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

Date of Report: 10/05/2017

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: Salmon-August Complex

B. Fire Number: CA-KNF-006081

C. State: CA

D. County: Siskiyou

E. Region: 05

F. Forest: Klamath

G. District: Salmon-Scott River

H. Fire Incident Job Code: 0505-P5K9N2

I. Date Fire Started: August 13, 2017

J. Date Fire Contained: 83% as of 10/03/2017 (est. 10/20)

K. Suppression Cost: $39.75 million as of 10/03/17

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

M. Watershed Number: 18010210 (Salmon), 18010208 (Scott)

N. Total Acres Burned: 65,312 (9/29/17)
NFS Acres: (64,502) Other Federal: (0) State: (0) Private: (810)

O. Vegetation Types: North facing slopes affected by the Salmon-August incident are occupied by mixed conifer forests dominated by Douglas-fir (*Pseudotsuga menziesii* Mirb. & Franco), sugar pine (*Pinus lambertiana* Douglas), ponderosa pine (*Pinus ponderosa* Lawson & C. Lawson), and incense cedar (*Calocedrus decurrens* (Torr.) Florin), with understories of mountain dogwood (*Cornus nuttallii* Audubon) in moist areas, and chinquapin (*Chrysolepis chrysophylla* (Hook.) Hjelmq.), Pacific madrone (*Arbutus menziesii* Pursh), California black oak (*Quercus kelloggii* Newberry), and canyon live oak (*Quercus chrysolpeis* Liebm.)

in drier areas at the lower elevations. True fir forests of white fir [*Abies concolor* (Gordon & Glend. Hildebr.)] and Shasta red fir (*Abies magnifica* A. Murray *var. shastensis* Lemmon) with mountain hemlock (minimal understory components are found at the upper elevations. Additionally, uncommon and relic conifer species such as Pacific Silver fir (*Abies amabilis* Douglas ex J. Forbes) and Brewer's spruce (*Picea breweriana* S. Watson), respectively, are also present. The south facing slopes are generally shrubby, dominated by sticky white-leaf manzanita (*Arctostaphylos viscida* Parry), deer brush (*Ceanothus integerrimus* Hook. & Arn.) and snow brush (*Ceanothus velutinus* Douglas).

P. Dominant Soils: Very gravelly to extremely gravelly loams of Clallam, Deadwood, Jayar, Woodseye, and Goldridge Families; Gilligan sandy loams; Chawanakee Loams.

Q. Geologic Types: Klamath Mountans – Metasedimentary and Metavolcanic bedrock with Granitic intrusion bodies.

R. Miles of Stream Channels by Order or Class:

Intermittent: 191 miles Perennial: 107 miles

S. Transportation System

Trails: 81.25 miles Roads: 4.35 miles

PART III - WATERSHED CONDITION

A. Soil Burn Severity (acres):

Wallow Soil Burn Severity		
Soil Burn Severity	**ACRES**	**Percent**
Unburned-Very Low	17,517	27%
Low	21,269	33%
Moderate	16,333	25%
High	9,870	15%
Total	**64,989**	**100%**

Mill Creek Soil Burn Severity		
Soil Burn Severity	**ACRES**	**Percent**
Unburned-Very Low	9,895	78%
Low	1,418	11%
Moderate	978	8%
High	433	3%
Total	**12,724**	**100%**

The Mill Creek watershed acres are a subset within the overall Wallow acres. The Mill Creek watershed is specifically identified as it is the municipal water source for the City of Etna, California.

