Date of Report: July 30, 2015

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: Corner Creek

B. Fire Number: OR-OCF-000297

C. State: Oregon

D. County: Crook/Grant/Wheeler

E. Region: Pacific Northwest (6)

F. Forest: Ochoco / Prinville BLM

G. District: Paulina

H. Fire Incident Job Code: P6JU9E (0607)

I. Date Fire Started: 6/29/2015

J. Date Fire Contained: 7/30/2015 (95% Contained)

K. Suppression Cost: $11,760,000 as of 7/24/2015

L. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 17.5 miles dozer line, 5.6 handline (Still in the Process of being treated)
2. Fireline seeded (miles): 17.5 mile of dozer line to be seeded.
3. Other (identify): Safety zones, staging areas and drop points are in the process of being rehabilitated. Road drainage installed where suppression activities warranted so.

M. Watersheds:

HUC 6 subwatersheds affected by the Corner Creek Fire. Percent of watersheds burned are reported in parentheses.

Subwatersheds (HUC12)	Total Acres	Unburned Acres	Burn Severity		
			Low	Moderate	High
Beaverdam Creek- North Fork Beaver	16861	14715 (87%)	2033 (12%)	112 (1%)	1 (0%)

Creek					
Black Canyon Creek	20800	16861 (81%)	2722 (13%)	1072 (5%)	95 (0%)
Corner Creek-South Fork John Day River	18730	15112 (80%)	3060 (16%)	556 (3%)	2 (0%)
Sunflower Creek	18543	16609 (89%)	16609 (9%)	1715 (1%)	2 (0%)
Wind Creek	17578	2726 (15%)	12883 (73%)	1840 (10%)	129 (1%)

N. Total Acres Burned: 29,673 total acres
NFS Acres(25,594) BLM (1,719) State of Oregon (1) Private (2,359)

O. VegetationTypes: Vegetation types within the fire area consist of a combination of forested and non-forested plant associations. The Forested Plant Association Groups (PAGs) represented are Dry Grand Fir (3,222 acres), Douglas fir (3,777 acres), Dry pine (2,810 acres), Juniper Steppe (4,797 acres), Juniper woodland (4,793 acres), Moist grand fir (10 acres), Mesic pine (3,170 acres) and 3,145 non-forested acres. Non-forested habitats include Alder/Willow (31 acres), Aspen (10 acres), Grassland (1,446 acres), Mahogany (28 acres) Meadow (60 acres) and Sage/Scab (1,500 acres).

P. Dominant Soils: Dominant soils are various silt loams to silty clay loams, extremely gravelly silt loams, very gravelly loams, and very cobbly loams mostly shallow to deep, and mostly soil hydrologic groups B and D. Specific dominant soils include, Arigxerolls, Cryandepts, Haploxerolls, and Vitrandepts.

Q. Geologic Types: The Corner Creek Fire is underlain 99% by Tertiary (16 Million year old) Picture Gorge Basalt (Tcp) and 1% Tertiary (9-6 Million year old) silicic ash-flow tuff and pumiceous ash-fall tuff (Tat) (Appendix B). Locally, the Picture Gorge Basalt has been faulted, with stringers of timber scribing the fault lines. The baked soil horizons between the basalt flows offer zones of permeability for groundwater movement. Groundwater also moves vertically through the fault planes. The ground water expresses as seeps and springs on the surface. No Paleontological resources at risk in the fire perimeter.

R. Miles of Stream Channels by Order or Class: See Table Below

	Length (Miles)	
Stream Order	Entire Fire	USFS
1	4.24	2.36
2	18.48	14.91
3	19.96	18.1
4	49.71	46.59
Total	92.39	81.95

S. Transportation System

Trails: 3.62 miles (South Prong Trail in Black Canyon Wilderness)

Roads: See Table Below

Maintance Level	Miles
1-Basic Custodial Care (closed)	38.75
2-High Clearance Vehicles	47.07
3-Suitable For Passenger Cars	2.10
4- Moderate Degree of User Comfort	0.56

PART III - WATERSHED CONDITION

A. Burn Severity (acres): Total: 3,184 (unburned); 22,462 (low); 3,797 (moderate); 230 (high)
NFS Land: 2897 (unburned); 19,215 (low); 3,266 (moderate); 217 (high)

B. Water-Repellent Soil (acres): 1254 total, 1188 on NFS lands

C. Soil Erosion Hazard Rating (acres):

1690 **(low)** 24468 **(moderate)** 3390 **(high)** 125 **(very high)**

Almost all of this area comes out high and moderate because of the huge percentage of shallow rocky soils and high runoff peaks which is typical of scab/stringer terrain.

