

# ELEVENMILE FIRE



## FS-2500-8 BURNED-AREA REPORT

SALMON-CHALLIS NATIONAL FOREST  
INTERIM REQUEST #1  
MARCH 16, 2016

Date of Report - Initial: **9/29/15**  
**Interim #1: 3/16/16**

**BURNED-AREA REPORT**  
(Reference FSH 2509.13)

**PART I - TYPE OF REQUEST**

A. Type of Report

- ☒ 1. Funding request for estimated emergency stabilization funds
- ☐ 2. Accomplishment Report
- ☐ 3. No Treatment Recommendation

B. Type of Action

- ☐ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)
- ☒ 2. Interim Report  
(*Interim #1: Additions and updates since initial request are shown in blue text*)
  - ☒ 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**

*Conditions as of 9/7/12 (date of most recent BARC map) within the Salmon-Challis NF, unless otherwise specified*

- A. Fire Name: Elevenmile Fire
- B. Fire Number: ID-SCF-015218
- C. State: Idaho
- D. County: Custer
- E. Region: 4
- F. Forest: Salmon-Challis National Forest
- G. District: Challis Ranger District
- H. Fire Incident Job Code: P4J2MF (0413)
- I. Date Fire Started: August 24, 2015
- J. Date Fire Contained: Estimated October 15, 2015
- K. Suppression Cost: \$8,932,003 (as of 9/18/15)
- L. Fire Suppression Damages Repaired with Suppression Funds
  - 1. Fireline waterbarred (miles): 3.5 miles of dozer line rehabilitated  
25 miles of hand line rehabilitated
  - 2. Fireline seeded (miles):
  - 3. Other (identify):

M. Watershed Number

5 <sup>th</sup> level HUC	6 <sup>th</sup> level HUC	6 <sup>th</sup> level Watershed Name	Watershed size (acres)	Percent of watershed within burn perimeter
Yankee Fork-Salmon River 1706020105	170602010501	Upper Yankee Fork	27,256	36
Squaw Creek-Salmon River 1706020108	17060210801	Upper Squaw Creek	19,189	3
Challis Creek-Salmon River 1706020116	170602011601	Upper Challis Creek	20,794	<1
	170602011604	Mill Creek	18,020	<1

N. Total Acres Burned (as of 9/18/15):

NFS Acres	State	Private	TOTAL
10,431	0	0	10,431

O. Vegetation Types: The fire area spans many vegetation types at elevations of 7100 to 9600 feet. Forested areas include Willow, Alder, Spruce and Douglas Fir near or adjacent to stream channels. Lodgepole Pine, Whitebark Pnne and Subalpine Fir at higher elevations. Non-forested areas include Sagebrush, and Bunchgrasses.

P. Dominant Soils: The Elevenmile Fire area soils were formed from Challis Volcanics consisting of igneous extrusive: mainly andesites, rhyolites and tuffs. These soils are generally medium to fine textured, moderate to high productive potential, and moderate to severe water erosion hazard on disturbed sites. Generally soils are shallow to moderately deep, have dark brown loam to sandy loam surfaces and dark yellowish-brown loam to sandy, or sandy clay loam subsoils. The soils are gravelly and contain 25 -75% rock fragments. Running water and frost action have produced a land surface which is generally rounded and smooth on the upper ridges and sideslopes and maturely dissected stream channel lower on the sideslopes. The drainage channels form well-defined dendritic patterns throughout the entire landscape, but short slopes above the drainage channels have little dissection themselves. These soils have a relatively high inherent surface erosion hazards. Reforestation/revegetation potential is low due to high rock content, a short dry growing season and, low water holding capacity, and relatively shallow soils.

Q. Geologic Types: Dominant geologic type are the Challis Volcanics

Landtype Geology	Total acres	Percent of burned area
Alluvium	410	4%
Volcanic	10021	96%
<b>Total</b>	<b>10431</b>	<b>100%</b>

R. Miles of Stream Channels by Order or Class: Perennial: 15.5 miles

Intermittent: 25 miles

S. Transportation System

Trails: 10.3 miles

Roads: 6.1 miles open system

Route Number	Road Name	Burn Severity	Miles
40070	CUSTER MOTORWAY (Existing, Open Level 2 Road)	Very Low/Unburned	1.16
		Low	3.73
		Moderate	0.33
40361	UPPER YANKEE FORK (Closed Road) Also Trail 4114, open to motorcycle)	Very Low/Unburned	0.26
		Low	0.60
		Moderate	0.01
Total Miles			6.09

