

Date of Report: 11/18/20**BURNED-AREA REPORT****PART I - TYPE OF REQUEST****A. Type of Report**

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

B. Type of Action

- ☒ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)
☐ 2. Interim Request #.
☐ Updating the initial funding request based on more accurate site data or design analysis.

PART II - BURNED-AREA DESCRIPTION**A. Fire Name:** Bullfrog**C. State:** CA**E. Region:** 05**G. District:** High Sierra**I. Date Fire Started:** 9/9/2020 @ 3:15**K. Suppression Cost:** \$700,000**L. Fire Suppression Damages Repaired with Suppression Funds (estimates)**

1. Fireline repaired (miles): n/a
 2. Other (identify): n/a

M. Watershed Numbers

<i>Table 1. Acres of Burned by Watershed</i>				
HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
180300100602	Helms Creek	28,772	1,654	6%

N. Total Acres Burned

Table 2. Total Acres Burned By Ownership	
Ownership	Acres
NFS	1,656
State	0
Private	0
TOTAL	1,656

O. Vegetation Types

Dominant vegetation communities within the burn perimeter and their proportion of the 1656 acres are as follows: subalpine conifer forest (47%), lodgepole pine forest (41%), red fir forest (4%), montane chaparral (3%), rock outcrop and associated flora (3%). Perennial grassland, wet meadow, and lacustrine each make up less than 1% of the burn area. Vegetation types are California Wildlife Habitat Relationship types (<https://wildlife.ca.gov/Data/CWHR>).

P. Dominant Soils

Dominant soil types consist of Stecun Family - Aquic Cryumbrepts association and Rock Outcrop – Entic Cryumbrepts association. These are well-drained to moderately well-drained soils with minimal development.

Q. Geologic Types

The Creek Fire area occurred within the western slopes of the central Sierra Nevada. The geology is classic Sierra Nevadan reflecting its origins as a sedimentary mountain range intruded by granitic batholiths. Subsequent erosion removed most of the metamorphosed sedimentary bedrock except for a few rock masses remaining as roof pendants. This erosion also exposed large areas of igneous intrusive (granitic) bedrock from the numerous batholithic intrusions. Later volcanic and glacial activity has overlain the granitic terrain with isolated flows and deposits of moraine.

Most of the fire area is underlain with igneous intrusive rocks consisting of granodiorite, tonalite and granite. These rocks are predominantly from the Bass Lake Tonalite, Dinkey Creek Granodiorite and Whiskey Creek Granodiorite. The Granodiorite of Dinkey Creek is a medium-grained, equigranular, strongly foliated biotite-hornblende granodiorite and tonality. Contains abundant mafic inclusions. The Granodiorite of Whiskey Ridge is a medium-grained, biotite-hornblende granodiorite. The Bass Lake Tonalite is a medium-grained, biotite-hornblende tonalite; varies to granodiorite and quartz diorite.

R. Miles of Stream Channels by Order or Class

Table 3. Miles Of Stream Channels By Order Or Class	
Stream Type	Miles Of Stream
Perennial	6.2
Intermittent	1.7
Ephemeral	7.9
Other (Artificial Path)	0.5
Total	16.3

S. Transportation System

Table 4. Miles of Road and Trail by Jurisdiction	
Type	Miles
Trails (National Forest)	3.2
Trails (Non-NF)	n/a
Roads (National Forest)	0
Roads (Non-NF)	0

PART III - WATERSHED CONDITION

A. Burn Severity (acres)

Due to the remote nature of the fire and the snow event, we did not field verify the BARC map. The BARC map is assumed to be the Burn Severity map. Many areas have a low confidence of accuracy.

Table 5. Summary of Burn Severity By Ownership*		
Burn Severity	Acres	Percentage with the Fire Perimeter
No Data	2	0%
Unburned/Low	1,067	64%
Low	443	27%
Moderate	98	6%
High	46	3%
TOTAL	1,656	
<i>*All of the fire is on NFS lands</i>		

B. Water-Repellent Soil (acres)

Water-Repellent Soil: Due to access difficulties and snowfall, soil burn severity was not field verified during the Bullfrog fire. It is likely that some of the acres of High and Moderate (144 acres total) burn severity mapped in the BARC imagery may contain water-repellent soils.

C. Soil Erosion Hazard Rating

Not assessed during the Bullfrog fire, assumed to be higher in moderate and high burn severity areas with steep slopes.

