

**Date of Report: 16 Oct 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****A. Fire Name: Bone Fire****B. Fire Number: 2023-STF-000896****C. State: California****D. County: Tuolumne****E. Region: 05****F. Forest: Stanislaus NF****G. District: Groveland****H. Fire Incident Job Code: P5EK1723****I. Date Fire Started: 06/15/2023****J. Date Fire Contained: 7/18/2023****K. Suppression Cost: \$1,200,000****L. Fire Suppression Damages Repaired with Suppression Funds (estimates):**

1. **Fireline repaired (miles):** None  
2. **Other (identify):** Unrepaired lines: 1.35 miles of handline  
Most of the perimeter of the Bone fire was FS system roads used as line. 1.35 miles of handline was constructed at the northern edge of the perimeter, and was left unrepaired in July. However, this line was re-opened and re-used during the 2023 Quarry fire, which shared this section of perimeter.

**M. Watershed Numbers:***Table 1: Acres Burned by Watershed*

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
180400090802	Reed Creek	24,526.8	747.9	3%
180400090405	Lower Cherry Creek	24,383.2	30.4	<1%
180400091001	Jawbone Creek- Tuolumne River	27,628.9	125.5	<1%
180400090404	Upper Cherry Creek	16,343.7	201.6	1%
180400090403	West Fork Cherry Creek	26,149.4	51.4	<1%

**N. Total Acres Burned:***Table 2: Total Acres Burned by Ownership*

OWNERSHIP	ACRES
NFS	1,163
OTHER FEDERAL (LIST AGENCY AND ACRES)	
STATE	
PRIVATE	
TOTAL	1,163

**O. Vegetation Types:** Sierra mixed conifer, Montane chaparral

**P. Dominant Soils:** Gerle family (granitic glacial debris), and McCarthy family (volcanic derived)

**Q. Geologic Types:** Granodiorite of Poopenaut Valley, volcanic deposits (disaster Peak formation)

**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	0.0
INTERMITTENT	1.8
EPHEMERAL	3.3
OTHER (DEFINE)	n/a

**S. Transportation System:**

**Trails:** National Forest (miles): 0.25

Other (miles): n/a

**Roads:** National Forest (miles): 13.2

Other (miles): 0.25 Unclassified Road

**PART III - WATERSHED CONDITION****A. Burn Severity (acres):**

The 87 acres of moderate and high severity were re-burned pockets from the 2013 Rim fire, where there was high overstory mortality, heavy dead and down wood, and dense regrowth of deerbrush. The remainder reburned at low burn severity. Nearly all of the Bone fire was within the perimeter of the 2013 Rim fire.

*Table 4: Burn Severity Acres by Ownership*

Soil Burn Severity	NFS	Other Federal (List Agency)	State	Private	Total	% within the Fire Perimeter
Unburned	624				624	54%
Low	452				452	39%
Moderate	82				82	7%
High	5				5	0%
Total	1,163				1,163	100%

**B. Water-Repellent Soil (acres): 10 acres**

Water repellent soils were very uncommon in the Bone fire, found only under fully consumed down logs and small patches of dense chaparral regrowth in the footprint of the 2013 Rim fire.

**C. Soil Erosion Hazard Rating:**

Very High: 4.3 acres

High: 421 acres

Moderate: 583 acres

Low: 148 acres

Not rated (rock outcrop): 7 acres

**D. Erosion Potential:**

Erosion modeling was not performed for this fire due to limited VARs. Most of the fire (93%) was gentle, low burn severity or unburned, and good ground cover remains intact or has only patchy areas of forest floor consumption. Erosion potential in these areas is very similar to background levels. The fire was early season, burning mid-June to Mid-July, and in the two patches of burn with moderate and high soil burn severity vegetative recovery has begun. Erosion potential is greater than background levels in these areas of moderate and high soil burn severity, but not enough to significantly impact soil productivity.

**E. Sediment Potential:**

The sediment potential is unchanged or only slightly elevated above normal conditions. Burn severity is primarily low and unburned along mapped streams, leaving a well-vegetated buffer strip along most streambanks. There is one mapped ephemeral drainage which flows through the southern moderate patch. While this stream channel has the greatest potential to transport sediment downstream, the drainage area is a small fraction of the Reynolds Creek watershed, so sediment increases should be minimal at the watershed scale. While smaller drainages within the fire area may see some bulking with fine sediment, ash, and floatable debris in and downstream of the burned area, these impacts are anticipated to be minor and not impact beneficial uses of water.

