

Date of Report: 5/31/2022 (Revised 6/2/2022)**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 # [1 - Phase 1 \(Gallinas and Tecolote Watersheds\)](#)
 - Updating the initial funding request based on more accurate site data or design analysis

PART II - BURNED-AREA DESCRIPTION**A. Fire Name: Hermits Peak/Calf Canyon****B. Fire Number: NM-SNF-000027/000028****C. State: NM****D. County: San Miguel, Mora, Taos****E. Region: Southwestern R3****F. Forest: Santa Fe, Carson****G. District: Pecos/Las Vegas, Camino Real****H. Fire Incident Job Code: P3PJ2G/P3PJ6J****I. Date Fire Started: 4/6/2022****J. Date Fire Contained: estimated 7/31/2022. 54% containment as of 6/1/2022****K. Suppression Cost: \$153,600,000.00 (as of 5/30/2022)****L. Fire Suppression Damages Repaired with Suppression Funds (estimates):**

1. Fireline repaired (miles): 10
2. Other (handline): 0.5

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

HUC #	Watershed Name	Total Acres	Acres Burned	% of Watershed Burned
1306000108	Headwaters Gallinas River	201,113.63	73,869	36.73%
1306000103	Tecolote Creek	181,712.98	41,628	22.91%

N. Total Acres Burned (Phase 1):*Table 2: Total Acres Burned by Ownership*

OWNERSHIP	ACRES
NFS	48,581

OWNERSHIP	ACRES
OTHER FEDERAL (LIST AGENCY AND ACRES)	0
STATE	745
PRIVATE	66,216
TOTAL	115,542

O. Vegetation Types:

The Hermits Peak and Calf Canyon fires burned through the following vegetation types:

Ponderosa Pine Forest: Ponderosa Pine forests generally occur in elevations between 6,000 and 7,500 feet. Ponderosa Pine dominates this vegetation type with common occurrences of Gambel Oak, native grasses, and forbs. Douglas Fir may be present sparingly. These forests receive approximately 56 cm of precipitation annually with more than 50% of that occurring between the months of October and March, while having a mean annual temperature of 0 – 8°C.

Dry Mixed Conifer Forest: This vegetation type is transitional between Ponderosa Pine forests and Wet mixed Conifer forests. Dry mixed conifer occurs generally above 7,500 feet or higher on southerly facing aspects. Shade intolerant trees including Ponderosa Pine and Gambel Oak are dominant, and commonly associated with mildly tolerant Douglas Fir. Dry Mixed Conifer forests have a mean annual temperature of 0 – 8 °C and receive more than 50% of their 68 cm annual precipitation between the months of October and March.

Wet Mixed Conifer Forest: Wet Mixed Conifer Forests occur at elevations between approximately 9,000 and 11,000 feet. Tree species composition includes Douglas Fir, White Pine and Quaking Aspen. Wet Mixed Conifer forests receive approximately 72 cm of precipitation annually with more than 50% occurring between the months of October and March, while having a mean annual temperature of 0 – 8 °C.

Spruce Fir Forest: This vegetation type occurs primarily in the highest elevations, generally above 9,500 feet. Douglas Fir, Engelmann Spruce, White Fir are typically the dominant tree species in the lower elevations while Englemann Spruce, Corkbark Fir, Quaking Aspen and Blue Spruce generally occupy the upper elevations. Spruce Fir forests have a mean annual temperature of 0 – 8 °C and receive more than 50% of their 76 cm annual precipitation between the months of October and March.

P. Dominant Soils:

The soils within the Hermits Peak/Calf Canyon Fire Phase 1 Fire perimeter are dominated by residuum and colluvium derived from intrusive igneous and sedimentary rock. The geologic and geomorphic setting, including weathering and edge fracturing of different layers of uplift, has played a significant role in soil development. The burned area has a complex geomorphology of geologically ancient soils derived from Precambrian granite, gneiss, and schist as well as from Mississippian and Pennsylvanian limestone, sandstone, and shale. Uplift during the Laramide Orogeny has created steep hill and mountain landforms. Deep and moderately deep Inceptisols and Alfisols with loam and sandy loam textures and moderate to severe erosion hazard rating predominate. Four Soil Subgroups - Typic Dystrochrepts, Dystric Cryochrepts, Eutric Glossoboralfs and Mollic Eutroboralfs comprise the majority of the burn area.

Dominant Soils of the Hermits Peak/Calf Canyon Phase 1 Fire Area										
TEUI Map Unit #	Landform	Surface Texture	Surface Rock Cover (%)	Parent Material	Soil Taxonomy Subgroup	Soil Depth Class	Hydrologic Soil Group	Veg Type	Soil Erosion Hazard	Percent of Burned Area

353	Hills, mountains	extremely stony sandy loam	60	Residuum, colluvium derived from granite, gneiss and quartz	Typic Dystrochrepts	Deep	A	Mixed conifer forest	Moderate	34
337	Hills, mountains	very cobbly sandy loam	40	Residuum derived from granite and quartz	Dystric Cryochrepts	Deep	A	Mixed conifer forest	Severe	18
228	Hills, mountains	very cobbly loam	35	Colluvium, residuum derived from sandstone, shale, limestone	Eutric Glossoboralfs	Mod. deep	C	Mixed conifer forest	Severe	13
275	Hills	cobbly loam	25	Residuum derived from sandstone and shale.	Mollie Eutroboralfs	Deep	D	Ponderosa pine forest	Moderate	9

Q. Geologic Types:

The geology in the Gallinas Watershed is comprised of Pennsylvanian Sandia Formation, Precambrian metemorphic rocks, Pennsylvanian and permian Madera Formation. The Espirito Santo and Terrero Formations are also present. These formations consist of schist, gneiss, granitic gneiss, sandy limestone and dolomitic limestone.

In the Tecolote Watershed, Precambrian metamorphic and igneous rocks form the cores of two southerly Rocky Mountain ridges. Precambrian crystalline rocks are exposed at the land surface in the headwaters. Surficial carbonate and calcareous rocks are also common in Upper Tecolote Creek.

R. Miles of Stream Channels by Order or Class:

Table 3: Miles of Stream Channels by Order or Class

STREAM TYPE	MILES OF STREAM NFS	MILES OF STREAM TOTAL
PERENNIAL	46.3	81.9
INTERMITTENT	265.8	291.4
EPHEMERAL	72.4	305.6
OTHER	.5	12.1

S. Transportation System:

Trails: National Forest (miles): 48.1
 Roads: National Forest (miles): 44.89

Other (miles): 0.0
 Other (miles): 8.94

PART III - WATERSHED CONDITION

A. Burn Severity (acres)¹:

Table 4: Burn Severity Acres by Ownership

Soil Burn Severity	NFS	Other Federal (List Agency)	State	Private	Total	% Within the Fire Perimeter
Unburned	5,894		28	11,212	17,134	15
Low	15,486		181	26,399	42,066	36
Moderate	15,536		104	16,328	31,968	28
High	11,665		432	12,277	24,374	21
Total	48,581		745	66,216	115,542	100

B. Water-Repellent Soil (acres):

19,433 acres (40%) of water repellent soils are estimated to occur on USFS lands in the Phase 1 Hermits Peak/Calf Canyon burned area. The majority of this acreage is classified as high soil burn severity while the remainder of water repellent conditions across Phase 1 were documented within areas of moderate soil burn severity.

C. Soil Erosion Hazard Rating:

Soil Erosion Hazard Rating (SEHR)	Acres*
Low	0
Moderate	26,311
Severe	26,416

*GIS acres approximate. SEHR –Terrestrial Ecosystem Survey of the Santa Fe National Forest (Miller, et al., 1991)

D. Erosion Potential²:

Average erosion rate across the Phase 1 fire area (moderate and high soil burn severity) is 18 tons/acre. Referencing this number alone could mask the site-specific impacts that are expected for hillslopes with high erosion potential. The Disturbed WEPP model was used to estimate post fire soil erosion rates for soil map units within the burned area of the Phase 1 assessment. Disturbed WEPP allows the user to create scenarios of various disturbances including low, moderate, and high burn severity while giving the user input options for a climate, soil texture, slope gradient, slope length, and percent ground cover (vegetative basal area, litter, surface rock). Hillslope erosion rates were calculated by Terrestrial Ecological Unit Inventory (TEUI) map unit and burn severity. Soil erosion rates are in tons per acre.