### **PART III - WATERSHED CONDITION**

A. Burn Severity (acres): 3,625 (low) 3,398 (moderate) 1,526 (high) 1,883 (Unburned)

\* *BARC imagery was obtained on 9/08/15.*

\* *Field review indicates high accuracy of burn intensity data from the BARC imagery. Burn severity was derived from the BARC burn intensity data through soil sampling of representative sites.*

Burn severity for watersheds of concern

Watershed	Watershed size (acres)	Burn Severity (acres / percent)			
		Low	Moderate	High	Unburned
Upper Yankee Fk	27,255	3,304 / 12	3,300 / 12	1,510 / 6	1,660 / 6
Upper Squaw Creek	19,189	271 / 1	97 / <1	15 / <1	537 / 3
Upper Challis Creek	20,794	1 / <1	0 / <1	0 / <1	4 / <1
Mill Creek	18,020	49 / <1	0 / <1	0 / <1	64 / <1

B. Water-Repellent Soil (acres): 1,525\*

\* *This figure is reported as the area of high burn severity based on field sampling.*

C. Soil Erosion Hazard Rating\* (acres):

Landtype Erosion Hazard Rating	Total acres	Percent of burned area
Low	410	4
Moderate	3,472	33
High	6,549	63
<b>Total</b>	<b>10,431</b>	<b>100</b>

\* *Acres are based on the Landtype Erosion Hazard attribute in the Landtypes GIS database.*

D. Erosion Potential: 1.8 – 7.5 tons/acre \*

\* *Based on ERMiT modeling for high burn severity on representative slopes, at the 20% probability that the sediment yield will be exceeded (see hydrology/soils specialist report).*

E. Sediment Potential: 873 - 3559 cubic yards / square mile

### **PART IV - HYDROLOGIC DESIGN FACTORS**

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

B. Design Chance of Success (percent): 80

C. Equivalent Design Recurrence Interval (years): 5 year

D. Design Storm Duration (hours): 30 minute

E. Design Storm Magnitude (inches): 0.7 to 1.2 inches

F. Design Flow (cubic feet / second/ square mile): 15 - 30

G. Estimated Reduction in Infiltration (percent): 6% - 18% (in watersheds of concern)  
(based on water repellent soil acres)

H. Adjusted Design Flow (cfs per square mile): 17.8 - 48.9

Pre- and post-fire flood magnitudes for streams of concern in the burn area, based on streamflow modeling using *Fire Hydrology Version 1.3* (see hydrology/soils specialist report).

Stream/Location	Flow recurrence interval (yrs)	Watershed size (sq mi)	Pre-fire flow (cfs / cfs/sqmi)	Post-fire flow (cfs / cfs/sqmi)	Percent increase in flow
Upper Yankee Fork	5	42.6	11.7	17.8	53%
McKay Creek	5	7.49	15.8	43.4	175%
Elevenmile	5	3.7	13.8	48.9	255%

## **PART V - SUMMARY OF ANALYSIS**

A. Describe Critical Values/Resources and Threats:

### **GENERAL DESCRIPTION**

The Elevenmile Fire burned approximately 10,500 acres on the Challis Yankee Fork Ranger District of the Salmon-Challis National Forest, approximately 15 miles west of Challis Idaho. The fire was lightning caused and was reported on August 24, 2015. Objectives for management of the fire were to provide for firefighter and public safety, protect structures and infrastructure prioritizing residences, bridges, power lines, mines and historical cabins, allow fire to play a natural ecological role along the northern perimeter as the fire advances towards the Frank Church River of No Return Wilderness, to keep fire from entering the Garden Creek watershed avoiding negative long duration fire effects to the city of Challis water supply, and to implement contingency strategies to protect adjacent designated sage-grouse habitat.

