

Date of Report: 9/20/2023**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*

* Acres used in this assessment are calculated from the Initial BARC imagery from August 23; since then, the fire perimeter was adjusted by roughly 19 acres.

A. Fire Name: Flat Fire**B. Fire Number:** OR-RSF-000209**C. State:** Oregon**D. County:** Curry**E. Region:** R6**F. Forest:** Rogue River-Siskiyou National Forest**G. District:** Gold Beach Ranger District**H. Fire Incident Job Code:** P6QDL4**I. Date Fire Started:** 07/15/2023**J. Date Fire Contained:** Estimated 10/31/2023**K. Suppression Cost:** 71M as of 9/17/2023**L. Fire Suppression Damages Repaired with Suppression Funds (estimates):**

1. Fireline repaired (miles): Across all ownerships, as of 9/12/2023, 16.7 miles of dozer fireline repair completed out of a total of 34.6 miles. 0.31 miles of the 34.6 miles of dozer fireline are showing as 'no repair needed'. Across all ownerships, as of 9/12/2023, 6.2 miles of hand fireline repair completed out of a total of 10.1 miles. 0.03 miles of the 10.1 miles of hand fireline are showing as 'no repair needed'.
2. **Other (identify):** Across all ownerships, as of 9/12/2023, 21 of the dozer push repairs completed out of a total of 52. 11 dozer push of the 52 points are showing as 'no repair needed'. Across all ownerships, as of 9/12/2023, 2 helispots of the helispot repair is completed out of a total of 32. 2 helispots of the 32 helispots are showing as 'no repair needed'. As of 9/12/2023, the only safety zone has not been repaired. As of 9/12/2023, zero camps have been repaired out of three.

M. Watershed Numbers:

Table 1: Acres Burned by Watershed

HUC-10 Watershed Name	High		Mod		Low		Unburned / Very Low		Total
	%	Acres	%	Acres	%	Acres	%	Acres	Acres
Indigo Creek	0.0%	2	0.6%	308	6.1%	2,988	93.3%	45,688	48,984
Klondike Creek-Illinois River	0.0%	1	0.0%	15	0.1%	72	99.9%	67,036	67,123
Lawson Creek-Illinois River	1.3%	535	10.6%	4,354	47.5%	19,568	40.6%	16,722	41,179
Pistol River	0.0%	0	0.0%	0	0.1%	45	99.9%	67,890	67,935
Rogue River	0.0%	0	0.0%	6	0.1%	106	99.9%	82,756	82,868
Silver Creek	0.0%	0	0.0%	0	0.2%	92	99.8%	51,528	51,620
Grand Total	0.2%	538	1.3%	4,683	6.4%	22,871	92.2%	331,620	359,709

N. Total Acres Burned:

Table 2: Total Acres Burned by Ownership

OWNERSHIP	ACRES
NFS:	34,038
ROGUE RIVER-SISKIYOU NF	
OTHER FEDERAL (LIST AGENCY AND ACRES)	0
STATE	36
PRIVATE	149
TOTAL	34,223

- O. Vegetation Types:** Habitats are varied within the Flat Fire areas. There are a variety of habitat types, but mixed-conifer forests are the dominant vegetation type in the fire area, primarily *Pseudotsuga menziesii* (Douglas-fir) with *Lithocarpus densiflora* (tanoak) or *Pseudotsuga menziesii* with *Abies concolor* (white fir). *Chamaecyparis lawsoniana* (Port Orford cedar), an endemic species, is found in both of these mixed conifer associations, and is often a major-dominant stand component, especially in draws and riparian areas. Other common mixed conifer forests within the fire include *Pinus ponderosa* (Ponderosa pine), *Pinus jeffreyi* (Jeffrey pine), *Calocedrus decurrens* (incense cedar), and *Pinus lambertiana* (sugar pine), which occur with the hardwoods *Quercus chrysolepis* (canyon live oak), *Umbellularia californica* (California bay laurel), *Arbutus menziesii* (Pacific madrone), and *Castanopsis chrysophylla* (chinkapin) (hardwood-dominated stands consisting of these species exist as well). On serpentine soils at higher elevations *Chamaecyparis lawsoniana* (Port Orford cedar) is often one of the dominant overstory trees, with *Pinus jeffreyi* (Jeffrey pine) and a mixture of several other conifers including *Pinus monticola* (western white pine), *Pseudotsuga menziesii* (Douglas-fir), *Pinus contorta* (lodgepole pine), and sometimes very thick patches of *Pinus attenuata* (knobcone pine) in recently burned areas, with shrubby understories. Common shrubs include *Arctostaphylos* spp. (manzanita), *Rhamnus californica* (coffeeberry), *Notholithocarpus densiflorus* var. *echinoides* (shrub form tanoak), *Rhododendron macrophyllum* (Pacific rhododendron), and *Rhododendron occidentale* (western azalea), and *Toxicodendron diversilobum* (poison oak) at lower elevations. *Darlingtonia californica* (California pitcher plant) occurs in localized seeps, streamsides, or