E. Sediment Potential:

Average sediment potential across the Phase 1 fire area (moderate and high soil burn severity) is 16,126 cubic yards/square mile.

F. Estimated Vegetative Recovery Period (years):

Vegetative recovery, as defined by pre-fire effective ground cover (post-fire erosion rates), and not overstory recovery, depends on many factors; including soil burn severity, vegetation type, and post-fire annual precipitation. Generally, low soil burn severity across all vegetation types will see rapid vegetative recovery within 1-3 years post-fire. Moderate and high soil burn severity within drier forest types like ponderosa pine and dry mixed conifer will respond much differently. Vegetative recovery in these forest types that experienced higher levels of soil burn severity will likely be within a 10–12-year timeframe. This is due to stand replacing fire and complete loss of soil cover. Lastly, vegetative recovery in moderate and high soil burn severity within wet forest types like wet mixed conifer and spruce-fir forests may recover more quickly than drier forest types, but recovery is dependent upon pre-fire vegetation components (e.g., aspen). This timeframe will likely be within 5–10 years due to higher levels of precipitation and soil moisture in these areas.

¹ Appendix A - Soil Burn Severity Map – Hermits Peak/Calf Canyon Phase 1

² Appendix B - Erosion Potential Map – Hermits Peak/Calf Canyon Phase 1

G. Estimated Hydrologic Response (brief description):

Areas of moderate and high severity were characterized by complete absence of vegetative ground cover. Approximately 27,201 NFS acres (56%) within the Phase 1 analysis of Hermit's Peak/Calf Canyon wildfire are characterized as having moderate and high soil burn severity which are estimated to have moderate to strong water repellency between the soil surface and a depth up to 6 cm. The majority of soils within the burned area have a hydrologic soil group of A or C, indicating a low to moderate natural potential for runoff when thoroughly wet where water transmission through the soil in an A hydrologic soil group is more permeable compared to soils characterized as a C where it is somewhat restricted. Additional effects of the fire will cause increased runoff, accelerated sheet and rill erosion throughout the fire areas, as well as the potential for rock fall and debris flows.

Large contiguous areas of moderate and high soil burn severity on NFS lands burned within mixed conifer vegetation systems. These areas will likely contribute to the elevated watershed response. Areas of particular concern for this phase of analysis include the Canovas Canyon – Gallinas Creek, Porvenir Canyon, and Cabo Lucero Creek – Tecolote Creek 6th code watersheds. Many of the modeled subbasins and catchments were predicted to have a significant increase of predicted post fire flows. Most of these areas resulted in expected increase over 100%. Model results of the Canovas Canyon – Gallinas Creek HUC12, modeled to the forest boundary, indicate a 2-year 1-hour storm (1.21") post fire would result in the equivalent of a pre fire 100-year runoff event, Porvenir Canyon's 2-year 1-hour storm (1.40") post fire would produce an equivalent pre-fire 25-year runoff event, and the three models of the headwater drainages of the Cabo Lucero Creek – Tecolote creek HUC12 indicate that a 2-year storm 1-hour storm (1.30") post fire would produce an equivalent 50-to-100-year pre fire runoff event.

According to the USGS debris flow preliminary hazard assessment ([link](#)), the primary areas of concern for debris flows (60%-80% change for a 15-minute rainfall amount with an equivalent rainfall intensity (I_{15}) – 1inch per hour) are in the Gallinas and Porvenir watersheds, specifically at the lower reaches near the forest boundary. Catchments along Burro Canyon in the upper portion of Gallinas Creek have a debris flow probability of both 60%-80% chance, as well as 80%-100% chance. Within the Porvenir Canyon watershed, the lower portion of Hollinger Canyon, before its confluence with the main drainage of Beaver creek, have debris flow probabilities of 60%-80%. The Cabo Lucero Creek – Tecolote Creek portion on Forest Service lands mostly has a debris flow probability of 40%-60% in the Capulin Canyon drainage and Blue Canyon drainage. There are sections within the lower portion of Blue Canyon with higher probabilities as well as the middle portion of Tecolote creek. Several drainages are estimated to generate sediment volumes between 1,000 – 100,000 m³ of sediment.

PART V - SUMMARY OF ANALYSIS

Introduction/Background

The Hermits Peak Fire started on April 6th, 2022 from the Las Dispensas prescribed burn on the Santa Fe National Forest - Pecos/Las Vegas Ranger District. Although forecasted weather conditions were within parameters for the prescribed fire, unexpected erratic winds in the late afternoon caused multiple spot fires that spread outside the project boundary. It was declared a wildfire at approximately 4:30 p.m. on April 6th, 2022. The fire began approximately 12 miles northwest of Las Vegas, NM at the base of Hermit Peak in the Pecos Wilderness. The Calf Canyon Fire started as a separate fire on April 19th, 2022 in the vicinity of the Gallinas Canyon Wildland Urban Interface pile burn project. Due to extreme wind conditions on April 22nd, the two fires quickly merged together. These fires are currently managed as the Hermits Peak/Calf Canyon fire. The fire is burning through mixed conifer in steep, rugged terrain. The fire is currently 315,223 acres and 50% contained (as of May 30, 2022).

Due to active fire on the western and northern flanks of the Hermits Peak/Calf Canyon fire, the BAER team assessed a subset of the whole fire perimeter. Phase 1 assesses portions of the burned area within the Headwaters Gallinas River and Tecolote Creek Watersheds. These watersheds occur in the south-eastern part of the fire perimeter. Acres reported in this BAER interim assessment are calculated from the two watersheds assessed, not the entire fire perimeter. The Phase 1 burned acres include: 48,581 acres (42%) of National

Forest System lands, 66,216 acres (57%) of private property, and 745 acres (1%) of New Mexico state lands. Within the Phase 1 burned area, 24,374 acres (21%) were high severity, 31,968 acres (28%) were moderate severity, 42,066 acres (36%) were low severity and 17,134 acres (15%) were unburned.

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

Critical Values identified during the BAER assessment that have potential to be at risk as defined in FSM 2523.1 include human life and safety of employees and public, FS property (roads, trails, administrative, recreation infrastructure), cultural resources, natural resources including Threatened and Endangered species habitat, native plant communities, soil and water resources. The BAER team evaluated the risk to these critical values in accordance with the by using the BAER risk assessment. The Hermits Peak/Calf Canyon Fire Critical Value table located in the project record.

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):

The Hermits Peak/Calf Canyon Fire area is surrounded by a number of communities that use the Santa Fe National Forest for a variety of multiple-use activities. The post-fire environment poses increased hazards to the permit holder investments, the general public, and Forest Service employees who travel, work or recreate on National Forest System lands. Fire is expected to cause increases in rock fall, debris flows, and road/trail failure at multiple locations causing a risk to human life/safety. There will be increased soil erosion along NFS road, trails, and complete loss of trail tread at certain locations, which is hazardous to human use. As a result of the fire, the probability of damage/loss of life/safety along these roads/trails is **likely/very likely**, and the magnitude of consequence of human life/safety is **major**, thus there is a **very high** risk for human life and safety in the post-fire environment.

