Date of Report: 10/4/2019

BURNED-AREA REPORT

COVE CREEK FIRE 2019
SALMON-CHALLIS NATIONAL FOREST

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: Cove Creek Fire

B. Fire Number: ID-SCF-019218

C. State: Idaho

D. County: Lemhi

E. Region: 4

F. Forest: Salmon-Challis

G. District: North Fork

H. Fire Incident Job Code: P4MJ90

I. Date Fire Started: 8/3/2019

J. Date Fire Contained: 9/30/2019

K. Suppression Cost: $5,210,000

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

1. **Fireline repaired (miles): 1.41**
2. **Other (identify): N/A**

M. Watershed Numbers:

Table 1: Acres Burned by Watershed

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
170602031301	Owl Creek	34,427	3280	10%
170602031302	Cove Creek-Salmon River	12,098	2082	17%

N. Total Acres Burned*:

*Table 2: Total Acres Burned by Ownership *Includes "unburned" areas within fire perimeter.*

OWNERSHIP	ACRES
NFS	5262
OTHER FEDERAL (LIST AGENCY AND ACRES)	0
STATE	0
PRIVATE	100
TOTAL	5362

O. Vegetation Types: The fire burned primarily along the steep, arid, south-facing lower hillslopes adjacent to the Salmon River and in the Owl Creek drainage. These slopes consist of primarily sparse ponderosa pine and a bunchgrass understory, with lesser amounts of Douglas Fir and shrub species. The fire did not burn into the lodgepole pine forests that exist at higher elevations. Much of the burned area along the Salmon River corridor contains expansive infestations of cheatgrass, along with other invasive plants such as spotted knapweed. The entire extent of the burned area lies within the fire scar of the 2012 Mustang Complex Fire, which resulted in partial tree mortality in this area.

P. Dominant Soils: The burned area consists of primarily steep, rocky, arid slopes with a southern aspect. Soils are thin and rocky in most of the area, with more developed soils existing in the more protected areas in the Owl Creek drainage. The following Landtypes exist within the burned area:
G124s (1797 acres / 34%) - Steep canyonland in granite and border zone, hot and dry sites. Soils are moderately deep, brown in color with loamy sand or sandy loam textures.
G120bs-1 (1555 acres / 29%) - Moderately dissected mountain slopelands in granite and border zone, warm and dry sites. Soils are moderately deep, brown in color with loamy sand textures.
G124R (956 acres / 18%) - Rocky steep canyonlands in granite, hot and dry sites. Soils are moderately deep, brown in color with loamy sand or sandy loam textures.
G120c (596 acres / 11%) - Strongly dissected mountain slopelands in granite and border zone, cool and moist sites. Soils are shallow to moderately deep, brown in color with loamy sand or sandy loam textures.
G120b (384 acres / 7%) - Moderately dissected mountain slopelands in granite and border zone, cool and moist sites. Soils are moderately deep to deep, light to brown in color, with loamy sand or loamy sand to sand or sandy loam textures.

Q. Geologic Types: The burned area consist of 99% granitic landtypes, and 1% alluvial landtypes. Granitics in this area are highly decomposed.

R. Miles of Stream Channels by Order or Class:

Table 3: Miles of Stream Channels by Order or Class

STREAM TYPE	MILES OF STREAM
PERRENIAL	5.7
INTERMITTENT	15.2
EPHEMERAL	0
OTHER (DEFINE)	0

Perennial streams within the burned area include the lower portions of Owl Creek, East Fork Owl Creek, and a few perennial tributaries.

S. Transportation System:

Trails: *National Forest (miles):* 5.1 *Other (miles):* 0
Trails within the burned area include the non-motorized trails along Owl Creek (Trail 6152) and East Fork Owl Creek (Trail 6153). These trails are used infrequently. No motorized trails exist within the burned area.

Roads: *National Forest (miles):* 6.1 *Other (miles):* 0
Roads are very limited within the burned area. Only 1.5 miles of open road exist within the burned area, and this is mostly the heavily used Salmon River Road (FR 030) that defines the southern burn perimeter. 4.0 miles of closed logging roads are present in the Eastern portion of the burned area (these have not been used in decades and are partially overgrown). 0.6 miles of unauthorized roads also exist.

PART III - WATERSHED CONDITION

A. Burn Severity (acres):

The BAER Team used BARC (Burned Area Reflectance Classification) data derived from the Forest Service Remote Sensing Applications Center (RSAC) as a basis for analyzing burn intensity and burn severity. BARC data were derived from a comparison of Landsat 8 satellite imagery on 9/3/2019 with pre-fire satellite imagery from 8/15/2018.