D. Erosion Potential

Not specifically assessed for Bullfrog, assumed to be higher in moderate and high burn severity areas due to lack of ground cover and expected increase in water repellency due to sandy surface textures.

E. Sediment Potential

Sediment Potential: Some sediment potential is likely in Helms and Dinkey Creeks; not specifically modeled for Bullfrog fire due to lower burn severity and lack of Critical Values.

F. Estimated Vegetative Recovery Period (years)

The Bullfrog burn area falls between 8400' and 9400' elevation. In the 1067 acres (64%) classified as very low/unburned burn severity, soil cover may not be diminished much, if at all. For the 443 acres (27%) of low burn severity, estimated full return of soil cover and vegetation structure should be 2-15 years. For the 98 acres (6%) of moderate burn severity and the 46 acres (3%) of high burn severity, it could take many decades for return to mature forests. Recovery of early successional herbs and shrubs will be within the first few years even in these higher severity areas.

G. Estimated Hydrologic Response

The overall hydrologic response for the Bullfrog fire will be low. The fire burned roughly 1,654 acres of the 28,772 acre Helms Creek watershed, or roughly 5.7%. Of the 1,654 acres burned 91% was low and unburned so little to no change in watershed response is expected. There is the potential for some impacts to water quality and water quantity in areas of high and moderate burn, with some ash and sediment reaching adjacent stream channels and potentially Courtright Reservoir. However, these impacts will be localized and short-term, usually abating 1 to 2 years after the burn.

Due to the small size of the fire and the lack of threats to Life and Safety or Property, hydrological response modeling was not done.

H. Geology/Geologic Response

- a) Rock Fall: Some rocks rolling from slopes above trails is expected; however, no areas of concentrated rock fall were identified.
- b) Debris Flow: None expected given burn pattern. Given the small size of the fire, the lack of Critical Values, and the lower burn severities identified in the BARC, the Burn Severity map was not sent to USGS for debris flow modelling.
- c) Sediment-Laden Flows: Localized amounts expected around moderate and high burn severity areas. No expected to impact Critical Values.

PART IV - SUMMARY OF ANALYSIS

Introduction/Background

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

Table 6. Critical Value Matrix			
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

Introduction/Background

Since the beginning of the year, there have been over 8,000 wildfires that have burned an unprecedented 4 million acres in California. Since August 15, when California's fire activity elevated, there have been 27 fatalities and over 7,000 structures destroyed. During the month of August 2020, California experienced 12,000 lightning strikes resulting in 560 new fires.

The Bullfrog Fire started on September 9, 2020 near Bullfrog Lake in the Dinkey Lakes Wilderness on the Sierra National Forest.

1) Human Life and Safety (HLS)

Due to remoteness and wilderness, the infrastructure in the Bullfrog fire is restricted to two non-motorized trails. This is the only concentrated (non-dispersed) use in the burned area; both trails are popular wilderness trails.

The BAER Team has identified a threat to human life and safety on those trails. As a direct consequence of the fire, the greatest risk for user safety is from rolling rocks and debris slides. The loss of soil stabilizing vegetation due to the fire has resulted in loose, unsupported trail tread and uphill slopes to all trails within the fire perimeter. Reports from packers and READs also indicate a threat from hazard trees.

- *Risk Assessment for Human Life and Safety – Non-Motorized Trails*: The Probability of the threats is *Likely* due to rolling rocks, damaged trail beds, and hazard trees. The Magnitude of Consequences is *Moderate*. The Risk is **High**.

Treatments for Life & Safety – Non-Motorized Trails: Treatments to protect life and safety are recommended.

2) Property

In the Bullfrog Fire, BAER Critical Values at risk for property are limited to forest non-motorized trails.

a) Property - Roads

There are no Forest Service or non-Forest Service roads in or near the Bullfrog Fire.

b) Property - Developed Recreation Sites

There are no Forest Service developed recreation sites in or near the Bullfrog Fire.

c) Property - Trails

No motorized trails exist within or downstream/downslope of the Bullfrog Fire; the assessment only addresses non-motorized trails. Trails within Bullfrog Fire: 3.1 miles of Non-motorized Wilderness trails. Sections of the Cliff Lake Trail 27E07 and the Nelson Lake Trail. Potential emergency conditions exist for specific trails and sections of trail within the burned area. These emergency conditions are based on threats associated with anticipated adverse post wildfire impacts to trails and trail users. Threats to trails include excessive erosion and degradation of the trail tread caused by capture and diversion of increased runoff from burned hillsides and drainages.