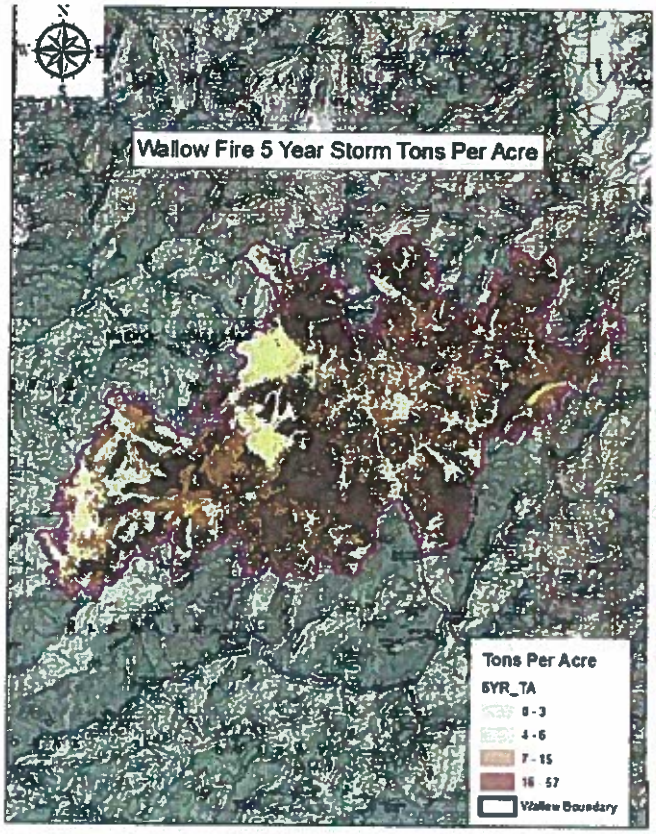
B. Water-Repellent Soil (acres): 10,000

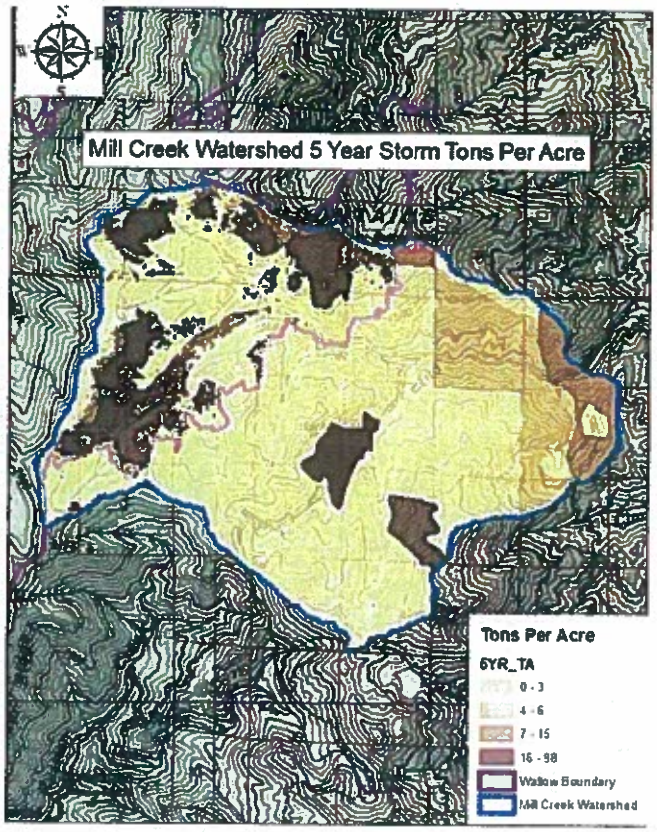
C. Soil Erosion Hazard Rating (acres):

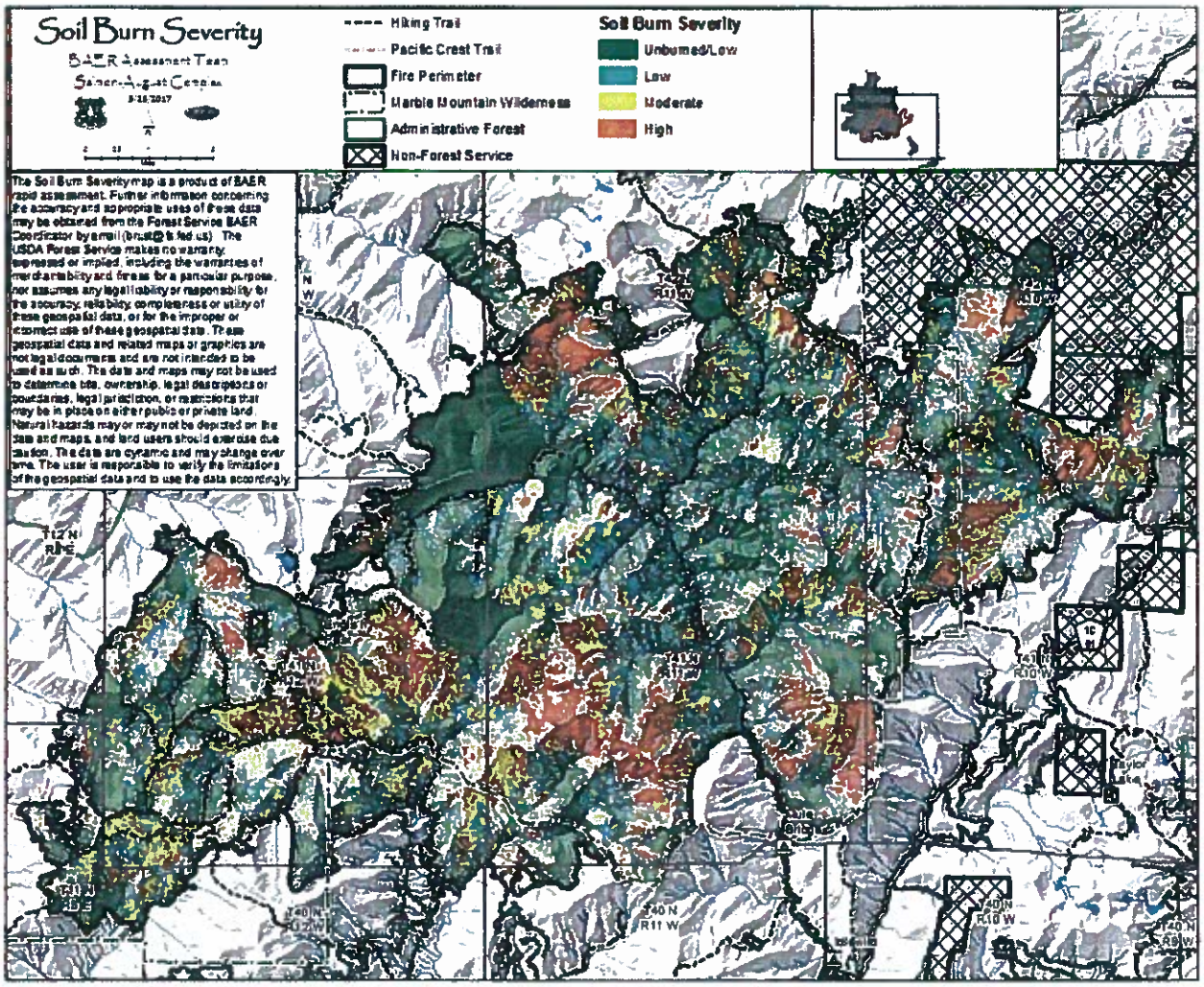
26,900 (low) 10,800 (moderate) 27,300 (high)