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period	5 years
B. Design Chance of Success	80%
C. Equivalent Design Recurrence Interval	5 years
D. Design Storm Duration	0.5 hours
E. Design Storm Magnitude	0.66 inches
F. Design Flow	20.6 cfs/ mi^2
G. Estimated Reduction in Infiltration	12%
H. Adjusted Design Flow	55.3 cfs cfs/ mi^2

Summary of Watershed Response

Hydrologic Response: The primary watershed responses of the Corner Creek Fire are expected to include: 1) an initial flush of ash, 2) rill and gully erosion in drainages and on steep slopes within the burned area, 3) flash floods with increased peak flows and sediment deposition. These responses are expected to be most evident during initial storm events immediately after the fire. Thereafter, responses are expected to become less evident as vegetation is reestablished, providing ground cover, increasing surface roughness, and stabilizing and improving the infiltration capacity of the soils.

The results of a peak flow analysis show that pre-fire area weighted flows were on average 20.6 cfs / mi^2 for a 5 year, 30 minute storm, and 55.3 cfs / mi^2 for post-fire flows. The post-fire flows could lead to plugged culverts, flow over road surfaces, rill and gully erosion of cut and fill slopes, erosion and deposition along road surfaces and relief ditches, loss of long-term soil productivity, and threats to human safety. Some sedimentation of the ephemeral channels is likely to occur at an accelerated rate until vegetation establishes itself and provides ground cover.

Erosion Response: The soil burn severity shows multiple areas that have the majority of moderate to high soil burn severity (14%) and the rest as very low to unburned (86%). The main areas of intense burning were South Prong Creek sub-watershed and Upper Wind Creek sub-watershed both being at risk due to flooding and possible sedimentation affecting water quality, roads, trails, and private residents below.

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

Values at Risk:

The table below is Exhibit 02 from FSM 2523.1. This matrix was used to evaluate the risk level for each value identified during this BAER assessment. See FSM 2523.1 for additional information.

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**

The table below is a summary of the values (some of which were not identified as 'critical' per Exhibit 01 from FSM 2523.1) within and along the Corner Creek fire area, as well as, the threats to those values, the probability of damage or loss, magnitude of consequences and the resulting level of risk. Red shaded cells are those values that rated out as "very high" or "high" risk. Yellow shaded cells rated out "intermediate" risk and white cells rated out "low" or "very low".

Value (Life/ Property/ Resources)	Value At Risk	Threat to Value At Risk	Probability of Damage or Loss	Magnitude of Consequences	Risk	Treatment	Notes
Life/Safety	Residence and structures at bottom of Frazier Creek and South Fork Wind Creek	Debris Flow and/or Flooding	Possible	Moderate	Intermediate	Notify NRCS	
Property	Loss or Damage of FS roads (such as Congleton Crossing)	Debris flow/Flooding	Likely	Moderate	High	Road treatments where appropriate, Storm Patrol **(R2)**	
Property	FS System Trails	Debris flow, erosion, raveling	Likely	Moderate	High	On sections of the trails with steep grades, install water bars or clean existing water bars to divert surface water **(T1)**	
Natural Resource	Water Quality	Ash and/or Debris Flow	Likely	Moderate	High	Road treatments, storm patrol **(R2, R3)**	
Natural Resource	Steelhead Critical Habitat*	Erosion and Sediment Delivery	Likely	Moderate	High	No Treatment- Natural Recovery	*For Black Canyon Creek, South Prong Black Canyon, and Wild Creek
Natural Resource	Steelhead Critical Habitat*	Erosion and Sediment Delivery	Minor	Possible	Low	No Treatment	*For North/South Fork Wind Creek, Congleton Creek and Frazier Creek
Natural Resource	Steelhead Critical Habitat	Grazing due to Lack of Fencing	Likely	Moderate	High	Change to either rest of the pasture for 2016 or if grazed before July 15th need of daily rider to push livestock out of creek bottom if redds are identified.	Only for Congleton Creek
Cultural Resources	Prehistoric Lithic Scatter Potentially Eligible in high and moderate severity on gentle	Erosion, exposure of resources, and looting	Possible	Moderate	Intermediate	No Treatment	

