Date of Report: Aug 5, 2014

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: Waterman Complex (Bailey Butte) **B. Fire Number:** OR-952S-014165

C. State: Oregon **D. County:** Crook/Wheeler

E. Region: Pacific Northwest (6) **F. Forest:** Ochoco

G. District: Lookout Mountain **H. Fire Incident Job Code:** PNHHDF(1502)

I. Date Fire Started: 7/14/2014 **J. Date Fire Contained:** 7/26/2014

K. Suppression Cost: $7,653,045 as of 7/26/2014

L. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 16.3 including dozer and hand line.
2. Fireline seeded (miles): None seeded at this time, however being assessed.
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. Watershed Numbers: 170702040302 (West Branch Bridge Creek), 170702040305 (Middle Bear Creek), 170703050203 (Upper Marks Creek).

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

Subwatersheds	Total Acres	Unburned/Very Low Acres	Burn Severity		
			Low Acres	Moderate Acres	High Acres
Middle Bear Creek	21529	19125 (89%)	1564 (7%)	830 (4%)	9 (0.04%)
Upper Marks Creek	20588	18079 (88%)	1899 (9%)	561 (3%)	49 (0.2%)
West Branch Bridge Creek	25385	21243 (84%)	2645 (10%)	1442 (6%)	54 (0.2%)

N. Total Acres Burned: 10,272 total acres
NFS Acres (7,789) Private Acres (2,483)

O. VegetationTypes: Plant communities affected by wildfire and suppression activities on the Bailey Butte Fire on the Ochoco National Forest include plant association groups dominated by grand fir (Abies grandis) communities (3,000 acres), Douglas fir (Psuedotsuga menziesii) communities (1,200 acres), and ponderosa pine (Pinus ponderosa) communities (300 acres). Juniper woodland (Juniperus occidentalis) communities occupy 50 acres within the fire perimeter. Mixed conifer stands are interspersed with wet to mesic meadow communities (2,100 acres) dominated by grasses, sedges and forbs.

P. Dominant Soils: Soils within the Bailey Butte Fire area can be differentiated in general terms by the presence or absence of Mount Mazama-origin volcanic ash capping, which varies based largely on aspect. The northern (NW, N and NE) aspects and eastern aspects (E) are largely Alfic Humic Vitrixerands which are ash-capped soils with 14 inches or greater of ash, a dark organic-rich surface (mollic epipedon), and a clayey subsoil (argillic horizon). Representative soils series are the Norlo, Normauk, Scarpal, Crosswhite and Whistler series. Ash-capped soils which have less than 14 inches of ash are classified as Vitrandic Argixerolls and occur on ridge shoulder positions, upper slopes and on more westerly and southerly (W, SW, S and SE) aspects with largely clayey subsoils also. Representative soil series are the Shotsprings, Larabee, Humarel, Lamulita and Maule series. Deep clay soils with less than 7 inches of surface ash (Vertic Palexerolls) also occur throughout the area. Representative series are the Meafun and Yawkey series.

Q. Geologic Types: The Bailey Butte Fire is underlain by Cretacious (60 Million year old) conglomerates, Tertiary Clarno Formation (54-37 Million year old) volcanic clastic rocks, andesite flows and tuffaceous rocks. Locally, the Clarno beds are known to contain plant fossils and petrified wood. The Clarno Formation underlies 74% of the burned area. The Cretacious conglomerates underlie 17% and the remaining lithologies take up the remaining 8%.

R. Miles of Stream Channels by Order or Class:

Stream Order	Length (Miles)
1	0.67
2	5.69
3	10.26
4	10.77
Total	27.39

S. Transportation System

Trails: 7.25 miles

Roads: See table below

Maintance Level	Miles
1-Basic Custodial Care (closed)	28.00
2-High Clearance Vehicles	8.90
3-Suitable for Passenger Cars	4.70
4-Moderate Degree of Comfort	0.67
5-High Degree of Comfort	6.95
Total	49.22

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 1220.65 (unburned); 6108.25 (low); 2831.58 (moderate); 11.68 (high)

B. Water-Repellent Soil (acres): 7186 acres (Most of the water-repellent soils are from natural background as opposed to fire induced).

