

**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 (###)
  - 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: **Gasquet Complex**
- B. Fire Number: **CA-SRF-001488**
- C. State: **California**
- D. County: **Del Norte &**
- E. Region: **05 - Pacific Southwest**
- F. Forest: **10 - Six Rivers**
- G. District: **Smith River NRA**
- H. Fire Incident Job Code: **P5JOPQ/0510**
- I. Date Fire Started: **July 31, 2015**
- J. Date Fire Contained: **October 15, 2015 (est.)**
- K. Suppression Cost: **\$42,000,000** (projected increase from 9/21/2015 Incident Narrative)
- L. Fire Suppression Damages Repaired with Suppression Funds
  - 1. Fireline waterbarred (miles): **ongoing**
  - 2. Fireline seeded (miles):
  - 3. Other (identify):

M. Watershed Number:

Subwatershed		Acres	Percent of Fire Acres
HUC12	HU Name		
180102090502	Copper Creek-Dillon Creek	149	<1
180101010308	Craigs Creek	9	<1
180102090903	Crescent City Fork	536	2
180101010302	Eightmile Creek	9712	32
180101010306	Goose Creek	2	<1
180101010305	Hurdygurdy Creek	25	<1
180101010309	Lower South Fork Smith River	5,670	19
180101010304	Middle South Fork Smith River	2,241	7
180101010201	Siskiyou Fork Smith River	10,224	34
180102090902	Upper Blue Creek	413	1
180102090402	Upper Clear Creek	447	2
180101010202	Upper Middle Fork Smith River	11	<1
180101010301	Upper South Fork Smith River	902	3
<b>Grand Total</b>		<b>30,341</b>	

N. Total Acres Burned: NFS – 30,179 Private – 229

Fire	Acres Burned			
	NFS	Other Federal	Private	Unclassified
Bear	15,373	-	3	-
Coon	1,726	-	226	-
Feeder	897	-	-	-
Peak	12,182	-	-	-

O. Vegetation Types: Predominantly enriched mixed conifer forest of the Klamath Siskiyou. Mixed evergreen species include California Red fir (*Abies magnifica*), Coastal Douglas-fir (*Pseudotsuga menziesii* var. *menziesii*), Port Orford cedar (*Chamaecyparis lawsoniana*), white fir (*Abies concolor*), incense cedar (*Calocedrus decurrens*), Jeffrey pine (*Pinus jeffreyi*), canyon live oak (*Quercus chrysolepis*), golden chinquapin (*Chrysolepis chrysophylla*), tanoak (*Notholithocarpus densiflorus*). The shrub and grass component consists of Evergreen huckleberry (*Vaccinium ovatum*), alder (*Alnus* spp.), Oregon Grape (*Berberis nervosa*), salal (*Gautheria shallen*), Idaho fescue (*Festuca idahoensis*), and bear grass (*Xerophyllum tenax*).

P. Dominant Soils: Major soil map units include the Clallam family, moderately deep-Hugo family, deep, maymen family association (loamy skeletal, mixed, mesic family of Dystric Xerochrepts); Clallam family, extremely gravelly-Skalan-Goldridge families, deep (loamy skeletal, mixed, mesic family of Dystric Xerochrepts); Nanny family, deep-Woodseye family-Bins family, deep association (loamy-skeletal, mixed, frigid family of Typic Xerumbrepts); Kistrin-Goldridge families, deep-Deadwood family association (loamy-skeletal, mixed, mesic family of Typic Haploxerults). Rock outcrops are approximately 5 percent of the burned area. The dominant soil types of the burned area are gravelly to very gravelly loams of Clallam (30 percent), Nanny (20 percent), Oragan (9 percent), and Kistrin (9 percent). The Oragan soil type is shallow and weathered from serpentized ultramafic rock. The Clallam, Nanny, and Kistrin soils are deep with metasedimentary or metaigneous parent material.

Fifty-five percent of the soils are hydrologic group B, and 45 percent are hydrologic group C. Group B soils have moderate infiltration rates when thoroughly wetted and consist chiefly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission (0.15-0.30 in/hr.). Group C soils have low infiltration rates when thoroughly wetted and consist chiefly of

soils with a layer that impedes downward movement of water and soils with moderately fine to fine texture. These soils have a low rate of water transmission (0.05-0.15 in/hr).

Q. Geologic Types: Dominantly mafic and ultramafic intrusive rocks of the Josephine Ophiolite and Rattlesnake Creek terranes including peridotite, serpentinite, amphibolite, gabbro, and diabase; metasedimentary and metavolcanic rocks of the Rattlesnake Creek Terrane and Galice Formation including slate, phyllite, argillite and other metasediments, metabasalt, greenstone, and other metavolcanics; associated plutonic rocks including peridotite, gabbro, diorite and tonalite.