	slopes greater than 5%						
Cultural Resources	Prehistoric Lithic Scatter Potentially Eligible in high and moderate severity on gentle slopes 0-5%	Erosion, exposure of resources, and looting	Unlikely	Moderate	Low	No Treatment	
Life/Safety	Persons traveling within Corner Creek burned area perimeter	Hazardous trees weakened by fire and erosion	Possible	Major	High	Signs placed at major entry points throughout fire perimeter **(R1)**	
Property	Loss and damage of Forest Service 5840-400 at Congleton Creek crossing	Debris plugging culvert	Likely	Moderate	High	Stormproof culvert inlet, Monitor throughout Fall 2015 and Spring 2016 **(R2,R3)**	
Property	High use Forest Service road system	Debris flow and flooding	Likely	Moderate	High	Monitor roads after each major storm event throughout Fall 2015 and Spring 2016 **(R3)**	
Property	Closed Forest Service road system	Debris flow and flooding	Possible	Minor	Low	No treatment for closed roads	
Resources	Potential Sage Grouse Habitat	Weed displacement of habitat due to post fire conditions	Likely	Moderate	High	No Treatment	Not currently covered under BAER as Sage Grouse is not T&E species.
Resources	Soil Productivity on side-slopes	Loss of soil due to erosion from loss of duff and downed wood.	Likely	Minor	Low	No Treatment	Steeper slopes vulnerable however they are generally rocky and isolated. Wood recruitment anticipated.
Resources	Native and naturalized communities	Invasion of native habitat from noxious weed spread from post fire-conditions	Very Likely	Moderate	Very High	Detection and treatment of new weed infestations and subsequent seeding of 20 acres. ***(L1, L2)***	Mapped weed populations (invasive grasses; Medusahead and Ventenata and forbs; whitetop, knapweeds and houndstongue) are a threat

							to naturalized communities. These communities include sensitive plant species such as Henderson's Needle Grass and Pecks Mariposa Lily. Also at threat are native plant communities within the Black Canyon Wilderness.
Resources	Native plant communities associated with special habitats	Invasion by noxious weeds	Possible	Minor	Low	No Treatment	Pertaining to springs and associated aspen. Potential for Long Term rehab.
Life/ Property	Loss of life or damage to property	Hazards that exist from post fire conditions (mostly hazard trees)	Possible	Major	High	Hazard Signs ***Treatment P1, R1***	Suppression team has mitigated some hazard trees, but anticipation of more hazard trees within year one post-fire.

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 and cultural resources. The application of these BAER treatments would minimize on-site and downstream damages to the identified values at risk previously mentioned. The emergency treatments being recommended by the Corner Creek BAER Team are specifically designed to achieve the following results.

Proposed Land Treatments

The objective of the land treatments are to:

1. Reduce the potential for impaired vegetative recovery/ spread of noxious weeds. (L1, L2).

Proposed Road and Trail Treatments

The objective of the road and trail treatments are to:

1. Protect road and trail inventments from becomping impassible and damaged due to post-fire flooding. (R2, R3, T1)
2. Reduce sedimentation into streams degrading water quality and Steelhead Critical Habitat (R2, R3, T1)

Protection/Safety Treatment:

The objective of the road and trail treatments are to:

1. Protect human life and safety by raising awareness through posting hazard warning signs at recreation sites, trailheads, and when entering the burner area. (R1, P1)
2. Temporarily prevent motor vechicle assess into parts of the fire area, helping to mitigate post fire hazards. (P2)

Proposed Channel Treatments

There are no proposed channel treatments.