1. **Human Life and Safety (HLS):** There is a very high risk to human life and safety on NFS lands within and immediately downstream of the burn area. The post-fire environment poses increased hazards to the permit holder investments, the general public, and Forest Service employees who travel, work or recreate on National Forest System lands. Threats to human life and safety of forest visitors and employees traveling on NFS roads and trails include falling trees and limbs, falling rocks, flash floods, debris flows, road/trail failure at multiple locations and other burned area hazards such as burnt stump holes in the prism of the road/trail. Threats downstream of the burned area on NFS lands include flash floods and debris flows. Additional threats from hazardous waste within NFS toilets and septic tanks as well as NFS infrastructure at recreation sites that are likely to be compromised during high flow events and contribute to bulking of flood flows. Hazardous material and raw sewage may be mobilized due to increased flooding of the site. There will be increased soil erosion along NFS road, trails, and complete loss of road/trail tread at certain locations, which is hazardous to human use. As a result of the fire, the probability of damage/loss of life/safety along these roads/trails is **likely/very likely**, and the magnitude of consequence of human life/safety is **major**, thus there is a **very high** risk for human life and safety in the post-fire environment. There may be an increased threat to private residences and private bridges, to several local, county and state roads, and to authorized permitted uses within and adjacent to the fire perimeter. The potential for flash flooding, debris flows, falling rocks and trees poses a threat to human life/safety as well as loss of ingress and egress to landowners if road systems and bridges are impacted. Water quality for domestic/municipal water sources may be at an increased risk from increased sedimentation and burnt hazardous material becoming mobilized and entering the streams and or leaching into the ground water. Several private residences and bridges and local, county and state roads exist within and downstream from the fire

area. Coordination and information sharing with landowners, NWS, USGS, NRCS, NM DHSEM and other emergency services is recommended.

2. Property (P):

- a. There is a very high risk to NFS wells at EV Long and El Porvenir Campgrounds. Threats to this infrastructure include flooding and debris flows. There are numerous roads and multiple recreation sites (including campgrounds, picnic sites, and trails) within the Hermits Peak/Calf Canyon fire perimeter. The fire burned along approximately 44.8 miles of road and 48 miles of trails at various soil burn severities. In total, there are 11 trails—including the popular Hermits Peak Trail—2 trailheads, and 6 developed recreation sites within the Hermits Peak/Calf Canyon fire perimeter. Multiple recreation infrastructures (picnic tables, fire rings) were affected by various soil burn severities. Several structures including the El Porvenir bridge were also burnt. Risk to Forest Service property (roads, trails, and developed recreation infrastructure) as a result of post-fire consequences varies by site. The watershed response indicates that there will be an increased risk of road/trail/developed recreation infrastructure failure due to increased flooding, erosion, and sedimentation. Woody material is expected to mobilize and flow onto roads and trails, blocking culverts and resulting in erosion and washouts. As ditches and culverts become compromised, there is an increased risk of failure with a potential for loss of the property itself.

Recreation Sites

The probability of damage/loss for the EV Long Campground is **very likely**, and the magnitude of consequence of property loss is **moderate**, thus the risk is **very high**. The probability of damage/loss for the El Porvenir Campground is **likely**, and the magnitude of consequence of property loss is **moderate**, thus the risk is **high**. The probability of damage/loss for Johnson Mesa Campground is **unlikely**, and the magnitude of consequence is **minor**, thus the risk is **low**.

The probability of damage/loss for Forest Service trails (251, 217, 247 (Beaver Creek), 210 (Blue Bell), 225 (Hermits Ridge) is **very likely**, and the magnitude of consequence of property loss is **major**, thus the risk is **very high**. The probability of damage/loss for the Trailhead at Burro Basin and the Big Pine Picnic Area is **likely**, and the magnitude of consequence is **minor**, thus the risk is **low**. The probability of damage/loss for the Oak Flats and Baker Flats Picnic Area is **very likely**, and the magnitude of consequence is **minor**, thus the risk is **low**.

There are numerous roads and multiple recreation sites (including campgrounds, picnic sites, and trails) within the Hermits Peak/Calf Canyon fire perimeter. The fire burned along approximately 44.8 miles of road and 48 miles of trails at various soil burn severities. In total, there are 11 trails—including the popular Hermits Peak Trail—2 trailheads, and 6 developed recreation sites within the Hermits Peak/Calf Canyon fire perimeter. Multiple recreation infrastructures (picnic tables, fire rings) were affected by various soil burn severities. Several structures including the El Porvenir bridge were also burnt. Risk to Forest Service property (roads, trails, and developed recreation infrastructure) as a result of post-fire consequences varies by site. The watershed response indicates that there will be an increased risk of road/trail/developed recreation infrastructure failure due to increased flooding, erosion, and sedimentation. Woody material is expected to mobilize and flow onto roads and trails, blocking culverts and resulting in erosion and washouts. As ditches and culverts become compromised, there is an increased risk of failure with a potential for loss of the property itself.

Roads

The probability of damage/loss for Maintenance Level 3 National Forest System Roads (NFSR) 18, 156, 156A, 261, and 263 is **very likely** based on the extreme changes in modeled peak flow values from pre- to post-fire and soil erosion modeling outputs. The magnitude of consequence of property loss is **major** due to the potential for substantial property damage to occur, thus the risk is **very high**.

The probability of damage/loss for non-surveyed NFSR Maintenance Level 2 roads is **very likely** due to the extreme changes in modeled peak flow values from pre- to post-fire and soil erosion modeling outputs. The

magnitude of consequence of property loss is **moderate** because moderate property damage is expected to occur, thus the risk is **very high**.

There may be an increased threat to private property and private bridges, to local, county, and state roads, and to authorized permitted water systems within and adjacent to the fire perimeter. The potential for flash flooding, debris flows, falling rocks and trees poses a threat to this property as well as loss of ingress and egress to landowners if road systems and bridges are impacted. Several private residences and bridges and local, county and state roads exist within and downstream from the fire area. Coordination and information sharing with landowners, NRCS, NWS, USGS, NMDHSEM and other emergency services is recommended.

3. Natural Resources (NR):Water used for municipal, domestic, hydropower or agricultural supply or waters with special Federal or State designations on NFS lands. (FSM 2523.1)

Municipal Water on NFS Land

Management area J within the Santa Fe National Forest Plan identifies portions of the Gallinas Creek that provides municipal water supply for several rural communities and the city of Las Vegas, NM. Emphasis is on water quality maintenance or enhancement and sustained water yield. Municipal water supply on NFS Land is threatened by increased sedimentation from erosion and increased post fire flows, dramatically increased nutrient loads and degradation of water quality. The probability of damage is **very likely** based on the extreme changes in modeled peak flow values from pre- to post-fire and soil erosion modeling and expected sedimentation rates. The magnitude of consequence is **moderate** because there will be considerable additions of sediment inputs into the water. Therefore, the risk rating is **very high**.

Outstanding National Resource Waters³

Outstanding National Resource Waters (ONRWs) are streams, lakes and wetlands that receive special protection against degradation under the State of New Mexico's Standards for Interstate and Intrastate Surface Waters (Water Quality Standards) and the federal Clean Water Act. Several miles of stream ONRWs are within the Phase 1 assessment area including segments of Beaver Creek (6.9 miles), Hollinger Canyon (5.9 miles), El Porvenir Creek (2.9 miles) and Cascade Canyon (1.1 miles). The designation of these ORNWs was due to their location within Federal Wilderness area. The sections of ONRWs on Forest Service lands were evaluated as a critical value. The probability of damage to this critical value is considered to be **very likely** based on the extreme changes in modeled peak flow values from pre- to post-fire and soil erosion modeling and expected sedimentation rates. The magnitude of consequences is considered to be **moderate** due to the influx of sediment into the stream system and potentially exceeding the State's water quality standard. Therefore, the risk rating is **very high**.

Eligible Wild and Scenic Rivers⁴

20 miles of Gallinas Creek and 3 miles of Beaver Creek are eligible Wild and Scenic Rivers on the Nationwide Rivers Inventory and in the Santa Fe National Forest Land Management Plan, respectively. Under the Wild and Scenic Rivers Act (Public Law 90-542; 16 U.S.C. 1271 et seq.), Forest Service directives on Wild and Scenic Rivers (Forest Service Handbook 1909.12, Chapter 8), and the Santa Fe National Forest Land Management Plan (2021, draft), eligible Wild and Scenic Rivers (including ¼ mile of land on either side of the stream) shall be managed as designated rivers until a suitability study is conducted and a determination on designation is made. Water quality and free flowing character are protected for both eligible streams under management guidelines. Additionally, Beaver Creek has protected Outstandingly Remarkable Values (ORVs) for fish and scenery, and Gallinas Creek has ORVs for fish, scenery, wildlife, and recreation. These values are to be protected from adverse effects and enhanced, when possible. The probability of damage to water quality is **very likely** based on the extreme changes in modeled peak flow values from pre- to post-fire and soil erosion modeling and expected sedimentation rates and the magnitude of consequence is **major** due to these streams being municipal waters. Therefore, the risk rating is **very high**.