BARC data verification of burn intensity was conducted using photographs and observations from fire personnel. Burn intensity as shown in the BARC data was determined to be accurate, and no adjustments were made to the BARC data classification thresholds. The classification thresholds are as follows: Unburned 0-71, Low 72-110, Moderate 111-194, High >194.

Field sampling of burn severity (soil burn severity testing) was not conducted on the Cove Creek Fire because of the generally low burn intensity of the fire and the lack of values at risk that would necessitate emergency treatments. It is unknown how burn intensity as shown in the BARC data relates to burn severity impacts to the soil. For this assessment, we assume that burn severity is roughly equivalent to burn intensity, based on similar findings in other wildfires in the area.

Table 4: Burn Severity Acres by Ownership

Soil Burn Severity	NFS	Other Federal (List Agency)	State	Private	Total	% within the Fire Perimeter
Unburned	1777	0	0	37	1813	34%
Low	2910	0	0	63	2973	55%
Moderate	569	0	0	1	570	11%
High	6	0	0	0	6	0.1%
Total	5262	0	0	100	5362	100%

B. Water-Repellent Soil (acres): Approximately 10 acres. Water repellent soils are likely present in areas of high burn severity, as well as some areas of moderate burn severity where heavy ground fuels caused extended periods of smoldering. This is estimated to be very limited on this fire.

C. Soil Erosion Hazard Rating: Landtype Erosion Hazard Rating is High or Very High for 99% of the burned area. These are primarily steep slopes (>45%) in decomposed granite, with sparse stabilizing vegetation.

D. Erosion Potential: N/A

E. Sediment Potential: N/A

F. Estimated Vegetative Recovery Period (years): 1-3 (grasses), 2-5 (woody), 10-50 (conifers)

G. Estimated Hydrologic Response (brief description): Burn severity for the majority (89%) of the fire was low or unburned. Grass and cheatgrass carried the majority of the fire, with smoldering of heavier fuels occurring in places. Burn severity was limited because of previous consumption of fuels during the 2012 Mustang Complex Fire. Increase in hillslope runoff is expected to be relatively small (0 to 10%) because of the very limited extent of the burned area expected to have hydrophobic soil conditions and the expected rapid regrowth of groundcover (bunchgrass and cheatgrass) within the first year following the fire. Intense summer thunderstorm events during the first year following the fire have the potential to cause localized floods and/or debris flows on intermittent tributaries of Owl Creek and East Fork Owl Creek. However, it is unlikely that Owl Creek would experience more than minor increases in flow because the fire only burned 10% of this large watershed. It is expected that soil erosion and rockfall will increase during the first year following the fire. After the first year following the fire, hillslope runoff and erosion are likely to return to pre-fire conditions.

PART V - SUMMARY OF ANALYSIS

Introduction/Background

The Cove Creek Fire started on August 3, 2019 as a result of lightning. The fire is located about 23 miles West of North Fork, Idaho, about 29 miles down the Salmon River Road from Highway 93. The fire burned in Ponderosa Pine and Bunchgrass, completely within the fire scar of the 2012 Mustang Complex Fire. The fire was managed aggressively using ground and air resources. Back-burns were conducted along the Salmon River Road and adjacent to private lands at the mouth of Owl Creek, resulting in 2.4 miles of burned slopes adjacent to the Salmon River Road. Much of the burned area contains extensive infestations of cheatgrass. With light fuels in most of the area and previous consumption of fuels during the 2012 Mustang Complex Fire, the Cove Creek Fire burned primarily at low intensity, with smoldering of heavier fuels occurring in places.

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

No emergency conditions exist at this time as a result of the Cove Creek Fire. A discussion of threats to critical values is presented below.

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):

BAER Value: Human life and safety on or in close proximity to burned NFS lands
What is at Risk: Human life and safety
Probability: Possible
Consequences: Moderate
Risk: Intermediate
Comments: Increased hillslope erosion, rockfall, and hazard trees may occur along the Salmon River Road and Owl Creek Trails. The majority of the slopes adjacent to the road are moderate gradient with limited potential for debris or rockfall runout onto the road. Many hazard trees were removed during fire fighting operations. The risk will decrease substantially after 1 year following the fire.

2. Property (P):

BAER Value: Buildings, water systems, utility systems, road and trail prisms, dams, wells, or other significant investments on or in close proximity to burned NFS lands
What is at Risk: Salmon River Road
Probability: Possible

Consequences: Minor
Risk: Low
Comments: Hillslope erosion and rockfall have the potential to run out onto the Salmon River Road. Any impacts are expected to be minor because of the moderate gradient slopes adjacent to the road. This section of road does not have a ditch that would require cleanout. The Owl Creek bridge is at minimal risk from post-fire flooding on Owl Creek.