across broad wet terraces, and is associated with a number of sensitive or endemic plants including *Gentiana setigera*, *Viola primulifolia* var. *occidentalis*, *Castilleja elata*, *Cypripedium californicum*, and *Lilium pardalinum* ssp. *vollmeri*.

- P. Dominant Soils:** Within the Flat fire perimeter, loamy-skeletal textured soils are the dominant texture due to significant surficial rock content and moderately fine textured surface soils. The most common soil type found within the fire are relatively young soils found on steeper mountain slopes that support upland forest and patchy forest/shrubland vegetation communities of moderate productivity. Shallow, rocky soils within the fire were predominantly Found along ridgetops, rock outcrops, and oversteepened mountain slopes that naturally ravel. Erosion potential is generally moderate in the Flat Fire perimeter due to naturally erosive soils and oversteepened terrain, with high erosion potential occurring when groundcover is removed, and steepness of slopes exceeds 60%. Vegetative cover is key in protecting these soil types from excessive erosion.
- Q. Geologic Types:** Parent materials across the fire area are varied, with a generalized trend of schist predominating in the southern and western portions of the fire perimeter, ultramafic and serpentinite rock in the southern portion, and sedimentary rock across the remainder of the fire area. Lithologies are predominated by Colebrook schist (28%), ultramafic and serpentinitic rock types (25%), mixed grained sedimentary rock (17%), coarse grained sedimentary rock (16%), fine grained sedimentary rock (5%), mafic composition lithologies (10%), and a small proportion of basalt (1%).

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	177.9
INTERMITTENT	Unmapped
EPHEMERAL	Unmapped
OTHER (DEFINE)	0

S. Transportation System:

Trails: National Forest (miles): 25.66 miles Other (miles): 0
Roads: National Forest (miles): 57.95 miles Other (miles): 0

Table 4. Miles of Road by Maintenance Level

ROADS: NATIONAL FOREST TOTAL R6 (MILES)	57.95
1 - BASIC CUSTODIAL CARE (CLOSED)	22.2
2 - HIGH CLEARANCE VEHICLES	18.82
3 - SUITABLE FOR PASSENGER CARS	16.93

PART III - WATERSHED CONDITION

A. Burn Severity (acres):

Table 5: Burn Severity Acres by Ownership

Soil Burn Severity	NFS	Other Federal (List Agency)	State	Private	Total	% within the Fire Perimeter
Unburned/ Very Low	6,083		14	35	6,131	18%
Low	22,737		22	112	22,871	67%

Soil Burn Severity	NFS	Other Federal (List Agency)	State	Private	Total	% within the Fire Perimeter
Moderate	4,681		1	2	4,683	14%
High	538		0	0	538	1%
Total	34,039		37	149	34,223	100%

B. Water-Repellent Soil (acres): Fire-induced or altered hydrophobicity is estimated to have occurred on approximately 15% of soils (100% of severely and moderately burned soil) or around 5,221 acres. Inherent moderate to strong hydrophobicity was noted during field observations, which could contribute to higher amounts of water repellent soils not induced by fire. Areas with fire adapted vegetation types and high lignin content, such as Tan Oak, are assumed to have influenced increased hydrophobicity throughout the fire.

C. Soil Erosion Hazard Rating: Approximately 6,341 acres of low (19%); 23,277 acres of moderate (68%); 4,127 acres of high (12%); and 478 acres of very high (1%) erosion hazard risk were estimated for the Flat Fire.