Hydrologic Function

³ Appendix C - Outstanding National Resource Waters Map - Hermits Peak/Calf Canyon Fire - Phase 1

⁴ Appendix D - Eligible Wild and Scenic Rivers Map - Hermits Peak/Calf Canyon Fire - Phase 1

Post-fire, increased runoff is expected, resulting in increases of magnitude of post-fire peak flows. Post-fire peak flows can affect stream channel geomorphology thereby reducing hydrologic function through excess scouring and deposition. The probability of damage to this critical value was considered to be **very likely** because of the likelihood of increased erosion, sediment delivery, channel incision, vertical and horizontal instabilities, changes to peak discharge, and reduction in flood attenuation. The magnitude of consequences is considered to be **moderate** as function will naturally adjust and recover over time Therefore, the risk rating is **very high**.

Soil Productivity

The probability of damage/loss for soil productivity with minor post-fire soil erosion potential (modeled soil loss < soil loss tolerance) is **very likely** because modeled erosion rates are associated with the 1.5-year return period of annual precipitation and the magnitude of consequence is **minor** because soil loss on these hillslopes could result in minimal, recoverable, or localized damage to soil productivity. Therefore, the risk rating is **low**.

The probability of damage/loss for soil productivity with moderate post-fire soil erosion potential (modeled soil loss 1-3 times soil loss tolerance) is **very likely** because modeled erosion rates are associated with the 1.5-year return period of annual precipitation and the magnitude of consequence is **moderate** because soil loss on these hillslopes could result in considerable long-term damage to soil productivity. Therefore, the risk rating is **very high**.

The probability of damage/loss for soil productivity with major post-fire soil erosion potential (modeled soil loss >3 times soil loss tolerance) is **very likely** because modeled erosion rates are associated with the 1.5-year return period of annual precipitation and the magnitude of consequence is **major** because soil loss on these hillslopes could result in considerable long-term damage to soil productivity. Therefor the risk is **very high**.

Habitat for Federally Listed Threatened or Endangered Species

The Mexican spotted owls (MSO) sites within the Phase 1 Watersheds impacted by the Hermits Peak/Calf Canyon (HPCC) Fire represented a high concentration area for the eastside of the Santa Fe National Forest. There are 66 Protected Activity Centers (PACs) across the SFNF, of which there are 24 on the eastside of the Forest, with 22 of those on the Pecos-Las Vegas (PLV) Ranger District. Of the 22 PACs on PLV, only 18 were functional, thus the Fire has burned over half of the functioning PACs on PLV District with 8 of these in the Phase 1 assessment area.

The fire burned significant portions of designated critical habitat within these 8 territories. In this Phase 1 area, there is approximately 41,490 acres of MSO delineated habitats that were impacted by the Fire, including 5,371 acres across 8 MSO Protected Activities Centers (PAC), 5,208 acres of delineated Recovery Nest Roost (NR) habitat, and 30,911 acres of MSO Critical Habitat. Approximately 23,686 acres of these habitats burned at High and Moderate Soil Burn Severity, as indicated through mapping and observations. Due to the accelerated soils erosion potential and decrease site productivity, the probability of damage or loss is **Very Likely** for MSO Critical Habitat. High and Moderate soil burn severity are likely to have altered MSO habitat to an extent that would result in those areas being no longer suitable, thus the magnitude of consequence is **Major**. The loss of these MSO PACs and MSO critical habitats it is likely to have long term impacts, thus there is a **Very High** risk to Mexican spotted owls protected activity center habitat and designated Critical Habitat.

Native or Naturalized Communities

Aggressive invasive plants (i.e., scotch thistle, bull thistle, oxeye daisy) are present within the burned area, primarily along travel routes and trails. These infestations are within or adjacent to burned areas. Invasive plants are highly adapted to take advantage of early seral conditions created after fire and are able to out compete native plants for resources. The probability of Damage and Loss is **Likely** to native plant populations due to plant species adjacent to previously un-infested areas that have been burned at a moderate to high intensity. These invasive plant infestations would have considerable long-term effects with eventual displacement of native plants thus the magnitude of consequence is **Moderate**. The risk is therefore **High** for critical values such as native plant communities due to spread of invasive plants into previously un-infested areas.

4. Cultural and Heritage Resources:

A total of 72 cultural resources were located within the Phase 1 HP-CC BAER assessment area. Of these, 51 were considered BAER critical resources (i.e., sites eligible for listing in the NRHP or unevaluated sites). These include 10 prehistoric and historic artifact scatters, 23 historic FS infrastructure (e.g., cabins/habitations/homesteads, administrative sites, roads, campgrounds, etc.), 3 historic irrigation ditches/acequias, 5 rock shelters and/or cobble alignments, 3 historic mines, and a number of historic trails and associated features belonging to a possible traditional cultural property. According to BARC imagery and derived soil burn severity data, 13 heritage resources were identified within areas that experienced either a moderate or high soil burn severity condition. However, some areas described as low soil burn severity data actually experienced a moderate burn severity. Generally, historic FS infrastructure sites located in moderate or high burn severity areas had most potential combustible building materials consumed. Sites with non-fire-sensitive features which were constructed of stone usually experienced some spalling of building material. Of the 51 archaeological sites considered BAER critical values, 20 were visited for field assessment.

The probability of damage or loss was determined to be **very likely** due to an increased risk of damage associated with debris flow and potential erosion. The magnitude of consequences (loss of information potential, diminished integrity, and/or loss of resource) was determined, in most cases, to be **major to moderate**. Therefore, the risk is **very high**.

B. Emergency Treatment Objectives:

The primary objective of this Burned Area Emergency Response Report is to recommend treatments to manage identified unacceptable risks from “imminent post-wildfire threats to human life and safety, property, and critical natural resources on National Forest System lands” (FSM 2523.02). These treatments are expected to substantially reduce the probability of damage to identified BAER critical values.

Post closure and warning signs to control public access and to inform the public of post-wildfire hazards that exist within the burned area. Minimize risk to human health and safety by removing hazardous wastes and infrastructure that are likely to contribute to bulking of debris flows and floodwaters. Protect NFS infrastructure by securing wells.

Facilitate the implementation of early warning systems (precipitation gauges or similar). Although the USFS does not install or maintain early warning systems, the forest should facilitate the expedited clearances and permits for partner agencies to install and maintain early warning systems for downstream entities and infrastructure prior to high-risk precipitation events.

Mulching and seeding treatments have the potential to directly reduce the adverse consequences of post-fire effects to municipal supply waters on NFS lands, outstanding national resource waters, hydrologic function and soil productivity from runoff and sedimentation and eligible Wild and Scenic Rivers. This treatment will also accelerate MSO habitat stabilization and provide ground cover to assist in protection of native plant communities from invasive species. Hand application of mulch/seed at Cultural/Heritage sites will limit visibility, accelerate vegetative growth around sites, and prevent further loss of soils around these heritage features.

Protecting high value Forest Service roads through storm proofing, culvert cleaning, and strategic armoring will ensure that NFS investments are able to function properly during events with increased flows, and sedimentation delivery.

Targeted cultural resource treatments to mitigate the risk of loss are recommended at 14 heritage resources. Treat archaeological sites by hazard tree felling, debris removal (to mitigate life and safety risk), seeding, and mulching (see mulching and seeding above).