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

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

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	70	80	90
Channel	NA	NA	NA
Roads/Trails	90	90	90
Protection/Safety	85	90	95

E. Cost of No-Action (Including Loss): Critical values identified in Section A would be damaged or lost. Cost of the no action is estimated to be $390,000.

F. Cost of Selected Alternative (Including Loss): There remains an approximate 10% chance that the proposed treatments for this initial work may not be fully successful. Total cost of the action alternative plus this 10% chance of failure is $33,781.

G. Skills Represented on Burned-Area Survey Team:

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

Team Leaders: Rob Tanner – Asst. Forest Hydrologist/BAER Coordinator, Deschutes and Ochoco NF
Kyle Wright- Zone Hydrologist, Deschutes NF

Email: rtanner@fs.fed.us **Phone:** 541-383-5566 / 541-416-6464
kylewright@fs.fed.us 559-359-2261

Team Members:

Hilda Kwan- Hydrologist
Brad Rust- Soil Scientist
Sarah Callaghan- Botany
Carrie Gordon- Geology
Kevin Keown- Wildlife
Dan Rife- Fisheries
Bryan Kurtz/Scott Lewis(t) -Engineering
Dennis Benson- Recreation
Dino Borghi/Dorothy Thomas- GIS
Jay Kinsman- Archaeology
Jacob Young- Range

H. Treatment Narrative:

Land Treatments:

L1 - Invasive Weed Detection and Treatment: Invasive plant surveys and treatment along the Forest Service Boundary will be necessary to prevent dispersal of non-native invasive plants coming onto Forest Service portion of the Corner Creek fire from BLM and private lands. Survey and treatment will also focus on the Black Canyon Wilderness and sensitive areas which are potential habitat for several R6 sensitive plant species (Henderson's needlegrass and Peck's mariposa lily). Species such as medusahead thrive where existing perennial vegetation has been destroyed or weakened, thus it was necessacy to treat moderate and high burn severity areas adjacent to known sites. Total request is for $12,349.35.

Treatment	Units	Unit Cost	# of Units	Total Cost
L1 Weed Surveys/ Treatment	Acres	$63.33	195	$12,349.35

L2- Seeding: Native seeding along Forest Service Boundary after herbicide treatments to increase resiliency and prevent consecutive invasions of medusahead and ventenata. Seeding will also occur in moderately burned areas to prevent weed spread within Wilderness where herbicide application are not allowed. Total request is for $500.00.

Treatment	Units	Unit Cost	# of Units	Total Cost
L2- Seeding	Acres	$25.00	20	$500

Road and Trail Treatments:

R1. Install "Burned Area" Warnings Signs - Signs would be installed at the 5800-500 rd./58 rd. junction, 5840 rd. at Mud Springs, 58 rd./5840 rd. junction, 5830 rd./5840 rd. junction. Total request is for $1200.

Treatment	Units	Unit Cost	# of Units	Total Cost
R1- Signs	Each	$300	4	$1200

R2. Clean Culvert, Remove Logs/debris from Inlet at 5850-400 rd. and N. Fork Wind Creek Crossing – Culvert would be storm proofed at least 50' above inlet by Road Crew laborers prior to Fall precipitation. Road will then be considered a "Priority Road" and patrolled. Total request is for $534.31.

Treatment	Units	Unit Cost	# of Units	Total Cost
R2- Storm Proof	Each	$534.31	1	$534.31

R3. Storm Patrol All "Priority Roads"– All high-use roads (primarily off the 5850 road system) will be patrolled throughout the Fall, and Spring following large storms events. Total request is for $4335.52.