Dinkey Wilderness is an extremely popular area due to its easy access to remote wilderness providing spectacular scenery and solitude.

On-the-ground field visits of trails were not conducted as part of this assessment due to the late season snowstorm. BARC Burn severity mapping, Geological, and Hydrologic modelling, Bullfrog REAF Report and local Recreation Staff were used in the evaluation instead. Emergency conditions likely exist for the Cliff Trail and Nelson Trail within the burned area in moderate burn severity areas. The Cliff Trail is the main entrance into the Dinkey Wilderness. Due to smoke, not field validating the BARC map and specific field observations by REAF's the amount proposed for treatment doesn't precisely match the amount of mapped moderate and high burn severity. Field observations completed in spring/summer may trigger modifications to specific trails treated and/or an interim BAER report. These emergency conditions are based on threats associated with anticipated adverse post wildfire impacts to trails and trail users. Threats to this trail include excessive erosion and degradation of the trail tread caused by capture and diversion of increased runoff from burned hillsides and drainages.

As a direct consequence of the fire, the greatest risk for user safety is from rolling rocks and debris slides. The loss of soil stabilizing vegetation due to the fire has resulted in loose, unsupported trail tread and uphill slopes to all trails within the fire perimeter.

The property at risk is segments of the trail system itself. As a direct consequence of the fire there is a significant risk of damage to the trail caused by the loss of water control. Increased flow rates can be expected following the loss of vegetation and natural ground cover. This increased flow rate will result in trail tread eroding flow patterns and/or midslope drainage with trails becoming covered by dry ravel and debris. Trails that follow and repeatedly cross intermittent stream channels are subject to washouts and loss of trail segments.

- *Risk Assessment for Trails (Property):* The Probability of loss of/damage to property is *Likely* due to burn severity. The Magnitude of Consequences is *Moderate* because the two trails are very popular. The Risk is **High**.

Treatments for Property – Non-Motorized Trails: Treatments to the Forest Service property are recommended.

3) Natural Resources (NR)

a) Beneficial Uses of Water For Domestic, Municipal, Hydropower Or Agricultural Supply

Wildfires primarily affect water quality through increased sedimentation. As a result, the primary water quality constituents or characteristics affected by this fire include color, sediment, settleable material, suspended material, and turbidity. Floods and debris flows can entrain large material, which can physically damage infrastructure associated with the beneficial utilization of water (e.g., water conveyance structures; hydropower structures; transportation networks).

The loss of riparian shading and the sedimentation of channels by floods and debris flows may increase stream temperature. Fire-induced increases in mass wasting along with extensive tree mortality can result in increases in floating material – primarily in the form of large woody debris. Post-fire delivery of organic debris to stream channels can potentially decrease dissolved oxygen concentrations in streams. Fire-derived ash inputs can increase pH, alkalinity, conductivity, and nutrient flux (e.g. ammonium, nitrate, phosphate, and potassium), although these changes are generally short lived. Post-fire increases in runoff and sedimentation within the fire perimeter may also lead to increases in chemical constituents.

Ash and sediment are likely during storm events in stream channels for several years after the fire. Water Quality can impact Threatened/Endangered species. See the Wildlife report for additional information.

- *Risk Assessment:* Probability: Unlikely (ash and sediment can get into Helms creek with little expected in Courtwright Lake. Magnitude: Minor. Risk: **Very Low**.
Treatments for Beneficial Uses of Water: None

b) Hazardous Materials – Threat to Water Quality and Soil Productivity

No structures burned during the Bullfrog Fire; as such, no threats to water quality and soil productivity from hazardous materials were identified.

c) Soil Productivity and Hydrologic Function

Soil Productivity: With the Bullfrog fire burning only 5.7% of the total watershed, and with 91% of the burn being low and unburned, impacts to soil productivity will be low. Accelerated erosion will occur in the high and moderate burn severity areas. However, these impacts will be localized and short-term, abating after 1 to 2 years. Overall impacts at the watershed scale will be minor.

- *Risk Assessment for Soil Productivity:* Probability of damage or loss: Unlikely. Magnitude of Consequences: Minor. Risk Level: **Very Low**.
Treatments – Soil Productivity: None.