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

Land: 80

Channel: n/a

Roads/Trails: 80
Protection/Safety: 80

D. Probability of Treatment Success

Table 6: Probability of Treatment Success

	1 year after treatment	3 years after treatment	5 years after treatment
<i>Land</i>	70	80	80
<i>Channel</i>	n/a	n/a	n/a
<i>Roads/Trails</i>	70	80	80
<i>Protection/Safety</i>	80	90	95

E. Cost of No-Action (Including Loss): \$31,889,900

F. Cost of Selected Alternative (Including Loss): \$18,092,800

The significance of protecting human life and safety assumed to be self-evident and not included in this calculation.

G. Skills Represented on Burned-Area Survey Team:

- | | | | | |
|---|--|---|--|---|
| <input checked="" type="checkbox"/> Soils | <input checked="" type="checkbox"/> Hydrology | <input checked="" type="checkbox"/> Engineering | <input checked="" type="checkbox"/> GIS | <input checked="" type="checkbox"/> Archaeology |
| <input type="checkbox"/> Weeds | <input checked="" type="checkbox"/> Recreation | <input type="checkbox"/> Fisheries | <input checked="" type="checkbox"/> Wildlife | |
| <input type="checkbox"/> Other: | | | | |

Team Leader: Micah Kiesow

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Forest BAER Coordinator: Micah Kiesow

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Phone(s):505-366-8876

Team Members: Table 7: BAER Team Members by Skill

Skill	Team Member Name
<i>Team Lead(s)</i>	Micah Kiesow; Anne Poopatanapong
<i>Soils</i>	Robert Ballard; Mike Natharius; Susan Roe(t); Dionisio Silva(t)
<i>Hydrology</i>	Paul Brown; Edgar Martinez; Alexander Makic(t)
<i>Engineering</i>	Lisa Archuleta (t) Kenneth Bigelow
<i>GIS</i>	Kevin Carns(t); Robert Arlowe
<i>Archaeology</i>	Matt Taliaferro; Jana Comstock (t); Jean Berkebile (t)
<i>Wildlife/Weeds</i>	Melvin (Danny) Burton (t)
<i>Recreation</i>	Sarah Smith(t)
<i>PIO</i>	Cathleen Thompson
<i>Liaison</i>	Mary Moore
<i>Interagency Coordination</i>	Todd Ellsworth

H. Treatment Narrative:

Land Treatments

L-1 Aerial Mulching

The upper portion of the Gallinas Watershed including the El Porvenir is within the Pecos Wilderness. The team considered treatment in the wilderness following the guidance in FSM 2523. Response actions in

wilderness may be appropriate if there is an unacceptable risk to the wilderness resource or if conducting emergency stabilization in wilderness would provide the best option for protection of life, property, or other critical resources outside of wilderness (FSM 2323.43). In this case, there are also BAER critical values within the wilderness that would benefit from treatments in the wilderness.

Mulch is the most effective treatment for controlling erosion and reducing runoff as it provides immediate ground cover (Robichaud, et al, 2010, Napper, 2006, Larsen, et al, 2009). Mulching and seeding treatments can minimize the negative effects of post-fire effects to municipal waters on NFS lands, outstanding national resource waters, hydrologic function and soil productivity from runoff and sedimentation. However, these treatments need to occur in the headwaters where high severity burned areas can function as the starting point for flash floods and debris flows. Treatments lower in the watershed, outside of the wilderness will not reduce the magnitude of uncharacteristic floods from beginning in the upper watershed.

In the Gallinas Watershed **mulching and seeding** is recommended. Treatment units are in areas of high soil burn severity and major erosion potential. 3,387 acres are recommended to be mulched and seeded in this watershed with certified weed-free seed and mulch. Of the 3,387 acres recommended for treatment, 779 acres are in the Pecos Wilderness in El Porvenir subwatershed. These treatments are recommended due to very high post fire risks to the following BAER critical values:

- Soil productivity and hydrologic function (Soils and Hydrology reports)
- Forest service infrastructure such as roads campgrounds, trails (Engineering and Recreation reports)
- Outstanding National Resource Waters -Beaver Creek and Hollinger Creek (Recreation report)
- Eligible Wild and Scenic Rivers - Gallinas Creek and Beaver Creek (Recreation report)
- Municipal watershed (Hydrology report)
- Water quality - (Hydrology report)
- MSO habitat (Wildlife report)
- Cultural and archaeological resources (Archaeology report)

Areas proposed for mulching would be treated at the rate of approximately 1 ton/acre to provide soil cover on approximately 60-80% of the ground surface. Mulch will reduce rainfall splash (impact), soil particle detachment, reduce runoff and increase surface roughness. This will reduce soil loss and bulking of runoff, thereby reducing potential for stream channel scour and incision. It is effective for reducing soil loss and maintaining soil productivity and hydrologic function in treated areas. Mulch will increase surface roughness and provide effective cover helping to contribute to restoration of nutrient cycles. It also provides 30-60% reduction in peak flows, depending upon rainfall return interval, that threaten downstream life and safety, municipal water, eligible Wild and Scenic Rivers, ONRWs and infrastructure on NFS lands. Indirectly retaining soil on site at tolerance or near tolerance levels will reduce the risk of loss of MSO Critical Habitat. Mitigating loss of site productivity will benefit future nest/roost and foraging opportunities. An MRDG is being prepared for land treatment in the Wilderness.

Application Rate	Price/Acre	Acres	Total
1 ton/acre	\$1,400/ac	3,387	\$4,741,800.00

L-2 Aerial Seeding

Areas of high with some intermingled moderate soil burn severity areas totaling 9,428 acres are recommended to be seeded with a certified weed free seed mix containing quick germinating nonpersistent annual cereal barley that would provide rapid ground cover and a smaller percentage of native perennial species that would give the burned area a jump start in natural recovery and provide for long term ground cover. Seeding would reduce negative impacts to soil productivity, hydrologic function, reduce soil erosion and reduce threats to downslope and downstream critical BAER values by reducing erosion and runoff. The treatment areas are identified on the attached treatment map. The proposed seed mix is identified in the table below. Availability of proposed seed mix species was an important consideration.

Certified weed free seed mix and application rate for the

Hermits Peak/Calf Canyon Fire		
Common Name	Species Name	Seeds/ft ²
Common barley	<i>Hordeum vulgare</i>	15
Mountain brome	<i>Bromus marginatus</i>	1
Arizona fescue	<i>Festuca arizonica</i>	5
Muttongrass	<i>Poa fendleriana</i>	2
Slender wheatgrass	<i>Elymus trachycaulus</i>	2

Seeding is necessary to provide vegetative ground cover where the soil seedbank has been eliminated. A majority of the high burn severity that occurred as a result of the Hermits Peak/Calf Canyon burned in mature mixed conifer forests. A dense closed canopy allowed for the accumulation of a thick layer of duff over approximately a 150–250-year period, essentially excluding forb or graminoid cover. Tree seeds are often destroyed in the organic duff layer, as are grass and forb seeds. Seeds are consumed in the fire or heat sterilized. Therefore, these soils do not have a viable seed bank of their own and will not stabilize naturally without greatly sacrificing site potential.

Application Rate	Price/ac	Acres	Total
56lbs/ac	\$160/ac	9,428	\$1,508,480

L-3 Cultural/Heritage Resource Protection

Limiting visibility and access to cultural/heritage sites is needed as the fire has exposed multiple surface sites. Treatments are targeted to mitigate the risks at each site. Seeding and mulching at sites 04-151, 04-152, 04-176, and 04-223 will accelerate vegetative growth to stabilize the soil and limit visibility. Other treatments include hazard tree felling (sites 04-031: CCC Powder House; 04-032: Gallinas Ranger Station; 04-222: Oak Flat Campground; 04-223: Baker Flat Campground; and 04-224: El Codo Picnic Area). Debris removal will occur at site 04-032. Debris removal is intended to protect downstream human life and safety. All work taking place in archaeological sites should be monitored by a professionally trained cultural resource specialist (ARCH monitor). The ARCH monitor should help engine crew with work. Consultation between the New Mexico Historic Preservation Office and Tribal Governments may be needed for sites. The R3 Heritage Programmatic agreement allows for hand thinning within site boundaries. The proposed work may be conducted by an engine crew (GS5-7 Foresters).