D. Erosion Potential: See sediment potential below tons/acre

E. Sediment Potential:







PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 5

B. Design Chance of Success, (percent): 80

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

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches): 1.95

F. Design Flow, (cubic feet / second/ square mile): 130

G. Estimated Reduction in Infiltration, (percent): 18

H. Adjusted Design Flow, (cfs per square mile): 182

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

The Salmon-August Complex consisted of (at its peak) a total of ten fires, with ignition dates ranging from late June to early September 2017. All of these fires were started by lightning. All of the fires stayed relatively "small" (less than an acre to ~1500 acres) until the start of the Wallow fire on August 11, 2017. Challenging weather, terrain and access issues combined to allow the Wallow to grow rapidly and become a threat to values at risk, both on and off National Forest lands. Prior to Wallow becoming a significant threat, the Complex had been managed by a Type 3 incident management team. As Wallow became a problem fire, a Type 2 team was ordered. Shortly after this order, the decision was made to enter into unified command with CAL FIRE Siskiyou Unit, due to the threats to the State Responsibility Area (communities and private timberlands).

The following is a brief summary of the values within and along the fire area as well as the threats to those values.

Values at Risk:

The risk matrix below, Exhibit 2 of Interim Directive No.: **2520-2017-1**, was used to evaluate the Risk Level for each value identified during Assessment:

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

Values at Risk Matrix: The values at risk (VAR) matrix displayed in Tables 1 and 2 on the following pages summarizes values at risk, post wildfire threats and risk ratings for National Forest lands. Other lands that are not National Forest were noted but not evaluated for risk. Values with high or very high risk ratings are addressed, where possible and appropriate, with BAER response actions (treatments). Generally, response actions are not recommended for values with low and intermediate risk ratings (except in the case for life and safety).

Potential Values At Risk includes these Critical Values: ***Human life and safety*** including threats from hazard trees, raveling trail tread, burned out cavities beneath trail treads, and debris flows along trail segments; ***property*** including trail infrastructure; ***cultural resources*** including recorded sites (potentially eligible for nomination to the National Historic Register) and newly discovered pre-historic sites during the fire.

Resource Condition Assessment:

Trails

Approximately 81.24 miles of National Forest System Trails were within the burned area. It is estimated that about 26 miles of trails burned within the moderate to high soil burn severity range, some of which are in need of emergency treatment for post-fire related conditions. These include segments of the Pacific Crest National Scenic Trail, and the following trails: Bug Gulch (5403), Salt Smith (5434), Smith Lake (5431), Ahlgren Cabin (5417), Clear Lake (5413), Crapo (5429), Devil's Canyon (5420), Etna Mill Creek (5515), Garden Gulch (5428), Horse Range Lake (5404), Lake of the Island (5424), Little North Fork (5406), Little North Fork Road (5449), Morehouse Meadow (5418), North Fork Salmon (5405), Old Snowslide (5433), Old Tanners (5423), Pine Lake

(5407), Portuguese (5416), Right Hand Fork (5401), Snowslide (5427), and Upper Abbotts (5402). On all segments, surveyors noted multiple small debris flows and the potential for increased erosion and loss of trail tread, as well as areas of burned roots and stumps which left cavities undermining the trail prism. Trails that burned with lower severity generally did not appear to have trail tread damaged to the point where it could collapse, or the investment in the trail prism lost without immediate action.

