Date of Report: 10/28/2020

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

This 2500-8 covers the R6, Rogue River-Siskiyou NF portion of the Devil Fire.

A. Fire Name: Devil Fire

B. Fire Number: CA-KNF-007035

C. State: CA

D. County: Siskiyou County

E. Region: R6; R5

F. Forest: Rogue River-Siskiyou; Klamath

G. District: R6 RSF – Siskiyou Mountains RD

H. Fire Incident Job Code: P5NKM3

I. Date Fire Started: Discovered 09/09/2020

J. Date Fire Contained: Est. 11/01/2020

K. Suppression Cost: $680K as of 10/27/2020

L. Fire Suppression Damages Repaired with Suppression Funds (estimates): Not known at this time

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

M. Watershed Numbers: In R6

Table 1: Acres Burned by Watershed

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
171003090101	Butte Fork Applegate River	11,671	3,561	30%

N. Total Acres Burned: In R6

Table 2: Total Acres Burned by Ownership

OWNERSHIP	ACRES
NFS - RSF	3534

OWNERSHIP	ACRES
OTHER FEDERAL (LIST AGENCY AND ACRES)	
STATE	
PRIVATE	27
TOTAL	3561

O. Vegetation Types: Mixed conifer forest made up of Douglas-fir, white fir, red fir, ponderosa pine, sugar pine, incense cedar, Pacific madrone, Brewer spruce in isolated populations, scattered high elevation meadow systems.

P. Dominant Soils: Dominant soils are Inceptisols with minor amounts of Mollisols, Alfisols, and Ultisols. Soils are generally formed from residuum and colluvium derived from mudstone or conglomerate, metavolcanics and/or metasedimentary rock. There are also areas of alluvium and colluvium derived from ultramafic rock and metasedimentary rock; and colluvium derived from extrusive igneous and altered sedimentary rock. Soils formed under conifer dominant forests with deciduous tree component and an understory of shrubs, forbs, and grass. Soils in the burn area are dominantly loamy-skeletal, mesic or frigid, shallow or moderately deep (less than 50 cm but can be up to 100 cm thick) Dystroxerepts. Most of the soil development in these soils occurs within the upper few centimeters of the soil profile but are void of accumulations or alterations for the most part between 18 and 100 cm of the soil thickness. These soils lack thick organic accumulations at the soil surface, generally have weak or moderate soil structure, and based on the soil particle-size control section have more than 35 percent rock fragments throughout most of the profile. Non-skeletal soil series comprise less than 1/3 of the acres burned and are scattered throughout the area. Fine earth textures are mapped as dominantly sandy loam but do contain some concentrations of clay loam in areas. Slopes range from moderately steep to very steep.

Q. Geologic Types: The Devil Fire is within the Klamath Mountains Physiographic Province and contain some of the oldest rocks in the Pacific Northwest. Rock types are composed of metasedimentary (argillite, phyllite, etc.) and metavolcanics rocks (amphibolite), ultramafic rock (peridotite, harzburgite, and serpentinite), granitic intrusive rock (diorite, gabbro, tonalite, etc.) from Jurassic volcanism, and Quaternary sediments in the valleys. Steep dissected slopes composed of dormant landslides and with smaller active landslides within their toe zones are the dominant geomorphic features. Most active landslides are on steep channel banks and can occur upslope within larger dormant landslides, or in other upland areas. High elevation north aspect slopes contain cirques and small cirque basins, as well as glacial troughs in their headwater areas, including Butte Fork of the Applegate River within the Devil fire.

R. Miles of Stream Channels by Order or Class:

Table 3: Miles of Stream Channels by Order or Class

STREAM TYPE	MILES OF STREAM
PERENNIAL	7.2
INTERMITTENT	6.1
EPHEMERAL	
OTHER (DEFINE)	

S. **Transportation System:**
Trails: *National Forest (miles):* 0.85 *Other (miles):* 0
Roads: *National Forest (miles):* 0 *Other (miles):* 0

PART III - WATERSHED CONDITION

A. Burn Severity (acres): R6

Table 4: Burn Severity Acres by Ownership

Soil Burn Severity	NFS	Other Federal (List Agency)	State	Private	Total	% within the Fire Perimeter
Unburned	1310			<1	1310	37%
Low	1223			2	1225	35%
Moderate	809			21	830	23%
High	192			4	196	5%
Total	3534			27	3561	100%

B. Water-Repellent Soil (acres): The extent of water repellent soils is estimated to be at least 510 acres for the Devil Fire or 50% of the moderate and high soil burn severity areas.

C. Soil Erosion Hazard Rating: Approximately 1,678 acres of low (43%); 1,216 acres of moderate (31%); 819 acres of high (21%); and 196 acres of very high (5%) erosion hazard risk were estimated for the Devil Fire.