C. Soil Erosion Hazard Rating with NFS Land (acres):

574.5 **(low)** 4899.8 **(moderate)** 2271.9 **(high)**

D. Erosion Potential: **0 .62** tons/acre (estimate)

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	4.7cfs / mi^2
G. Estimated Reduction in Infiltration	27%
H. Adjusted Design Flow	32 cfs / mi^2

Summary of Watershed Response

Hydrologic Response: The results of a peak flow analysis show that pre-fire area weighted flows were on average 4.7 cfs / mi^2 for a 5 year, 30 minute storm, and 32 cfs / mi^2 for post-fire flows. 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. Debris flow assessment was conducted by the USGS to evaluate the potential for debris flow events (Staley, 2014). The results indicated that the probability for debris flow were low (0=20%) and most of the volumes were also quite low (<1,000 cubic meters), However several drainages

had potentially larger volumes of material including O'Kelly Creek, Headwater of Heflin Creek, and several drainages above Highway 26.

Erosion Response: Hydrophobic soil conditions are widespread within the fire area, but the amount that is fire-induced as opposed to that which is naturally-occurring is difficult to resolve. The fine ash cap soils present througout the Ochoco NF tend to form hydrophobic vessicular soil crusts at the organic-mineral interface. Most sites that were visited during field reconnaissance exhibited some degree of hydrophobicity (even the unburned sites). It is likely that the fire increased the extent or severity of hydrophobicity within the fire perimeter, and that surface erosion potential is increased as a result. It is estimated that 70% of the soils within the fire perimeter exhibit some degree of hydrophobicity.

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 Bailey Butte 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".

For more detailed information and descriptions on the values at risk see Section H of this report, as well as, specialist reports.

Value (Life/ Property/ Resources)	Value at Risk	Threat to Value at Risk	Probability of Damage or Loss	Magnitude of Consequence	Risk	Treatment	Notes
Resources	T&E Steelhead Critical Habitat	Private land cattle access into designated Critical Habitat in Dodds Cr due to burned boundary fence.	Likely	Moderate	High	Repair or reconstruct portions of the northern private/NFS boundary fence. ***Treatment L1***	This is the only designated Steelhead Critical Habitat on FS lands (Dodds Cr) that is expected to be affected by private land cattle coming onto FS lands (from effects due to the fire). Other designated Critical Habitat is adjacent to the fire but on private lands.
Resources	T&E Steelhead Critical Habitat	Degradation of downstream habitat from road/culvert runoff/failure in O'Kelly Cr.	Likely	Moderate	High	Remove 2 culverts (1 on 2600611 rd and 1 on 2210202 rd) on O'Kelly Cr. Also install critical drain dip on 2210 and 2600611 roads. ***Treatments R4,R5***	Critical drain dip on 2210 is contingent upon approval from Wheeler County per Public Use designated road.
Resources	T&E Steelhead Critical Habitat	Degradation of habitat from road/culvert runoff/failure in Dodds Cr.	Possible	Moderate	Intermediate	***No treatment.*** Culvert on the 2730560 rd will remain in place.	Identify in Long Term/Critical Post-fire rehab plan.

Life/Property	Human life and property along Hwy 26	Loss of Forest/private boundary fences and fences along Hwy 26 allowing private land cattle access to Hwy 26, increasing the threat of a vehicle accident with cattle on hwy.	Likely	Major	Very High	Posting Hazard Signs that cattle may be on roadway within designated open range. ***Treatment P3***	Repairing fenceline was proposed but not considered minimum treatment necessary. Western fenceline along Hwy 26 is not as critical so long as private boundary fence is repaired/reconstructed per Treatment L1 above. FS pasture east and west of hwy will most likely be rested. Coordinate with ODOT.
Life/Property	Human life and property along Hwy 26 and at recreation sites and trail head.	Hazard trees adjacent to Hwy and at recreation sites pose threat to life and property.	Likely	Major	Very High	Felling of hazard trees along Hwy 26 and at recreation sites. ***Treatment P1***	Suppression team has mitigated hazard trees to open hwy, but anticipation of more hazard trees within year one post-fire. Traffic control necessary. Coordinate with ODOT.
Life/Property	Hwy 26 and vehicle traffic	Loss of hwy road prism due to minimal drainage capacity structures at 5 locations.	Possible	Major	High	Coordinate with ODOT. No Treatment.	Coordinate potential threats and mitigation with ODOT. At least one culvert located north of Forest Boundary. USGS modeling shows relatively low risk.
Life/Property	Hwy 26, traffic, FS roads, private lands	Increased landslide potential from post-fire conditions.	Possible	Moderate	Intermediate	No Treatment	Potential risks identified and documented. No warranted treatment to mitigate landslides. Coordinate with NRCS and ODOT. Potential risk in 3-5 years when roots decay.