Grade	Cost/day	Days needed	
Arch. Monitor (8hr day)	\$180	10	\$1,800
Other Materials and Services (including contracting costs):			
Item	Cost/unit	Units needed	
Certified weed-free seed	100	5	\$500
Certified weed-free straw mulch	100	10	\$1,000
Total funding requested:			\$3,300

Channel Treatments: n/a

Roads and Trail Treatments

RT-1 Storm Proofing (Road Reconditioning) – Storm proofing, also known as road reconditioning, includes cleaning existing ditches to ensure the correct flow, reshaping sections of aggregate road templates to ensure appropriate road template in place for drainage of the road surface, compaction of the road surface which will allow water to move off the road more effectively while transporting the minimum amount of surfacing, and culvert cleaning, to ensure the currently established drainage structures are able to function at their design

capacity. The road reconditioning cost associated with road reconditioning of the ML-3 roads in the assessed area are:

NFSR	Miles of Treatment	Ditch & Culvert Cleaning Cost	Reshaping Road Template & Compaction Cost	Total Road Recondition Cost
18	3.4	\$2,049	\$8,814	\$10,863
156	3.5	\$2,398	\$9,241	\$11,639
156A	0.4	\$228	\$0.00	\$228
261	0.8	\$492	\$784	\$1,276
263	4.8	\$2,891	\$9,805	\$12,696
Total	12.8	\$8,059	\$28,644	\$36,702

RT-2 Storm Inspection and Response - Storm Inspection and Response (SI&R) involves inspecting the transportation system after storm events and cleaning ditches, culverts and bridges of any accumulated debris to ensure they remain free flowing. SI&R would allow the forest to monitor the road drainage structure treatments to ensure the treatments are functioning, clean the area to ensure they continue to function in the future, and maintain and/or repair any damage to the road surface due to the sediment delivery thus preserving the investments in this transportation network. The SI&R cost associated with road reconditioning of the ML-3 roads in the assessed area are:

NFSR	Miles of Treatment	Ditch, Culvert & Bridge Cleaning Cost	Reshaping Road Template & Compaction Cost	Total Road Recondition Cost
18	3.4	\$ 4,098	\$ 8,814	\$12,912
156	3.5	\$ 4,297	\$ 9,240	\$13,536
156A	0.4	\$ 456	\$ 980	\$ 1,436
261	0.8	\$ 985	\$ 784	\$ 1,769
263	4.8	\$ 5,781	\$ 9,805	\$15,586
Total	12.8	\$ 15,616	\$ 29,624	\$45,239
No. of Treatments	Year 1	8	4	\$ 243,425

RT-3 Emergency Access Low Water Crossing - Creating a least cost emergency access by constructing a low water crossing utilizing geotextiles and a combination of existing rock from the stream bed with angular washed rock for crossing stability. Access to El Porvenir Campground is needed to perform other BAER work that threatens human life and safety including pumping, sanitizing sealing toilets and removing recreational bedload (picnic tables and other infrastructure) that could mobilize downstream in high water flows contributing to bulking of floodwaters and debris flows. The cost associated with the emergency access is:

GeoCell Installation	Equipment Cost	Labor Cost	Total
\$ 6,101	\$3,746	\$1,116	\$10,963

RT-4 Culverts/Armored Drainage Dips - Armored Drain dips harden the road crossing providing a relief path for flooded roadway, minimizing diversion potential, and providing protection where flow modeling predicts concentrated flows that would erode the road fill. Additional components of the treatment include enlarging existing catch basins to increase capacity and armoring the inlet and outlet of a few strategic culverts to accommodate the predicted increased flows with the least damage to the road structure. The costs associated with this treatment are:

NFSR	# of Culvert Treatments	# of Armored Dips	Total Cost
156	9	0	\$2,239
263	19	2	\$18,040
Total	28	2	\$20,733

RT-5 Channel Clearing (Debris Removal) – Channel clearing (debris removal) involves using heavy equipment to clear channel debris upstream of the 15 existing bridges in order to maintain hydraulic cross section at the crossings. This will include removing any fencing, trees and other woody debris that could get lodged at the bridge crossing and armoring key abutments at bridges where the position of the abutment in the stream channel puts the bridge at greater risk for impact damage or scour and potential loss of major infrastructure. The cost associated with this treatment are:

Bridges Treated	Equipment Cost	Labor Cost	Total
15	\$25,763	\$8,864	\$34,628

Protection/Safety Treatments

P-1 Warning/Closure Signs

Burned area warning signs: A closure is currently in place on forest service lands for the fire area. At key access points of trails, roads and recreation sites install 54 warning signs. The purpose of the Burned Area Warning signs is to reduce risks to human life and safety by informing forest visitors of potential dangers and/or hazards when entering burned areas on NFS lands. Entering burned areas presents a high risk to human and life and safety, with increased threats from post-fire effects such as falling trees, rolling rocks, flash floods, and debris flows. It is necessary to inform the public of burned-area hazards that are a direct result of wildfire. Burned area warning signs will be installed to inform the public of the possible dangers associated with the burned area on major entry points into the burned area. Lump sum costs include signs, posts, hardware and installation.

Sign Type	UOM	Unit Cost	# of Units	Total Cost
FW9-18c 36"x36"	Lump Sum	\$725	10	\$7,025
FW8-14d 60"x42"	Lump Sum	\$875	18	\$15,750
TFW8-14d 12"x10"	Lump Sum	\$450	20	\$9,000
TFW8-14d 24"x16"	Lump Sum	\$525	6	\$3,150

P-2 Recreation site risk reduction

Recreational site risk reduction: Remove hazardous waste from toilets and septic tanks and NFS infrastructure (picnic tables) within E.V. Long Campground, El Porvenir Campground, Oak Flats Picnic Area and Baker Flat Picnic Area. Pull pumpjacks and cap wells at both campgrounds. It is necessary to remove hazardous waste from recreational sites as this hazardous waste can move downstream during high flow events compromising human health and safety. It is necessary to remove NFS infrastructure at recreational sites such as picnic tables as this infrastructure can become detached during high flow events contributing to bulking of floodwaters and debris flows. This infrastructure once detached will become hazards to downstream human life and safety. It is necessary to pull pumpjacks and cap wells at both NFS campground to protect the NFS investment. Job costs include mobilization, equipment, labor and disposal. Six recreation residence cabins pose an imminent threat to municipal water on NFS lands and downstream human health and safety. Implement wattles or straw bales and silt fence around six burned cabins (9,12,14,15,16,21) to mitigate potential of debris from moving into municipal water.

Task	UOM	Unit Cost	# of Units	Total Cost
Toilet/Septic Pump	Lump Sum	\$1,500	9	\$13,500
Rec. Site Infrastructure Removal	Job	\$25,500	1	\$25,500
Well Cap/Remove Pump Jack	Site	\$1,500	2	\$3,000
Coir Fiber Wattles/Straw Bales (20 inch)	Per	\$150	100	\$15,000

P-3 Burnt Bridge and Debris Removal - El Porvenir Remove any unconsumed hazardous waste from the burnt treated timber road and trail bridge at El Porvenir. Remove material from the Gallinas Administrative site. It is necessary to remove hazardous waste and other material from stream and floodplain as this hazardous waste can mobilize downstream during high flow events contributing to bulking of floodwaters and debris flows and

leach hazardous chemicals into the waterway that serves as municipal drinking water source. The costs associated with this treatment are:

Bridges Type	Equipment Cost	Labor Cost	Landfill Fee	Total
Road Bridge	\$1,696	\$420	\$4,329	\$6,445
Trail Bridge	\$1,696	\$420	\$2,165	\$4,280

Heritage Site Debris Removal	Equipment Cost	Labor Cost	Landfill Fee	Total
Gallinas	\$3,393	\$838	\$7,937	\$12,168

I. Monitoring Narrative:

Effectiveness monitoring is recommended to determine if the seed and mulch treatments are effective. Monitoring would involve site visits by Forest personnel, contractors or partners. During each trip personnel would visit a subset of the treatment areas to determine if adequate mulch cover to prevent erosion, natural recovery and occurrence of invasive/noxious weed species. Photo documentation will occur. Transect data may be collected if warranted. Sediment traps to measure erosion may be incorporated. A request for this funding is anticipated.