Hydrologic Function: Due to the size of the burn relative to the size of the watershed, impacts to hydrologic functioning are unlikely. The fire burned only 5.7% of the watershed, with 91% of the burn being unburned and low. Some short-term, site-specific impacts may be noticeable in the areas of moderate and high burn, leading to localized impacts to hydrologic functioning. However, when looking at hydrologic functioning from the watershed scale, potential impacts are unlikely and minor.

- *Risk Assessment for Hydrological Function:* Probability of damage or loss: Unlikely. Magnitude of Consequences: Minor. Risk Level: **Very Low**.
Treatments - Hydrological Function: No treatments are recommended.

d) Geologic Hazards

Four geologic hazards were assessed for the Bullfrog Fire: rock fall, debris slides, debris flows, and sediment-laden flows. See the discussion in Part III above for an overview.

- *Risk Assessment for Geologic Hazards:* Minimal risks due to rolling rocks and unstable soils. Some sediment-laden flows may enter the two streams and potentially reach Courtright Lake; however, the levels are not expected to be severe. Probability of damage or loss: Unlikely. Magnitude of Consequences: Minor. Risk Level: **Very Low**.

Treatments for Geologic Hazards: No treatments are recommended.

e) Terrestrial Wildlife

No federally-listed terrestrial wildlife species are known to occur within the fire area or within the areas where post-fire watershed responses are expected. Similarly, no suitable or Critical habitat for any federally-listed terrestrial occurs in the Bullfrog fire area. **Table 7** displays T/E terrestrial species on the Sierra National Forest and the rationale for not considering them in this analysis.

Table 7. Wildlife Resource Values Considered in this BAER Assessment			
Scientific Name	Common Name	Status	Status and Location within Bullfrog Incident Area
<i>Pekania pennanti</i>	SSN DPS Fisher	Federally Endangered	No potential denning ¹ or potential foraging ¹ habitat within the Bullfrog Fire perimeter
<i>Vulpes vulpes necator</i>	Sierra Nevada Red Fox	Proposed Federally Endangered	No potential habitat within the Bullfrog Fire perimeter
<i>Ovis canadensis sierrae</i>	Sierra Nevada Bighorn Sheep	Federally Endangered	No critical habitat within the Bullfrog Fire perimeter
¹ Delineated by the Conservation Biology Institute (CBI) for the SSN DPS of fisher			

f) Fisheries and Wildlife

There is one federally listed species within the fire area: Yosemite toad (Threatened). Yosemite toad designated Critical Habitat also occurs within the fire area totaling approximately 1,656 acres. One watershed was addressed for post-fire threats to the federally listed Yosemite toad.

Yosemite Toad Occupied Habitat (Subwatershed 521.5104): The Bullfrog fire perimeter contains one 20-acre meadow occupied by Yosemite toad (521M311). Storm flow modeling was performed on this site since it is occupied and has moderate and high soil burn severity upstream from the site and within 1250 meters of the meadow (toad dispersal distance). A total of 145 acres (representing 16% of the watershed) burned at moderate and high SBS and is anticipated to have an 18% increase in flow under a two-year storm event. This falls to a 9% increase when modeling a 10-year event.

Post-fire concerns include degraded water quality once egg masses are laid and sedimentation of breeding habitats which may reduce depth and alter temperature regimes of these ephemeral pools. Depth and temperature of water in breeding habitats are critical elements in successful annual recruitment for this species. Storm flow modeling indicates a slight increase in flow anticipated for this site, however Yosemite toads are highly sensitive to changes in breeding habitat, therefore it is recommended this site be monitored next season to assess habitat conditions. Approximately 1,656 acres of Critical Habitat was also affected, but it is anticipated that most Primary Constituent Elements were maintained.

- *Risk Assessment – Yosemite Toad*: Probability of effects: Possible. Based on the predicted watershed response, downstream impacts to Yosemite toad may occur. Magnitude of Consequences is Moderate. The Yosemite toad occurrence in the meadow assessed above is small and a reduction in numbers and suitable habitat could impact their viability; however, it is unlikely the post-fire response in this meadow would result in extirpation of this occurrence. Risk: **Intermediate Risk**.

Treatments – Yosemite Toad: Recommend the Forest monitor this site next season to evaluate breeding habitat alteration due to sedimentation potential. Not a BAER treatment and no treatment cost proposed.

g) Botanical Resources

No federally-listed plants occur within the fire area or within the areas where post-fire watershed responses are expected.

h) Non-Native Invasive Plants as a Threat to Native Vegetative Recovery

Because the Bullfrog Fire area has no documented non-native invasive plants, the importance of protecting its pristine status is paramount, especially given that it is entirely within wilderness.

