

Date of Report:

BURNED-AREA REPORT

(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

- [X] 1. Funding request for estimated emergency stabilization funds
[] 2. Accomplishment Report
[] 3. No Treatment Recommendation

B. Type of Action

- ☒ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)
- ☐ 2. Interim Report #_____
- ☐ Updating the initial funding request based on more accurate site data or design analysis
- ☐ Status of accomplishments to date
- ☐ 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

- A. Fire Name: Burro
- B. Fire Number: CO-SJF-000509
- C. State: CO
- D. County: Montezuma
- E. Region: 02
- F. Forest: San Juan NF
- G. District: Dolores Ranger District
- H. Fire Incident Job Code: P2LU5G (0213)
- I. Date Fire Started: 6/8/2018
- J. Date Fire Contained: Estimated date of 9/1/2018
- K. Suppression Cost: \$3.3 million as of August 23, 2018
- L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): Approximately 1 mile of dozer line will be waterbarred.
 2. Fireline seeded (miles): Approximately 6 miles of dozer line will be seeded.
 3. Other (identify): Approximately 3 acres of staging areas will be reseeded.
- M. Watershed Number: 140300020206 (Bear Creek)



Burned Area Emergency Response

Bear Creek Watershed

BURRO BAER

Dolores Ranger District, San Juan National Forest
July 17, 2018



0 0.435 0.87 1.7 Miles

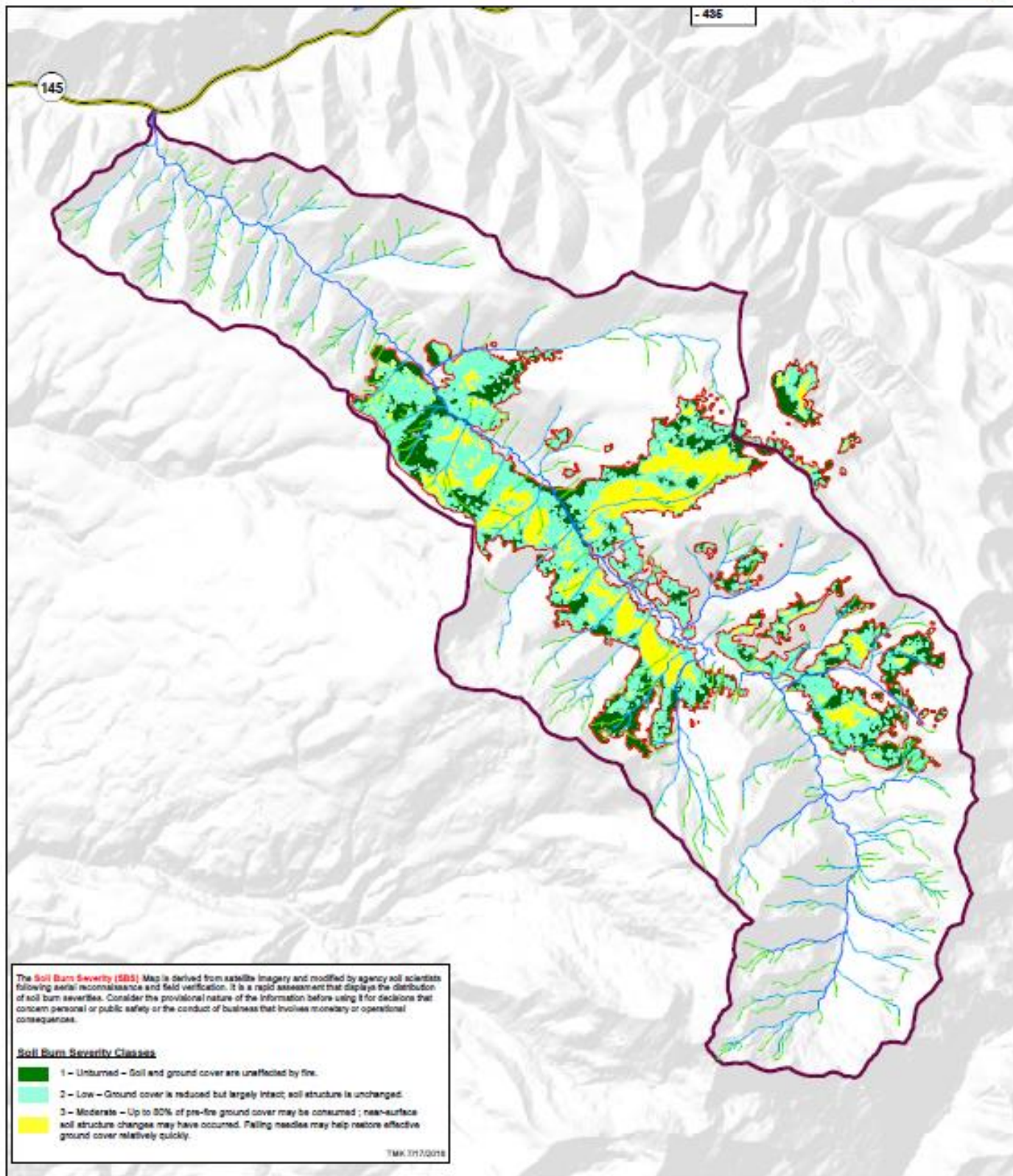


Legend

- Burro Fire Perimeter
- Perennial
- Intermittent
- Ephemeral
- Bear Creek Watershed

Soil Burn Severity

- Unburned
- Low
- Moderate



N. Total Acres Burned:

NFS Acres(4,777) Other Federal (0) State (0) Private (15.24)

O. Vegetation Types: The Burro fire is primarily composed of three general vegetation types: spruce/fir, aspen, and mountain grassland parks. Tree density and understory composition and cover vary with aspect and slope. Some aspen stands are being replaced by spruce/fir. Aspen stands, a disturbance dependant species is expected to expand from these fire effects. Common understory plants in forested areas include snowberry, mountain ash, osha, cows parsnip, mountain brome, nodding brome, and a variety of other forbs. Plants occurring in the open grassland parks include, Thurber's fescue, mountain brome, nodding brome, Kentucky bluegrass, orchard