At the four-mile crossing along the highly-used North Fork Salmon Trail, one trail bridge lost approximately 25% of its wood decking, and is estimated to cost approximately $4,500 to repair, including materials and move-in/move-out logistical support. The line officer considers administrative closure infeasible for this particular trail, and thus short-term repair of the bridge is necessary for safety of public using the trail, as well as safety of FS personnel/crews performing stabilization treatments. Permanent repair and/or replacement of this bridge should be considered for priority post-fire rehabilitation and restoration funding in the future.

Table 1. Recreation Values At Risk Assessment

Critical Value	Value At Risk	Potential Threat	Probability of Damage or Loss	Magnitude of Consequences	Risk	Treatment	Comments
Human Life and Safety/Property/ Natural Resource	FS Trails	Weakened trees, raveling tread, debris flows, erosion, tread damage from stump/root system cavities, bridge damage	Likely	Moderate	High	Install hazard warning signs at trailheads. Rock holes and reestablish trail tread. On trail sections with 15% or greater slopes, install or clean out existing water bars to divert surface water and sediment. Repair damaged bridge segment.	Includes high priority trails: Snowslide/North Fork Salmon/Right Hand Fork/Old Tanners
Human Life and Safety/Property/ Natural Resource	Pacific Crest NST	Weakened trees, raveling tread, debris flows, erosion, tread damage from stump/root system cavities	Likely	Major	Very High	Install hazard warning signs at trailheads. Rock holes and reestablish trail tread. On trail sections with 15% or greater slopes, install or clean out existing water bars to divert surface water and sediment	For the 2016 season, the Pacific Crest National Scenic Trail had at least 900 documented travelers through the Seiad Valley area. Actual usage numbers are certainly higher.
Human Life and Safety/Property	Mulebridge and Idlewild Campgrounds	Debris flow and flooding	Possible	Major	High	Continue normal seasonal closure at Idlewild, monitor storm events at both locations for damage	

Summary of Hydrology Resource Analysis

The primary watershed responses of the Salmon-August Complex Fire area expected to include: 1) an initial flush of ash, 2) rill and gully erosion in drainages and on steep slopes within the burned area, and 3) flash floods with increase peak flows and sediment deposition. These responses are expected to be greatest within initial storm events. The disturbances will become less evident as vegetation is reestablished, providing ground cover and increasing surface roughness. Soils will also become stabilized and the infiltration capacity of the soils will improve. Debris flows are also expected to occur when thresholds for precipitation intensity or cumulative total are exceeded (See Geology Report for details).

Property and infrastructure is at a slight risk of flooding, especially those who are immediately downstream of drainages (such as Idlewild Campground). Water supply for Etna has the potential to be temporarily affected by increased turbidity during the first few intense storms.

Most "treatments" seen the above table are related to the notification for the possibility of an increased runoff due to the fire. It is also suggested that community water infrastructures be maintained frequently to keep lines clean. Where possible, an increase of storage would help provide water for longer periods of turbid water events.

Though no road work is proposed, it is still recommended for safety-related monitoring (storm patrol), especially during or following sizeable storm events. There are a number of trail treatments proposed to minimize damage (more detail in Recreation reports) due to excess runoff. The damaged bridge along the North Fork Salmon Trail should be removed of any debris and temporarily repaired for the short-term (next one to two years).

