

**Date of Report:** June 14, 2022

Revised June 22, 2022

**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:** Bear Trap**B. Fire Number:** NM-CIF-000138**C. State:** NM**D. County:** Socorro**E. Region:** R3**F. Forest:** Cibola National Forest**G. District:** Magdalena**H. Fire Incident Job Code:** P3 PLQ8 (0303)**I. Date Fire Started:** 05/01/2022**J. Date Fire Contained:** 06/08/2022**K. Suppression Cost:** \$19M**L. Fire Suppression Damages Repaired with Suppression Funds (estimates):**

- Fireline repaired (miles):** 17.4 miles (to date)
- Other (identify):**

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

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
130202110101	Headwaters East Red Canyon	33437	316	0.9%
130202110102	Outlet East Red Canyon	28890	56	0.2%
130202110201	Rock Springs-Milligan Gultch	37835	19	0.1%
130202110204	Big Rosa Canyon	25441	222	0.9%
130202110602	Big Pigeon Canyon-Alamosa Creek	32613	11323	35%
130202110603	Little Pigeon Canyon-Alamosa Creek	22527	26	0.1%
130202110604	Whitewater Canyon-Alamosa Creek	27662	10399	38%
130202110605	West Red Canyon	28440	6136	22%

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

OWNERSHIP	ACRES
NFS	38,266
OTHER FEDERAL (LIST AGENCY AND ACRES)	
STATE	
PRIVATE	
TOTAL	38,266

**O. Vegetation Types:** Mixed conifer and ponderosa pine forests, and pinyon-juniper woodlands

**P. Dominant Soils:** Lithic Eutrudepts and Vitrandic Haplustepts, Hapludalfs, and Haplustalfs

**Q. Geologic Types:** Rhyolite and Tuff

**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
INTERMITTENT	30
EPHEMERAL	277
OTHER (DEFINE)	0

**S. Transportation System:**

**Trails:** National Forest (miles): 12.5 miles      Other (miles):

**Roads:** National Forest (miles): 94 miles      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	9,776				9,776	26%
Low	25,223				25,223	66%
Moderate	3,167				3,167	8%
High	100				100	<1%
Total	38,266				38,266	

**B. Water-Repellent Soil (acres):** 1144 acres

**C. Soil Erosion Hazard Rating:** Slight 6,231  
Moderate 21,376  
Severe 10,618

**D. Erosion Potential:** Erosion potential ranges from less than one ton per acre in areas of low burn severity up to 42 tons per acre in areas of high burn severity.

**E. Sediment Potential:** Sediment potential ranges from less than one to 1,776 cubic yards per square mile in the first year following the fire. Weighted by soil burn severity (SBS) area, the average sediment potential rate for the Bear Trap Fire is 124 cubic yards per square mile.

**F. Estimated Vegetative Recovery Period (years): 3 to 5 years****G. Estimated Hydrologic Response (brief description):**

The Bear Trap Fire occurred within the Headwaters Alamosa Creek 10<sup>th</sup> code (HUC 1302021106) watershed, and within the eight 6<sup>th</sup> code subwatersheds listed above. No municipal watersheds are affected. The result was small patches of moderate and high soil burn severity widely dispersed and usually near the tops of the drainages with large areas of low soil burn severity.

Storm runoff from the fire will likely cause flooding on ephemeral and intermittent streams locally, however those effects will decrease with distance downstream and will likely contribute a smaller overall percentage of peak flow discharge at or near the watershed (5<sup>th</sup> code) outlet. There is however a high to very high risk to health and safety within the drainages along roads within the fire perimeter during flooding and debris flows until sufficient recovery has occurred.

No perennial water bodies are threatened, except springs and seeps which mostly emerge from existing ephemeral/intermittent channels in valley bottoms (Rheocrene spring e.g., Eagle Spring), are expected to be affected.