Integrity and Recovery of Native Vegetation – Suppression-Related

- *Risk Assessment - Invasive Non-Native Plants (Suppression-Related)*: Probability of damage or loss is determined as Possible: seeds may have been transported via firefighters' gear, clothing, and boots. The 2+ miles of hand line and adjacent burned soil would facilitate rapid establishment and spread if invasive weeds were introduced. Helicopters can also transport weed seeds thus the helispot needs to be checked in 2021. In addition, several ATVs used to ferry firefighters and gear were driven repeatedly in the dry lakebed of Courtwright Reservoir to the trailhead leading to the fire. Magnitude of consequence would be Major: Aggressive weeds adapted to high elevations (e.g. rush skeletonweed, spotted knapweed, Canada thistle, whitetop) could impede native vegetation recovery if undetected and allowed to spread. The risk is thus **HIGH**.

Treatments for Integrity and Recovery of Native Vegetation (Fire Suppression Areas) Early detection/Rapid Response (EDRR) surveys along 2 miles of handline, trails used for firefighter access, a helispot, and any other event points.

Integrity and Recovery of Native Vegetation – Burned Area

- *Risk Assessment - Invasive Non-Native Plants (Burned Area)*: The probability is Possible for damage or loss: the danger is higher than pre-fire for rapid establishment and spread of seeds that happen to be brought in by hikers, pack stock, cattle, wind, runoff, erosion, or wildlife. Immediately post-fire (all burn severities) there is an abrupt increase in availability of water, mineral soil, sunlight, and nutrients that allow newly deposited seeds of invasive weeds to rapidly dominate and outcompete native vegetation. Magnitude of consequence would be Major, and risk is **HIGH** for the same reasons given under suppression-related risk (above).

Treatments for Integrity and Recovery of Native Vegetation (Burned Area). EDRR surveys in the burned area in general and near areas where disturbance is concentrated: trails, dispersed campsites, lakesides.

4) Cultural Resources

There are no known archaeological sites within the perimeter of the Bullfrog Fire. As the fire was located entirely within the wilderness boundary, little to no archaeological survey had been previously conducted

within the bounds of the fire. Due to the location in the wilderness and inclement weather, no field visits were conducted to verify. Threats to possible unknown sites would primarily be hazard trees damaging features, threat of erosion, and loss due to looting and damage from cattle on the fragile site surfaces.

- *Risk Assessment for Cultural Resources:* As no cultural resources are known in the area, none were physically assessed for damage or loss. No effects to cultural resources are expected from watershed responses.

Treatments for Cultural Resources: As such, there are no recommended treatments at this time.

B. Emergency Treatment Objectives

- Provide for public safety
- Limit damage to property
- Limit loss of soil productivity and provide for natural vegetative recovery
- Early detection and rapid response of nonnative invasive plants
- Road and trail treatments to protect investment in infrastructure and limit post-fire watershed response
- Conserve threatened and endangered species habitat

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

- **Land:** N/A
- **Channel:** N/A
- **Roads/Trails:** Trails currently under snow

D. Protection/Safety

Table 8. Probability of Treatment Success			
Type of Treatment	Time After Treatment		
	1 year	3 years	5 years
Land	85	95	100
Channel			
Roads/Trails	80	95	100
Protection/Safety	80	95	100

E. Cost of No-Action (Including Loss)

Using VAR Lite Cost/Benefit tool, Risks to life and safety, losses of Forest trail assets and impacts to native plant communities. Cost/Benefit spreadsheet is included in 2500-8 approval package.

Table 9. Cost of No-Action	
Total Treatment Cost	0
Expected Benefit of Treatment	\$6,000
<i>Implied Minimum Value</i>	0

F. Cost of Selected Alternative (Including Loss)

Using VAR Lite Cost/Benefit tool: Costs include EDNR. Minimizing risks to Life and Safety. Cost/Benefit spreadsheet is included in 2500-8 approval package.