Etna Public Water System

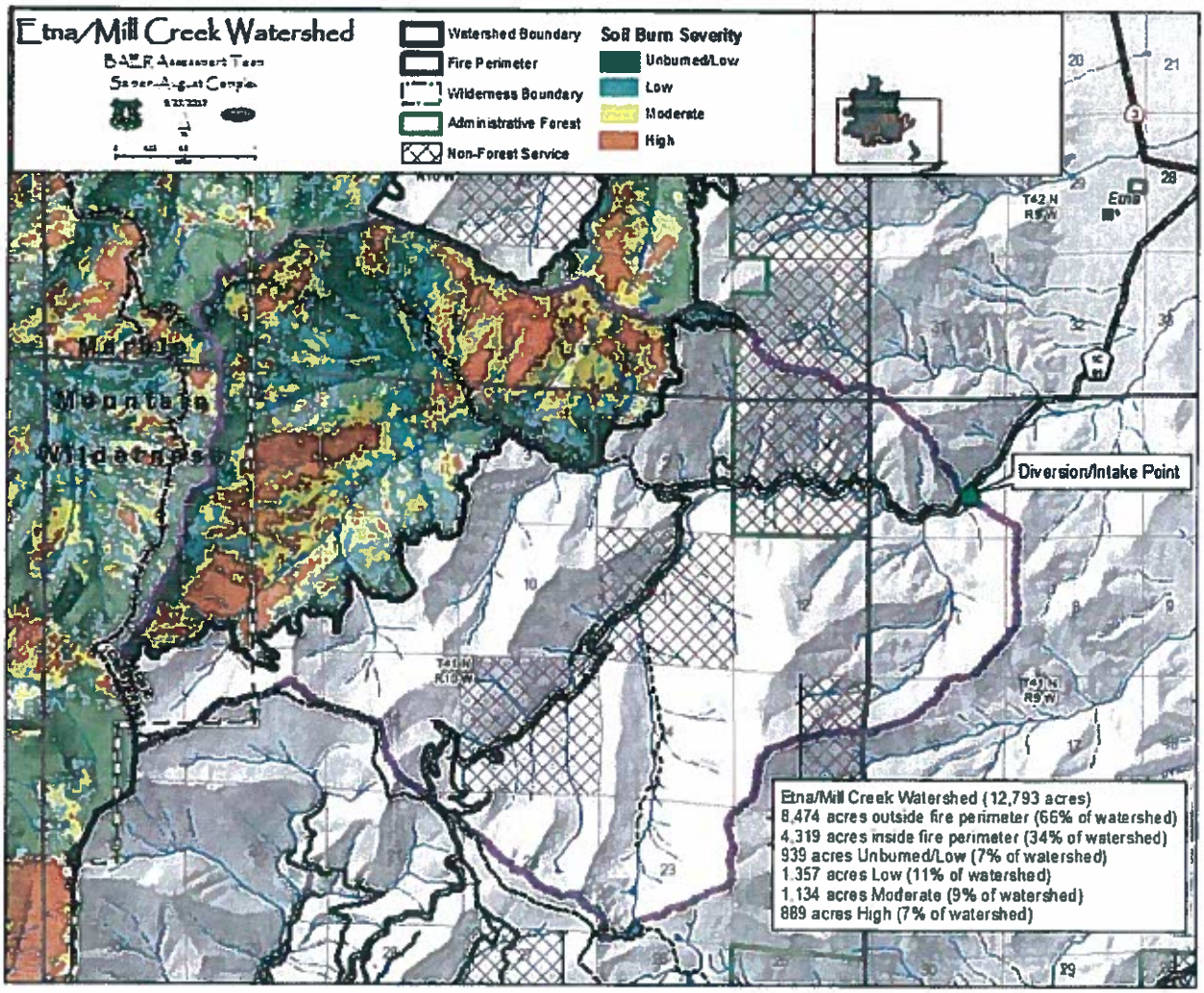
The intake diversion for the Etna Public Drinking Water System is on Mill Creek approximately 2.5 miles downstream from the burn perimeter. The BAER team obtained formation from the Etna Department of Public Works that during periods of high turbidity from storms the intake at the diversion dam can be down until the water clears up. In the past, the system has been shut down for as long as two days. The system is reported to be designed to shut for up to 4-days. The Etna water system has two underground concrete storage tanks with 300,000 gallon capacity. The Etna Public Water System is reported to have an 11 mile pipeline with 370 hookups.

The majority (66%) of the Mill Creek watershed is unburned with 16 percent of the watershed burned at high (7%) and moderate (9%) soil burn severity. The BAER Team hydrologic modeling estimates that the increase in post fire runoff over pre-fire is approximately a 30% increase in flow.

There will be a short-term threat to water quality from the tributaries of the main stem of Mill Creek. Ash and debris are expected to be mobilized off the steeper slopes during the first significant precipitation event. There is an increased potential for storm water runoff and erosion, especially downslope/downstream from areas of high burn severity. The main short-term threat to water quality in Mill Creek will be from ash and fine, suspended sediment. There is a potential for an increase in the pH of the post-fire runoff water due ash deposition. Initial concerns are that increased turbidity, sediment deposition and debris could change operations and increase maintenance of the water diversion intake. There is a likely probability of turbidity, debris and sediment affecting the operation of the intake diversion dam. The magnitude of consequences is thought to be moderate and the risk is high. The BAER Team has notified and coordinated with and shared Soil Burn Severity data with NRCS, SWRCB Division Drinking Water, Siskiyou County Environmental Health and Etna Public Works, the operator of the Etna Public Drinking Water System.

