains or frontal storms in mid-late September are the first runoff producing events following the Rock Creek Fire. General at the first rains in September there is drying period until mid-November. The risk of flooding and erosional events will increase as a result of the fire, creating hazardous conditions within and downstream of the burned area. These hazardous conditions may be worsened in the case of a rain-on-snow event, where long-duration rainstorms falling on a shallow snowpack can produce very high peak flows.

Soils/Erosion Response
Soils in the fire area have a sandy and non-cohesive surface texture, with various amounts of gravel and cobble. Erosion response is heavily influenced by soil burn severity, hillslope geomorphology, slope, rock outcrop and surface texture. The burn affected soil aggregate stability, canopy cover, ground cover and infiltration rates.

The BAER team expects a slight increase in erosion in the moderate severity areas. These areas burned light or were mostly unburned in the 2002 Birch Fire.

Watershed Response:
The fire occurred within the Lower Rock Creek (HUC 12) watershed. . Sub watersheds in the fire area were delineated and hydrologic modeling conducted during the BAER assessment.

"Hydrologic modeling was not conducted for the fire area as only 122 acres.

Water Quality

It is likely that post-fire ash, fine soil, and debris will temporarily degrade water quality in Birch and Lower Rock Creek. The Fire partially burned the lower parts of Birch Creek and two other drainages that lead to Lower Rock Creek and perennial stream channel. It is likely degrade water quality during and shortly after storm events and snowmelt runoff. The BAER Team expects this affect to be highly localized and ephemeral in nature. The risk for effects to water quality to Birch Creek and Lower Rock Creeks are consider **likely but temporary and highly localized. .**

Geology/geologic response:

No post-fire response is expected.
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A. Describe Critical Values/Resources and Threats:

*The risk matrix below, Exhibit 2 of Interim Directive No.: **2520-2010-1** was used to evaluate the Risk Level for each value identified during Assessment. Only values at risk that had a risk of Intermediate or above are discussed.*

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**

Threats to Life/safety and Property

Rock Creek multi-use trail: There is approximately .7 miles of the Lower Rock Creek trail within the fire area. The BAER team expects increased dry ravel and rocks on the trail for the next several years.

Emergency Determination:

Increase dry ravel and rocks on the trail can impacting bicyclists and to a lesser degree hikers.

Probability of Damage or Loss: Likely

Magnitude of consequences: Minor

Risk Level: Intermediate

Threats to Natural and Cultural Resources

Ecosystem Stability and Vegetation Recovery
Invasive weeds:
Lower Rock Creek Road bounds the eastern edge of the fire and could serve as a weed corridor. A dirt road intersects portions of the western edge of the fire. Approximately 1.4 miles of dozer lines were constructed and should be surveyed after germination next spring. As it is unlikely that equipment used in the fire was cleaned before use, weed species not present prior to fire suppression activities could have been introduced.

Inventory: Botanical surveys intersecting the Rock Creek Fire were completed in 2004, 2007, and 2015. Over 25% of the Rock Creek Fire footprint contains previously mapped occurrences of *Salsola tragus* (Russian thistle) and *Bromus tectorum* (cheatgrass). Due to the fire history of the area, 25% is a conservative estimate of the actual size of the occurrences of both species and the true number is likely much higher. Other weeds known from the vicinity of the Rock Creek Fire are *Ceratocephala testiculata* (curveseed butterwort), *Grindelia squarrosa* var. *serrulata* (curlytop gumweed), *Sisymbrium altissimum* (tall tumblemustard), *Penstemon subglaber* (smooth penstemon), and *Verbascum thapsus* (woolly mullein).

Emergency Determination:

Probability of damage or loss: Very likely

Magnitude of Consequences: Moderate

Risk Level: Very high

Risk Level: High

No TES or sensitive plant species are found in the fire area therefore additional analysis or treatments are not needed.

Cultural Resources:

No threat to cultural resources exists due to the post-fire environment. Potential impacts to cultural resources will be evaluated during project implementation.

B. Emergency Treatment Objectives:

Threats to Life and Property
Inform recreationists of potential hazards on Lower Rock Creek Trail.

Treats to Critical Natural and Cultural Resources

Threats to Ecosystem Stability

Determine if new invasive species have been introduced due to suppression activities

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

Land **90** % Channel ___ % Roads/Trails ___ % Protection/Safety **90** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	90	90	100
Channel			
Roads/Trails			
Protection/Safety	90	95	100

E. Cost of No-Action (Including Loss): 13,200
F. Cost of Selected Alternative (Including Loss): 3,702

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Todd Ellsworth

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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:

Noxious/invasive weed early detection and rapid response: Noxious/invasive weed early detection and rapid response: Survey 1.4 miles of dozer line, approximately 3 miles of hand line, 0.7 miles of Lower Rock Creek Road, 0.7 miles of Lower Rock Creek Trail, and 0.7 miles of Forest Service Road 4S54. Additional survey work on the hillside below the mapped occurrences of cheatgrass and Russian thistle may be necessary.

Small infestations will be eradicated by hand pulling and disposing of plants in garbage bags taken off site. It may not be possible to reverse the long-term trend in cheatgrass expansion where it is already present in high densities unless new treatment options are discovered. Dense infestations of Russian thistle may be impossible to control without herbicide or other methods beyond hand pulling. A Forest-wide Weed EA is currently under development which would allow a broader range of treatment activities, including herbicide methods.

Weed Surveys and Rapid Response Costs				
Item	**Unit**	**Unit Cost**	**# of Units**	**Cost**
1 GS-11 botanist	Days	$355	3	$1065
1 GS-7 weed technicians	Days	$196	5	$980
Vehicle gas mileage	Miles	$0.50	250	$125
Total Cost				**$2,170**

Channel Treatments:

N/a

Protection/Safety Treatments:

Burned Area signs : Place 2 signs at the two parking areas that lead into the fire area. The signs will say "entering burned area use caution." This treatment will inform users they are entering a fire area

Unauthorized road disguising, barriers and Carsonite signs				
Item	**Unit**	**Unit Cost**	**# of Units**	**Cost**
1 GS-9 Hydro. Tech	Days	$280	2	$560
Signs	Each	$250.00	2	$500
Posts	each	$100	2	$200
Vehicle gas mileage	Miles	$0.50	100	$50
Total Cost				**$1,310**

Note: The Forest has a contract crew that is already paid for and can implement this project The Forest Hydrology Intern, who is already paid for, will assist the crew. In addition, volunteers are available to install signs.

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.)

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										
Weed detection	days	434	5	$2,170	$0		$0		$0	$2,170
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$2,170	$0		$0		$0	$2,170
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										
Signs	each	655	2	$1,310	$0		$0		$0	$1,310
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$1,310	$0		$0		$0	$1,310
E. BAER Evaluation										
BAER Team	ea	1500	1	$1,500			$0		$0	$0
										$800
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation					$0		$0		$0	$800
F. Monitoring										
				$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				$3,480	$0		**$0**		**$0**	**$4,280**
Previously approved										
Total for this request				**$3,480**						

PART VII - APPROVALS

1. _____ 8/22/16
Forest Supervisor (signature) Date

2. _____ 8/29/2016
Regional Forester (signature) Date