Widespread, mostly dormant deep-seated landsliding with occasional large active inner gorge debris slides; isolated areas of glacial landforms and deposits in upper basins; common rockfall and colluvial deposits in headwall and canyon settings; a deeply weathered relict erosional surface (the Klamath peneplain) occupying the low-relief plateau summit of Coon Mountain and nearby ridgetops.

R. Miles of Stream Channels by Class:  
Perennial: 54.7 Intermittent: 44.9

S. Transportation System (miles)  
Roads: 26.9 Trails: 9.3

### PART III - WATERSHED CONDITION

#### A. Burn Severity:

Soil Burn Severity (SBS) - Acres					
Fire	High	Moderate	Low	Very Low/Unburned	Total
Bear	799	1,803	5,485	3,564	11,651
Coon	121	1,101	2,779	1,677	5,678
Feeder	11	120	250	517	898
Peak	686	3,307	3,934	4,255	12,182
<b>Total</b>	<b>1,617</b>	<b>6,331</b>	<b>12,448</b>	<b>10,013</b>	<b>30,409</b>

Soil Burn Severity (SBS) - Percent				
Fire	High	Moderate	Low	Very Low/Unburned
Bear	7	15	47	31
Coon	2	19	49	30
Feeder	1	13	28	58
Peak	6	27	32	35

#### B. Water-Repellent Soil (acres):

Fire	Strong	Medium	Weak	Total
Bear	891	1,630	1,680	4,200
Coon	233	905	840	1,978
Feeder	31	116	95	242
Peak	819	2,415	1,396	4,630
<b>Total</b>	<b>1,973</b>	<b>5,066</b>	<b>4,010</b>	<b>11,049</b>

C. Soil Erosion Hazard Rating (acres):

Fire	Very High	High	Moderate	Low
Bear	704	2,779	8,029	96
Coon	68	1,797	3,610	202
Feeder	8	150	740	0
Peak	338	3,455	7,052	360
<b>Total</b>	<b>1,118</b>	<b>8,181</b>	<b>19,431</b>	<b>658</b>

D. Erosion Potential: 22 tons/acre

E. Sediment Potential: 2 tons/acre

#### PART IV - HYDROLOGIC DESIGN FACTORS

- A. Estimated Vegetative Recovery Period (years): 3-5
- B. Design Chance of Success (percent): 65
- C. Equivalent Design Recurrence Interval (years): 10
- D. Design Storm Duration (hours): 12
- E. Design Storm Magnitude (inches): 5.6 (NOAA Atlas 14)
- F. Design Flow (cubic feet / second/ square mile): 356.3 (average of 4 basins)
- G. Estimated Reduction in Infiltration (percent): 26 (extent of high/moderate severity)
- H. Adjusted Design Flow (cfs per square mile): 419.6 (average of 4 basins)

#### PART V - SUMMARY OF ANALYSIS

Background: The Gasquet Complex, comprised of the Bear, Coon, Feeder, and Peak fires ignited by lightning on July 31, 2015, has burned roughly 30,400 acres within the Smith River and S.F. Smith River watersheds, which are located in the Smith River National Recreation Area (SRNRA) on the Six Rivers National Forest. The observed fire intensity and soil burn severity (SBS) is consistent with fire behavior documented in the Incident Management Team (IMT) close-out narratives. Predominantly low SBS exists across the areas where fires burned with a steady downhill backing spread, with limited spotting and occasional single tree torching. In these areas fuel consumption was limited to surface litter and smaller diameter vegetation (1 and 10 hour fuels). Areas of high fire intensity and high SBS exist in scattered locations where upslope runs occurred during late afternoons as the coastal inversion lifted and the fire aligned with wind and slope. In these areas substantial skeletons exist due to intense burning of overstory vegetation, predominantly in the shrub cover types but also severely burning conifer stands ranging from 20 to 160 acres.

Created by Congress in 1990, Smith River National Recreation Area (SRNRA) forms a northern border to Redwood National and State Parks. The SRNRA was established to "ensure the preservation, protection, enhancement, and interpretation for present and future generations of

*the Smith River watershed's outstanding wild and scenic rivers, ecological diversity, and recreation opportunities while providing for the wise use and sustained productivity of its natural resources...*" The Smith River highly recognized as one of the undammed rivers in California, and has three main forks: the North Fork, Middle Fork, and the South Fork. Over 300 miles of the river have been designated as both California and National Wild and Scenic River. The rivers and their numerous tributaries support Designated Critical habitat for anadromous populations of ESA-listed Chinook and Coho salmon, as well as steelhead and Coastal cut-throat trout. The terrain of the burned areas is an indicator of underlying nutrient-deficient serpentine soils which harbor economically important mineral deposits. The variety of bedrock and soils support a rich diversity of flora and many botanical species that are endemic to the area, including the Bear Basin Butte Botanical Area. The diverse coniferous forest and understory component is supported by the high amounts of precipitation, ranging from 90" – 150" annually.