D. Erosion Potential: 4.0 tons/acre/year

E. Sediment Potential: 3.0 tons/acre/year

F. Estimated Vegetative Recovery Period (years): Vegetation recovery will vary depending on plant association group, soil type, aspect, and soil burn severity. However, productivity should not decline too much if there is only a minor degree of soil loss. Natural recovery from fire would be expected to occur within a **1-to-3-year** timeframe. Serpentine soils as well as very steep and rocky soils are characteristically low in productivity. Serpentine soils have inherent high metal properties and are sensitive to disturbance. However, these soils often have high rock content and sparse vegetation allowing fires to move through quickly with lower residence time. These lower residence times result in lower soil burn severities. After the Biscuit fire these areas were able to revegetate and exhibited resiliency after disturbance. Wet soils are other sensitive sites that are found in isolated pockets across the burned area and can be quick to recover from wildfire if their groundwater source is not disrupted. Soil erosion potential is moderate across the burn area resultant from steepened slopes, naturally raveling soils, and watersheds with naturally high sedimentation rates.

G. Estimated Hydrologic Response (brief description): The Flat Fire burned with a mosaic of low, moderate, and high burn severity within primarily two HUC12 subwatersheds, Lawson Creek and Indigo Creek, in the Illinois River sub-basin. Peak flow analysis was conducted at sixteen pour points using a modified regional regression equation (Cooper, 2005). Modeling mimicked peak flows caused by long-duration frontal storms that typically occur during the wet season, approximately December through March. The Q2, or 2-year peak flow event with a 50% chance of occurring annually, was estimated for pre-fire and post-fire conditions.

Model predictions indicate that peak flows at modelled poursheds may increase 1.0 – 2.3 times the pre-fire condition. The highest increases are expected in smaller poursheds with higher proportions of high and moderate soil burn severity. The watershed response will likely also include an initial flush of ash and burned materials, rill and gully erosion in steep drainages, and higher potential for debris slides and debris flows. Model predictions of post-fire peak flows on Lawson Creek, the HUC 12 drainage within 73% of the fire area, was 1.5 times pre-fire 2-year stream flow. Indigo Creek, the other HUC 12 drainage within 8% of the fire area did not have an estimated increase in streamflow post-fire due to the high proportion of unburned and low soil burn severity. Lawson Creek and Indigo Creek enter the Illinois River several miles upstream from the Rogue River, which is not anticipated to show elevated streamflow response or water quality concerns as a result of the fire.

Peak flow and watershed response are highly dependent on storm occurrence and are at greatest risk of elevated fire response in the first year or two after the fire, with emphasis on initial storm events. Post-fire hydrologic impacts will become less evident as vegetation is re-established, providing ground cover that reduces erosion, increases surface roughness to slow flow accumulation, and increases infiltration. Vegetation recovery is anticipated within approximately three years.

PART V - SUMMARY OF ANALYSIS

Introduction/Background

The Flat Fire started south of Agness, Oregon, near Oak Flat Campground on July 15th, 2023 and the human-cause is under investigation. The fire burned through several old fire scars on the Rogue River-Siskiyou National Forest, including the Biscuit Fire of 2002 and Klondike Fire of 2018. Dry vegetation and winds contributed to the rapid growth of the fire over the first several days, which funneled the fire towards the south west, toward Wild Horse Ridge up Lawson Creek drainage. Following the fifth day the fire stood at more than 15,000 acres. Several burnout operations were conducted to slow fire spread and contain the fire to ridgetop roads such as National Forest Roads 3318 and 3860. The Flat BAER Team began their assessment of the fire on September 6th, 2023 with the final close-out with the forest on September 21st, 2023. The Flat BAER team worked to determine the final Soil Burn Severity map for the Flat Fire to inform on hydrologic and soil modeling to assess threats to BAER critical values found within the fire perimeter. The Critical Values spreadsheets in the project file summarizes critical values evaluated and the risk assessment to identify where a BAER emergency exists that warrants treatment. The risk assessment focused on the most probable damaging storm events, which are typically longer duration wetting rains that occur in the fall and winter.