**F. Estimated Vegetative Recovery Period (years):**

The Bone fire was an early season fire (mid-June to mid-July) in an area with good soil moisture conditions. This has led to rapid understory forb recovery in late summer and early fall. Additional recovery of early successional forbs and shrubs is anticipated in the first few years in areas of low soil burn severity, as there was minimal overstory mortality and only patchy areas of forest floor consumption. The two patches of moderate/high soil burn severity are in areas where the 2013 Rim Fire had high vegetation mortality. This reburned area, approximately 80 acres in size, is anticipated to take longer to recover, approximately 10-20 years.

**G. Estimated Hydrologic Response (brief description):**

Hydrologic modeling was not performed for this fire due to limited VARs and overall low soil burn severity, with only 7% of the fire area (87 acres) moderate or high severity. An intermittent stream runs between the two moderate severity patches and an ephemeral stream flows out of the southern moderate severity patch into the intermittent stream. While the watershed of the intermittent stream may see slightly elevated flows, these increased flows would quickly reach Reynolds Creek, where they would be diluted by this much larger watershed.

## **PART V - SUMMARY OF ANALYSIS**

**Introduction/Background**

Spatial lightning strike maps indicate that the Bone Fire was caused by lightning on June 15, 2023. Smoke and fire behavior took a while to develop and road access was delayed by melting snow. The wildfire was located in the pre-planned Cherry North Prescribed Burn Unit, and thus was managed to achieve multiple resource objectives, including restoring natural fire return intervals, increasing forest resiliency, and aiding in reducing catastrophic wildfire risk to communities. While a Burned Area Reflectance Classification (BARC) satellite imagery map was not requested from the Geospatial Technology and Applications Center (GTAC), it was close enough in proximity to the Quarry Fire that the Quarry Fire BARC map included the Bone Fire. The Forest BAER Coordinator/ Bone Fire Team Leader coordinated with local resource specialists and determined that a full BAER team was not needed and that no BAER funds would be requested.

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

Table 5: Critical Value Matrix

Probability of Damage or Loss	Magnitude of Consequences		
	Major	Moderate	Minor
	<b>RISK</b>		
Very Likely	<b>Very High</b>	<b>Very High</b>	<b>Low</b>
Likely	<b>Very High</b>	<b>High</b>	<b>Low</b>
Possible	<b>High</b>	<b>Intermediate</b>	<b>Low</b>
Unlikely	<b>Intermediate</b>	<b>Low</b>	<b>Very Low</b>

**1. Human Life and Safety (HLS):**

- a. Post-fire flood flows are not anticipated to be significantly higher than pre-fire conditions and there are minimal stream crossings or values at risk near drainages below the fire. Thus the risk of debris flows and sediment flows are not substantially elevated beyond normal levels.

Probability: Unlikely Magnitude: Major Risk: **Intermediate**

- b. Hazard trees are the primary threat to HLS in the Bone Fire. Trees along National Forest System road 2N05Y had high vegetation mortality following the 2013 Rim Fire. The re-burn of this area in the Bone Fire has weakened the standing dead trees. The number of snags with poor integrity poses a risk to forest user's life and safety.

Probability: Possible Magnitude: Major Risk: **High**

**2. Property (P):** National Forest system roads are the only possible property value at risk within the Bone Fire. However, due to the low expected watershed response, the BAER team does not expect significant damage potential to road infrastructure.

Probability: Possible Magnitude: Minor Risk: **Low**

**3. Natural Resources (NR):** Native Plant Communities: Fireline construction was limited due to use of roads as firelines. Due to the limited amount of fireline construction, small fire acreage, and no known direct disturbance to existing weed populations, the risk of weed spread is relatively minor. No noxious weed Early Detection Rapid Response (EDRR) is recommended.

Probability: Unlikely Magnitude: Moderate Risk: **Low**

- b. Hydrology and Soil Productivity: The erosion and hydrologic response in the Bone Fire are expected to be mild, with only minor increases above pre-fire conditions. Erosion and sedimentation will occur but are not significant enough to threaten beneficial uses of water or decrease soil productivity.

Probability: Unlikely Magnitude: Minor Risk: **Very Low**

- c. Threatened and Endangered Species (aquatics): Stanislaus National Forest Aquatic Biologist, Steve Holdeman, indicated that there was no suitable or occupied habitat for Threatened or Endangered Species in the Bone Fire.