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

(formatted to incorporate "Critical Values and Risk Assessment" from WO ID 2520-2014-1, effective December 17, 2014)

**1. Human Life and Safety:**

**High Risk** (possible, major) to human life and safety of recreating public and agency personnel from hazard trees, rolling rocks, flooding and localized debris flows when traveling roads and trails affected by burned areas. Fire-damaged road segments and post-fire impacts increase risk for loss of ingress/egress. Specific routes of concern include: 15N01 (G-O road, high potential for rock fall/debris last mile before trailhead); 16N36B (Level 2 dead-end road with multiple stream crossings downslope of high-mod SBS, culvert inlet basins full of debris, likely undersized pipes; all crossings have diversion potential); 16N02 (2 separate segments from lookout road junction to Doe Flat trailhead located downslope of high-mod SBS, inlet basins for cross-drains mostly clean, but potentially mobile logs/debris on slopes 20-30 feet above basins; fire burned vegetation/logs/root wads incorporated into fill thereby compromising stability of road prism); 16N19 (burned bridge surface with damaged and detached plate); 17N05 (Rockfall hazard, burned out fill and damaged road edge and surface); 17N07 and 17N07G (sinkholes from burned fill). (PS-01, RT-02, RT-03, RT-04)

**Intermediate Risk** (possible, moderate) to human life and safety of recreating public and agency personnel from hazard trees, rolling rocks, flooding and localized debris flows when traveling recreation trails affected by burned areas. Travel on fire-damaged trail segments when rainfall is expected increases the level of risk on the Summit Valley Trail (3E07) and Sawtooth Trail (4E50). (PS-02, RT-01)

**High Risk** (possible, major) to the human life and safety of recreating public and agency personnel at Doe Flat and Boundary Trailheads from hazard trees. There are numerous burned snags within 1-1/2 tree length to parking and campsites that threaten stationary campers and parked vehicles. (PS-02, RT-01)

**2. Property**

**High Risk** (possible, major) for post-fire damage to segments of the Summit Valley Trail (3E07) and Sawtooth Trail (4E50). Segments of these trails have burned over tread and burned vegetation/roots comprising the integrity of the tread edge. Roughly 6.2 miles of trail segments are susceptible to rilling, erosion, and potential damage from large rain events. The

most prone locations are steeper segments with grades above 15% in the moderate to severity burn areas, as well as areas with in-sloping tread. These trails are important to four local tribes; there is significant importance to uphold the character of these trails. (RT-01, PS-03)

**High Risk** (likely, major) for rock fall/debris to damage the 15N01 (G-O road, last mile before trailhead); damage to 16N36B from accelerated flow and sediment delivery into culvert inlets (Level 2 dead-end with multiple stream crossings downslope of high-mod SBS, culvert inlet basins full of debris, likely undersized pipes); and damage to 16N02 from accelerated flow and sediment delivery into culvert inlet basins (2 separate segments from lookout road junction to Doe Flat trailhead downslope of high-mod SBS have cross-drains, inlet basins mostly clean, but potential mobile logs/debris on slopes 20-30 feet above basins); 16N19 where burned area adjacent to a bridge damaged the running surface; **High Risk** (likely, moderate) for substantial damage to 16N02, 17N05 and 17N07 where fire burned vegetation/logs/root wads incorporated into fill thereby compromising stability of road prism; damage to 16N71, 17N24, 17N29, and 17N35 where accelerated runoff process are likely to erode the road surface. Most all other roads have Low to Very Low Risk as they are either located on ridgelines noes505,500t influence by flood source areas or are located within or downslope of low severity burn areas. (RT-02, RT-03, RT-04)

### **3. Natural Resources:**

**High Risk** (likely, moderate) is expected to water quality. There are increased threats to water quality in streams within and adjacent to the burned area from increased sediment delivery. Impacts to watershed process and functions that regulate erosion and sediment delivery are expected from moderate and high burn severity areas. Threats to water quality can potentially affect beneficial uses that includes habitat for ESA-listed cold water aquatic species as well as municipal and domestic water supply systems. No treatments are recommended.

**Very High Risk** (very likely, moderate) to soil quality from post-fire increases in erosion are expected in localized areas that sustained moderate to high burn severities. To be consistent with the BAER matrix, eight to ten years was the estimated length of time for recovery from the loss of effective ground cover and above ground organic matter for areas that burned at moderate to high severity. Over the long term, the loss of surface soils can lead to decreased site productivity with the potential to increase the spread of invasive plant species, since noxious weeds are able to more readily establish on degraded sites. In the short term, unauthorized OHV intrusions can increase where physical barriers and vegetative screens have been damaged or lost, contributing to further degradation of soil productivity. No treatments were recommended for soil productivity, since the various fires within the complex sustained predominately low to very low soil burn severities with a mosaic on unburned areas within the fire perimeters.