Critical values and resources present in the fire perimeter include the Custer motorway (FS Road #40070) a highly used corridor that connects the town of Challis, through Garden Creek, to the Custer ghost town, the Yankee Fork dredge, and the Yankee Fork of the Salmon River. The Custer motorway is one of two primary routes that provide access for full sized vehicles into the Yankee Fork Basin. The Custer motorway follows the old wagon road and is part of a 40 mile historic tour of numerous mines and towns in the Yankee Fork, Custer and Bonanza areas. The tour includes 17 interpretive sites and includes some of the main historic attractions on the Salmon-Challis N.F. There are a total of 9 bridges along the motorway with 3 bridges and one culvert in the fire area and 6 downstream. There are 10.3 miles of trails accessing the Yankee Fork, Elevenmile, McKay and Squaw Creek drainages providing recreational opportunities including hunting, horseback riding, motorcycle riding and mountain biking. The Yankee Fork river is critical spawning habitat for the Chinook Salmon, steelhead and bull trout.

Post-fire threats within the burned area include flooding, debris flows, rockfall, hazard trees, and invasive plants. Many of these impacts can be the result of increased erosion and runoff caused by loss of ground cover, reduced evapotranspiration, and soil hydrophobicity. Damaging runoff can be the result of snowmelt and/or intense summer thunderstorms. The typically high snowpacks in this area create high flows during summer snowmelt (June), but because snowmelt occurs relatively slowly, hillslope erosion is a lesser concern. High intensity, short duration thunderstorms and longer duration heavy rainfall events (1-3 days) also occur in this area during the summer (July through September), creating the high potential for hillslope erosion and floods. Thunderstorms in this area are less severe than in the deeper canyons of the Salmon River but the storm magnitude will likely be increased by increased convection from the large amount of blackened ground in the burned area.

## Human Life and Safety

### Human Life and Safety on or in close proximity to burned NFS lands

#### ***Possible Probability of Damage or Loss / Major Consequences – High Risk***

Post-fire watershed conditions threaten the life and safety of visitors using the Forest Service roads and trails within the fire perimeter. Portions of the Custer motorway and trails 148, 149 150 and 151 lie in narrow canyon bottoms or steep side slopes that can be easily damaged by storm runoff. Some of these roads and trails are downslope of high/moderate severity burned slopes. Normal storm frequencies and magnitudes can now more easily initiate rill and gully erosion on the severely burned, over-steepened slopes. These “minor” events can activate floods in the smaller tributary drainages that intersect these roads and trails, putting the safety of users and workers at risk.

Structurally compromised burned hazardous trees exist throughout the burned area, with higher concentrations in areas that are mapped as high and moderate soil burn severity. While a lot of hazardous tree removal has already been implemented by Elevenmile Fire suppression crews, the threat to life and safety of forest users and BAER implementation personnel remains high, and this risk will persist for several years following the fire.

On many steep burned slopes though out the burned area, the potential for large rocks to become dislodged and roll down-slope is increased, threatening the life and safety of forest users and workers. In addition to the immediate physical threat of floods, hazardous trees and rolling rocks, increased risk for loss of access and egress is also a threat to the life and safety of forest users and workers.

## Property

### Forest Service Roads on the Salmon-Challis National Forest (SCNF)

#### ***Likely Probability of Damage or Loss / Moderate Consequences – High Risk***

Post-fire watershed conditions threaten the Custer Motorway within the fire perimeter. Areas of the motorway with steep terrain adjacent to burned hillslopes (moderate and high soil burn severity) are at increased risk for sediment delivery to the road and erosion of the road surface. In these areas, bridges, culverts, rolling dips and other existing road drainage features are likely to be impacted from increased runoff and erosion during snowmelt runoff and high intensity summer thunderstorms. In addition to increased potential for impacts to road infrastructure, erosion from roads and trails is a source of sedimentation to streams and rivers, particularly where connectivity of roads and streams is high. Increased erosion from roads within the burned area is likely to adversely impact riparian resources, water quality and fisheries habitat.

### Forest Service Trails on the Salmon-Challis National Forest Service

#### ***Likely Probability of Damage or Loss / Moderate Consequences – High Risk***

A 10.3 mile trail network exists within the Elevenmile burned area. These heavily used trails provide numerous recreational and commercial opportunities. Approximately 2.9 miles of these trails are within or adjacent to areas that were burned at moderate and high severity, and these trails are at risk of severe erosion resulting from increased post-fire runoff and sediment erosion on the hillslopes above them. Functional drainage structures capable of reducing unacceptable risks to trail loss due to increased post fire runoff do not exist on many areas of these trails. As a result of increased post-fire hillslope runoff, these trails have a high risk of capturing hillslope drainage, and loss of trail tread. These trails provide the bulk of the motorized and non-motorized use in the Upper Yankee Fork area. See hydrology/ soils specialist report for a map showing burn severity and trail locations.