BAER Value: Buildings, water systems, utility systems, road and trail prisms, dams, wells, or other significant investments on or in close proximity to burned NFS lands
What is at Risk: Owl Creek non-motorized trails
Probability: Possible
Consequences: Minor
Risk: Low
Comments: These non-motorized trails are at some risk from increased erosion, runoff, and deadfall. However, the burn intensity along these trails is primarily low or unburned, with a few areas of moderate, and emergency conditions do not exist. Previous maintenance and use along these trails is minimal, with frequent deadfall as a result of the 2012 Mustang Complex Fire.

3. **Natural Resources (NR):**

BAER Value: Soil productivity and hydrologic function on burned NFS lands
What is at Risk: Soil erosion and stream channel function
Probability: Possible
Consequences: Minor
Risk: Low
Comments: Recovery of soils and hydrologic function is expected to occur quickly, within the first year following the fire because of the high percentage of the fire that burned at low severity. It is likely that some degree of increased runoff and soil erosion will occur, with slightly increased sediment delivery to Owl Creek and the Salmon River. This is within the range of natural variability and will not alter the overall balance within this high fire frequency area.

BAER Value: Critical habitat or suitable occupied habitat for federally listed threatened or endangered terrestrial, aquatic animal or plant species on or in close proximity to buned NFS lands
What is at Risk: Chinook, Steelhead, and Bull Trout Habitat
Probability: Possible
Consequences: Minor
Risk: Low
Comments: Owl Creek contains critical habitat for Chinook, Steelhead, and Bull Trout. Some degree of increased sediment delivery may occur in the lower portion of Owl Creek within the first year following the fire. Although unlikely to occcur, a large debris flow event could impact localized fish populations in the short term, but would not likely upset the overall balance within this area. Input of sediment and debris into Owl Creek and its tributaries is a common occurrence because of the steep terrain and high fire frequency, and this process is critical to developing and maintaining quality fish habitat and spawning gravel.

BAER Value: Native or naturalized communities on NFS lands where invasive species or noxious weeds are absent or present only in minor amounts
What is at Risk: Spread or invasive species
Probability: Possible
Consequences: Minor
Risk: Low
Comments: The burned area is already occupied by extensive infestations of non-native species, including primarily cheatgrass and spotted knapweed. These species are likely to spread to some degree following the fire, but are not likely to spread into areas of native plant communities that are not previously affected by invasive species.

4. **Cultural and Heritage Resources:**

BAER Value: Cultural resources on NFS lands which are listed on or potentially eligible for the National Register of Historic Places
What is at Risk: Historic Sites
Probability: Possible
Consequences: Moderate
Risk: Intermediate
Comments: Cultural and historic sites are present along the Salmon River corridor within the burned area. The risk of damage to these values from erosion and increased runoff is minimal. However, the fire has exposed many of these values, making them more susceptible to looting during the first year following the fire. This risk will decrease as the area becomes re-vegetated.

B. Emergency Treatment Objectives: N/A – No BAER treatments proposed at this time.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:
Land N/A – No BAER treatments proposed **Channel** N/A – No BAER treatments proposed
Roads/Trails N/A – No BAER treatments proposed **Protection/Safety** N/A – No treatments proposed

D. Probability of Treatment Success
N/A – No BAER treatments proposed at this time.

Table 6: Probability of Treatment Success

	1 year after treatment	3 years after treatment	5 years after treatment
Land			
Channel			
Roads/Trails			
Protection/Safety			

E. Cost of No-Action (Including Loss): N/A – No BAER treatments proposed at this time.

F. Cost of Selected Alternative (Including Loss): N/A – No BAER treatments proposed at this time.

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: David Deschaine
Email: david.deschaine@usda.gov **Phone(s):** (208)756-5171

Forest BAER Coordinator:
Email: david.deschaine@usda.gov **Phone(s)**: 208-756-5171

Team Members: *Table 7: BAER Team Members by Skill*

Skill	Team Member Name
Team Lead(s)	David Deschaine
Soils	Jeremy Back
Hydrology	Bill MacFarlane
Engineering	Pete Schuldt
GIS	Bill MacFarlane
Archaeology	Tim Canaday
Other	

H. Treatment Narrative:

Land Treatments: N/A – No BAER treatments proposed at this time.