**High Risk** (likely, moderate) to native plant diversity, intact native plant communities or naturalized communities due to the threat of introduction and spread of noxious and non-native invasive plants from known populations (Canada thistle, foxglove, spotted knapweed, scotch broom) that exist within and adjacent to areas of high and moderate burn severity. Areas of moderate to high burn severity have lost the competitive barrier (i.e. existing vegetation) which serves to reduce, if not prevent the spread of non-native invasive plants into new areas and have altered habitat conditions (e.g. fire-damaged soils) that favor invasive plant seed establishment. Displacement of native species by non-native invasive

plant species can result in a loss of viability for Region 5 Sensitive plant species that occur within the fires. These species include the Kohler's rockcress, opposite-leaved lewisia, the Siskiyou bells and the Siskiyou ragwort. Encroachment by non-native invasive plants can also result in the degradation of range and recreational values, reduction of water availability to native plants, and can negatively impact community ecology. (L-01, L-02)

**High Risk** (likely, moderate) to native plant diversity due to the threat from the spread of non-native invasive plant species from known noxious weed populations (Canada thistle, diffuse knapweed, yellow star-thistle, scotch broom) as a result of fire suppression (e.g. seed imported by fire suppression equipment, as well as vehicles utilized to implement fire suppression damage repair and authorized BAER response actions). (L-01, L-02)

**Low Risk** (possible, minor) to occupied and suitable critical habitat for Northern spotted owl (NOS) and marbled murrelet (MAMU). Fire-caused conifer mortality has resulted in roughly an 11% decrease in loss of NOS habitat and 16% of MAMU habitat. Fire stress to trees will likely result in secondary mortality and additional loss of suitable and Critical Habitat, and reduce the functionality of nesting territories.

**Low Risk** (possible, minor) from implementing BAER activities that extend into the 2016 nesting season that could potentially disrupt nesting owls, MAMU, and fisher, causing loss of productivity and survival of young. Disturbances that reduce owl, MAMU, and fisher survival and productivity can result in ESA "take" of the affected species. Implementation of BAER actions should be coordinated with local wildlife biologist to avoid adverse disturbance effects to owl, MAMU, and fisher. Refer to the management recommendations later in this report and the Gasquet Complex, Wildlife Specialist Report in the Project Record.

**Low Risk** (possible, minor) to Coho salmon, their suitable and occupied Designated Critical habitat (DCH). There is potential for localized short- and long term modification of substrate composition from fine sediment and inputs of debris, including impacts to aquatic invertebrates and periphyton; short term water quality impacts from fine sediment and ash; and increased water temperatures due to patches of burned streamside vegetation and loss of shade canopy. These effects are likely in Eightmile Creek (Peak Fire) where Coho salmon are present near confluence with the South Fork Smith River; Coon Creek and South Fork Smith River (Coon Fire) that supports Coho salmon spawning and smolt migration; and Siskiyou Fork (Bear Fire) – Coho salmon DCH.

#### **4. Cultural and Heritage Resources:**

**Intermediate Risk** (possible, moderate) of degradation to historic properties. Five prehistoric/historic trails are located within the Peak Fire. Damage may occur to these trails from flooding, as increased overland flow and hillslope erosion is possible where trails intersect moderate and high burn severity areas. Flooding damage to trails will result in the loss of data and site integrity if not mitigated. (RT-01)

#### **5. Other Values:**

Other values are non-BAER Critical Values that are potentially threatened due to post-fire conditions. These values may be NFS values or non-NFS values that may be threatened from post-fire effects originating primarily on NFS lands. Activities to address other non-BAER NFS values have been identified as 'Management Recommendations' and can be considered for discretionary program funding. Threats to non-NFS values should be

communicated to the appropriate parties through interagency coordination procedures. These recommendations are described after the BAER Treatments Narratives (Section H; page 14).

**Domestic and Municipal Water Supplies.** A threat exists to domestic and municipal water supply systems off NFS lands downstream from the burned areas. This threat is from the potential for increased sediment and turbidity, as well as increased peak flood flows which have the potential damage or clog surface water supply intake systems. It is unclear at the time of the assessment the amount and location of these systems adjacent to the fire. One supply system was identified adjacent to the Coon Fire which diverts water from Deer Creek for private residents near Boulder Creek and is conveyed in a pipe which spans the South Fork Trinity River near. Other domestic and municipal water supply systems are located downstream from the fire area, which divert water from the Smith River.