Probability: Unlikely Magnitude: Minor Risk: **Very Low**

- d. Threatened and Endangered Species (botany): The Quarry Fire burn area is lower than the expected elevation of the Federally Threatened species, *Pinus albicaulis* (white bark pine), on the Stanislaus National Forest. No other Federally listed Threatened, Endangered, or Proposed plant species or their designated critical habitat have potential to occur in the burn area.

Probability: Unlikely Magnitude: Minor Risk: **Very Low**

**4. Cultural and Heritage Resources:** Groveland District Archaeologist, Jim Moak, was consulted about post-fire threats to heritage resources. The Bone Fire was located in the pre-planned Cherry North Prescribed Burn Unit. Cultural and heritage resources were considered in planning the prescribed fire, and based on the BAER team's assessment of the limited watershed response, he thought there was not a need to perform a full BAER assessment of heritage resources. Additionally, heritage READs were present on the fire and worked with the incident management team to mitigate direct effects to heritage resources from suppression and backburning, and indirect impacts from the fire. Thus, the risk of damage or loss was not substantially altered due to changed conditions caused by the fire.

Probability: Unlikely Magnitude: Minor Risk: **Very Low**

**B. Emergency Treatment Objectives:** Human Life and Safety: Risks to Forest users from hazard trees has already been partially mitigated with BAER warning signs from the STF BAER cache posted on 2N05A. Due to its high elevation, the road is expected to be closed by snow in winter 2023/2024. Hazard trees will be allowed to fall naturally over winter and the road will be re-assessed in spring 2024 to determine if there are additional needs to protect human life and safety.



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

**Land:** Not applicable  
**Channel:** Not applicable  
**Roads/Trails:** Not applicable  
**Protection/Safety:** 100% (warning signs currently in place)

**D. Probability of Treatment Success**

Table 6: Probability of Treatment Success

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

**E. Cost of No-Action (Including Loss):** N/A – Human life value

**F. Cost of Selected Alternative (Including Loss):** \$0

**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 7: BAER Team Members by Skill

Skill	Team Member Name
Team Lead(s)	Curtis Kvamme

<b>Skill</b>	<b>Team Member Name</b>
<i>Soils</i>	Curtis Kvamme
<i>Hydrology</i>	Tracy Weddle
<i>Engineering</i>	
<i>GIS</i>	
<i>Archaeology</i>	
<i>Weeds</i>	
<i>Recreation</i>	
<i>Other</i>	

**H. Treatment Narrative:**

**Land Treatments:** No treatments proposed

**Channel Treatments:** No treatments proposed

**Roads and Trail Treatments:** No treatments proposed

**Protection/Safety Treatments:** To protect human life and safety from falling snags along 2N05Y, a BAER hazard warning sign has been posted before users enter the reburn area with hazard trees. Most of the imminent hazards are expected to fall through the fall and winter months when the road is closed due to snow levels. The hazard condition will be reassessed in the spring to determine if primary hazards have fallen naturally. Any proposed treatment would be forest responsibility, not a BAER proposal. No treatment funding is requested.

**I. Monitoring Narrative:** No monitoring of treatments is proposed

**PART VI – EMERGENCY STABILIZATION TREATMENTS AND SOURCE OF FUNDS**

Line Items	Units	Unit Cost	NFS Lands		Other \$	Other Lands				All Total \$
			# of Units	BAER \$		# of units	Fed \$	# of Units	Non Fed \$	
<b>A. Land Treatments</b>										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Land Treatments</i>				\$0	\$0		\$0		\$0	\$0
<b>B. Channel Treatments</b>										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Channel Treatments</i>				\$0	\$0		\$0		\$0	\$0
<b>C. Road and Trails</b>										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Road and Trails</i>				\$0	\$0		\$0		\$0	\$0
<b>D. Protection/Safety</b>										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Protection/Safety</i>				\$0	\$0		\$0		\$0	\$0
<b>E. BAER Evaluation</b>										
Initial Assessment	Report	\$416	1	\$416	\$0		\$0		\$0	\$416
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				---	\$0		\$0		\$0	\$0
<i>Subtotal Evaluation</i>				\$416	\$0		\$0		\$0	\$416
<b>F. Monitoring</b>										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Monitoring</i>				\$0	\$0		\$0		\$0	\$0
<b>G. Totals</b>				\$0	\$0		\$0		\$0	\$416
Previously approved										
Total for this request				\$0						

**PART VII - APPROVALS**

1.   11/15/23  
 Forest Supervisor Date