D. **Erosion Potential:** No model runs completed on the Devil Fire due to minimal level of critical values

E. Sediment Potential: No model runs completed on the Devil Fire due to minimal level of critical values

F. Estimated Vegetative Recovery Period (years): Vegetation recovery will vary depending on plant association group, soil type, aspect, and soil burn severity. Areas that burned at low severity will generally recover within the first two years. Areas that burned with moderate soil burn severity may recover the shrub layer, for the most part, in 3-5 years with canopy formation occurring much later. For sites with high soil burn severity and full vegetative stand replacement, recovery may take decades.

G. Estimated Hydrologic Response (brief description): The Devil Fire is entirely within the Butte Fork Applegate River 6th-field (HUC12) subwatershed. This drainage flows into the Applegate River just downstream of the fire perimeter. The Applegate River then flows approximately 4 miles down to Applegate Lake.

Elevation within the burned area perimeter ranges from approximately 6,300 feet above sea level near Rattlesnake Mountain to approximately 2,400 feet near the confluence with the Applegate River. Annual precipitation is approximately 50 inches throughout the analysis area with the majority of the rainfall occurring from November through March from large frontal systems that tend to be lower intensity, longer duration, and larger in geographic extent. Snowpack accumulates in the higher portions of the fire area, usually at 3,000 feet above sea level or higher. Summer is much drier, and precipitation is from weak frontal systems and localized thunderstorms that tend to be shorter in duration, higher intensity, and smaller in size. The precipitation season and typical event that will likely drive post-fire damage is the November to March large frontal storm.

PART V - SUMMARY OF ANALYSIS

Introduction/Background

The Devil Fire was discovered on September 9, one day after the neighboring fire to the west, Slater Fire, started during an historic wind event. On the Rogue River-Siskiyou National Forest, the Devil Fire is almost entirely within the Red Buttes Wilderness, which contains a series of wilderness trails that tie into the Pacific Crest Trail. Most of the fire's growth occurred in the first two weeks, with interior areas continuing to burn. The BARC imagery was taken on September 29, 2020. As of October 27, the Devil Fire perimeter has held at 8,885 acres and is at 67% containment, with an estimated containment date of November 1, 2020. The Rogue River-Siskiyou National Forest BAER Team began their assessment of the R6 portion of the Slater and Devil fires on October 7, 2020 with the final close-out with the forest on October 22, 2020. The R6 Rogue River-

Siskiyou team worked closely with the R5 BAER team on the assessment, including determination of the final Soil Burn Severity map and collaboration on hydrologic and soils modelling, among other resources. Due to the minimal amount of critical values determined in the Devil Fire, and the inability to collect soil burn field data over the majority of the fire area due to the fire's remote locaton, the joint R5-R6 team chose to accept the BARC as the final Soil Burn Severity map. Two BAER team members were able to hike into the north end of the fire on the Butte Fork Trail #957 on October 13, 2020 and found that areas on the BARC mapped as unburned within the perimeter had since been experiencing ongoing expansion of burning within that perimeter. The Critical Values spreadsheets in the project file summarizes critical values evaluated and the risk assessment to identify where a BAER emergency exists that warrants treatment. The risk assessment focused on the most probable damaging storm events, which are typically longer duration wetting rains and/or rain-on-snow that occur in the fall or snowmelt in the spring.

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

Table 5: 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):**
   a. Human life/safety is at risk on NFS land from threats associated with hazard trees, rock fall, increased flooding and debris flows, and loss of egress/access throughout the burned area, but particularly on trails that traverse through the burned area. The Butte Fork Trail #957 in the Red Buttes Wilderness was burned over in the Devil Fire, and is accessed by two trailheads, the Shoofly TH and the Horse Camp TH. The fire continued to consume woody debris, effective groundcover and understory vegetation along the trail system after the initial BARC and SBS map was determined, which makes comparing the trail location to SBS on the map not very accurate. Probability of damage or loss regarding HLS is considered **Possible**, with a **Major** magnitude of consequences, resulting in a **High** Risk to HLS.
2. **Property (P):**Approximately 1 mile of the Butte Fork Trail #957 in the Red Buttes Wilderness was burned over in the Devil Fire. Despite the SBS estimated on the BARC of low to unburned, it was discovered during a field assessment of the trail that much more fire had occurred along this trail since then. Consumption of ground cover, litter, and forest woody debris along and on the steep slopes above the trail that protected the system from erosion is now absent or ineffective to mitigate the expected increase in runoff in the burned area. While the tread is still present, the tread is under immenent threat of being lost through tread collapse and fillslope failure from erosion, channelization down the trail tread, and burial from upslope destabilization during storm events and snowmelt from increased runoff potential. Probability of damage or loss is considered **Likely**, with a **Moderate** magnitude of consequences, resulting in **High** Risk to losing the trail tread.