## Natural Resources

### Native or Naturalized Plant Communities on NFS lands where invasive species or noxious weeds are absent or present only in minor amounts

#### **Likely Probability of Damage or Loss / Major Consequences – Very High Risk**

Field reviews indicate that there is a substantial risk of noxious weed invasion along roads, trails, trailheads, campgrounds, dozer lines, handlines, other areas used during fire suppression activities, and high intensity burn areas. This threat is due to the existence of noxious weeds adjacent to the burn area, and a high likelihood that noxious weed seeds were brought into the area by fire equipment that has been used on other wildfires and suppression activity within known noxious weed locations in the burned area.

The following known infestations of noxious/invasive weed populations exist in areas near the burned area:

Species	Idaho Statewide containment list	Idaho Statewide control list
Canada thistle ( <i>Cirsium arvense</i> )	X	
Spotted knapweed ( <i>Centaurea stoebe</i> )	X	
Diffuse Knapweed ( <i>Centaurea diffusa</i> )	X	
White Top ( <i>Cardaria draba</i> )	X	
Houndstongue ( <i>Cynoglossum officinale</i> )	X	
Leafy Spurge ( <i>Euphorbia esula</i> )	X	
Hoary alyssum ( <i>Berteroa incana</i> )	X	
Hoary Cress ( <i>Leidum draba ssp. draba</i> )	X	
Rush skeletonweed ( <i>Chondrilla juncea</i> )	X	
Dalmatian toadflax ( <i>Linaria dalmatica</i> )	X	
Yellow toadflax ( <i>Linaria vulgaris</i> )	X	
Field Bindweed ( <i>Convolvulus arvensis</i> )	X	
Black Henbane ( <i>Hyoscyamus niger</i> )		X
Oxeye Daisy ( <i>Chrysanthemum leucanthemum</i> )	X	
Sulphur Cinquefoil ( <i>Potentilla recta</i> )		
Bull thistle ( <i>Cirsium vulgare</i> )		
Common tansy ( <i>Tanacetum vulgare</i> )		
Cheatgrass ( <i>Bromus tectorum</i> )		
Mullein ( <i>Verbascum thapsus</i> )		

The burned area, now lacking desired native perennial vegetation that can normally out-compete noxious weeds, supports favorable conditions for initial expansion of nearby populations of noxious weeds and other invasive species. The spread of existing or new invasive species would lead to a reduction of desirable native vegetation. Once invasive plants establish, the long-term impacts would be the loss of soil productivity due to increased solar radiation and runoff, increased fire frequency, loss of suitable wildlife habitat and decreased forage production. Prevention and treatment of invasive species prior to populations becoming established and expanding is a key point in restoring desired native vegetation within the burned area and reducing long-term cost of containment, control and eradication.

### Critical habitat or suitable occupied habitat for federally listed threatened or endangered terrestrial, aquatic animal or plant species on or in close proximity to the burned NFS lands

#### **Possible Probability of Damage or Loss / Moderate Consequences – Intermediate Risk**

The BAER Team Fisheries Biologist identified no emergency conditions for fish and fisheries habitat within or downstream from the burned area. Fire and post wildfire erosion and sedimentation are natural processes. Fish and fire have co-existed for thousands of years. Fish are adapted to tolerate fire and, in all likelihood, fish and fish habitat are dependent on fire in order to maintain healthy populations over the long term. Short-term

adverse impacts to fish and fish habitat following fire may include changes that limit the ability of the habitat to support fish and may even result in the death of fish eggs and fish. However, as these natural processes continue to play out they will often result in habitat that is better for the fish than before the fire. Improved conditions for fish and habitat and increased fish numbers will eventually result in the Yankee Fork, Makay Creek and Elevenmile Creek.

### **Soil Productivity and hydrologic function on burned NFS lands**

#### ***Possible Probability of Damage or Loss / Moderate Consequences – Intermediate Risk***

Although impacts to soil resources will likely occur as a result of increased erosion during storm events, the BAER team determined that emergency conditions for soil productivity do not exist within the burned area. Likewise, increased runoff during high intensity storm events will cause increased peak flows, but in most cases, stream channels in this area will likely be able to adapt to these dynamic changes in flow and sediment production without causing irreversible changes. Therefore, no emergency conditions exist for hydrologic function as a result of the fire.