Resource	RNA (naturalized community)	Spread of invasive weeds into RNA.	Very Likely	Moderate	Very High	Seeding native mix around RNA that burned with high/moderate severity to reduce weed spread (***Treatment L3***). Detection and treatment of weeds adjacent to and within RNA (**Treatment L2**).	Fence repair and cattle guard was recommended but not considered minimal treatment necessary to mitigate risk. Minimal treatment would be to not authorize grazing in first year post fire. Mapped weed populations within the fire area demonstrate abundant presence of weeds outside the RNA (1,157 acres) compared to minor amount within RNA (17 acres or less than 1% of the RNA).
Property/Res	Water developments/ springs/riparian areas	Loss of exclosure fences and access of cattle into sensitive areas and potential spread of invasive weeds.	Likely	Moderate	High	No treatment warranted as related to rebuilding developments or fences. Treatment warranted for seeding as well as detection/ treatment of invasive weeds. ***Treatments L2,L3***	For developments – generally not considered emergency. For fence reconstruction - no special designation within BAER for protection of these areas. For weeds – seeding in high/moderate severity areas as well as detection and treatment.
Resources	FS Lands	Loss of FS boundary fence allows access of private land cattle to spread invasive weeds onto FS lands.	Likely	Moderate	High	No treatment related to rebuilding fences. Treatment warranted for detection/ treatment of invasive weeds. ***Treatment L2, L3***	For fence reconstruction - no special designation within BAER for protection of general FS lands. For weeds – detection and treatment.

Life/Property	Forest Service Roads	Loss of roads due to increased watershed response.	Likely	Moderate/ Major	High	Storm proofing. ***Treatments R1, R2, R3, R4, R5, R6, R8***	See treatment description section for more detailed information.
Life/Property	Forest Service Roads	Loss of roads due to increased watershed response during storms.	Likely	Moderate/ Major	High	Storm patrol. ***Treatment R7***	See treatment description section for more detailed information.
Resources	Sage Grouse, California Wolverine, Henderson's Needlegrass, Redband Trout	Loss of habitat from the fire associated with these species.	NA	NA	NA	No Treatment	Not currently covered under BAER as they are not T&E species.
Property	Downstream water diversions (on private lands)	Loss of or damage to diversion structure(s) due to post-fire watershed response (i.e. debris flows) as well as fish entrainment out of stream.	Possible	Minor	Low	No Treatment	Coordinate with NRCS.
Life/Property	Downstream Structures and Property	Loss of life or property (i.e. structures) due to increased watershed response flooding.	Possible	Moderate	Intermediate	No Treatment	Coordinate with NRCS.
Property/Res	Earthen bridges with culverts on Cougar Trail and associated downstream designated Critical Habitat/ Property/historic trail	Loss of earthen bridges from post-fire watershed response (increase in flows) and degradation to downstream Critical Habitat.	Likely (on Heflin Cr) Possible on tributary	Moderate Moderate	High Intermediate	Storm Patrol Storm Patrol ***Treatment T2***	Also protects integrity of historic Bear Creek Trail and current Cougar Trail. Potential for treatment request in interim 2500-8 based on storm patrol findings.

Property/Res	Cougar Trail	Loss of trail tread from post fire watershed response and erosion and degradation to downstream designated Critical Habitat.	Likely	Moderate	High	Drainage structures on portion of trail ***Treatment T1***	Also protects integrity of historic Bear Creek Trail and Cougar Trail.
Life	Life and safety at campgrounds, trailheads, developed recreation sites, Hwy 26 and high use road entrances into burned area.	Hazards associated with post-fire conditions.	Likely	Major	Very High	Hazard signs for both ends of Hwy 26 as well as small hazard signs for posting at recreation sites and high-use road entrances. ***Treatment P3***	Coordinate with ODOT and Forest Sign Coordinator, Tim Skaggs. Signs to also address potential for cattle on Hwy 26.
Life/Property	Crystal Springs Organization Camp	Loss of or damage to structures (cabins, well/pump, cistern) or life from post-fire conditions	Unlikely	Moderate	Low	No Treatment	Not within or downslope of the fire area. Ingress/egress could be affected.
Resources	Paleontological Resources	Loss of resources (i.e. collecting) from exposure due to the fire.	Likely	Minor	Low	No Treatment	Paleontological resources do not fall within BAER Critical Values (Exhibit 01 within FSM).
Life/Property	Hwy 26, traffic, FS roads, private lands	Increased landslide potential from post-fire conditions	Possible	Moderate	Intermediate	No treatment	Potential risks identified and documented. No warranted treatment to mitigate landslides. Contact NRCS for coordination. Potential risk in 3-5 years.