Table 10. Cost of Selected Alternative	
Total Treatment Cost	\$22,370
Expected Benefit of Treatment	\$6,000
<i>Implied Minimum Value</i>	\$33,950

G. Skills Represented on Burned-Area Survey Team

Table 11. Skills on the BAER Team				
<input checked="" type="checkbox"/> Soils	<input checked="" type="checkbox"/> Hydrology	<input type="checkbox"/> Engineering	<input checked="" type="checkbox"/> GIS	<input checked="" type="checkbox"/> Archaeology
<input checked="" type="checkbox"/> Weeds/Botany	<input checked="" type="checkbox"/> Recreation	<input checked="" type="checkbox"/> Fisheries/Aquatics	<input checked="" type="checkbox"/> Wildlife	<input checked="" type="checkbox"/> Trails
<input checked="" type="checkbox"/> Other: PAO	<input type="checkbox"/> Geology			
Table 12. BAER Team Members by Skill*				
Skill	Team Member Name			
<i>Team Lead(s)</i>	Todd Ellsworth. todd.ellsworth@usda.gov ; Phone(s) 760-937-2033			
<i>Assistant Lead(s)</i>	Robin Eliason (Admin & Logistics)			
<i>Forest BAER Coordinator</i>	Antonio Cabrera. antonio.cabrera@usda.gov ; 559-297-0706 ext. 4842			
<i>Soils & Hydrology & Geology</i>	Mike Wiese			
<i>GIS</i>	Mark Schug			
<i>Archaeology</i>	Megan Krietsch			
<i>Botany/Weeds</i>	Joanna Clines, Blake Engelhardt			
<i>Recreation</i>	Cori Hayth, Deb McDougald			
<i>Wildlife</i>	Theresa Lowe			
<i>Aquatic Wildlife</i>	Anae Otto			
<i>PAO</i>	Cathleen Thompson			

H. Treatment Narratives**Land Treatments**

Land Treatment #1 Fire Suppression-Related Early Detection, Rapid Response: Early Detection and Rapid Response (EDRR) treatments are proposed along 2 miles of handline, trails used for firefighter access, a helispot, and areas accessed by crews transported on ATVs across the dry lakebed. Weed control will be manual and mechanical.

Table 13. Land Treatment #1: Invasive Weed Early Detection, Rapid Response Treatment – Suppression*				
Item	Unit	Unit Cost	# of Units (SNF)	Total Cost
Invasive Plant Detection & Treatment				
GS-6 Bio Tech Crew Members	Days	\$186	10	\$1,860
Administration, Travel, and Materials				
GS-11 Botanist (hiring, training, supervising, agreements, coordination)	Days	\$400	2	\$800
Vehicle miles at 0.58/mi; ave. trip 150 mi./day	Days	\$87	4	\$348
M&IE for field locations requiring camping	Days	\$50	12	\$600
Supplies	Each	\$200	1	\$200
Total Cost				\$3,808
<i>*Along firelines and at event points in Dinkey Lakes Wilderness</i>				

Land Treatment #2 Burned Area-Related Early Detection, Rapid Response Treatment: EDRR treatments are proposed within the burn, away from suppression activities, in areas with high probability for invasive plant introductions or expansion. Priority will be near areas where seeds may have originated campsites, trails, lakesides, streamsides; and randomly selected transects in remote burned areas, locations to be determined in the BAER Implementation Plan. Weed control will be manual and mechanical.

Table 14. Land Treatment #2: Invasive Weed Early Detection, Rapid Response - BAER/Burned Area				
Item	Unit	Unit Cost	# of Units	Total Cost
Invasive Plant Detection & Treatment				
GS-6 Bio Tech Crew Members	Days	\$186	20	\$3,720
Administration, Travel, and Materials				
GS-11 Botanist (hiring, training, supervising, agreements, coordination)	Days	\$400	5	\$2,000
Vehicle miles at 0.58/mi; ave. trip 150 mi./day	Days	\$87	6	\$522
M&IE for camping in wilderness.	Days	\$50	23	\$1,150
Supplies	Each	\$400	1	\$400
Total Cost				\$7,792

Channel Treatments

No channel treatments are proposed for the Bullfrog Fire.

Trail Treatments

Trail Treatment #1

Trail treatments are recommended for sections of trail deemed most at risk, when those treatments can be accomplished in a timely manner.