Table 2. Identified Values at Risk due to increased hydrologic response.

Critical Value	Value At Risk	Probability of Damage or Loss	Magnitude of Consequence	Risk	Treatment	Comments
Human Health/Safety	MMW-Upper Mule Bridge	Likely	Major	Very High	Signage and Barricades or Repair	Access to PVT parcel at Abbott Ranch
Water Quality	Mill Creek Municipal W/S	Possible	Major	High	Notify NRCS, SWRCB Division WQ, Siskiyou County EH and Etna WS operator	4K acres of 12K watershed burned, 7% at high SBS
Human Health/ Safety/ Property	Recreation Cabins, Idlewild Campground, Mule Bridge Trailhead	Unlikely	Major	Intermediate	Warn residents of hazards, continue seasonal closure of Idlewild Campground	Adjacent to NF Salmon River and downstream of burn area
Natural Resource	NF Salmon River	Likely	Moderate	High	Remove Creosote timbers and debris below Upper Mule Bridge	T&E habitat, W&S River Corridor
Natural Resource	NF Salmon River Trail 5405	Very Likely	Moderate	Very High	Forest Closure Order	Upper Mule Bridge
Natural Resource	Slope stability	Very Likely	Major	Very High	Warning signs	USGS will model



Noxious and Invasive Weeds: Native or naturalized communities on NFS lands where invasive species or noxious weeds are absent or present in minor amounts.

The North Fork of the Salmon River, where the Salmon August incident occurred, has been actively monitored and treated for noxious weeds since the early 1990's by both the Forest Service and the Salmon River Restoration Council. Weeds sites present in the fire footprint are limited, however, many were directly impacted by suppression activities and will likely spread into vulnerable burned areas. Infested areas directly border the Marble Mountain Wilderness and spread into this area is of particular concern. The establishment of new weed infestations in the Marble Mountains would cause irreversible damages to natural Wilderness conditions. The Klamath National Forest weed program, and the Salmon River Restoration Council (SRRC), staffed by community volunteers from Forks of Salmon and Sawyers Bar are ready to respond to the control needs of these expansions.

Key concerns:

- Invasion of noxious weeds into presently un-infested Forest areas, especially the Marble Mountain Wilderness;
- Potential introduction of new invasive species and/or spread of existing species into vulnerable burned habitats by a variety of vectors, including equipment, personnel, sling loads, spike camps, stock animals, and wildlife;
- Preserving natural conditions and ecological processes by maintaining watersheds in a weed free or minimally infested condition.

The ***probability of damage or loss*** from non-native species introduction or spread is ***likely*** to occur, with the ***magnitude of consequences*** being ***major***, thus the ***risk rating is high.***

Cultural

There are eight known cultural resource sites identified within the burn area, plus seven incidental finds during the fire suppression efforts. These were subjected to GIS visual analysis (proximity to contiguous areas of high + moderate soil burn severity above) augmented by limited field examination to determine risk assessment ratings (cf. BAER Risk Matrix). Threats to these sites include bare exposure of the sites due to soil burn severity, combined with on-site erosion from increased overland flow and concentration of flows with coming rains, possible rain on snow events, and typical spring run-off in this high-precipitation environment. Some of those concentrated flows originate from trails and locations of trail drainage. Threats to integrity of these sites are real and imminent given the post-fire changed conditions.

In the case of cultural resources, the damage or loss refers to the likely loss of integrity of the scientific data present in the archaeological deposits that renders them significant and eligible to the National Register of Historic Places, and such losses are irrecoverable and irretrievable for cultural resources. It was determined that the probability of damage or loss of site integrity (and attendant significant cultural resource data value) is considered **likely to very likely** for seven of the eight sites. For the incidental finds there is more variance on the determinations. The magnitude of consequences is **major**, being irreversible. **The risk rating is Very High.**

B. Emergency Treatment Objectives: The primary objective of this Burned Area Emergency Response Report is to recommend prompt actions deemed reasonable and necessary to effectively protect, reduce or minimize significant threats to human life and property and prevent unacceptable degradation of natural resources prior to damaging events. The application of these BAER treatments would minimize on-site damages to the identified values at risk. The emergency treatments being recommended by the Salmon-August Complex BAER Team are specifically designed to achieve the following results.

   The objectives of the treatments are to:

   1. Protect human life and safety by signing hazards, closing roads, protecting escape routes, and treating select Forest Service trails where administrative closure would be problematic, including repairing a burned bridge decking for safety.