### **Cultural and Heritage Resources**

#### **Cultural resources on NFS lands which are listed on or potentially eligible for the National Register of Historic Places**

#### ***Possible Probability of Damage or Loss / Moderate Magnitude of Consequences – Intermediate Risk***

Known historic cultural sites are located within the Elevenmile Fire perimeter. The fire has increased the potential for cultural resources to be impacted by erosion, flooding, and incidental collecting as a result of increased visibility from burned vegetation. This risk is likely to persist for one to three years until ground vegetation regrowth occurs.

#### **B. Emergency Treatment Objectives:**

- Reduce threats to personal injury and/or human life of visitors and workers using system roads and trails within the burned area.
- Reduce threats of erosion, debris deposition, and flooding on system roads and trails routed through severely burned areas. Reduce impacts on water quality with increased erosion from roads and trails.
- Control expected invasion of noxious weeds within the area, especially along and adjacent to Forest roads and dozer lines used by fire equipment and in existing populations within the fire boundary.
- Protect historic sites from flood damage.

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

Land **95%** Channel **80%** Roads **80%** Trails **70%** Protection/Safety **90%**

#### **D. Probability of Treatment Success**

<b>Treatment</b>	<b>Years after Treatment</b>		
	<b>1</b>	<b>3</b>	<b>5</b>
Land – weed treatments	95% <sup>1</sup>	70% <sup>2</sup>	25% <sup>3</sup>
Channel	80%	80%	80%
Roads/Trails	70%	80%	90%
Protection/Safety	90%	90%	90%

<sup>1</sup> Local post-treatment effectiveness monitoring results typically show a greater than 95% mortality rate for treated infestations. This is true for all weed species that are known to occur or that may occur in the burn area. This is a function of proper application procedures and techniques.

<sup>2</sup> Most infestations will be treated with herbicides that possess soil residual capability, providing effective control beyond one year. So in Year Two post-treatment, control is generally almost as high as Year One. Beyond Year Two, the herbicide begins to lose effectiveness as it is broken down by soil microbes. Levels of control may persist into Year Three, depending on the herbicide used, soil and topographic conditions and the life history strategy of the weed species



being treated. However, if a seed bank was present, as the herbicide decays, a fresh flush of sprouting occurs, reducing the level of control. The level of control depends on a number of factors in addition to seed banks, such as the residual capability of the herbicide, the porosity of the soil, precipitation levels, or other management actions (e.g. pulling roadside ditches where weeds are often found mixes the soil and reduces residual activity and encourages sprouting of seeds in the seed bank).

<sup>3</sup> On the steep slopes and gravelly soils in the burn area, control levels by Year Five will have been reduced far below that needed for effective management. By this time, retreatment will be needed to continue to deplete the seed bank, if one exists. New infestations or new invaders will be monitored and generally re-treated in Year Two under an Early Detection/Rapid Response strategy. Pre-existing infestations and invaders will be monitored for level of control. Once seed production resumes, the site would be re-treated for continued control using other funding sources.

E. Cost of No-Action (Including Loss): Expected Benefit of Treatment: **\$125,160** (see VAR Tool)

F. Cost of Selected Alternative (Including Loss): Total Treatment Cost: **\$28,822** (see VAR Tool)

#### Values at Risk Summary

Description	Market resource value	Prob. of experiencing loss with no treatment	Total treatment costs	Prob. of experiencing loss if trtmt occurs	Expected benefit of treatment	Expected benefit/cost ratio
Human Life and Safety	N/A	N/A	<b>\$5,678</b>	N/A	N/A	N/A
Historic Cultural Sites	N/A	N/A	N/A	N/A	N/A	N/A
Native Plant Communities	N/A	N/A	<b>\$8,890</b>	N/A	N/A	N/A
Road Network	\$180,000	0.8	<b>\$6,307</b>	0.5	<b>\$54,000</b>	<b>8.6</b>
Elevenmile Bridge	\$150,000	0.8	<b>\$3,447</b>	0.5	<b>\$45,000</b>	<b>13.1</b>
Trail Network	\$57,200	0.8	<b>\$4,500</b>	<b>0.5</b>	<b>\$17,160</b>	<b>3.8</b>
Public Access loss	\$30,000	0.8	Treatments Above	0.5	<b>\$9,000</b>	See Above
<b>Total</b>	<b>\$417,200</b>	<b>0.8</b>	<b>\$28,822</b>	<b>0.5</b>	<b>\$125,160</b>	<b>4.3</b>