Treatment	Units	Unit Cost	# of Units	Total Cost
R3- Storm Patrol	Days	$270.97	16	$4335.51

T1. Trail Drainage– Install drain dips on 1 mile of S. Prong Trail #821 (within Black Canyon Wilderness) from the fire perimeter near Black Canyon Trail Junction to the saddle leading into S. Prong Canyon within the burned area to protect the trail asset by diverting anticipated increases in surface runoff on the trail. This request also includes felling of hazard trees along the portion of trail to be worked on to mitigate safety concerns. Portion of trail to be worked on is a two mile hike into the wilderness. Total request is for $6000.00.

Treatment	Units	Unit Cost	# of Units	Total Cost
T1- Tail Drainage	Miles	$6000	1	$6000

Protection/Safety Treatments:

P1 - Hazard Signs: Installation of 25 laminated paper signs placed at trail heads, developed recreation sites, and dispersed recreation sites. Total request is for $3125.00.

Treatment	Units	Unit Cost	# of Units	Total Cost
P1-Hazard Signs	Signs	$125	25	$3125

P2- Gate Installation- Installation of a gate on the 5850 road to enforce closure thus helping to mitigate post-fire threats to pubic safety. Total request is for $3000.00.

Treatment	Units	Unit Cost	# of Units	Total Cost
P2- Gate Installation	Gate	$3000	1	$3000

Channel Treatments:
No treatments Proposed

I. Monitoring Narrative:

M1 - Effectiveness monitoring includes the following components:
1). How effective was the prescribed treatment in reducing infestations?
2). Were all Project Design Features effectively implemented? If not why?

3). Treatment recommendations for follow up treatment.

Treatment	Units	Unit Cost	# of Units	Total Cost
Monitoring of Treatment L1	Days	$350	4	$1,400

Part VI – Emergency Stabilization Treatments and Source of Funds

			NFS Lands				Other Lands		
		Unit	# of		Other	# of	Fed	# of	Non Fed
Line Items	Units	Cost	Units	BAER $	$	units	$	Units	$
A. Land Treatments(L)									
L1-Weed Detect/ Treatment	Acres	$63.33	195	$12,349	$0		$0		$0
L2- Seeding	Acres	$25	20	$500	$0		$0		$0
				$0	$0		$0		$0
				$0	$0		$0		$0
Insert new items above this line!				$0	$0		$0		$0
Subtotal Land Treatments				$12,849	$0		$0		$0
B. Channel Treatments									
				$0	$0		$0		$0
Insert new items above this line!				$0	$0		$0		$0
Subtotal Channel Treat.				$0	$0		$0		$0
C. Road and Trails (R-T)									
R2- Road Storm Proofing	Each	$534.31	1	$534	$0		$0		$0
R3- Storm Patrol	Days	$270.97	16	$4,336	$0		$0		$0
T1-Trail Drainage	Miles	$6,000.00	1	$6,000	$0		$0		$0
Insert new items above this line!				$0	$0		$0		$0
Subtotal Road & Trails				$10,336	$0		$0		$0
							$0		$0
D. Protection/Safety (R-P)							$0		$0
R1- Road Hazard Signs	Signs	$300	4	$1,200			$0		$0
P1- Rec Hazard Signs	Signs	$125	25	$3,125	$0		$0		$0
P2- Gate Installation	Gate	$3,000	1	$3,000					
Insert new items above this line!				$0	$0		$0		$0
Subtotal Structures				$6,125	$0		$0		$0
E. BAER Evaluation									
Corner Ck BAER				$38,154			$0		$0
Insert new items above this line!					$0		$0		$0
Subtotal Evaluation					$0		$0		$0
F. Monitoring (M)									
M1-Monitor L1	days	350	4	$1,400	$0		$0		$0
				$0	$0		$0		$0
Insert new items above this line!				$0	$0		$0		$0
Subtotal Monitoring				$1,400	$0		$0		$0
G. Totals				$30,710	$0		**$0**		**$0**
Previously approved									
Total for this request				**$30,710**					

PART VII - APPROVALS

1. /s/ Stacey Forson — July 30, 2015
   Forest Supervisor (signature) — Date

2. */s/ Rebecca Lockett Heath (for) James M. Peña* — *August 7, 2015*
   Regional Forester (signature) — Date