3. **Natural Resources (NR):** A quick assessment by BAER Team members determined there were no BAER Critical Values for NR that were under immenent threat from post-fire effects from the Devil Fire.
4. **Cultural and Heritage Resources:** A quick assessment by the Archeology BAER Team member determined there were no BAER cultural critical values that were under immenent threat from post-fire effects from the Devil Fire.

B. Emergency Treatment Objectives:

Proposed Land Treatments: None proposed

Proposed Trail Treatments:

a. Protect trail investment from damage or loss due to increased post-fire runoff and erosion (RT13).

Proposed Protection/Safety Treatments:

a. Protect human life and safety by raising awareness through posting hazard warning signs at trailheads entering the burned area to warn users of potential hazards resulting from post-fire conditions (P1b).

Proposed Channel Treatments: None proposed.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:
Land: N/A
Channel: N/A
Roads/Trails: 80 percent
Protection/Safety: 95 percent

D. Probability of Treatment Success

Table 6: Probability of Treatment Success

	1 year after treatment	*3 years after treatment*	*5 years after treatment*
Land	N/A		
Channel	N/A		
Roads/Trails	80	90	95
Protection/Safety	90	95	95

E. Cost of No-Action (Including Loss): $19,890. Does not include monetary value on loss or harm to human life.

F. Cost of Selected Alternative (Including Loss): $17,680. Does not include monetary value on loss or harm to human life.

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Joni Brazier
Email: joni.brazier@usda.gov **Phone(s):** 541-471-6760

Forest BAER Coordinator: Joni Brazier, Rogue River-Siskiyou National Forest
Email: joni.brazier@usda.gov **Phone(s):** 541-471-6760

Team Members: Team covering Slater Fire also addressed the Devil Fire. *Table 7: BAER Team Members by Skill*

Skill	**Team Member Name**
Team Lead(s)	Joni Brazier, Kailey Clarno (t)
Soils	Lizeth Ochoa, Brien Park (t)
Hydrology	Jamie Krezelok, Lindsey King (t)
Engineering	Brett Yaw, Chris Tweed (t)
GIS	Upekala Wijayratne, Brent Hasty
Archaeology	Jamie Moore
Weeds	Stu Osbrack, Kailey Clarno
Recreation	Kristin Ballard, Tyler Rhodes (t)
Other	Derek Beal (Geology, Klamath NF)

H. Treatment Narrative:

Land Treatments: None Proposed

Channel Treatments: None Proposed

Roads and Trail Treatments:
RT13. Trail Drainage: 0.85 miles of trail will require drainage treatments due to increased water compromising trail tread where the trail crosses through moderate and high SBS, as determined by field reconnaissance. Note that the SBS map, which was taken directly off the BARC due to timing and access constraints, did not capture the subsequent fire activity that occurred. Work will include installing drainage (rolling grade dips, grade reversals, nicks), water bars (only where necessary, and then only with rock), armoring drainage crossings, restoring out slope, re-establishing tread, and snagging trees as appropriate for worker safety.

Treatment	Units	# of Units	Unit Cost	Total Cost
RT13. Trail Drainage				
Trail Name & Number				
Butte Fork #957	Miles	0.85	$5,890	$5,007
Total:		0.85		**$5,007**

Protection/Safety Treatments:
Pb1. Trail Hazard Signs. This cost estimate is for placing information boards and posting hazard related signs to notify the public of post fire hazards, at the Shoofly Trailhead and the Horse Camp Trailhead.

Site/Treatment	Units	# of Units	Unit Cost	Total Cost
Installation of Warning Signage	Sign/Post	2	125	$250
Maintenance of Warning Signage for 12 Months	Replacement	2	125	$250
Total				**$500**

I. Monitoring Narrative:

PART VI – EMERGENCY STABILIZATION TREATMENTS AND SOURCE OF FUNDS

			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											
				$0	$0			$0		$0	$0
				$0	$0			$0		$0	$0
Insert new items above this line!				$0	$0			$0		$0	$0
Subtotal Land Treatments				$0	$0			$0		$0	$0
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											
RT13. Trail Drainage	miles	5,890	1	$5,007	$0			$0		$0	$5,007
				$0	$0			$0		$0	$0
Insert new items above this line!				$0	$0			$0		$0	$0
Subtotal Road and Trails				$5,007	$0			$0		$0	$5,007
D. Protection/Safety											
P1b. Trail Hazard Signs	Each	125	4	$500	$0			$0		$0	$500
				$0	$0			$0		$0	$0
Insert new items above this line!				$0	$0			$0		$0	$0
Subtotal Protection/Safety				$500	$0			$0		$0	$500
E. BAER Evaluation											
Initial Assessment	Report	$10,000		---	$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				$5,507	$0			$0		$0	$5,507
Previously approved											
Total for this request				$5,507							

PART VII - APPROVALS

1. _____ 10-29-2020

Forest Supervisor Date