Resources	Historic Summit Trail, Friesen's salt log and stock trail, Wildwood Campground, Bear Creek Trail (now Cougar Trail), Forest Road 2210, Vowell Trail, phone line route, Beaver Ranger Station, Bandit Cr lithic scatter	Loss or exposure of cultural and heritage resources from the fire	Likely	Minor	Low	No Treatment. However, Treatment T1 described above would protect integrity of Bear Cr Trail.	Cultural values are viewed as a loss, except for the lithic scatter at Bandit Creek which was not damaged from the fire.
Resources	Soil Productivity	Loss of soil productivity due to erosion from post fire conditions.	Likely	Moderate	High	Mulch/Straw application considered, but deemed not cost effective and modeling showed lower risk.	Downed wood not completely consumed in several drainages. Monitor post-storm erosion and assess if need for later treatment
Resources	Soil Productivity and Hydrologic Function within meadows	Post-fire increased flows resulting in down-cutting or degradation to specified meadows.	Possible	Moderate	Intermediate	No Treatment	Heflin and Nature Creeks were identified as potential treatment areas. Identify in Long Term/ Critical Post-fire rehab plan.

Life/ Resources	Life associated with hazard trees along roads as well as Designated Critical Habitat for steelhead	Loss of or damage to life and property from hazard trees along the 2730550 and 2730600 roads as well as degradation to downstream designated Critical Habitat from vehicle traffic (primarily hunting)	Likely	Moderate	High	Install gate on 2730550 road at level 1 and level 2 designation change. Also install gate on the 2730600 road. ***Treatment P2***	Area closure considered, but deemed not effective. 2730600 road also goes into Bandit Springs Recreation Area, considered non-motorized area.
Life/ Resources	Life associated with hazard trees along 2600630 road system	Loss of or damage to life and property from hazard trees along the 2700630 road	Likely	Moderate	High	Install gate on bottom end of 2600630 road and recontour 50 feet of road for treatment effectiveness. ***Treatment P2***	Area closure considered, but deemed not effective. Gate would complete a 4 square mile closure area.
Resources	Forest Service Lands	Loss of Forest boundary and RNA signs from the fire may result in degradation to designated management areas.	Possible	Minor	Low	No Treatment	Not justified as BAER emergency.

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 Bailey Butte Fire BAER Team are specifically designed to achieve the following results.

Proposed Land and ProtectiveTreatments

The objectives of the land and protective treatments are to:

1. Protect human life and safety by assessing for, and removing hazards, limiting access into unsafe areas and posting hazard awareness signs (P1, P2, P3).
2. Minimize the increased potential for the spread of invasive and noxious weeds (L2, L3).
3. Protect lands to allow for natural recovery of designated Critical Habitat for Steelhead (T&E)(L1).

Proposed Road and Trail Treatments (R1, R2, R3, R4, R5, R6, R7, R8, T1, T2)

The objectives of the road treatments are to:

1. Reduce the high risk for accelerated surface runoff/failure, damaging National Forest roads within the Bailey Butte Fire area.
2. Reduce the potential for road and trail related surface/mass erosion and accelerated sediment delivery to downstream designated Critical habitat for Steelhead (T&E).
3. Improve culvert capacity to reduce the potential for road failure due to increased flows.
4. Remove hazards within the burned area while implementing recommended road treatments.
5. Prevent out-year drainage problems.

Proposed Channel Treatments

There are no proposed channel treatments.

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

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

D. Probability of Treatment Success

	Years after Treatment		
	1	**3**	**5**
Land	70	80	80
Channel	NA	NA	NA
Roads/Trails	80	85	95
Protection/Safety	90	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 $1,780,000.