- Storm proofing measures will minimize potential effects to downstream values at risk and enhance water quality and is the minimum trail treatment necessary to protect trail investment in its current condition. Recommend immediate trail treatment of storm proofing as soon as practical when those treatments can be accomplished in a timely and safe manner
- To provide for implementation crew safety, hazard trees should be removed at sites where crews need to camp and dangerous work areas. All recommended trail treatments include log outs necessary to make the work sites accessible and to allow for safe crew egress in case of emergency.
- Continued trail condition assessments during the 2020/2021 winter/spring season to monitor trail conditions and treatment effectiveness after major weather events is recommended on both trails located within the Bullfrog Fire Assessment area, within the Dinkey Wilderness.

Trail Treatment Descriptions: An emergency determination was made that the following BAER treatments are required for wilderness non-motorized trails within the Bullfrog Fire burned area to protect property:

- Storm proofing measures relevant to fire related concerns incorporated throughout the Bullfrog Fire area trail system include:
 - Cleaning and reshaping of existing rolling dip drainage features and installation of new rolling dip drainage features in anticipation of increased post-fire runoff
 - Berm removal to increase outboard drainage as needed
 - Armoring of key ephemeral drainages to prevent undercutting and loss of trail tread. This will require the placement of rock in a rip-rap fashion below drainages to dissipate the energy of off trail water flows and decrease the possibility of bank erosion.
 - Trail drainage feature treatments should be focused in areas of moderate burn intensity.
 - To provide protection for implementation crew safety, hazard trees should be removed at work areas and sites where crews need to camp. All recommended trail treatments include log outs necessary to make the work sites accessible and to allow for safe crew egress in case of emergency.

Table 15. Trail Treatment #1: Bullfrog Non-Motorized Wilderness Trail Priority 1 Treatments						
Trail #	Trail Name	Miles	Type*	Crew (days)	Crew Cost/Person**	Cost
27E07	Dinkey Lakes Cliff Lake Trail	0.5	SP	1	\$ 350	\$ 1,750
27E09	Nelson Lake	0.6	SP	1	\$ 350	\$1,750
Hazard Tree Mitigation at dangerous work areas & Spike Camp			HT	1	\$350	\$1,750
Overhead 10%***						\$ 525
Grand Total – 1.1 miles						\$ 5,775
*Treatment Type SP - Storm proofing treatment including repair and cleanout of existing drainage structures (rock, log, dips), and as needed add drainage structures (rolling dips), armor drainage outlets, out slope tread, remove berms, tread dry raveling/debris removal, clear (buck out) down trees. TM - Trail monitoring and patrol including cleanout of drainage structures after major storm events, conduct minor trail repair and maintenance, document and report treatment effectiveness. HT - Hazard tree mitigation at dangerous work areas and spike camp						
**Crew Cost Includes salary/mobilization/per diem =\$1750 Crew Costs per day. GS-05 @ \$250 X 5 Person + \$250 mobilization (travel /equipment/ supplies) + \$55 (per diem a day) x 5 person						
Trail Storm Proofing Treatment Priority Priority 1: (2 Trails) - Highest Forest priority for treatment implementation prior to adverse winter weather and conditions; due to high demand and use, potential post-fire erosional impacts, and limited available time for completion of treatment implementation; complete Fall 2020, if possible, weather dependent						
***10% overhead for Trails Coordinator and Specialist input						

Protection/Safety Treatments

Protection/Safety Treatment #1

Trail treatments are recommended for protection/safety.

- Recommended Forest Closure Order for the 2020/2021 winter/spring seasons at a minimum to provide for public safety.
- Burn Area Warning Signs at entrances to Dinkey Wilderness.

Trail Treatment Descriptions: An emergency determination was made that the following BAER treatments are required for wilderness non-motorized trails within the Bullfrog Fire burned area to reduce human life/safety hazards and protect property:

- Forest Closure Order: The Forest has issued a Forest Closure Order for area within the Bullfrog and Creek Fires (Order No. 05-15-00-20-19) and expires November 24, 2020. It is recommended that this closure stays in place till spring 2021 or a new order exclusive to the Dinkey Wilderness be issued. The risk associated with the burn scar are can be reevaluated prior to lifting the closure.
- Burn Area Warning Signs and Forest Closure Order Signs at entrances to Dinkey Wilderness.