   2. Coordination with NRCS, National Weather Service, and USGS to communicate hazards to the public and private properties from flooding and debris flows in the town of Etna vicinity (Mill Creek watershed).

   3. Protect cultural sites by stabilizing the North Fork Salmon trail, which coincidentally directs concentrated flows of water to multiple cultural sites, both recorded and newly discovered sites during the fire. New sites are both historic and pre-historic in nature; site integrity should be protected short-term so that they can be recorded and eligibility status can be determined (using program funds).

   4. Protect ecological value of biological diversity by detecting and treating as necessary sites where introduction of noxious weeds may have occurred in previously uninvaded sites.

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

Land **90** % Channel **N/A** % Roads/Trails **80** % Protection/Safety **80** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land (EDRR)	90	95	100
Channel	n/a	n/a	n/a
Roads/Trails	90	100	100
Protection/Safety	95	100	100

E. Cost of No-Action (Including Loss): The cost of non-treatment is indeterminable and mostly non-monetary values. The real cost of non-treatment can only be measured in the irretrievable loss of cultural resources, degradation of aquatic habitat and water quality, noxious and invasive weeds in the wilderness, and the loss of recreation values for an indefinite timeframe.

F. Cost of Selected Alternative (Including Loss): See Part VI.

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Rick Weaver

Email: rweaver@fs.fed.us Phone: 530-478-6241

Salmon-August Complex BAER Team Roster			
Name	Specialty	Cell Phone	Email
Rick Weaver	Team Leader	530-913-3278	rweaver@fs.fed.us
Hilda Kwan	Hydrologist	415-602-1727	hkwan@fs.fed.us
Will Tripp	Soils	254-459-9262	wtripp@fs.fed.us
Juan delaFuente	Geology	530-841-4413	jdelafuente@fs.fed.us
Derek Beal	Geology Trainee	405-822-0955	dbeal@fs.fed.us
Charlotte Corbett	GIS	530-598-8609	ccorbett@fs.fed.us
Lori Jackson	Road Engineering	530-598-9314	ljackson@fs.fed.us
Ben Molitor	Road Engineering	530-841-4447	bmolitor@fs.fed.us
Erin Lonergan	Botany weeds	530-327-8994	erinrlonergan@fs.fed.us
Karl Dietzler	Engineering	541-953-9222	kdietzler@fs.fed.us
Robert Weaver	Archaeology	707-344-2027	robertweaver@fs.fed.us
Brian Thomas	Fisheries	530-841-4547	bthomas01@fs.fed.us
Gay Baxter	Special Uses	530-468-1210	gbaxter@fs.fed.us
Elaine Elliot	GIS	530-321-2092	eelliott@fs.fed.us

Salmon-August Complex External Contacts			
Name	**Agency**	**Phone**	**Email**
Jim Patterson	NRCS	530-572-3119	james.patterson@ca.usda.gov
Lorrie Bundy	NRCS	530-572-3138	lorrie.bundy@ca.usda.gov
Craig Bunas	SWRCB Division of Drinking Water	530-224-4800	craig.bunas@waterboards.ca.gov
Dan Burbank	Etna Public Works	530-598-2286	etnacitypwd@gmail.com
Darin Stringer	Ecotrust Forest Management (EFM)	541-517-3875	dstringer@ecotructforests.com
Spencer Higginson	NWS-Medford	541-776-4303 x228	spencer.higginson@noaa.gov
Dennis Staley	USGS		dstaley@usgs.gov
Eric Jones	USGS Geological Hazards Science Center		ejones@usgs.gov
Dan Wessell	Siskiyou County EH	530-841-2118	dwessell@co.siskiyou.ca.us

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 weed detection surveys and concurrent hand treatments of small, newly established infestations. Treatments to mitigate the noxious weed emergency include detection surveys in high priority areas and concurrent treatment of any new noxious weed populations located during those surveys. Detection surveys will be conducted in areas along fire lines, spike camps, drop points, wilderness trails, and existing roads where invasion by noxious weeds is most probable. Surveys will be conducted during appropriate seasonal times for detection of target noxious weeds in 2018.

All newly discovered noxious weed populations on Forest Service land will be mapped and entered into the National Resource Inventory System (NRIS) according to National protocol. Treatment will be recorded as directed by the same National protocols. Noxious weed treatment will consist of hand pulling to root depth and if seed is present, plants will be bagged and disposed of properly. The communities within the Salmon River watershed are committed to remaining herbicide free, and as such, the funding request reflects the cost of manually treating increases in infestations due to fire and suppression actions on Federal lands.

Channel Treatments: N/A

Roads and Trail Treatments:
There are no road treatments proposed.

