

Date of Report: 4/13/2021**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: Long Branch****B. Fire Number: 2021-TNCNF-000143****C. State: TN****D. County: Monroe****E. Region: 08****F. Forest: Cherokee****G. District: 04 (Tellico)****H. Fire Incident Job Code: P8NY4K****I. Date Fire Started: 04/20/2021****J. Date Fire Contained: 05/07/2021****K. Suppression Cost:****L. Fire Suppression Damages Repaired with Suppression Funds (estimates):**

1. Fireline repaired (miles): 1.41 miles of dozer line, 0.46 miles of hand line
2. Other (identify):

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

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
060102040301	North River	11,916.35	797.3	6.69
060102040305	Upper Tellico River	40,878.14	86.12	0.21

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

OWNERSHIP	ACRES
NFS	884.5

OWNERSHIP	ACRES
OTHER FEDERAL (LIST AGENCY AND ACRES)	
STATE	
PRIVATE	
TOTAL	

O. Vegetation Types: Mixed hardwood and pine**P. Dominant Soils:**

Map unit name	Classification	Acres in Burned Area	Percent of Burned Area
Brookshire loam, 20 to 40 percent slopes	Coarse-loamy, mixed, mesic Umbric Dystrochrepts	288.9	32.7%
Ditney loam, 25 to 60 percent slopes	Coarse-loamy, mixed, mesic Typic Dystrochrepts	328.0	37.1%
Sylco channery silt loam, 25 to 65 percent slopes	Loamy-skeletal, mixed, mesic Typic Dystrochrepts	266.5	30.2%

Q. Geologic Types: Precambrian graywacke and arkose**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	4.20
INTERMITTENT	1.72
EPHEMERAL	0.48
OTHER (DEFINE)	

S. Transportation System:

Trails: National Forest (miles): 0 Other (miles):
 Roads: National Forest (miles): 2.72 Other (miles):

PART III - WATERSHED CONDITION**A. Burn Severity (acres):***Table 4: Burn Severity Acres by Ownership*

Soil Burn Severity	NFS	Other Federal (List Agency)	State	Private	Total	% within the Fire Perimeter
Unburned						
Low	442					
Moderate	221					
High	221					
Total	884					

B. Water-Repellent Soil (acres): 331 ac.**C. Soil Erosion Hazard Rating:** Severe erosion hazard rating for all map units (K factors of 0.2 – 0.32)**D. Erosion Potential:**

- E. **High burn severity:** 22.37 tons per acre in first year, decreasing to 17 tons per acre in the second year, and 10 tons per acre in the third year

Moderate Burn Severity: 19 tons per acre in the first year, decreasing to 14.2 tons per acre in the second year, and 6.6 tons per acre in the third year.

- F. **Sediment Potential:** 6,284 cu yds per sq. mile.

- F. **Estimated Vegetative Recovery Period (years):** 3 to 5 years

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

A 10-yr. return interval storm of 1 hr. duration could produce up to 2.41 inches of stormwater runoff from high burn severity in the first year. A 2-yr. return interval storm of 1 hr. duration could produce 1.43 inches of stormwater runoff from high burn severity areas.

A 10-yr. return interval storm of 1 hr. duration could produce up to 2.16 inches of stormwater runoff from moderate burn severity in the first year. A 2-yr. return interval storm of 1 hr. duration could produce 1.31 inches of stormwater runoff from moderate burn severity areas.

PART V - SUMMARY OF ANALYSIS

Introduction/Background

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

Table 5: 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

- Human Life and Safety (HLS):** Probability of loss of human life is possible and the magnitude of consequences would be major, resulting in a high risk to human life and safety. Increased runoff from the burned area could increase storm flows downstream of the burned area, in low-lying areas below the burned area and in the North River or tributaries originating from within the fire scar, such as Long Branch Creek. Forest visitors should be made aware of risks of increased stormflows and flooding within and proximal to the Long Branch Fire burned area.
- Property (P):** The probability of damage or loss of Forest Service property is possible and the magnitude of consequences would be moderate, resulting in an intermediate risk to property. There appears to be minimal infrastructure in close proximity to the burned area other than Forest roads. Forest Service roads below the fire are at risk of washing and stream crossing culverts could become obstructed by debris, resulting in stormflows damaging road infrastructure.
- Natural Resources (NR):** The probability of damage or loss of natural resources is likely and the magnitude of consequences would be moderate, resulting in a high risk to natural resources. There are non-native invasive plant species near the burned area that could now propagate readily within the burned area, increasing the risk of invasion of species such as tall fescue and Autumn olive.
- Cultural and Heritage Resources:** The probability of damage or loss of cultural resources is possible, with the magnitude of consequences being moderate, resulting in an intermediate risk of damage or loss of cultural resources. The risk is that resources could be mobilized and carried away in stormwater runoff or displaced from their current locations, resulting in difficulty in understanding

and interpreting patterns of occupancy and use by prehistoric indigenous people or understanding occupancy and use by post-European settlers.