grass, and variety of forbs. In the majority of the fire area, major drainage channels and streams are relatively narrow and are dominated by aspen, alder, willow and/or narrowleaf cottonwood stands. Wide stream bottoms and wetlands near the western edge of the fire perimeter contain combinations of aspen, willow, common sedges, spruce, and wetland forbs, varying according to the type and saturation level of the soil. Areas along Bear Creek Trail within and adjacent to the fire perimeter contain a combination of native vegetation and invasive weeds such as Canada thistle and musk thistle.

P. Dominant Soils: Dominant soil types within the fire perimeter include the Frisco-Horsethief Complex and the Needleton-Snowdon-Rock outcrop complex. The Needleton series consists of very deep, well drained soils that formed in outwash, colluvium, and slope alluvium derived from granitic, volcanic, and sedimentary rocks. The Horsethief series consists of very deep, well drained soils that formed in colluvium and slope alluvium derived from sandstone, volcanic, and igneous rocks. The Needleton series consists of very deep, well drained soils that formed in slope alluvium and colluvium derived from rhyolite, limestone, and sandstone. The Snowdon series consists of shallow, well drained soils that formed in residuum and slope alluvium derived from rhyolite, limestone, and sandstone. Moderate soil burn severity areas had little organic material at the surface, weakly hydrophobic soils, and no revegetation occurring several weeks after the fire. Fine roots and soil aggregates were generally intact in the moderate soil burn severity areas. Low soil burn severity areas were found to have a more organic material on the surface, no hydrophobic soils, good soil aggregates, and higher amounts of soil moisture. Recovery of amount grasses and forbs was observed throughout the low soil burn severity areas. Overall, it is not believed that long term soil productivity will be an impediment to the continued recovery of plants during successive growing seasons. Higher rates of erosion are likely within drainages that experienced moderate soil burn severity. Debris flow hazard throughout the burn is mostly low and moderate (based on a combined hazard index of volume and probability).