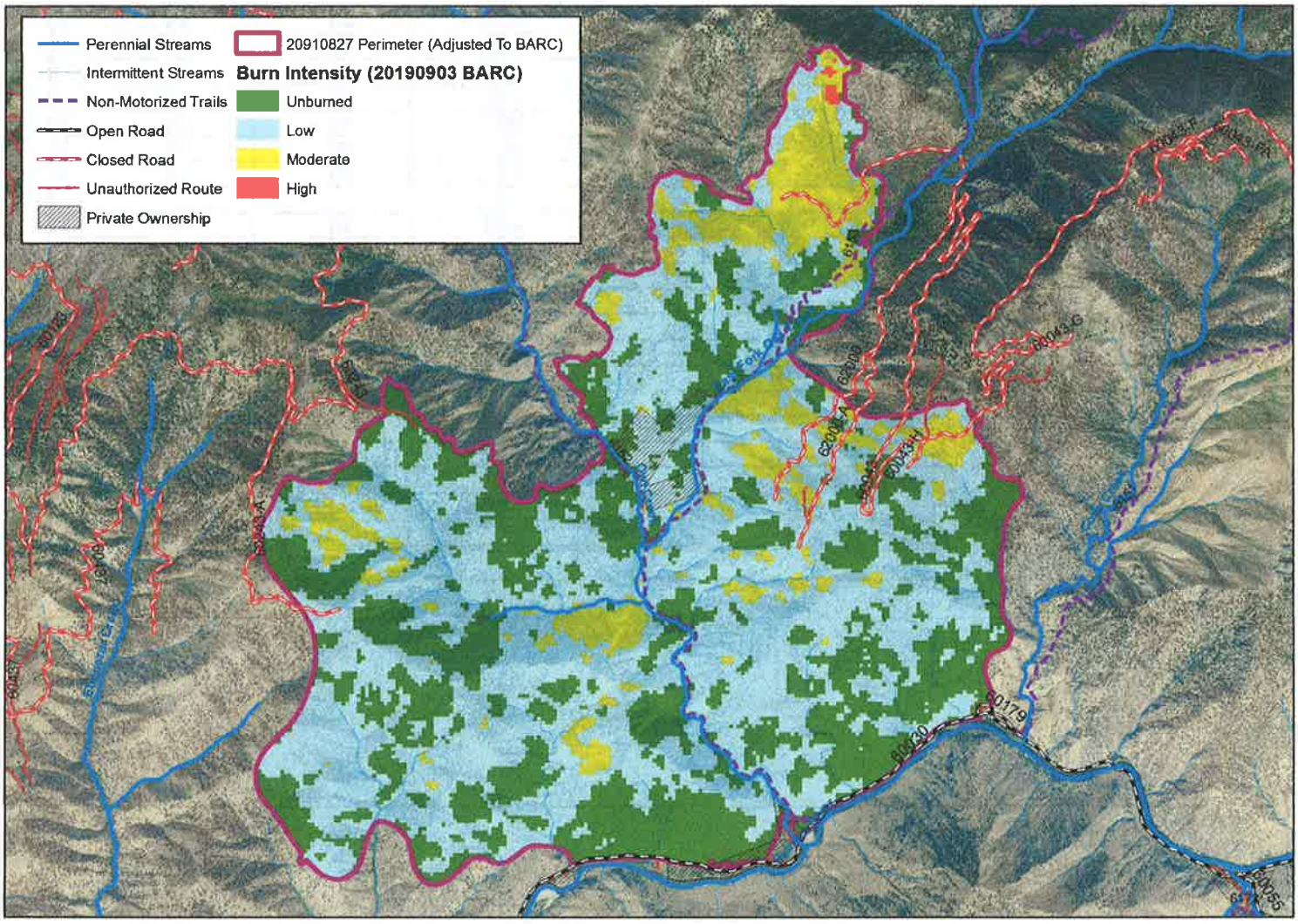
Channel Treatments: N/A – No BAER treatments proposed at this time.

Roads and Trail Treatments: N/A – No BAER treatments proposed at this time.

Protection/Safety Treatments: N/A – No BAER treatments proposed at this time.

I. Monitoring Narrative:

N/A – No BAER treatments proposed at this time.



Burn Intensity Map for the 2019 Cove Creek Fire, Salmon-Challis National Forest
Map created 9/5/2019 by the Salmon-Challis National Forest Shady Fire BAER Team.
Burn intensity data from 9/3/2019 Landsat 8 satellite imagery. Burn intensity data not field verified.

N

0 0.25 0.5 1 Miles

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										
				$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										
				$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				$0	$0		$0		$0	$0
Previously approved										
Total for this request				$0						

PART VII - APPROVALS

1. Charles A. Mark — 10/8/19

Forest Supervisor — Date