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input type="checkbox"/> Range
<input type="checkbox"/> Forestry	<input type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input checked="" type="checkbox"/> Engineering
<input type="checkbox"/> Contracting	<input checked="" type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology
<input checked="" type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS

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#### BAER Team Members

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Tom Gionet, Weeds, Salmon-Challis National Forest  
Pete Schuldt, Road Engineer, Salmon-Challis National Forest  
Reed McDonald, Archaeologist, Salmon-Challis National Forest  
Phil McNeal, Trails, Salmon-Challis National Forest  
Bart Gammet, Fisheries, Salmon-Challis National Forest

## H. Treatment Narrative

### Protection/Safety Treatments

#### Hazard Warning Signs for Roads and Trails on the Salmon-Challis National Forest \_\_\_\_\_

Purpose of Treatment: To inform users of the dangers associated with entering/recreating within the burned area. Threats include hazardous trees, loose rocks, flash flooding, debris flow and increased risk for loss of access/egress.

General Description: Install warning signs on the Custer Motorway as visitors enter the fire area and at trailheads and along trails within the burned area. Where necessary, hazardous trees would be removed to protect the life and safety of workers implementing this treatment. Work would include purchase of the signs and any incidental hardware, as well as installation.

Locations:

Trail ID	Trail Name
40070	Custer Motorway- at Mill Creek Summit
40070	Custer Motorway- at Tenmile Creek
4114	East Mayfield – Yankee Fork trail intersection
4148	Eleven Mile – Martin Creek trail intersection
4149	Squaw Creek trail intersection
4150	Pack Creek trail intersection
4151	Mckay- Elevenmile trail intersection
4159	Bayhorse trail intersection
4201	Trealar trail intersection
4152	Buster Lake trail intersection
4268	Challis Creek Lakes trail intersection
4147	Challis Creek Lake Cut-off trail intersection

### Land Treatments

#### Early Detection Rapid Response- Weeds Treatment \_\_\_\_\_

Purpose of Treatment: The capability to reduce the risk of invasive plants from impacting native or naturalized plant communities is highest within the first year/growing season following fire. Past emergency response of fires on the Salmon-Challis NF has shown that a rapid response to the threat of invasive plants significantly reduces the competition to native plants during the first couple of years following fire and protect the value at risk. The purpose of the treatment is to perform Early Detection Rapid Response (EDRR) management activities on noxious weeds species within and adjacent to the Elevenmile fire perimeter. In addition to doing reconnaissance associated with roads, campgrounds, trailheads, trails and other identified potential vectors, the area around known infestations will also be examined and treated for potential expansion into previously uninfested areas. Populations are generally along roadways, trails and drainage bottoms within or adjacent to the burned area. The purpose of the treatment is to prevent establishment of new infestations, prevent spread of existing infestations, and prevent increase in weed density in existing infestations.

Location (Suitable) Sites: The main areas of concern are the Custer Motorway, the Meadow Spike Camp, the Mosquito Flat Staging area and the approximately 5 miles of constructed hand and dozer line.

Design/Construction Specifications: Select herbicide, application rate, and application timing based on specific weed species.

## Channel Treatments

### Streambank Armoring- Elevenmile Bridge Abutment

Purpose of Treatment: Placement of rip rap immediately upstream of the south abutment on the eleven mile bridge would reduce impacts from increased peak flows. Armoring this area would protect the slope from erosion that could destabilize the abutment and hold the toe of the slope, decreasing the potential for undermining of the abutment.

General Description: Armor the streambank adjacent to the southern abutment of the Elevenmile Bridge with large rock.

Location (Suitable) Sites: Armoring would occur on the left bank upstream from the Elevenmile Bridge for approximately 20-30ft.

Design Specifications: Material would consist of 12-15 cubic yards of class 3/4 rip rap (16-20 in. largest pieces graded to 5 in.) and placed with a backhoe or excavator. Suitable material is located onsite (wasterock from road construction just up valley from the bridge).