Q. Geologic Types: Dominant Soils: Dominant soil types within the fire perimeter include the Frisco-Horsethief Complex and the Needleton-Snowdon-Rock outcrop complex. (medium- to fine-grained sandstone) Formation at the top of the hillslopes; the Morrison Formation (mudstone, sandstone, siltstone, and limestone) at mid-slope on the south facing hillslope; the Brushy Basin Member of the Morrison Formation (fine-grained mudstone rich in volcanic ash) at mid-slope on the north facing hillslope; the Junction Creek Sandstone (fine- to coarse-grained poorly sorted eolian crossbedded sandstone), Wanakah Formation and Entrada Sandstone (fine-grained quartz sandstone in thin beds overlaying thin bedded limestone) at the low end of the hillslopes; and the Dolores Formation (fluvial siltstone, sandstone, and shale) along the valley bottom.

R. Miles of Stream Channels by Order or Class: 14 miles ephemeral, 12 miles intermittent, 3 miles of perennial

S. Transportation System

Trails:

TRL_NO	NAME	TYPE	MILES
608	GRINDSTONE	Non-Motorized	1
631	ASPEN LOOP	Motorized	0.8
618	GOLD RUN	Motorized	1
609	LITTLE BEAR	Motorized	0.2
607	BEAR CREEK	Motorized	2.7
607	BEAR CREEK	Non-Motorized	0.7
658	GRINDSTONE LOOP	Motorized	0.1
		Total Miles	6.5

Roads:

ID	NAME	SEG_LENGTH	OPER_MAINT
358	GRINDSTONE	1	2 - HIGH CLEARANCE VEHICLES
436	HILLSIDE DRIVE	0.3	2 - HIGH CLEARANCE VEHICLES
436.A	HILLSIDE DRIVE A	1.5	1 - BASIC CUSTODIAL CARE (CLOSED)
436.A1	HILLSIDE DRIVE A1	0.5	1 - BASIC CUSTODIAL CARE (CLOSED)
436.C1	HILLSIDE DRIVE C1	0.3	1 - BASIC CUSTODIAL CARE (CLOSED)
561	WEST MANCOS	0.8	2 - HIGH CLEARANCE VEHICLES
	Total Miles	4.4	

PART III - WATERSHED CONDITION

A. Burn Severity (acres):

2,148 (low) 834 (moderate) 0 (high) (1,804 acres within the burn perimeter are unburned due to the mosaic nature of the fire)