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

1. Human Life and Safety (HLS):

Critical Value	Probability	Consequence	Risk Rating	Threat
People travelling on roads intersecting fire boundary, and impacted by burned area	Possible	Major	High	Potential for falling snags and rocks, flooding, or other unforeseen hazards
Harm to people at Oak Flat Campground and Game Lake Trailhead	Very Likely	Major	Very High	Fire weakened/dead trees falling where people congregate
Harm to people traveling on Forest Service trails in the fire area	Possible	Major	High	Burnt area hazards include falling trees, rocks and debris, and unstable trail tread
Harm to people at fire damaged bridge at Ethels Creek, Illinois River National Recreation Trail 1161	Possible	Major	High	Exposed damaged bridge material
HLS of campers at Oak Flat CG	Unlikely	Major	Intermediate	Flooding/debris flow of the campsite causing injury to Forest users
HLS of boaters camping on Illinois River within burned area	Unlikely	Major	Intermediate	Flooding/debris flow of dispersed campsite(s) along the river causing injury to Forest users
HLS of boater users on the Illinois River	Unlikely	Major	Intermediate	Debris and large wood moving downstream on the Illinois River creating unsafe conditions for river users

2. Property (P):

Critical Value	Probability	Consequence	Risk Rating	Threat
NFSR 3318282, 3577261, 3680000, 3680407, 3680408	Possible	Moderate	Intermediate	Increased flow due to moderate to high Soil Burn Severity and increased potential for sediment and debris impeding drainage structures, ditch lines.
1173 Lawson Creek Trail	Likely	Major	Very High	Post-fire runoff and erosion of trail tread and prism.
Illinois River National Recreation Trail 1161	Likely	Major	Very High	Post-fire runoff and elevated stream flows; erosion of trail tread and prism.
1175 Horse Sign Trail	Likely	Major	Very High	Post-fire runoff and elevated stream flows at Horse Sign Creek; erosion of trail tread and prism.
1169 Game Lake Trail	Likely	Moderate	High	Erosion of trail tread and prism.
Trails 1173 Lawson Creek and 1161 Illinois River NRT	Likely	Major	Very High	Destruction of trail tread on steep slopes from fire weakened trees near trail tipping and uprooting
80" CMP on NFSR 3318122, 3318129	Unlikely	Moderate	Low	Increased flow causing road prism and drainage structure failures
40" CMP on NFSR 3318310	Unlikely	Minor	Very Low	Increased flow causing road prism and drainage structure failures
Game Lake Bridge on NFSR 3318312	Unlikely	Major	Intermediate	Potential for falling snags on the bridge.
2 - 24" CMP on NFSR 3680000	Possible	Moderate	Intermediate	Increased flow due to moderate to high Soil Burn Severity and increased potential for sediment and debris impeding drainage structures.
Illinois River-FLTPS1 Bridge	Unlikely	Major	Intermediate	Damage to substructure due to increased flow and debris

3. Natural Resources (NR):

Critical Value	Probability	Consequence	Risk Rating	Threat
Soil Productivity	Possible	Minor	Low	Accelerated Erosion, Increased Potential for Debris Flows
Hydrologic Function	Likely	Minor	Low	Negative impacts to water quality due to excess sedimentation. Greater duration and magnitude of sediment load from erosion with increased flows causing elevated turbidity
Drinking water for domestic users downstream on Rogue and Illinois Rivers	Possible	Minor	Low	Reduced water quality from turbid and sediment-laden waters to off-Forest drinking water sources downstream
Domestic water quality on Nancy's Creek	Unlikely	Minor	Very Low	Reduced water quality from turbid and sediment-laden

				waters to domestic and irrigation water right on Nancy's Creek
Water Quality ORV on the Wild and Scenic River section of the Illinois River	Possible	Minor	Low	Impacts to water quality from excess sedimentation and debris flows, increased turbidity affecting water quality ORV
(T) SONCC Coho Salmon Designated Critical Habitat - Lawson Creek-Illinois River Watershed & Indigo Creek Watershed	Possible	Minor	Low	Impacts/Loss of Critical Habitat from post-fire watershed response
T&E Species: Northern spotted owl Suitable Habitat, Northern spotted owl sites, Critical Habitat Suitable Owl Habitat	Possible	Moderate	Intermediate	Impacts from the fire including greater risk from blowdown, mass soil movement, flooding and insects and disease could result in additional mortality to remaining live trees and further reduce NSO suitable habitat and usable Critical Habitat and threaten the viability of owl sites.
T&E Species; Coastal marten habitat, coastal marten sites, and proposed critical habitat	Possible	Moderate	Intermediate	Impacts from fire to coastal marten habitat include risk from blowdown, mass soil movement, flooding and insect and disease could result in additional mortality to remaining live trees and shrubs. This would further reduce suitable marten habitat.
T&E Species; Marbled murrelet habitat, occupied sites and critical habitat.	Possible	Moderate	Intermediate	Impacts from the fire including greater risk from blowdown, mass soil movement, flooding and insects and disease could result in additional mortality to remaining live trees and further reduce MAMU suitable habitat and usable Critical Habitat and threaten the viability of MAMU sites.
Native plant communities	Very Likely	Moderate	Very High	Invasive plant invasion due to suppression disturbance
Native plant communities: sensitive plant populations, meadows, serpentine wetlands, and botanical areas	Very Likely	Moderate	Very High	Invasive plant invasion in sensitive areas with 50-100% basal area loss