## Roads and Trail Treatments

### Storm Inspection and Response- Custer Motorway

Purpose of Treatment: Inspect and maintain the functionality of road drainage features during the storm season.

General Description: Storm inspection and response treatments are recommended to inspect and implement sediment and debris removal from inside ditches, roads, culverts and bridges affected by post wildfire increased flows and erosion throughout the burned area. Increased streamflows are expected in moderate and high severity burned areas, and the decomposed granitic hillslopes throughout much of the fire are likely to deliver abundant sediment onto roads.

Location(s): Storm inspection and response will focus on the Custer Motorway through the Elevenmile Burned Area.

Design/Construction Specifications: Each storm inspection would require 2 people and 1 vehicle for 1 day. Funding is requested for 4 inspections \$715 each visit for a total of \$2,860. Each storm response is estimated to require 2 people, 1 service truck, and 1 backhoe and 1 dumptruck for 3 days. Cost is estimated to be \$3,448 per response. Based on expected storm frequency, funding for at least 1 response is needed. The total estimated cost is \$6,308.

### Trail Stabilization

Purpose of Treatment: Provide drainage features and stabilization measures on trails that have a high risk of loss or damage due to an increase of runoff expected within the first year following fire. Previous fires on the Salmon-Challis NF have shown that moderate and high burn severity areas have a high potential to impact existing trail systems. Treatments are proposed to reduce unacceptable risks within moderate and high burn severity areas, to reduce damage to trail infrastructure and impacts to downstream values at risk.

General Description: Trail stabilization and storm-proofing is proposed for approximately 2.9 miles of trail within the fire perimeter. Trail segments identified for treatment are those within or downslope from areas burned at moderate and/or high severity, based on ground reconnaissance by trails/wilderness personnel and burn severity mapping. The trail work will be implemented on trails lacking adequate drainage

features for anticipated increased runoff. Storm-proofing treatments will include construction of wood and rock water bars, dip-drains, and rolling dips, as well as armoring of stream crossings. The work would follow Forest Service trail specifications, and the proposed trail work would be the minimum required to prevent loss of the trails or excessive sedimentation. Damaging storms may potentially occur during the summer months. It is intended that the trail work will occur early in the summer, prior to the first damaging storm. All of the trail work would be completed by the end of July, with the expectation that the trails would be stabilized prior to the high magnitude thunderstorms that typically occur in the late summer.

Location(s): Treatments will be implemented on sections of trails routed through steep burned terrain within or immediately downslope of areas of moderate and high burn severity. Specific trail segments to be treated are on the following trails:

Trails needing emergency response treatments (see *Elevenmile Fire Trails Assessment for a map of trail segments needing treatments*):

Trail ID	Trail Name	Erosion Hazard	Burn Severity	Miles
4148	ELEVEN MILE-MARTIN CREEK	High	High	0.21
			Moderate	0.14
4149	SQUAW CREEK	High	High	0.37
			Moderate	0.71
4151	MCKAY-ELEVEN	High	High	0.38
			Moderate	1.05
Total trail miles within the Fire Perimeter				2.86

Design/Construction Specifications: These treatments will be implemented by field crews using appropriate equipment. Treatments will follow design specifications in the Burned Area Emergency Response Treatments Catalog (USDA Forest Service, 2006). Structures will include wood and rock water bars, dip-drains, and rolling dips, following Forest Service trail specifications. The number of structures will depend on the severity of the area burned, soil type, and slope of the trail impacted. A total of \$4,500 in BAER funding is requested to accomplish ONLY the work described above on 2.86 miles of trail within moderate and/or high severity burned areas in order to reduce unacceptable risk to the trail infrastructure and to address public safety concerns. These funds would be used in conjunction with \$9,000 in Forest funds appropriated to the South Zone trails program in order to address trail stabilization, repair, and hazard tree removal (to ensure safety for implementation personnel) on the entire 10.3 miles of trail that were affected by the Elevenmile Fire. The Forest funding would fund an agreement with the Student Conservation Association (SCA) for 2 weeks of work. The requested BAER funds would provide funding for Forest personnel to work in conjunction with the SCA crew on the 2.86 miles of trail within moderate and/or high severity burned areas.

## I. Monitoring Narrative:

The following is a summary of recommended implementation (I) and effectiveness (E) monitoring for the proposed BAER treatments on the Elevenmile Fire.