Wildcat Modeling results:

Subwatershed	12 HUC Acres	Pour-Point/Critical Value	Acres above Pour-Point	Pre-Fire (cfs)	Post Fire (cfs)	% Change
West Red Canyon	28,440	96 RD Crossing W. Red	3,832	804	1,381	<b>72</b>
Big Pigeon Canyon-Alamosa Ck.	32,613	Bitter Tank	1,085	133	284	<b>113</b>
West Red Canyon	28,440	478 RD Crossing W. Red Canyon	20,205	3,870	5,210	<b>35</b>
West Red Canyon	28,440	3 Culverts 478 RD W. Red Canyon	2,412	610	1,186	<b>94.5</b>
Big Pigeon Canyon-Alamosa Ck.	32,613	549 Culverts	1,866	398	733	<b>85</b>
Big Pigeon Canyon-Alamosa Ck.	32,613	Bear Trap CG	739	283	516	<b>82</b>

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

**Introduction/Background**

The Bear Trap Fire was reported as 100 acres on May 1, 2022 at 1200 hours in Bear Trap Canyon, San Mateo Mountains, Magdalena Ranger District, Cibola National Forest & National Grasslands. The fire is approximately 22 miles southwest of Magdalena, New Mexico. It burned in mixed juniper and ponderosa pine timber and reached a fire footprint of 38,266 acres at the time of containment on June 8, 2022.

**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):**

Human life and safety is at risk on NFS lands from threats associated with post-fire increased potential for flooding and debris flows, rockfall, and loss of egress/access throughout the burned area particularly with roads, trails, campgrounds, and private inholdings.

Most roads within the fire area have post-fire safety concerns that need to be addressed to allow for safe travel. Treatments such as warning and regulatory signage, temporary closures, improved road drainage, and recreational site waste containment will be critical in protecting human life and safety at locations with unacceptable risks.

## **2. Property (P):**

There are 94 miles of NFS roads and 12.5 miles of NFS trails within the fire, some of which have unacceptable risks of damage or loss due to high and moderate post-fire burn severities upslope. Many of the roads are located in the bottom of the drainages and threats include increased runoff, erosion, rockfall, flooding, and localized debris flows. There are two developed camp sites, a fence, and water developments that have unacceptable risks from potential erosion and flooding. Treatments such as storm proofing, storm inspection and response, installation of critical dips and a low water crossing, and infrastructure protection will be critical in protecting property with unacceptable risks.

## **3. Natural Resources (NR) Native and Naturalized Plant Communities:**

Native plant communities within the fire area where invasive species or noxious weeds are absent are at risk of invasion by documented and newly introduced non-native invasive species.

Unacceptable risk exists in areas that burned with high and moderate intensity and soil burn severity, or within and along areas disturbed by suppression activities. Noxious weed infestations pose a serious threat to the composition, structure, diversity, and function of native plant communities. These disturbed areas are now highly vulnerable to noxious weed spread from adjacent sources and the introduction of new invaders brought in by suppression equipment and activities. EDRR treatments in high burn severity and high priority Mexican Spotted Owl PAC habitat are proposed to reduce this risk.

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

Important cultural and heritage resources include rock shelters, historic cabins, and fire lookouts. Many of these sites are located above the creek bed on terraces or on top of ridges and are not at risk of post-fire damage. For implementation of BAER treatments (ie roads, infrastructure protection, signage post installation) it is essential to ensure cultural resource compliance where appropriate to address potential effects.

## **B. Emergency Treatment Objectives:**

### **Proposed Land Treatments**

The objective of the land treatments is to promote and protect native and naturalized vegetative recovery by reducing the spread of known and newly introduced populations of noxious weeds (**L1a, L1b**). No active land treatments are recommended for long term soil productivity and hydrologic function; natural recovery is the recommended action.

### **Proposed Road and Trail Treatments**

The objectives of the road and trail treatments are to:

1. Protect road investments from becoming impassible and damaged from increased post-fire runoff (**RT1a, RT1b, RT2, RT4, RT11, RT12**).
2. Protect water development invests from increased post-fire runoff (**RT12**).
3. Protect function of cattleguards by reducing sedimentation from post-fire runoff (**RT15**).

### **Proposed Protection and Safety Treatments**

The objectives of the protection and safety treatments are to:

1. Protect human life and safety by raising awareness through the posting of hazard warning signs (**P1a, P1b**).

2. Protect human life and safety by installing gates on high use areas that have unacceptable risks **(P2)**.
3. Protect human life and safety from hazardous human waste exposure **(P5)**.
4. Protect Forest Service infrastructure investments from increased post-fire runoff **(P6a, P6b, P6c)**.