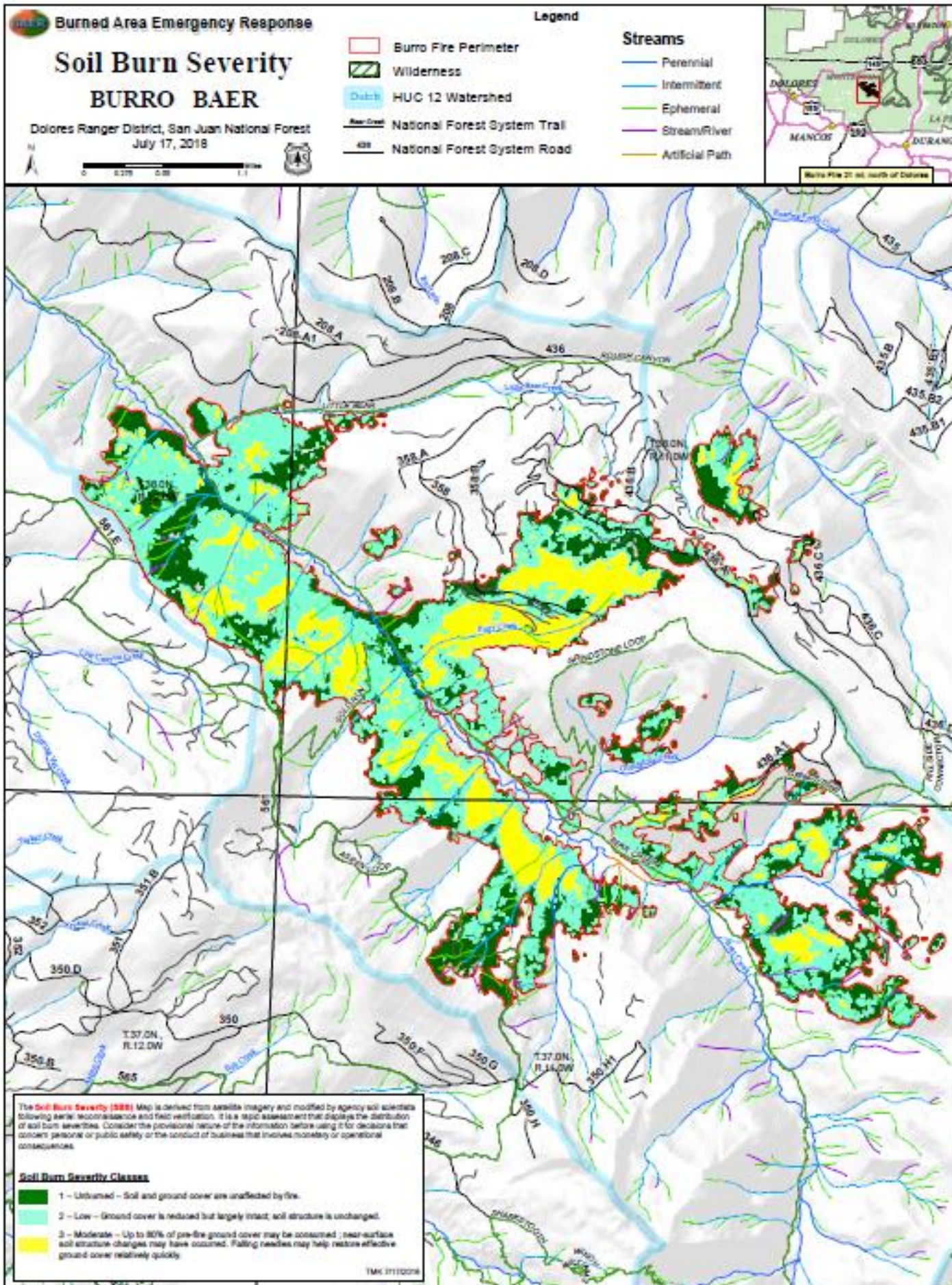
B. Water-Repellent Soil (acres): weakly hydrophobic soils on approximately 30% of the moderate areas

C. Soil Erosion Hazard Rating (acres):

477 (low; "slight" SEHR) 478 moderate; "moderate" SEHR) 3,821 (high; : "severe" or "very severe" SEHR)

D. Erosion Potential: 3.35 tons/acre

E. Sediment Potential: 1,531 cubic yards / square mile



PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years):	<u>3-5 years</u>
B. Design Chance of Success, (percent):	<u>80%</u>
C. Equivalent Design Recurrence Interval, (years):	<u>10 year</u>
D. Design Storm Duration, (hours):	<u>1 hour</u>
E. Design Storm Magnitude, (inches):	<u>0.947 inches</u>
F. Design Flow, (cubic feet / second/ square mile):	<u>119 cfs (at the mouth of Bear Creek)</u>
G. Estimated Reduction in Infiltration, (percent):	<u>17% (the percent of moderate SBS)</u>
H. Adjusted Design Flow, (cfs per square mile):	<u>293 cfs (at the mouth of Bear Creek)</u>

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

Critical Value: Human life/safety

Threats to human life and safety exist along sections of trail within the burned area that intersect or are adjacent to areas of moderate soil burn severity where weakened trees exist (mostly the Gold Run trail). Forest users are at a greater risk of injury from hazard trees following the fire. Sections of the Gold Run trail will also experience increased runoff and erosion that will not be life threatening but will potentially make the trail hazardous to navigate. Bear Creek and Little Bear Creek trails may have some hazard trees along their length but it is less likely because of the predominantly low and unburned areas along those trails where the vegetation type was either aspen or spruce/fir.

Emergency Determination: The probability of loss is Possible and the magnitude of consequences is Moderate for threats to life and safety on Forest Service lands. Risk is **Intermediate**.

Critical Value: Property

Roads

Forest Service roads 561, 358, and 436 (along with it's spur roads) intersect the burned area in predominantly unburned and low soil burn severity areas, with a very minor amount of moderate soil burn severity areas intersecting the roads. FS Road 358 intersects an area of moderate soil burn severity near its terminus; however, the road is impassable prior to area. Furthermore, runoff and erosion occurring on the small areas of moderate soil burn severity areas upslope of these FS roads will be buffered by the low and unburned areas before reaching the roads themselves.