F. Cost of Selected Alternative (Including Loss): There remains an approximate 20% chance that the proposed treatments for this initial work may not be fully successful. Total cost of the action alternative plus this 20% chance of failure is $693,790.

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 Leader: Rob Tanner – Asst. Forest Hydrologist/BAER Coordinator, Deschutes and Ochoco NF

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Team Members:

Kyle Wright- Hydrologist/Team Leader Trainee
Diane Hopster- Hydrologist
Jim David- Soil Scientist
Sarah Hash- Soil Scientist
Krista Farris- Botany
Mark Lesko- Botany
Sarah Callaghan- Botany/Weeds
Carrie Gordon- Geology
Steve Pickert- Engineering
Ramon Alonso- Engineering
Dan Rife- Fisheries
Kent Koeller- Recreation
Dino Borghi- GIS
Terry Holtzapple- Archaeology
Ron Gregory - Archaeology
Steve Gibson- Range
Dede Steele - Wildlife

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:

L1: T&E Bounday Fence Repair – This 0.9 mile section of boundary fence controls the entry of livestock from private land (to the north of the Forest) into the Dodds Pasture of the Bear Creek Allotment. Dodds Pasture contains both Dodds Creek and Heflin Creek that are perennial streams. On the Ochoco National Forest 2.3 miles of Dodds Creek is Designated Critical Habitat for Mid-Columbia Steelhead Trout within the Dodds Pasture. Dodds Creek is a headwater stream within the larger Bridge Creek system of the John Day Basin. In addition Heflin Creek, which is redband trout occupied habitat has 0.75 miles of stream in the Dodds Pasture which is a tributary to the Designated Critical Habitat in Dodds Creek. The Ochoco National Forest does not graze livestock in the Dodds pasture before July 15th to protect spawning steelhead and incubation of eggs in Dodds Creek.

The entire northern boundary fence line was walked and evaluated for damage from the fire. Approximately 0.9 miles of fence are located along this section that includes two small ridge top areas, Heflin Creek and a small swale. Much of the fence was in unburned or lightly burned areas, specifically in the areas that are west of Heflin Creek. These sections of fence will not need to be replaced except where small isolated areas where fire burned posts and compromised the strength of the wire. A total of 500 feet of fence to the west of Heflin Creek will need to be replaced. East of Heflin Creek there are much longer sections of fence that will need to be replaced as the west facing slope in this area burned with higher intensity and either burned entire sections or compromised smaller sections. A total of 1700 feet of fence will need to be replaced east of Heflin Creek to tie into the holding pen at the corrals at the Forest boundary. Without this fence, management of the Dodds pasture (primarily from private land cattle coming onto NFS lands) to protect the primary constituent elements of Designated Critical Habitat for steelhead of spawning, rearing, and migration will be compromised. *Total request is for $7,670 ($7070 for fence repair plus $600 for hazard tree abatement).*

	Low fence effect	Moderate fence effect	High fence effect	Total dollars requested
Total miles	0.3	0.2	0.4	
Cost/ft	0.19	1.23	2.59	
Cost	**$301**	**$1299**	**$5470**	**$7,670**

L2: Invasive Weed Detection and Treatment: Prevention, combined with early detection and rapid response, is the most effective means of controlling noxious weeds and protecting native plant communities. Assessing the establishment of and treating new weed infestations as part of the early detection and rapid response program will be critical to the recovery of native plants within the burned area. This treatment would focus on 3 specific areas.

- Forest Boundary – There is a heavy infestation of medusa head on private land bordering National Forest System lands. Suppression efforts resulted in several miles of dozer line that started on private lands and came onto NFS lands. Three miles of the NFS boundary fence was burned in the fire and livestock are also a vector for weed spread onto NFS lands. Invasive plant detection and treatment of new populations along the NFS boundary (on NFS land) will be critical to prevent dispersal of non-native invasive plants coming onto Forest Lands from private lands. At this time no treatments are proposed on private lands (through the Wyden

Amendment) but may be considered later in time.