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

**Land:** NA- EDRR not influenced by damaging storm or event

**Channel:** NA

**Roads/Trails:** 75%

**Protection/Safety:** 90%

**D. Probability of Treatment Success**

*Table 6: Probability of Treatment Success*

	<b>1 year after treatment</b>	<b>3 years after treatment</b>	<b>5 years after treatment</b>
<b>Land</b>	75	85	90
<b>Channel</b>	NA	NA	NA
<b>Roads/Trails</b>	85	90	90
<b>Protection/Safety</b>	90	90	90

**E. Cost of No-Action (Including Loss): \$467,742** This value does not include loss of human life and safety, but does include potential damage and losses to roads, campgrounds, infrastructure.

**F. Cost of Selected Alternative (Including Loss): \$218,280**

**G. Skills Represented on Burned-Area Survey Team:**

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

**Team Leader:** Liz Schnackenberg, Alex Rozin (t)

**Email:** elizabeth.schnackenberg@usda.gov, alexandra.rozin@usda.gov      **Phone(s)** 503-956-5033

**Forest BAER Coordinator:** Rob Arlowe

**Email:** robert.arlowe.usda.gov      **Phone(s):** 505-346-3849

**Team Members:** *Table 7: BAER Team Members by Skill*

<b>Skill</b>	<b>Team Member Name</b>
<b>Team Lead(s)</b>	Liz Schnackenberg, Alex Rozin (t)
<b>Soils</b>	Nessa Rasmussen
<b>Hydrology</b>	John Rihs
<b>Engineering</b>	Cait Woods, Jamos Schmidt (t), Hampton Coogle (t)
<b>GIS</b>	Daniel Levrier
<b>Archaeology</b>	Blair Mills
<b>Weeds</b>	Jessee Montoya
<b>Recreation</b>	Ben Lara
<b>Other</b>	Megan Campbell (consulted)

**H. Treatment Narrative:**

**Land Treatments:**

L1a. Invasives EDRR: Early Detection and Rapid Response (EDRR) treatments of high priority non-native invasive plant species are proposed in moderate and high burn severity areas that are also in proximity to Mexican Spotted Owl PACs that are currently free of any known invasive plants. Rapid spread of non-native

plants in newly burned PACs could degrade the habitat. EDRR is proposed on less than 1% of the NFS acres within the fire perimeter.

L1b. Invasives EDRR – Suppression: Beyond the Incident Suppression Repair efforts, BAER EDRR for dozer lines and roads disturbed by suppression activities will be essential to protect native and naturalized plant communities. Limited weed wash facilities were available while the fire was being suppressed, leading to a high probability that heavy equipment and other resources brought in invasive plants from outside the Cibola National Forest.

<b>A. Land Treatments</b>				
L1a. Invasives EDRR	Acres	250	118	\$29,500
L1b. Invasives EDRR - Suppression	Acres	250	39	\$9,750
TOTAL				\$39,250

### Roads and Trail Treatments:

Proposed road treatments are designed to improve drainage and remove higher levels of runoff from the roads before extensive damage or loss of infrastructure can occur. The 36.4 miles of impacted roads in the area of analysis are easily accessible and should be treated quickly to prevent further degradation and water and sediment movement. Inspections during the first winter season to monitor treatment effectiveness after major weather events are also recommended.

<b>C. Road and Trails</b>				
RT1a-1. Road Drainage - Clean Drainage Structure	Each	250	2	\$500
RT1a-2. Road Drainage - Clean Culvert	Each	350	2	\$700
RT1b-1. Road Drainage - install lead off ditch	Each	600	3	\$1,800
RT1b-2. Road Drainage - install ditch	Each	350	1	\$350
RT1b-3. Road Drainage - Install drain dip	Each	350	6	\$2,100
RT2. Storm Inspection and Response	Mile	700	36	\$25,480
RT4. Armored Dip	Each	500	8	\$4,000
RT11. Stream Crossing Protection	Each	2,500	2	\$5,000
RT12. Fill Slope Stabilization	Cubic Yard	160	30	\$4,800
RT15. Cattleguard Protection	Each	350	9	\$3,150
RT16. Implementation Team	Days	413	20	\$8,250
TOTAL				\$56,130

### Protection/Safety Treatments:

The purpose of "Burned Area Warning Signs" as well as gate installations is to reduce the risks to human life and safety by alerting users to existing threats while traveling the within the areas susceptible to flooding, debris flows, hazards trees, and all other risks attributable to post fire events on the landscape. Installation of Gates is to inhibit movement within the burned area and prevent risk to human life and safety.