**FS Sensitive Terrestrial Species.** Threats from implementing BAER activities that extend into the 2016 nesting season could disrupt nesting raptors and cause loss of productivity and survival of young. Mechanical noises within close proximity to nesting/denning goshawk and marten can disturb and disrupt nesting activities. The concern is to prevent BAER activities from reducing survival and productivity at the nest/den sites, including nest/den abandonment. Consult with the local wildlife biologist to assess if BAER response actions overlap disturbance buffers and to determine if limited operating periods (LOPs) are needed.

**Forest Service Sensitive Fish and Aquatic Species and Habitat (not listed under ESA).** Expected post-fire effects include: localized short- and long term modification of substrate composition in downstream channels from fine sediment and debris flows, including impacts to aquatic invertebrates and periphyton; short term water quality impacts from fine sediment and ash; and increased water temperatures from loss of streamside vegetation/loss of shade canopy. Effects are likely to be seen in Eightmile and Williams Creeks, and South Fork Smith River downstream of Eightmile/South Fork confluence (Peak Fire); Coon Creek and South Fork Smith River (Coon Fire); and Siskiyou Fork (Bear Fire).

#### B. Emergency Treatment Objectives:

- Mitigate and protect, to the extent possible, threats of personal injury or to human life of forest visitors and Forest Service employees by raising awareness through posting hazard warning signs on roads, trails, and recreation facilities to communicate hazards of burned trees, flooding, debris flows, and rock fall, and by repair and maintenance of roads that would pose a threat to safety. Communicate risks to cooperating agencies and community groups. Consider temporary closures to protect public users of NFS lands and recreation facilities.
- Protect or minimize damage to NFS investments in roads by installing drainage features capable of withstanding potential increased overland and/or debris flows. Minimize damage to key NFS travel routes. If necessary, implement temporary wet-season closures to ensure effectiveness and to protect the investment of implemented BAER treatments.
- Protect or mitigate potential post-fire impacts to critical natural and cultural resources within the burned area. When implementing authorized BAER response actions ensure compliance with conservation recommendations provided by tribes and cooperating agencies.

- Treat invasive plants, which are a threat to native or naturalized ecosystems, by minimizing the expansion of existing weed populations in the burned area where soil and/or vegetation was disturbed as a result of fire suppression activities.
- Assist other governments and cooperators, including Native American tribes, local, State, and Federal agencies with the interpretation of the assessment findings to identify potential post-fire impacts to important cultural resource and Indian Sacred Sites, downstream communities and residences, domestic water sources, and infrastructure.

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

Land 50% Channel NA Roads/Trails 80% Protection/Safety 90%

Note: The only Land Treatment is Early Detection Rapid Response (EDRR) of noxious weeds and non-native invasive plant species. The implementation of this response action will occur two times in 2016 when plant emergence and flowering allow accurate identification of target species.

D. Probability of Treatment Success

Treatment	Years after Treatment		
	1	3	5
Land	80	80	80
Channel	NA	NA	NA
Roads/Trails	75	80	90
Protection/Safety	80	70	60

Initially, visitors will heed the warning signs. Complacency is expected after the initial year unless there is a damaging event.

E. Cost of No-Action (Including Loss): **REDACT**

F. Cost of Selected Alternative (Including Loss): **REDACT**

Implementation of recommended response actions is based on market resources only and is economically justified with 1.3:1 benefit-to-cost ratio. The likely probability of loss if treatments were not applied is based on field observations and expert opinion for potential damage or loss from activities likely to be implemented on adjacent private lands. For the recommended treatments there is a reduced probability of damage or loss with implementation. The expected loss would not be as costly when implementing the recommended treatments. The VAR analysis focused primarily on market values so potential benefits such as lowering level of risk to human life and safety, natural resources, and cultural resources were recognized in this BAER assessment, but not included in the cost basis for Values at Risk analysis.

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Terry Hardy, Boise NF-R4

Email: **REDACT**

Phone: **REDACT**

FAX: **REDACT**

**Gasquet Complex BAER Assessment Team**

Fred Levitan, Co-Team Lead, Geology, Six River NF-R5  
 Brian Anderson, Hydrology, Boise NF-R4  
 Nikos Hunner, Soils, AMSET-R5  
 Jennifer Dyer, Archeology, Six River NF-R5  
 Mike McCain, Fisheries, Smith River NRA, Six Rivers NF-R5  
 Brenda Devlin, Wildlife, Smith River NRA, Six Rivers NF-R5  
 Pam Winn, Engineering, Smith River NRA, Six Rivers NF-R5  
 Kyle Sullivan, Recreation, Lake Tahoe Basin MU-R5  
 Ty Dayberry, Recreation, Lake Tahoe Basin MU-R5  
 John McRae, Botany, Six Rivers NF-R5  
 Lisa Hoover, Botany, Six Rivers NF-R5  
 Celia Yamagiwa, GIS, Modoc NF-R5  
 Karla Knapek, GIS, Six Rivers NF-R5  
 Dave Young, BAER Coordination, Shasta-Trinity NF-R5  
 Cathy Carlock, Logistics, Modoc NF-R5

**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:**

**L-01 EDRR (Early Detection Rapid Response):** Reduce the potential for establishment of non-native invasive plant infestations in native or naturalized communities, particularly establishment of infestations in highly susceptible burned areas or dozer lines, prevent spread of existing infestations, and decrease rate of spread of non-native invasive plant density from existing infestations.