4. Cultural and Heritage Resources:

Critical Value	Probability	Consequence	Risk Rating	Threat
Potentially Eligible for listing to the NRHP Heritage Resources	Unlikely	Minor	Very Low	Erosion and exposure to looting or vandalism
Potentially Eligible for listing to the NRHP Heritage Resources	Very Likely	Major	Very High	Other BAER treatment implementation in proximity to known cultural resources

A. Emergency Treatment Objectives:Proposed Land Treatments:The objective of the land treatments are to:

- a. EDRR is prescribed in order to mitigate long-term impacts to native plant communities and promote native plant resources by removing invasive plant populations. Treatments will foster the recovery of intact native plant communities in the burned area by minimizing the proliferation of noxious weed populations. **P1a.**
- b. Respond and minimize the potential for rapid invasion of invasive plants into native plant communities due to suppression-related ground disturbance. **P1b.**
- c. **NOTE:** No active land treatments are being proposed for soil productivity or drinking water for domestic users. Allowing for natural recovery is the recommended course of action. Many areas will have vegetation recovery within 1-3 years in moderate/high burn severity areas; low burn severities should have quicker vegetative recovery and provide a needle-cast for mulch to cover exposed soils. Moderate soil burn severity areas may also have the potential for needle-cast for mulch. Furthermore, the burned area is a small proportion of the upstream watershed at these water rights and reduced water quality would last for very short time periods. Additionally, most users have water rights upstream or outside of the fire influence area. The level of risk to soil productivity or drinking water for domestic users is **Low**.
- d. **NOTE:** No active land treatments are being proposed for T&E habitat for wildlife or fisheries. Habitats were impacted by the fire and will take decades to recover habitat conditions where high and moderate basal area mortality was observed, outside the scope of BAER. The level of risk for wildlife critical values is **intermediate** for all threatened species. The level of risk for fisheries critical value is **Low** for threatened species.

Proposed Channel Treatments: None Proposed.Proposed Roads/Trails:

- a. **Note:** No road treatments are being proposed. Current road and drainage crossing location conditions and very low intersection with moderate to high soil burn severity results in intermediate to low level of risk.

The objective of the recreation treatments is to:

- a. Protect trail investments from damage or loss due to increased post-fire runoff and erosion off of the trail surface/tread. **T1.**
- b. **Note:** Sections of Trails:1173, 1161, 1169, and 1175 were assessed to consider if unacceptable risk was present in moderate and high soil burn severity. Additionally, all trails listed were visited in the field to determine post-fire condition from September 6th to 9th, 2023.**T1.**
- c. Protect trail tread from damage or loss due to the uprooting of fire-weakened or dead trees. **T3.**

Proposed Protection/Safety Treatments:The objective of the protection/safety treatments are to:

- a. Protect human life and safety by raising awareness through posting hazard warning signs at recreation sites and trailheads, and along roads entering the burned area to warn users of potential hazards resulting from post-fire conditions and ensure users are able to access the correct routes in a safe manner. **S1a, S1b.**
- b. Protect human life and safety by posting legal closure orders and solicit caution from recreational users in burned areas. Inform and educate users about closed or impassable areas when they are recreating in the area. **S2.**
- c. Protect Forest Service infrastructure and human life/safety in areas where we invite the public to congregate, as well as for worker safety by removing hazard trees associated with BAER treatments. **S3, H1.**
- d. Protect human life and safety of users and work crews as well as protection of Ethels Creek from burned remnant treated bridge timbers. **S8.**
- e. Protect human life and safety by raising awareness and informing users of trailheads, length, and reasoning of closure. Additionally, inform of hazards on specific trails/trailheads, as well as hazardous

conditions along the Illinois River, in association with the Flat Fire burned area. This will help solicit caution from users in burned areas. **\$11.**

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

Land: 90

Channel: N/A

Roads/Trails: 75

Protection/Safety: 90

D. Probability of Treatment Success

Table 7: Probability of Treatment Success

	1 year after treatment	3 years after treatment	5 years after treatment
Land	80	85	90
Channel	N/A	N/A	N/A
Roads/Trails	80	85	85
Protection/Safety	90	90	90

E. Cost of No-Action (Including Loss): Approximately \$1,447,400.00, based on trail reconstruction and expansion of noxious weeds, and a 1M value for public safety, recognizing that the value of life is priceless. Costs of loss of water quality, soil productivity, T&E species, or cultural resources were not quantified.