- The Ochoco Divide Research Natural Area – the RNA lies almost entirely within the Bailey Butte fire perimeter and comprises 1,923 acres that is managed as a special designation to provide opportunities for research, education, and ecological benchmarks in naturally occurring ecosystems where natural processes are maintained. Approximately 885 acres within and along the RNA burned with a high or moderate severity. These acres are highly susceptible to colonization by known non-native invasive plants that surround these acres. The RNA has a significantly lower infestation of noxious weeds than the surrounding NFS lands. Within the fire perimeter there are approximately 1,157 acres of state listed noxious weeds (20% of the fire area), whereas there are only 17.1 acres of documented noxious weeds within the RNA (less than 1% of the RNA). Standard and Guidelines (1989-1990 LRMP, plan p 4-56) state the following desired condition, "Any management activities within the RNA will be directed at maintaining the natural conditions of the area."

  This treatment is for detection and treatment of those areas that burned with moderate and high severity adjacent to known weed infestations; and will primarily focus within and adjacent to the RNA to ensure natural succession proceeds.

- Sensitive riparian habitats including seeps, springs and creeks – Many of these areas had exclosure fences associated with them that burned in the fire and are now susceptible to invasion by non-native invasive plants. Detecting and treating invasive plants in these sensitive riparian habitats will be important for the recovery of the native riparian plant community and the wildlife that depends on them. Specific design criteria are described in the Forest Weeds EIS for sensitive areas and manual treatment would be prescribed for any weed infestations within 15 feet of water.

Total request is for $48,815 (see table below).

-Early Detection/Rapid Response Weed Survey and Treatment: $48,815			
RNA and perimeter	Houndstongue in and surrounding RNA focusing on High and Mod burn severity		
Detection $10/acre	1,000 acres	$10,000	
Treatment $72/acre	325 acres	$23,400	
GS-11 Program Manager	$318/day * 5 days	$1,590	
All other sites	Dozerlines, major corridors, FS boundary with private lands, riparian areas		
Detection $10/acre	500 acres	$5,000	
Treatment $72/acre	100 acres	$7,200	
GS-9 Botanist	$290/day*5 days	$1,450	

L3: Native Seeding – This treatment would include hand seeding approximately 325 acres of ground that is highly susceptible to weed infestation (i.e. moderate and high severity burn areas that are adjacent to known weed populations). This 325 acres is the same acres identified in Treatment L2. These acres will be seeded and then incur invasive plant detection and treatment. The Deschutes and Ochoco Weed EIS (2012) recommends the use of native seeding to promote native plant community establishment after herbicide treatment to increase resiliency and prevent consecutive invasions by non-native invasive weeds. Seeding with an appropriate native seed mix in these areas will greatly reduce the rate of spread of noxious weeds. Approximately 300 acres would be seeded adjacent to the RNA and the other 25 acres would be seeded along the forest boundary and in other sensitive areas. All seed used to prevent the establishment of noxious weeds on Forest Service lands has been collected from the Ochoco

National Forest from the appropriate seed zone and grown out for propagation. Local genetic variation helps ensure successful establishment and adaptation to local conditions. Species of seed that will be used around the RNA include blue wild rye (*Elymus glaucus*), squirrel tail (*Elymus elymoides*), bluebunch wheatgrass (*Psuedoroegneria spicata*), Idaho fescue (*Festuca idahoensis*), and Pine grass (*Calamagrostis rubescens*). Total request is for $8,125.

Channel Treatments:

There are no proposed channel treatments.

Road and Trail Treatments:

R1. Clean Culverts, Catch Basins and Remove Brush from Inlets/Outlets (Storm Proofing) - Treatment would occur on the 2600-550, 2600-600, 2600-607, 2600-608, 2600-610, 2600-611, 2600-622, 2600-623, 2600-630, 2600-700, 2210 and 2630. Approximatly 24.8 miles of road would receive storm proofing this was determined to be the most cost effective treatment in order to protect road infastructure due to post-fire watershed response conditions. Total request is for $22,225.

Treatment	Unit	Unit Cost	# of Units	Total Cost
R1- Storm Proof Culverts	Lump	$22,225	1	$22,225

R2. Construct Waterbars - Treatment would occur at 10 locations along the 2600-630, 3 locations on the 2210-202, 8 locations on the 2730-550 and 5 locations each on the 2730-560 and 2730-600. These treatments are necessary to protect road prisms due to post-fire watershed response conditions Total request is for $3,565.