Table 16. Protection/Safety Treatment #1: Burned Area Warning Signs			
Item	Unit	Unit Cost	Cost
Trailside Warning Signs (includes installation)	5	\$300	\$1,500
Replacement Trailside Warning Signs	5	\$200	\$1,000
Forest Closure Order signs	5	\$100	\$1,500
TOTAL			\$3,000

I. Monitoring Narrative**Treatment Effectiveness Monitoring**

Effectiveness Monitoring: Monitoring the effectiveness of the other BAER treatments (as described above) will be used to determine if additional treatments are needed. The 2500-8 report requests funds to monitor the effectiveness of road treatments on Creek Fire roads.

Table 17. Monitoring Treatment #1: Trail Treatment Monitoring				
Item	Unit	Unit Cost	# of Units	Cost
GS-11 Trails Specialist or Hydrologist	Day	475	1	\$475
Mileage	LS	100	1	\$100
Total Cost				\$575

The following form or similar form will be filled out to assess the roads.

1) Trail treatment Effectiveness Monitoringa. *Monitoring Questions*

- ☐ Is the trail-tread stable?
- ☐ Is the trail leading to concentrating runoff leading to unacceptable off-site consequences?
- ☐ Are there trail incursions?

b. *Measurable Indicators*

- ☐ Rills and/or gullies forming of the trail
- ☐ Loss of trail prism.

c. *Data Collection Techniques*

- ☐ Photo documentation of site
- ☐ Inspection Checklist (attached)

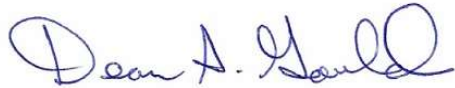
d. *Analysis, Evaluation, And Reporting Techniques*

- ☐ Monitoring will be conducted after storm events. If the monitoring shows the treatment to be ineffective at stabilizing road and there is extensive loss of Trail tread or prism an interim report will be submitted. A several page report would be completed after the site visit. The report would include photographs and a recommendation on whether additional treatments are necessary. Monitoring should take place at key road and trail entrances into the fire area to monitor for unauthorized access and any effects to critical values at risk and assess the need for additional enforcement and/or installation of additional barriers.

Trail Inspection Checklist (Example)		
Date		Time
Inspector		
Forest		
Trail #/Name		
Portions of Trail Inspected		
Describe locations reviewed during inspection		
Trail Damage?	Yes	No
If yes, GPS coordinates of repair site		
Describe damage and cost to repair		
Photo taken of trail damage		
Recommended actions to repair		
Other Notes		

			NFS Lands				Other Lands				All
		Unit	# of		Other		# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER \$	\$		units	\$	Units	\$	\$
A. Land Treatments											
EDRR	Days	580	20	\$11,600	\$0			\$0		\$0	\$11,600
				\$0	\$0			\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0			\$0		\$0	\$0
Subtotal Land Treatments				\$11,600	\$0			\$0		\$0	\$11,600
B. Channel Treatments											
				\$0	\$0			\$0		\$0	\$0
				\$0	\$0			\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0			\$0		\$0	\$0
Subtotal Channel Treatments				\$0	\$0			\$0		\$0	\$0
C. Road and Trails											
Storm Proofing	miles	5,250	1	\$5,775	\$0			\$0		\$0	\$5,775
				\$0	\$0			\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0			\$0		\$0	\$0
Subtotal Road and Trails				\$5,775	\$0			\$0		\$0	\$5,775
D. Protection/Safety											
Signs	each	273	11	\$3,003	\$0			\$0		\$0	\$3,003
				\$0	\$0			\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0			\$0		\$0	\$0
Subtotal Protection/Safety				\$3,003	\$0			\$0		\$0	\$3,003
E. BAER Evaluation											
Initial Assessment	Report	\$11,500	1	---	\$0			\$0		\$0	\$0
				\$0	\$0			\$0		\$0	\$0
<i>Insert new items above this line!</i>				---	\$0			\$0		\$0	\$0
Subtotal Evaluation				\$0	\$0			\$0		\$0	\$0
F. Monitoring											
Trails monitoring	Day	\$575	1	\$575	\$0			\$0		\$0	\$575
				\$0	\$0			\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0			\$0		\$0	\$0
Subtotal Monitoring				\$575	\$0			\$0		\$0	\$575
G. Totals											
Previously approved				\$20,953	\$0			\$0		\$0	\$20,953
Total for this request				\$20,953							

PART VI - APPROVALS

A handwritten signature in blue ink that reads "Dean A. Gould". The signature is fluid and cursive, with the first name "Dean" and last name "Gould" clearly legible.

December 8, 2020

Forest Supervisor
Dean Gould, Sierra National Forest

Date