F. Cost of Selected Alternative (Including Loss): \$247,400.00

G. Skills Represented on Burned-Area Survey Team:

- ☒ Soils ☒ Hydrology ☒ Engineering ☒ GIS ☒ Archaeology
☒ Weeds ☒ Recreation ☒ Fisheries ☒ Wildlife
☐ Other:

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Team Members: *Table 8: BAER Team Members by Skill*

Skill	Team Member Name
<i>Team Lead(s)</i>	Joni Brazier, Lizeth Ochoa (t)
<i>Soils</i>	Mary Young, David Watson, Jerome Barner (t), Alexander Kind (t)
<i>Hydrology</i>	Hazel Wood, Leah Tai, Kelcy Huston (t)
<i>Engineering</i>	Luis Palacios, Colton Smith (t)
<i>GIS</i>	Maureen Durrant
<i>Archaeology</i>	Michelle Durant
<i>Weeds</i>	Teresa Bird (t)
<i>Recreation</i>	Lance Sargent, Cameron Castle (t)
<i>Other</i>	Steve Brazier, Sheila Colyer, Karla Cottom (t)

H. Treatment Narrative:

Land Treatments:

P1a. Invasives EDRR: Prevention, combined with early detection and rapid response, is the most effective means of controlling invasive plants and protecting native plant communities. Post-fire non-native invasive plant detection monitoring is recommended the first year "to determine the post-fire presence of invasive

species” on fire lines and burned areas. This is consistent with Forest Service Manual direction of BAER treatment of invasive plants. (FSM2523.2(f)) (USDA, 2017). Detection surveys will be focused in areas of increased probability of infestation including areas near sensitive plant populations, meadows, and botanical areas in areas with 50-100% basal area loss with invasive plant populations nearby. EDRR is proposed for 1,203 acres identified as likely potential for spread of invasive plants into native plant communities. Manual invasive plant control would occur when invasive plants are detected in order to reduce the potential for spread of weeds within the fire perimeter. Current NEPA covering herbicide treatment on the Gold Beach and Wild Rivers Ranger Districts is limited, therefore the majority of the invasive plant treatments will be manual. Areas with NEPA coverage (a few major road systems and grazing allotments) for select invasive species will be treated chemically through an existing BPA.

Treatment	Units	Unit Cost	# of Units	Total Cost
P1a. - Invasives EDRR	Acres	\$43	1,203	\$51,720

P1b. Invasives EDRR – Suppression Repair: Constructed helispots, dozer lines, hand lines, spike camps, and safety zones with no prior invasive plant infestations will be the focus of suppression damage EDRR treatments. EDRR is proposed on 129 acres of constructed dozer/hand line, 1 safety zone (1 acre), 1 camp (11 acres), 25 helispots (approximately 23 acres), and 52 large dozer pushouts (approximately 46 acres).

Treatment	Units	Unit Cost	# of Units	Total Cost
P1b. - Invasives EDRR- Suppression Repair	Acres	\$53.76	202	\$10,860

Channel Treatments: None Proposed.

Road and Trail Treatments:

T1. Trail Drainage Stabilization: 5.1 miles of trail traverse through moderate and high soil burn severity and steep burned slopes to warrant emergency treatments due to increased runoff and erosion. Work will include: construction of rolling dips, berm removal, restoring out-slope, and felling of hazard trees for worker safety. The following sections of trail have been targeted for this protective trail work, and only include sections of trail that are still intact and have received recent maintenance, but are now at unacceptable risk of damage or loss without stabilization work:

- 1173 Lawson Creek Trail, 1.6 miles
- 1161 Illinois River National Recreation Trail, 1.6 miles
- 1169 Game Lake Trail, 1.1 miles
- 1175 Horse Sign Trail, 0.8 miles

Estimated cost per mile for trail stabilization is higher than the average cost in the region, but realistic factors based on local costs, recent agreements and inflation were taken into account for these remote trail locations. Factors included: Limited local NGO workforce and capacity with partnerships and volunteers that would have the capacity to complete the work rapidly this fall, long distance mobilization costs, support for spike camps, competition with other work already planned, and more reliance on paid staff versus volunteers later into fall. There is the potential final cost will be lower the more local assets are able to be utilized at time of implementation.