Emergency Determination: The probability of loss of property as it pertains to FS roads is Unlikely. Magnitude of consequences is Moderate. Risk is **Low**.

Trails

Sections of the Gold Run trail are within, adjacent to, or downslope of moderate soil burn severity areas. It is anticipated that localized increases in flows associated with fire effects will cause trail rilling and erosion. Trail approaches to stream crossing on steep slopes are at risk of failure and cut and fill slope failures are likely to occur. Bear Creek and Little Bear Creek trails are within mostly unburned and low soil burn severity areas.

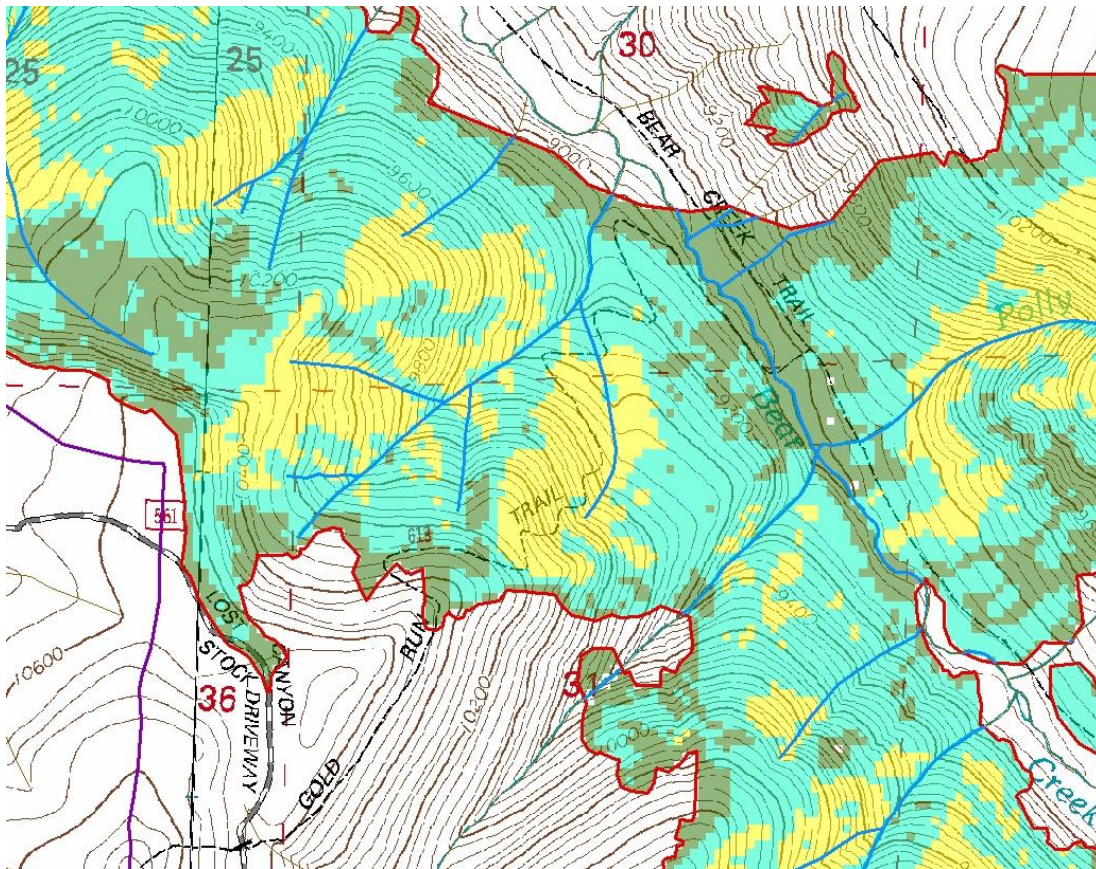


Figure 1 Gold Run Trail location within the fire

Emergency Determination: The probability of loss of property as it pertains to the Gold Run trail is Likely. Magnitude of consequences is Moderate. Risk is **High**.