- B. Emergency Treatment Objectives:** 1) Protect human life and safety by informing the public about post-wildfire watershed response, burned trees that could fall on visitors, etc. 2) Prevent undesirable loss of native vegetation communities through early detection and rapid response of non-native invasive plant species (NNIS). 3) Conduct storm patrols following significant storm events to monitor post-wildfire effect to Forest Service road infrastructure.

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

Land: The damaging event for non-native invasive plants is seed set or root propagation. Surveying for the presence of, and treating infestations of NNIS species has proven to be a successful mitigation strategy to prevent adverse effects of NNIS species to native plant communities.

Channel: None recommended

Roads/Trails: None recommended

Protection/Safety: Storm patrols have proven very effective in rapidly detecting post-storm response to Forest Service transportation infrastructure. Storm patrol for first few storm events is recommended.

D. Probability of Treatment Success

Table 6: Probability of Treatment Success

	1 year after treatment	3 years after treatment	5 years after treatment
Land	75	85	90
Channel			
Roads/Trails			
Protection/Safety	80	85	95

E. Cost of No-Action (Including Loss): In the absence of treatment of NNIS species within and adjacent to the burned area, it is reasonable to expect populations of NNIS to grow and invade existing native plant communities. It is therefore reasonable to expect that the cost of NNIS treatments would increase over time as evidenced by National Forests throughout the U.S. that have very active and costly NNIS programs. The cost of future NNIS mitigation within and adjacent to the Long Branch Fire burned area cannot be predicted with certainty, but a cost of \$50.00 per acre to survey and treat infestations (a reasonable cost) would be greater than \$40,000.

F. Cost of Selected Alternative (Including Loss): \$14,000

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Christopher "Kit" MacDonald

Email: christopher.macdonald@usda.gov **Phone(s)** 540-589-8973

Forest BAER Coordinator: Ali Reddington

Email: allison.l.reddington@usda.gov **Phone(s):** 423-476-9742

Team Members: Table 7: BAER Team Members by Skill

Skill	Team Member Name
Team Lead(s)	Kit MacDonald

Skill	Team Member Name
<i>Soils</i>	Kit MacDonald
<i>Hydrology</i>	Kit MacDonald
<i>Engineering</i>	Brett Yaw
<i>GIS</i>	Kit MacDonald
<i>Archaeology</i>	
<i>Weeds</i>	Mark Pistrang
<i>Recreation</i>	
<i>Other</i>	

H. **Treatment Narrative:** Invasive plants are harmful non-native plants that are able to establish on many types of sites, grow and expand quickly, and whose introduction or expansion causes or is likely to cause harm to human health, economic or environmental harm, such as disrupting plant communities or ecosystems. Another category of unwanted plants, which may include native plants, are plants that appear on the Federal and/or State Noxious Weed Lists. The recommendation is to survey for the presence of, and treat any infestations found in accordance with the BAER Guidance Paper on Invasive Plant Threats.

I.

Land Treatments: Survey and treat NNIS species within and adjacent to the burned area to prevent spread of infestations (i.e., Early Detection and Rapid Response)

Channel Treatments: None

Roads and Trail Treatments: None

Protection/Safety Treatments: Storm Patrol following significant precipitation events for the first year.

I. **Monitoring Narrative:** Monitoring vegetation recovery and stream and watershed condition for the next calendar year is recommended. Natural recovery, for the most part will be sufficient to mitigate adverse effects to forest resources. Consider stream stabilization measures if instability is observed and forest restoration treatments if needed. Road stream crossings should be monitored as part of the storm patrol and any culvert or stream crossing obstructions should be addressed immediately.

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 \$	
A. Land Treatments										
NNIS EDRR	ac	40	250	\$10,000	\$0		\$0		\$0	\$10,000
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Land Treatments</i>				\$10,000	\$0		\$0		\$0	\$10,000
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
<i>Subtotal Channel Treatments</i>				\$0	\$0		\$0		\$0	\$0
C. Road and Trails										
				\$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
D. Protection/Safety										
Storm Patrol	event	500	8	\$4,000	\$0		\$0		\$0	\$4,000
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Protection/Safety</i>				\$4,000	\$0		\$0		\$0	\$4,000
E. BAER Evaluation										
Initial Assessment	Report	\$360	1	---	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				---	\$0		\$0		\$0	\$0
<i>Subtotal Evaluation</i>				\$0	\$0		\$0		\$0	\$0
F. Monitoring										
				\$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
G. Totals				\$14,000	\$0		\$0		\$0	\$14,000
Previously approved										
Total for this request				\$14,000						

PART VII - APPROVALS


1. _____
Forest Supervisor

5/24/2021
Date