Treatment includes an initial detection survey combined with treatment at time of discovery, if possible. Surveys will begin in 2016 at times when the target species are the most visible. Treatments are primarily associated with locations documented in the Non-native & Invasive Plant Species BAER Report. Additional treatment sites are likely to be identified following a more comprehensive survey of the burned areas in 2016.

Treatment would consist of hand pulling to root depth and, if seed is present, plants would be bagged and disposed of properly. All locations of noxious weeds discovered would be mapped and entered into the National Resource Inventory System (NRIS) according to national protocol. Treatment would be recorded as directed by the same national protocols.

L-01 EDRR Treatment Cost	Detection Survey Area (acres - dozer line, drop points, etc)	Labor	Mileage	Total
Bear Fire	<b>REDACT</b>			
Coon Fire				
Feeder Fire				
Peak Fire				
<b>Total</b>				

**L-02 Native & Naturalized Community (NNC) Stabilization:** Seven high priority non-native invasive plant treatment sites would be mulched with weed free straw and seeded with locally collected native grass seed to lower the risk of spread and reduce or retard the potential for

subsequent germination of non-native invasive plant species. Refer to Tables 2, 3 and 4 of the Non-native & Invasive Plant Species BAER Report.

L-05 NNC Stabilization Treatment	Acres Treated	Materials
Bear Fire	<b>REDACT</b>	
Coon Fire		
Feeder Fire		
Peak Fire		

Channel Treatments:

None recommended.

Road and Trail Treatments:

Approximately 4.2 miles of trail segments identified for storm proofing have considerable importance to local tribes and are valuable resources for many visitors and recreationists to the area. Rainfall events have the potential to deteriorate and compromise the trail's integrity, eventually causing loss of trail segments and the financial investment. The trail segments needing storm proofing are located in Designated Wilderness; the cost estimate is higher than similar work for non-wilderness trails as these recommended actions will be implemented with hand tools only (no mechanized equipment or tools) and accessed by foot travel.

Trails within burn perimeter are excellent conveyors for routing significant volumes of sediment to nearby streams if drainage facilities are not adequate to process increased runoff. Storm proofing of existing water bars & drainage dips, and installation of new drainage structures is needed to effectively route water from the trail surface, thereby reducing sedimentation into critical stream habitat, reducing and preventing erosion of trail surface and minimizing impacts to water quality. Predicted increases in surface runoff/ overland flow are expected to erode soils from the burned area and deliver sediment to adjacent streams. Additionally, voids in the trail tread created by burned out stump holes may act to channel runoff underneath existing trail tread eroding trail tread resulting in delivery of even greater amounts of sediment to nearby streams. Installing additional drainage features, maintaining existing features, and filling voids in the trail tread should ensure increased runoff and over surface flows will not destroy trail tread, compromise human health and safety, and contribute sediment to streams impacting water quality and habitat.

RT-01 Trail Storm Proofing – Personnel [Grade @ Cost/Day X # Days]	Cost Estimate
GS-9 (Crew Coordinator)	<b>REDACT</b>
WL-05 (2 Crew Leaders) (leaders)	
WG-05 (2 Crew Members members)	
WG-03 (2 Crew Members members)	
Saw Equipment (fuel, oil, )	
Travel Cost for Trail Storm Proofing [Personnel/Equipment @ Rate X # UoM]	Cost Estimate
<b>REDACT</b>	

# REDACT

Roads within the Gasquet Complex area are expected to receive post-fire increases in stormflow from adjacent hillslopes over the next few years. Of the 119 miles of maintenance level 2, 3, and 4 roads assessed, it was determined that 40 miles are at risk of damage that could result in threats to human life and safety, loss of road function, loss of access (ingress/egress), and increased sediment and debris movement that could pose a risk to adjacent resources. (See Burned Area Emergency Response Treatments Catalog Chapter 4, Rolling Dips pages 109-112, Low-Water Stream Crossings pages 121-126, Catchment-Basin Cleanout pages 145-148 and BAER Specification, Road Drainage Reconstruction for more information.)

**RT-02 Road Storm Proofing:** Prevent road damage through berm removal, maintenance of rolling dips, outsloping, cleaning of ditches, culverts, and catch basins; installation of culvert inlet end sections, slotted inlet riser pipes, and debris racks.