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											
L-1 Aerial Mulching	acres	1,400	3387	\$4,741,800	\$0						\$4,741,800
L-2 Aerial Seeding	acres	160	9428	\$1,508,480	\$0			\$0		\$0	\$1,508,480
L-3 Cultural/Heritage Resource Protection			13,880	1	\$13,880	\$0		\$0		\$0	\$13,880
<i>Insert new items above this line!</i>				\$0	\$0			\$0		\$0	\$0
Subtotal Land Treatments				\$6,264,160	\$0			\$0		\$0	\$6,264,160
B. Channel Treatments											
<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											
RT-1 Storm Proofing	miles	2,868	12.8	\$36,710	0						\$36,710
RT-2 Storm I&R	miles	19,018	12.8	\$243,430	0						\$243,430
RT-3 Emergency Crossing	job	10,963	1	\$10,963	\$0			\$0		\$0	\$10,963
RT-4 Culvert/Dips	culverts	692	30	\$20,760							\$20,760
RT-5 Channel Clearing	sites	2,309	15	\$34,635	\$0			\$0		\$0	\$34,635
<i>Insert new items above this line!</i>				\$0	\$0			\$0		\$0	\$0
Subtotal Road and Trails				\$346,499	\$0			\$0		\$0	\$346,499
D. Protection/Safety											
Road/Trail Hazard/Closure	job	34,925	1	\$34,925	\$0			\$0		\$0	\$34,925
Toilet/Septic Pumping	per	1,500	9	\$13,500							\$13,500
Infrastructure Removal	job	25,500	1	\$25,500	\$0			\$0		\$0	\$25,500
Waste Removal	job	7,631	3	\$22,893							\$22,893
Coir fiber wattles	per	150	100	\$15,000							\$15,000
<i>Insert new items above this line!</i>				\$0	\$0			\$0		\$0	\$0
Subtotal Protection/Safety				\$111,818	\$0			\$0		\$0	\$111,818
E. BAER Evaluation											
Initial Assessment	Report	\$24,023	1	\$24,023	\$0			\$0		\$0	\$0
Interim Assessment	Report	\$178,044	1	\$178,044	\$0			\$0		\$0	\$0
<i>Insert new items above this line!</i>				---	\$0			\$0		\$0	\$0
Subtotal Evaluation				\$202,067	\$0			\$0		\$0	\$0
F. Monitoring											
				\$0	\$0			\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0			\$0		\$0	\$0
Subtotal Monitoring				\$0	\$0			\$0		\$0	\$0
G. Totals											
Previously approved				\$73,925							
Total for this request				\$6,648,552	\$0			\$0		\$0	\$6,722,477

PART VII - APPROVALS

1. _____
Forest Supervisor _____ Date

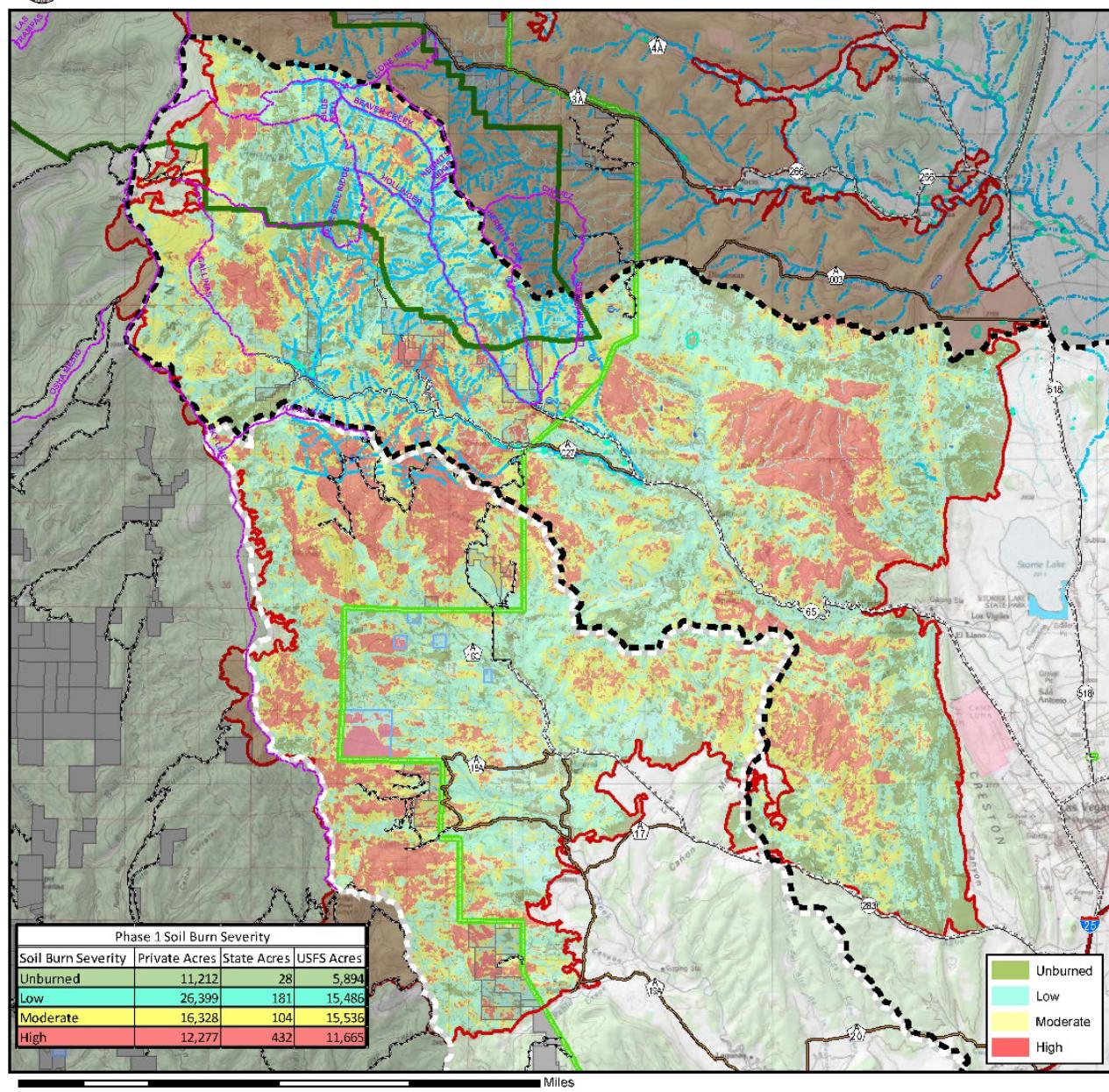
Appendix ASoil Burn Severity – Hermits Peak/Calf Canyon Fire - Phase 1**Santa Fe National Forest**

U.S. Forest Service, Southwestern Region

**Hermits Peak / Calf Canyon BAER**

Phase 1 Soil Burn Severity - Headwaters Gallinas River and Tecolote Creek Watersheds

Coordinate System: NAD 1983 UTM Zone 13N
 Projection: Transverse Mercator
 Datum: North American 1983