Primary treatments are for the mitigation of life and safety. Road, trail, campgrounds, and day use area closures through the high flow event seasons, when most debris flows, flash floods, and high-risk snags should fall, will mitigate most of the threat to life and safety of forest visitors who will use the roads, recreation

sites and trails and impacted by the Bear Trap fire. Closures to the burned area will help reduce risk exposure to visitors until such a time where the sites are not under elevated threat of debris flows or flash floods.

<b>D. Protection/Safety</b>				
P1a. Road Hazard Sign	Each	400	12	\$4,800
P1b-1. Camp Hazard Sign	Each	200	3	\$600
P1b-2. Trail Hazard Sign	Each	200	6	\$1,200
P2. Road Closure Device	Each	10,000	10	\$100,000
P5. Hazardous Materials	Each	1,000	2	\$2,000
P6a. Infrastructure Protection - Earthen Tank	Cubic Yard	160	30	\$4,800
P6b. Infrastructure Protection - Eagle Springs	Site	7,500	1	\$7,500
P6c. Infrastructure Protection - Well	Each	2,000	1	\$2,000
P6d. Sign Implementation	Lump sum	1000	1	\$1,000
<b>TOTAL</b>				<b>\$123,900</b>

#### **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											
L1a. Invasives EDRR	Acres	250	118	\$29,500	\$0			\$0		\$0	
L1b. Invasives EDRR - Sup	Acres	250	39	\$9,750	\$0			\$0		\$0	
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Land Treatments				\$39,250	\$0			\$0		\$0	
B. Channel Treatments											
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Channel Treatments				\$0	\$0			\$0		\$0	\$0
C. Road and Trails											
RT1a-1. Road Drainage - C	Each	250	2	\$500	\$0			\$0		\$0	
RT1a-2. Road Drainage - C	Each	350	2	\$700							
RT1b-1. Road Drainage - in	Each	600	3	\$1,800							
RT1b-2. Road Drainage - in	Each	350	1	\$350							
RT1b-3. Road Drainage - In	Each	350	6	\$2,100							
RT2. Storm Inspection and	Mile	700	36	\$25,480							
RT4. Armored Dip	Each	500	8	\$4,000							
RT11. Stream Crossing Pro	Each	2,500	2	\$5,000							
RT12. Fill Slope Stabilizati	Cubic Ya	160	30	\$4,800							
RT15. Cattleguard Protecti	Each	350	9	\$3,150	\$0			\$0		\$0	
RT16. Implementation Tear	Days	413	20	\$8,250							
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Road and Trails				\$56,130	\$0			\$0		\$0	\$0
D. Protection/Safety											
P1a. Road Hazard Sign	Each	400	12	\$4,800	\$0			\$0		\$0	
P1b-1. Camp Hazard Sign	Each	200	3	\$600	\$0			\$0		\$0	
P1b-2. Trail Hazard Sign	Each	200	6	\$1,200							
P2. Road Closure Device	Each	10,000	10	\$100,000							
P5. Hazardous Materials	Each	1,000	2	\$2,000							
P6a. Infrastructure Protect	Each	4,800	1	\$4,800							
P6b. Infrastructure Protect	Site	7,500	1	\$7,500							
P6c. Infrastructure Protect	Each	2,000	1	\$2,000							
P6d. Sign Implementation	lump sum	1,000	1	\$1,000							
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Protection/Safety				\$123,900	\$0			\$0		\$0	\$0
E. BAER Evaluation											
Initial Assessment	Report			---	\$0			\$0		\$0	\$0
Insert new items above this line!				---	\$0			\$0		\$0	\$0
Subtotal Evaluation				\$0	\$0			\$0		\$0	\$0
F. Monitoring											
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Monitoring				\$0	\$0			\$0		\$0	\$0
G. Totals				\$219,280	\$0			\$0		\$0	\$0
Previously approved											

**PART VII - APPROVALS**



1. \_\_\_\_\_  
Forest Supervisor Date