**RT-03 Road Surface Repair:** Stabilize fillslopes where compromised by vegetation and logs/root wads incorporated into fill has burned, replace asphalt over burned out fill areas.

**RT-04 Road Storm Patrols:** The roads at risk from increased stormflow runoff and erosion within the burned area are primarily located below areas of high to moderate burn severity. There is an immediate and future threat to travelers along the roads within the burned area due to the increased potential for culverts to plug with sediment and debris which could washout sections of the roads. With the loss of vegetation, normal storm frequencies and magnitudes can more easily initiate erosion on the slopes, and it is likely that this runoff will inundate the roads or cause washouts at drainage facilities (culverts) or stream crossings. These events create hazardous conditions on forest roads and put the safety of users at risk.

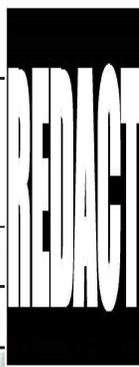
Monitor road drainage structures and debris flow treatment structures after significant storm events to ensure the maximum drainage capacity is maintained until the natural re-vegetation of the burned area has occurred. Maintain and/or repair any damage to road surfaces. Remove sediment and debris from drainage and treatment structures and repair headcutting in streams and drainages to prevent further degradation of channels. Monitor the movement of large woody debris and determine whether the material should be removed before it contacts bridge piers, abutments, or culverts. Mitigate hazard trees at treatment locations to provide for worker safety.

**RT-05 Gate Maintenance:** Maintain non-functional gates on Level 2 roads in order to close the gates during wet-weather conditions to protect BAER road work.

**RT-06 Riprap Placement:** Install riprap below culverts and at the outlet of rolling dips for energy dissipation.

See Burned Area Emergency Response Treatments Catalog Chapter 4, Storm Inspection and Response pages 149 -152 and BAER Specification for Storm Patrols for more information.

Engineering Treatments		Cost
RT-02 Road Storm Proofing	Outslope; install rolling dips; clean ditches, culverts, and catch basins; install culvert inlet end sections.	<b>REDACT</b>

RT-03 Road Surface Repair	Remove and replace the fill-slope and road surface material (including asphalt) that is compromised or damaged, where human life and safety and protection of infrastructure investment are at risk and vehicle access is needed. Replace fire-damaged bridge plate.	
RT-04 Storm Patrols	Storm patrols to identify problem areas such as clogged culverts, washed out roads and damaged drainage and treatment structures. Storm patrols will complete limited maintenance by removing debris from treatment structures to ensure they continue to function during future flood events.	
RT-05 Gate Maintenance	Maintain non-functional gates on Level 2 roads.	
RT-06 Riprap Placement	Install riprap below culverts and at the outlet of rolling dips.	
<b>Total Cost</b>		

**Protection/Safety Treatments:**

It is important for the safety and well-being of visitors utilizing the trail system to be notified there are hazards associated with entering a burn area. Proper signage at both ends of trailheads and roads leading up to burn area are to be installed to give ample warning to recreationists. Potential threats to the public and agency personnel include flooding and debris flows, hazard trees, and rockfall along roads, trails, and at recreation facilities that are downstream or downslope of areas with moderate to high burn severity.

**PS-01 Hazard Warning Signs - Roads:** Purchase and install 'Entering Burned Area" hazard warning signs at 8 locations, primarily at roads or road intersections that access the burned area. Signs are to be installed in visible locations on uphill side of roads. Signs will be installed consistent with FHWA Standard Specifications for Roads and Bridges on Federal Highway Projects (FP-03) with Forest Service supplemental specifications and follow sign and poster guidelines for the Forest Service EM7100-15. Refer to BAER Treatment map for specific locations.

**PS-02 Hazard Warning Signs - Recreation:** Purchase and install 'Entering Burned Area" hazard warning signs at 10 locations, primarily trailheads either within or that access the burned area. Installation of reflectorized signs with letter size according to USFS Handbook specifications mounted on 4"x4"x8' posts at heights and distances mandated in USFS Handbook. Refer to BAER Treatment map for specific locations.

<b>Public Safety Treatments</b>			
PS-01 Hazard Warning Signs – Roads			
Bear Fire			
Coon Fire			
Peak-Feeder Fire			
<b>Total PS-01: Ha</b>			
PS-02 Hazard Warning Signs – Recreation			
Bear Fire			
Peak-Feeder Fire			
<b>Total PS-02: Hi</b>			



**PS-03 Resource Protection Patrols - Heritage:**   
 trails are part of an archaeological district determined eligible for inclusion on the National Register of Historic Places. In addition to response action RT-01, monthly patrols will document

changes to the trails in terms of runoff and flash flooding, which could affect site integrity. The results of the patrols will be used to determine if additional management action is required to protect these properties. This treatment is consistent with FS Heritage Program direction for the monitoring of cultural resources (Indicator 4: Condition Assessments).