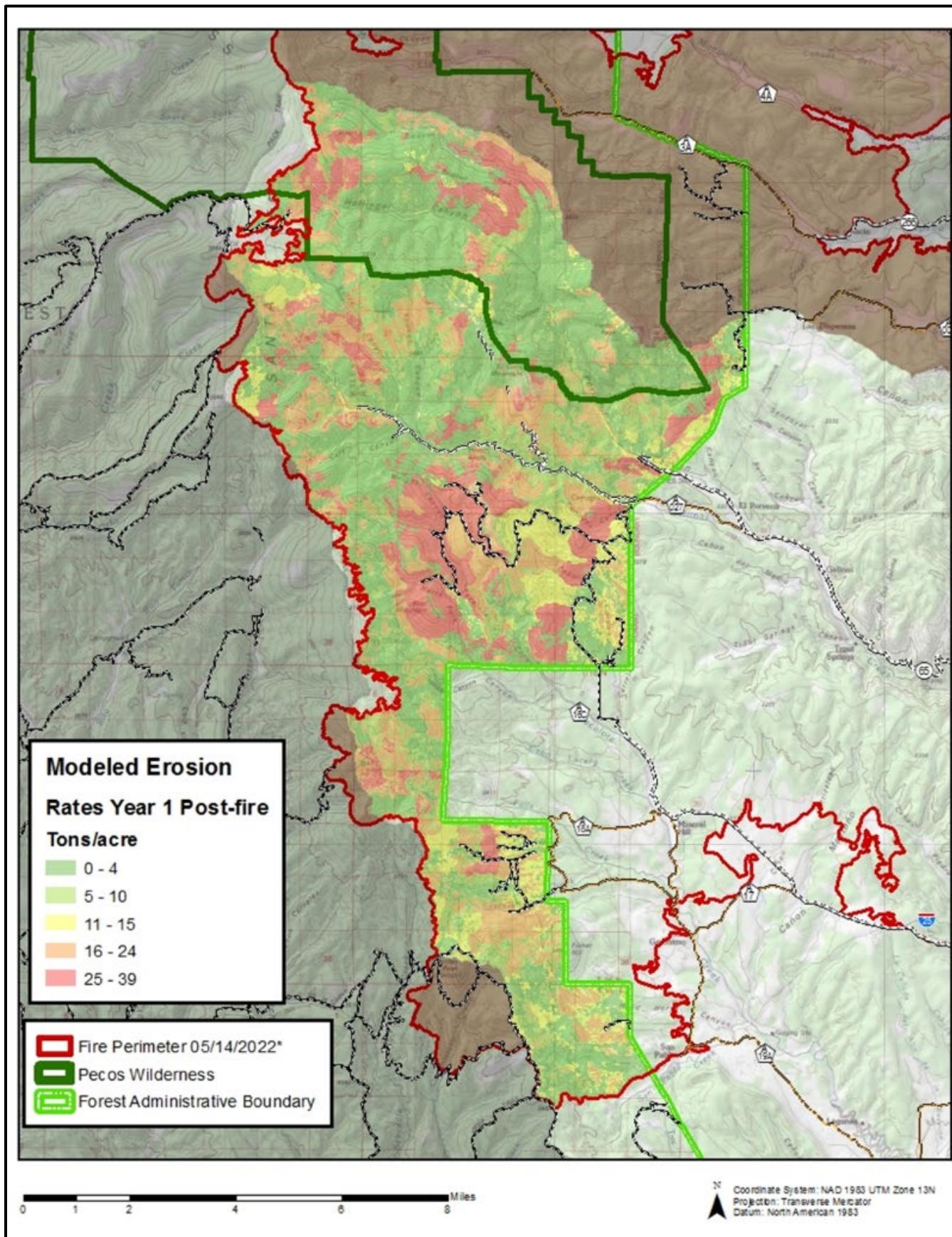
This map is a product of a Burned Area Emergency Response (BAER) Team rapid assessment.
 Further information concerning the accuracy and appropriate uses of this data may be obtained from the USDA Forest Service.

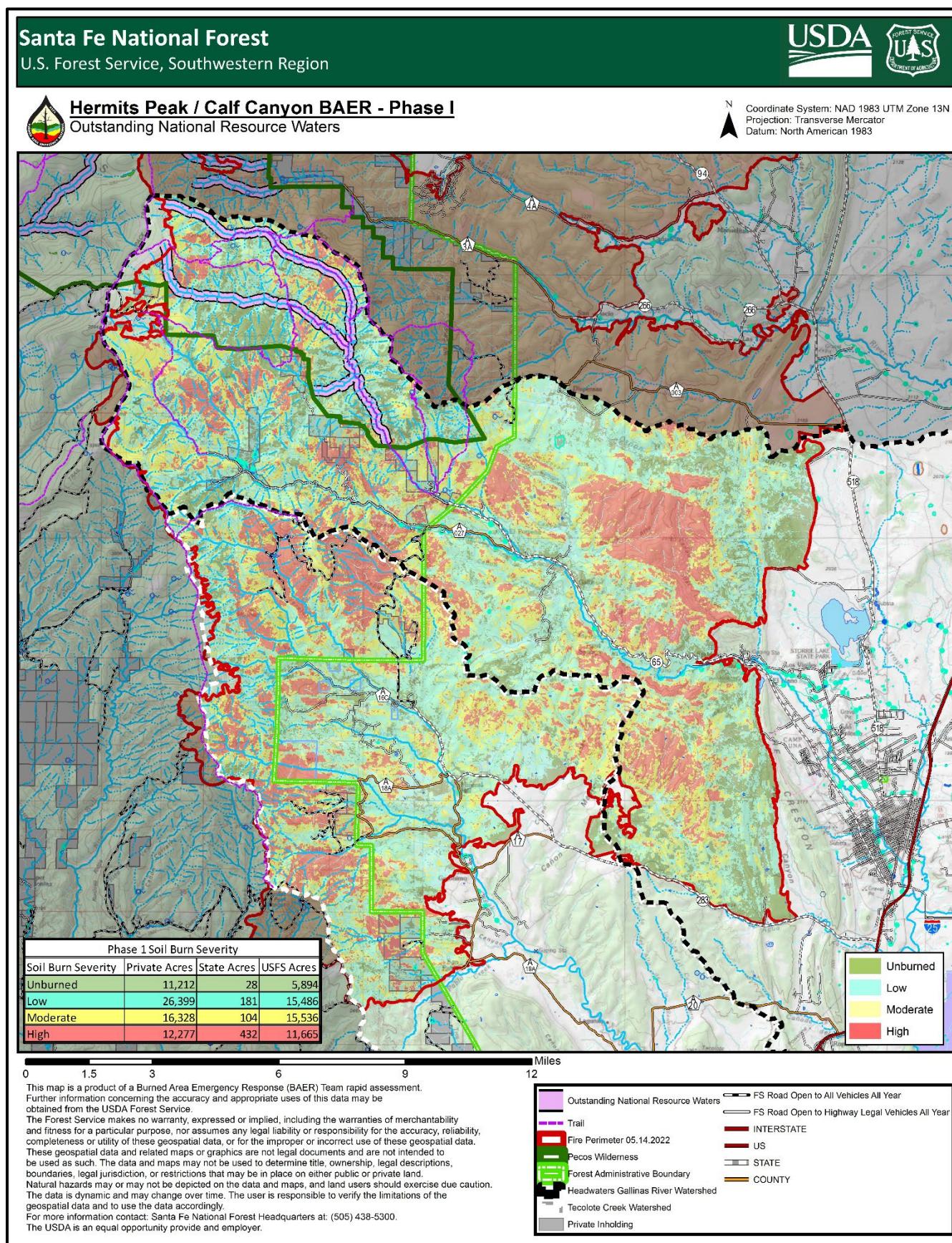
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For more information contact: Santa Fe National Forest Headquarters at: (505) 438-5300.

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Trail	Headwaters Gallinas River Watershed
FS Road Open to All Vehicles All Year	Tecolote Creek Watershed
INTERSTATE	Pecos Wilderness
STATE	Forest Administrative Boundary
COUNTY	Private Inholding
FIRE PERIMETER 05/14/2022*	Dept. of Defense
	Fish and Wildlife Service
	State Land
	State Park

Appendix BErosion Potential – Hermits Peak/Calf Canyon Fire - Phase 1

Appendix COutstanding National Resource Waters - Hermits Peak/Calf Canyon Fire - Phase 1

Appendix DEligible Wild and Scenic Rivers - Hermits Peak/Calf Canyon Fire - Phase 1