Treatment	Units	Unit Cost	# of Units	Total Cost
T1. Trail Drainage Stabilization	Mile	\$9,504.39	5.1	\$48,472.40

T3. Other Trail Treatments: Five trees have been identified in the Hazard Tree database and flagged for removal that are likely to fall and damage tread along the Illinois River NRT. Lawson Creek Trail is estimated to

have about two trees per mile that need removal adding up to approximately 4 trees where T1 treatments are also planned. Specific identification and flagging of trees for removal on Lawson Creek Trail will occur during T1- trail drainage stabilization work.

Treatment	Units	Unit Cost	# of Units	Total Cost
T3. Other Trail Treatment	Sites	\$1,428.15	2	\$2,856.30

Protection/Safety Treatments:

S1a. Road Hazard Signs: Eight road hazard signs will be installed to inform users of the dangers associated with entering and recreating within the burned area. Location of signs are shown on maps, S1a Specification Form, and included in 2500-8 close-out packet.

Treatment	Units	Unit Cost	# of Units	Total Cost
S1a. Road Hazard Signs	Each	\$537.50	8	\$4,300.00

S1b. Trail/Recreation Hazard Signs: Four burned area hazard signs will be installed on a post next to the trailhead marker at Illinois River NRT, Lawson Creek, Game Lake, and Pupp Camp to notify the public of post-fire hazards. All locations are expected to remain closed through the winter of 2023-2024 but will be reassessed in 2024 for opening.

Treatment	Units	Unit Cost	# of Units	Total Cost
S1b. Trail/Recreation Hazard Signs	Each	\$300	4	\$1,200.00

S2. Physical Closure Device: Eight traffic barricades with informational postings will be installed at sites specified in the Flat BAER Treatment Map, S2 Specification Form, and included in the 2500-8 close-out packet to inform users of trail hazards found in a post-fire environment to protect human life and safety. Temporary closure through at least the fall of 2023 and the winter of 2024 is recommended to allow time for unstable fire-weakened trees to fall. Additionally, unstable tread and debris from burnt structures have made sections of trail unsafe to pass; specifically in the case of Illinois River National Recreation Trail. In spring of 2024 reassess trail systems to identify if threats have been mitigated and opening is appropriate. Two additional traffic barricades have been included to replace damaged or stolen barriers. Coordinate with S11 treatments.

Treatment	Units	Unit Cost	# of Units	Total Cost
S2. Physical Closure Device	Each	\$237.00	10	\$2,370.00

S3. Hazard Tree Removal: Work will include felling of hazard trees in the immediate vicinity of Oak Flat Campground and Game Lake trailhead for human life and safety of public, work crews, and BAER implementation team members for S1b and S2 treatments. Five to nine trees per site are anticipated to be felled through a qualified Tier 2 hazard tree inspector and falling module. All trees would be felled and left in place. It is not feasible to physically close these locations once the Emergency Forest Closure order for the Flat Fire is lifted. Heritage mitigation measures require felling trees directionally towards 3680 road at Game Lake trailhead. Buck and move portions of the trees that are within the road or parking area. Monitoring of dead/dying trees will need to occur at all trailheads and campgrounds. Additionally, monitoring of Oak Flat Campground and Game Lake TH should also occur, but no earlier than the spring of 2024, in order to identify hazard trees that were not evident at the time of survey.

Treatment	Units	Unit Cost	# of Units	Total Cost
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S3. Hazard Tree Removal	Site	\$1,676.05	2	\$3,352.10
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S8. Infrastructure Removal:

The trail bridge on 1161 Illinois River National Recreation Trail over Ethels Creek was burnt and now has exposed hardware and debris that needs to be removed for safety of the public and trail crews, as well as for resource protection of Ethels Creek since the bridge was constructed of treated timber. Partially burnt planking and remaining hardware needs to be removed. Burnt hazard trees in the area need to be fallen in order for the crews to safely work at the bridge site. Approximately 9 hazard trees will be dropped in the area of the structure.