Treatment	Unit	Unit Cost	# of Units	Total Cost
R2- Waterbars	Each	$115.00	31	$3,565

R3. Ditch Brushing - Treatment would occur on the 2600-600, 2600-607, 2600-608, 2600-610, 2600-611, 2600-622, 2600-623, 2600-630 and 2600-700. Brush out ditches to provide drainage area for increased surface flows. Trees and brush in ditches can catch debris creating a damming effect which will put water back onto the road surface to drain off and erode fill slopes. Total request is for $8,008 dollars.

Treatment	Unit	Unit Cost	# of Units	Total Cost
R3- Ditch Brushing	Mile	$1120.00	7.15	$8,008

R4. Remove Culvert and Resize 2 Culverts - Treatment would remove the culvert on the 2600-610 on a tributary to O'Kelly Cr, remove the culvert on the 2600-611 road at O'Kelly Creek and the 2210-202 road at O'Kelly Cr. Treatment would also remove two 15-inch culverts on a tributary to Camp Creek on the 2210 road (high use road) and replace with 36-inch culverts. Total request is for $31,250.

Treatment	Unit	Unit Cost	# of Units	Total Cost
R4- Remove Culverts	Lump	$31,250	1	$31,250

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R5. Construct Vented Fords - Treatment would install a total of four vented fords (to allow protection of road prism in the event the associated culvert plugged or was over-capacity). Vented fords (also known as critical drain dips) would be driveable, broad 12 foot wide dips in the road prism near a stream crossing culvert to allow and direct overflow waters (in the case the associated culvert plugs with debris) across the road prism to prevent water from running down the road resulting in road failure or damage. One vented ford would be constructed each on the 2600-611 road on a tributary to O'Kelly Cr, on the 2600-630 on a tributary to Nature Creek, on the 2210 at O'Kelly Creek (contingent upon Public Use Agreement) and on the 2210-202 on a tributary to O'Kelly Cr. Cost per item is $1500. Total request is for $6000.

Treatment	Unit	Unit Cost	# of Units	Total Cost
R5- Vented Ford	Each	$1,500	4	$6,000

R6. Install Ditch Relief Culverts - Treatment would install 5 ditch relief culverts on the 2210 road (maintenance level 3 road with steep grades). Segment has one ditch relief culvert in 1.5 miles in the burned area. This segment has moderate to high soil burn severity. Total request is for $6000.

Treatment	Unit	Unit Cost	# of Units	Total Cost
R6- Ditch Relief Culverts	Each	$1,200	5	$6,000

R7. Storm Patrol - Treatment would be for personnel time and equipment to address storm associated risks and mitigate those risks prior to damage or loss to property and life. Total request is for $12,000.

Treatment	Unit	Unit Cost	# of Units	Total Cost
R7- Storm Patrol	Lump	$12,000	1	$12,000

T1. Install drainage structures on Cougar Trail - Approximately 1.75 miles of the multi-use, non-motorized trail was burned with moderate and high soil severity with stand replacement intensity. This length of trail cuts up and across a steep embankment for one mile just above Heflin Creek. This is a secondary Steelhead spawning habitat. The trail then travels for approximately 0.1 miles downhill into Dodd's Creek drainage which is primary spawning habitat. The loss of vegetation and instability of the soils is expected to erode at a more significant rate down the trail and into Heflin creek directly and indirectly to Dodd's creek. Constructing additional water bars would mitigate much of this concern. Total request is for $3810.

Treatment	Unit	Unit Cost	# of Units	Total Cost
T1- Drainage Cougar Trail	Each	$127.00	30	$3,810

T2. Storm Patrol Crossings on Cougar Trail – Treatment is for limited trail storm patrol especially in areas where the historic trail crosses Heflin Creek and a tributary to Dodds Creek. Total request is for $1000.

Treatment	Unit	Unit Cost	# of Units	Total Cost
T2- Storm Patrol Trail Xing	Days	$200.00	5	$1,000

Protection/Safety Treatments:

P1: Felling of Hazard Trees – The suppression efforts have mitigated hazard trees enough to open Hwy 26, but there is anticipation of more hazard trees within the first year after the fire. Coordination with ODOT, especially for traffic control will be necessary. Treatment would occur along both sides of Highway 26 as well as at Cougar Trail Head. Most of the existing hazard trees have been mitigated for at designated recreation sites, however these funds would also cover further mitigation of hazard trees at these locations if determined within the first year after the fire. *Total request is for $7750 ($1500 per 4.5 miles of road plus $1000 for trailhead and designated recreation sites).*

Treatment	Unit	Unit Cost	# of Units	Total Cost
P1- Hwy 26 Hazard Trees	Lump	$7,750	1	$7,750

P2: Install Gates – Treatment would install 3 gates to help mitigate threats to life and safety. All of the gates are located on level 1 roads (open only for administrative purposes) where they connect with level 2 roads. (high clearence vehicles). Total request is for $7500.