<b>PS-03 - Resource Protection Patrol</b>	<b>REDACT</b>
Program Manager - GS-12	
Technician - GS-5	
Technician - GS-7	
Vehicles (FOR and mileage)	

Other Treatments and Response Actions

**Management Recommendations**

Replace road mileage, road directional signs, and 'road closed' signs on level 1 roads either burned in the fire or damaged/removed as part of fire suppression operations. The road and direction signs are important for navigation by the general public. The 'road closed' signs provide resource protection (decrease prism damage, reduce sediment delivery and noxious weed spread) by discouraging unauthorized motor vehicle travel.

However, some district coordination and monitoring is recommended to reduce the risk of potential disturbances to nesting spotted owls, marbled murrelet, and fisher and sensitive species and to inform the emergency consultation on the activities related to this fire.

1. Implement projects that fall within the disturbance buffers of known owl activity centers, marbled murrelet sites, fisher and marten dens, and goshawk nesting sites, and suitable spotted owl, marbled murrelet, and fisher nesting/denning habitat outside of the nesting season.
2. The local wildlife biologists will be consulted during the BAER project implementation to assess if suitable nesting habitat still remains post-fire and if nesting is still likely. The local biologist can also assess the site-specific conditions where projects overlap disturbance buffers and determine if the noise may harm owls or other species.
3. If any BAER disturbance activities (e.g., emergency ditch/culvert cleanout in the spring) are likely to result in adverse effects and harm to nesting spotted owls, these should be documented by the local biologists and used to inform the emergency consultation.
4. Conduct follow up monitoring of habitat effects of the fire, especially in Low SBS areas adjacent to Moderate and Severe SBS areas to determine if additional post-fire tree mortality is resulting in significant losses of suitable owl, MAMU, and fisher habitat and NSO and MAMU Critical Habitat. It is recommended this monitoring occurs for several years after the fire. Even if the monitoring consists of field reconnaissance and a few photo points, it may be useful in helping determine the baseline condition for spotted owls, MAMU and fisher following the fire.

(The analysis for these recommendations is included in the Gasquet Complex, Wildlife Specialist Report in the Project Record.)

**Coordination, Communication, and Consultation**

Over the next year it is critical that appropriate agencies maintain due diligence and continue to inform the public and private land owners of the potential threats resulting from post-fire watershed response.

Areas of concern:

Communicate to local law enforcement and emergency management services that routes providing ingress and egress throughout the burn area may become compromised. This may result in loss of access by emergency response vehicles.

Coordinate with local water system operators to notify operators of the potential for increased sedimentation and turbidity, as well as the potential for debris flows and dams in surface waters downstream from the burned areas. Increased sediment and turbidity and debris flows could damage water systems to leave local residents without access to potable water. It is recommended to provide water system operators information about the location and extent of burned areas in drainages above these areas so they may determine the level of risk associated with these systems. In particular, the water system in Deer Creek was identified as being potentially at risk.

**Coordination**

Staff Officer (GS-13)	<b>REDACT</b>
Forest BAER Coordinator (GS-12)	

**Implementation Tracking and Required Reporting of Authorized Emergency Response Actions**

Forest BAER Coordinator (GS-12)	<b>REDACT</b>
PIO (GS-11)	

In addition, associated emergency consultation required under the Endangered Species Act (ESA) for activities obligated under ID-FSM2520-2014-1 need to be considered in the BAER funding request when emergency response actions are authorized. These are accumulated tasks above the normal program of work and cannot be recognized in out-year program planning. Because implementation of approved BAER response actions trigger these required tasks and the unit's allocated budget does not account for these obligations, BAER funding is the appropriate authorization to ensure this coordination and consultation is completed.

**Emergency Consultation on Implementation of Authorized Emergency Response Actions**

Forest Fish Biologist (GS-11)	<b>REDACT</b>
Forest Wildlife Biologist (GS-11)	

Authorized BAER actions require consultation with the State Historic Preservation Office (SHPO). In addition, ongoing consultation for addressing tribal concerns relative to minor trail work (such as installing some rock water bar structures) along short segments of trails at moderate to significant risk for water erosion is appropriate. Tribal consultation is on-going at this time. Further coordination with Tribes is needed to ensure that any concerns are addressed. Due to the high cultural sensitivity of the area, Forest Service Archaeologists and/or Tribal Monitors shall be present during implementation of all trail work.

**NHPA Compliance for Implementation of Authorized Emergency Response Actions**

Tribal Consultation (Heritage Program Manager, GS-12)	<b>REDACT</b>
SHPO Consultation (Heritage Program Manager, GS-12)	

**I. Monitoring Narrative:**

None recommended.