Treatment	Units	Unit Cost	# of Units	Total Cost
S8. Infrastructure Removal	Each	\$4,682.10	1	\$4,682.10

S11. Public Communication Strategy: The following recreational sites/websites require informational postings and updates as closure orders and trail conditions change. This information, at a minimum, would include geographic references and the nature of hazards or impassible trail conditions. Coordinate/develop website notifications for these locations as well as potential hazards associated with floating the Illinois River. The physical posting sites overlap with S2 treatments and can be used to post this information if a kiosk is not ideally located at the recreation sites. The purpose of the proposed treatment is to develop a message that will inform recreational users which trailheads are closed, the length they are closed, why they are closed and which trails/trailheads have hazards, as well as potentially hazardous conditions along the Illinois River, in association with the Flat Fire burned area. This will help solicit caution from recreational users in burned areas. Sites:

- Illinois River National Recreation Trail #1161 (both Trailheads); Illinois River West Trailhead and Illinois River Trailhead at the end of Forest Road 4103
- Miami Bar and Diver's Bar
- Oak Flat Campground
- Lawson Trailhead and Game Lake Campground
- Pupp Camp Trailhead
- Hobson Horn-Silver Peak Trailhead
- Post on Rogue River-Siskiyou National Forest Alerts and Notices Page, as well as American Whitewater webpage.

Treatment	Units	Unit Cost	# of Units	Total Cost
S11. Public Communication Strategy	Sites	\$92.85	12	\$1,114.20

H1. Heritage and Cultural Resource Protection: Treatment to mitigate the emergency for the potentially eligible heritage resources is to cover NHPA, Section 106 (S106) compliance for all authorized BAER treatments using the H1 Treatment Code. S106 compliance includes the minimum required documentation to implement the approved treatment. Although BAER treatments are considered "emergency undertakings" under NHPA, a reasonable effort shall be made to avoid adverse effects whenever possible during ground-disturbing activities. For Site 6102600112 apply S106 compliance efforts to treatments in T36S/R12W/S27.

Treatment	Units	Unit Cost	# of Units	Total Cost
H1. S106 Compliance by GS 11 Archaeologist (OT)	Hours	\$46.00	40	\$1,840.00

I. Monitoring Narrative:

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										
P1a. Invasives EDRR	Acres	43	1203	\$51,720	\$0		\$0		\$0	\$51,720
P1b. Invasives EDRR Supp	Acres	54	202	\$10,860	\$0		\$0		\$0	\$10,860
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Land Treatments				\$62,580	\$0		\$0		\$0	\$62,580
B. Channel Treatments										
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Channel Treatments				\$0	\$0		\$0		\$0	\$0
C. Road and Trails										
T1. Trail Drainage Stabilizat	Mile	9,504	5	\$48,472	\$0		\$0		\$0	#REF!
T3. Other Trail Treatments	Site	1,428	2	\$2,856	\$0		\$0		\$0	\$2,856
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Road and Trails				\$51,329	\$0		\$0		\$0	#REF!
D. Protection/Safety										
S1a. Road Hazard Signs	Each	538	8	\$4,300	\$0		\$0		\$0	\$4,300
S1b. Trail/Rec Hazard Signs	Each	300	4	\$1,200	\$0					
S2. Physical Closure Device	Each	237	10	\$2,370	\$0					
S3. Hazard Tree Removal	Site	1,676	2	\$3,352	\$0					
S8. Infrastructure Removal	Each	4,682	1	\$4,682	\$0					
S11. Public Info. Strategy	Site	93	12	\$1,114	\$0					
H1. S106 Compliance BAER	Hours	46	40	\$1,840	\$0					
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Protection/Safety				\$18,858	\$0		\$0		\$0	\$4,300
E. BAER Evaluation										
Initial Assessment	Report	\$133,119	1	---	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				---	\$0		\$0		\$0	\$0
Subtotal Evaluation				\$0	\$0		\$0		\$0	\$0
F. Monitoring										
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Monitoring				\$0	\$0		\$0		\$0	\$0
G. Totals							\$0		\$0	#REF!

PART VII - APPROVALS

/s/ Jacob Winn

September 21, 2023

Acting Forest Supervisor, Rogue River-Siskiyou NF

Date