<b>Project</b>	<b>Monitoring timeframe</b>	<b>Type</b>	<b>Summary of monitoring</b>	<b>Funding Requested</b>
<b>EDRR Weed Control</b>	Fall 2015 Spring 2016	I	Monitoring is included within the EDRR proposal.	No additional funding for monitoring is proposed.
<b>Road and bridge Treatments</b>	Spring-Fall 2016	E	As part of Storm Inspection and Response during the summer 2016 thunderstorm season, bridges, culverts, ditches, and rolling dips will be inspected after large storm events.	No funding requested - will be part of the Storm Inspection and Response treatment.
<b>Road and Trail Hazard Warning Signs</b>	Fall 2016	I, E	Monitoring will determine whether the signs remained in place during the first season, and discussion with Forest staff will determine whether the signs achieved the intended result, or if additional or different signs are needed.	No funding requested - will be part of the regular program.
<b>Water Quality and Sediment</b>	Fall 2015-Summer 2016	-	Data will be collected at established stream sediment core sampling sites and temperature monitoring sites within and downstream of the burned area. Data will show potential effects of the fire, but this is not considered to be effectiveness monitoring of BAER treatments.	No BAER funding requested - this is not BAER implementation or effectiveness monitoring.

## References

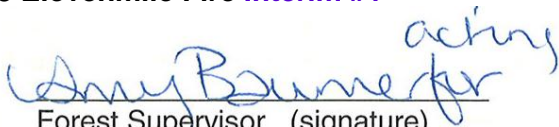
USDA Forest Service, 2006. Burned Area Emergency Response Treatments Catalog. Forest Service National Technology and Development Program.

USDA Forest Service, 2008. Trails Management Handbook. Forest Service Handbook (FSH) 23909.18, Amended 9/30/2008.

**Part VI – Emergency Stabilization Treatments and Source of Funds**
**Interim # 1**

			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										
*EDRR Fall 2015 -Weed Crew	Days	\$127	30	\$3,810			\$0		\$0	\$3,810
*EDRR Spring 2016 -Weed Crew	Days	\$127	40	\$5,080			\$0		\$0	\$5,080
Insert new items above this line!				\$0			\$0		\$0	\$0
Subtotal Land Treatments				\$8,890	\$0		\$0		\$0	\$8,890
B. Channel Treatments										
*Streambank Armoring-Elevenmile Bri	Each	\$3,447	1	\$3,447			\$0		\$0	\$3,447
Insert new items above this line!				\$0			\$0		\$0	\$0
Subtotal Channel Treat.				\$3,447	\$0		\$0		\$0	\$3,447
C. Road and Trails										
*Storm Inspection	Each	\$715	4	\$2,860						
*Storm Response	Each	\$3,447	1	\$3,447			\$0		\$0	\$3,447
Trail Protection	Miles	\$1,574	2.86	\$4,500	\$9,000		\$0		\$0	\$13,500
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Road & Trails				\$10,807	\$9,000		\$0		\$0	\$16,947
D. Protection/Safety										
*Trail Hazard Sign Installation	Each	\$473	10	\$4,730			\$0		\$0	\$4,730
*Road Hazard Sign Installation	Each	\$474	2	\$948			\$0		\$0	\$948
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Structures				\$5,678	\$0		\$0		\$0	\$5,678
E. BAER Evaluation										
SCNF BAER Team - salary and fleet	Each	\$10,500	1		\$10,500					\$10,500
Insert new items above this line!				---	\$0		\$0		\$0	\$0
Subtotal Evaluation				---	\$10,500		\$0		\$0	\$0
F. Monitoring										
EDRR weeds	See above			\$0	\$0		\$0		\$0	\$0
Storm Inspection roads	See above			\$0	\$0					
FP sediment and channel stability	Program funded			\$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				\$28,822	\$19,500		\$0		\$0	\$34,962
Previously approved in Initial Request (items marked with *)				\$24,322						
Total for this request				\$4,500						

**PART VII - APPROVALS**
**2500-8 Elevenmile Fire Interim #1**

- acting*  
  
 Forest Supervisor (signature)

*Charles A. Marx*

*3/16/16*  
 Date
- \_\_\_\_\_/s/ Regina A. Freel (for)  
 Regional Forester (signature)

*3/24/16*  
 Date