Trail treatments are proposed for benefits to multiple critical BAER values: manage risks to human life and safety, protect the trail infrastructure from damaging events and much greater repair costs later, and protect cultural resources where concentrated/channeled flow upon and exiting trails is the actual threat.

More specificallyTreatments are to address areas with potential for trail collapse because of undermined tread, avoid trail diversion of water at water crossings and entire segment failure, and promote tread drainage (waterbars) to avoid concentrated flows. Contacts have been made to assure implementation can take place force account in an urgent and timely manner. The Pacific Crest National Scenic Trail would be prioritized over other trails for completion in the fall. The cost of all trail work (25 miles total) is estimated at $42,050 or $1,862 per trail mile.

Trail Tread Repair Actions:

- Fill and stabilize burned out stump and large root cavities with native rock material.
- Where side slope is >35%, remove slough and widen tread to 24-36" in areas of high and moderate soil burn severity, specifically where total loss of tree canopy will not produce natural soil cover.
- Construct, maintain, or upgrade existing waterbars and drainage features, especially on slopes 15% or greater, to facilitate trail drainage and avoid concentrated flows during storm events over-winter.

Water Bars: On sections of the trails with steep grades, water bars will be installed or existing water bars cleaned to divert surface water, curb trail erosion and protect the investment in these facilities. Installation should be designed to last no more than two to three years – permanent structures are not part of this treatment.

At the four-mile crossing along the highly-used North Fork Salmon Trail, one trail bridge lost approximately 25% of its wood decking, and is estimated to cost approximately $4,500 to repair, including materials and move-in/move-out logistical support. The line officer considers administrative closure infeasible for this particular trail, and thus short-term repair of the bridge is necessary for safety of public using the trail, as well as safety of FS personnel/crews performing stabilization treatments. Permanent repair and/or replacement of this bridge should be considered for priority post-fire rehabilitation and restoration funding in the future.

Protection/Safety Treatments:

Cultural Resources Storm Patrol is needed to insure features or subsurface remains are not damaged or exposed by erosion, soil movement, or looting. This is needed in particular along the length of the North Fork Salmon River Trail. This trail crosses near-and-above or through all of the known and recently discovered sites along the river corridor and though the most archaeologically sensitive areas of this fire. Threats include bare-exposure of the trail and surrounding slopes due to soil burn severity, and susceptibility to erosion and concentration/channeling of water upon the trail surface with intense rains, possible rain on snow events, and typical spring run-off. Erosion and/or water channeling upon the trail threatens to have direct and indirect effects to known, newly discovered, and unknown cultural resources. This is repeated here; trail treatments are proposed (above) in part to protect these cultural resources, and **manage/reduce a Very High risk rating**. Storm patrol described here is intended to maintain effectiveness of these treatments.

Even with the trail treatments intended in part to protect cultural sites, there is residual risk: magnitude of consequences remains major for irreversible damage to cultural resources; the trail treatments reduce probability of damage from likely or very likely to possible (< 50%) for a **residual risk rating of High**. Given an unknown number and intensity of storm events to come over-winter, additional storm patrol is requested as insurance for protection of cultural site integrity over the short term (first 1-2 winter cycles).

Proposal: Qualified Archaeologists and/or Archaeological Technicians will perform extended trail storm patrol of the 25-mile length of the N-F Salmon River Trail, in conjunction with a small (2-person) trail labor crew. Patrolling condition of the trail after storm events and maintaining trail treatment integrity as related to protecting adjacent cultural sites is needed, as these cultural resources are irreplaceable and irretrievable, and time is needed to determine the value of newly discovered sites that are potentially eligible until determined otherwise. Total request for storm patrol in addition to trail treatment is $9,338.

I. Monitoring Narrative:

No monitoring proposed.

Part VI – Emergency Stabilization Treatments and Source of Funds

Interim #

				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$16,986	$0		$0		$0	$16,986
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										
Trail Stabilization	miles	1682	25	$42,050	$0		$0		$0	$42,050
Bridge Safety Repair	ea	4530	1	$4,530	$0		$0		$0	$4,530
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$46,580	$0		$0		$0	$46,580
D. Protection/Safety										
Cultural Storm Patrol	year	9337.5	1	$9,338	$0		$0		$0	$9,338
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$9,338	$0		$0		$0	$9,338
E. BAER Evaluation										
				---			$0		$0	$0
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				---	$40,000		$0		$0	$0
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				$72,904	$40,000		**$0**		**$0**	**$72,904**
Previously approved										
Total for this request				**$72,904**						

PART VII - APPROVALS

1. Forest Supervisor (signature) — Date: 10.13.17

2. Regional Forester (signature) — Date: 10/19/2017