Treatment	Unit	Unit Cost	# of Units	Total Cost
P2- Gate Installation	Each	$2,500.00	3	$7,500

P3: Hazard Signs – Install Hazard Warning signs on each end of Hwy 26 (entering and leaving fire area) as well as at designated recreation sites and on major travel routes along and within the fire area. These signs are necessary to inform users of immediate danger posed by storm-related response to fire effects and hazards within burned areas (floods, snags, loose rock, etc.). These signs will also address the risk of cattle on Hwy 26 due to loss of safety fences along the highway. Coordination with ODOT will be ongoing with this effort. Total request is for $5700.

Treatment	Unit	Unit Cost	# of Units	Total Cost
P3- Hazard Signs	Lump	$5,700.00	1	$5,700

I. Monitoring Narrative:

M1 - **Effectiveness Monitoring of Treatment L2**

Monitoring includes the following components:

1). How effective was the prescribed detection and treatment in reducing the spread of infestations?
2). Were all Project Design Features effectively implemented? If not why?
3). Treatment recommendations for follow up treatment.

Monitoring would occur within the first year post-fire and would determine the potential for requesting additional detection and treatment funds.

Treatment	Unit	Unit Cost	# of Units	Total Cost
M1- Monitor L2	Days	$350	8	$2,800

Part VI – Emergency Stabilization Treatments and Source of Funds

			NFS Lands				Other Lands			All
		Unit	# of		Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER $	$	units	$	Units	$	$
A. Land Treatments(L)										
L1-North T&E Fence	lump	7670	1	$7,670	$0		$0		$0	$7,670
L2-Weed Detect/Treatmnt	lump	48815	1	$48,815						$48,815
L3-Native Seeding	acres	25	325	$8,125	$0		$0		$0	$8,125
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$64,610	$0		$0		$0	$64,610
B. Channel Treatments										
				$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 (R-T)										
R1-Storm Proof Culverts	lump	22225	1	$22,225	$0		$0		$0	$22,225
R2-Waterbars on 5 roads	each	115	31	$3,565	$0		$0		$0	$3,565
R3-Ditch Brushing	mile	1120	7.15	$8,008	$0		$0		$0	$8,008
R4-Remove Culverts	lump	31250	1	$31,250	$0		$0		$0	$31,250
R5-Vented Fords	each	1500	4	$6,000	$0		$0		$0	$6,000
R6-Ditch Relief Culverts	each	1200	5	$6,000	$0		$0		$0	$6,000
R7-Storm Patrol	lump	12000	1	$12,000	$0		$0		$0	$12,000
T1-Drainage Cougar Trail	each	127	30	$3,810			$0		$0	$3,810
T2-Storm Patrol Trail Xing	days	200	5	$1,000			$0		$0	$1,000
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$93,858	$0		$0		$0	$93,858
D. Protection/Safety (P)										
P1-Hwy 26 Hazard Tree	lump	7750	1	$7,750	$0		$0		$0	$7,750
P2-Install Gates	each	2500	3	$7,500	$0		$0		$0	$7,500
P3-Hazard Signs	lump	5700	1	$5,700	$0					$5,700
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$20,950	$0		$0		$0	$20,950
E. BAER Evaluation										
Bailey Butte Fire				$52,564			$0		$0	$0
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				---	$0		$0		$0	$0
F. Monitoring (M)										
M1-Monitor L2	days	350	8	$2,800	$0		$0		$0	$2,800
Implementation Leader	days	350	30	$10,500	$0		$0		$0	$10,500
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$13,300	$0		$0		$0	$13,300
G. Totals				$192,718	$0		**$0**		**$0**	**$192,718**
Previously approved										
Total for this request				**$192,718**						

PART VII - APPROVALS

1. _____Kate Klein_____ ____August 5, 2014__
   Forest Supervisor (signature) Date

2. _____ _____
   Regional Forester (signature) Date