The probability of loss of property as it pertains to Bear Creek and Little Bear Creek is unlikely, respectively. The magnitude of consequences is moderate. Risk is **Low**.

Critical Value: Natural Resources

Soil Productivity

While wildfire will have a negative effect on soil productivity and vegetative recovery in moderate soil burn severity areas, over time it is expected that natural processes will result in the most effective revegetation of these soils. Runoff and erosion will be localized and is not expected to accumulate downslope/downstream to the extent that an emergency situation exists. The remainder of the burned area is low soil burn severity or unburned as a result of the mosaic nature of the fire.

Emergency Determination: The probability of loss of soil productivity is Likely in areas of moderate soil burn severity. Magnitude of consequences is Minor. Risk is **Low**.

Water Quality

Water quality will not be negatively affected by the fire. Increased runoff and erosion is likely to remain localized and to not degrade downstream water quality in Bear Creek or in the Dolores River. The nearest surface water intake for municipal water supplies is more than 25 miles away.

Emergency Determination: The probability of negatively impacting water quality downstream of the fire is Unlikely. Magnitude of consequences is Moderate. Risk is **Low**.

Native or Naturalized Plant Communities

Canada thistle (*Cirsium arvense*) and musk thistle (*Carduus nutans*) infestations have been documented in small patches or as individual plants throughout the burned area. Thistle population expansion has been documented

after other fires in the area and populations are expected to increase after the Burro fire. Fire typically increases the distribution of these weeds as well as facilitating existing patch expansion because these species can quickly resprout from unburned underground structures, flower, and wind-disperse seed throughout the recently burned landscape. Expansion of these weed species constitutes an additional threat to the landscape appearance, ecosystem function, and to habitat quality in Crucial Winter Range. In the years following the Burro fire weed populations are expected to remain at post-fire elevated levels or further increase in size due to vegetation and habitat types in the burn area and the expected slow recovery of forest vegetation.

Emergency Determination: The probability of invasion from noxious weeds is Very Likely in areas of moderate soil burn severity. Magnitude of consequences is Moderate. Risk is **Very High**.

Critical TES Habitat or Suitable Occupied Habitat

Habitat for Canada lynx (*Lynx canadensis*) exists within the burn perimeter. Based on the soil burn severity that occurred in Canada lynx habitat the Burro fire will likely create a mosaic of successional stages that will be beneficial for providing foraging and denning habitat for Canada lynx. However, short term effects may be negative in some areas due to a reduction in cover and temporary effects to prey species. It is expected that as succession progresses, the amount of vegetation will increase providing the necessary cover and forage for snowshoe hares, resulting in greater abundance of hares. Fire may have negative impacts on Canada lynx and snowshoe hare in the short term due to reduced food and cover; however, as succession continues the amount of food and cover for snowshoe hares will increase, resulting in greater abundance of hares and thus a potential increase in densities of Canada lynx. Overall, the lynx habitat within the burned area perimeter is at a low of risk due to the mosaic nature of the fire and the small amount of habitat that experienced moderate soil burn severity.

Emergency Determination: The probability of negatively impacting Canada lynx habitat is Unlikely. Magnitude of consequences is Moderate. Risk is **Low**.

Critical Value: Cultural and Heritage Resources

Prior to the Burro Fire, cultural resource surveys documented and assessed a total of 2 historic trail segments and 18 isolated finds within the fire perimeter. Site reports were collected and reviewed at the Dolores Public Lands Office. None of these resources were determined to be historic properties. As a consequence, no cultural resources values at risk were identified within the area of potential effects.

Emergency Determination: NA

Resource	Critical Value	Probability of Loss	Magnitude of Consequences	BAER Risk
Life/safety	Life/Safety	Possible	Moderate	Intermediate
Roads	Property	Unlikely	Moderate	Low
Gold Run Trail	Property	Likely	Moderate	High
Bear Creek Trail	Property	Possible	Moderate	Low
Little Bear Creek Trail	Property	Unlikely	Moderate	Low
Native Plant Communities	Natural Resources	Very Likely	Moderate	Very High
Soil Productivity	Natural Resources	Likely (moderate SBS areas only)	Minor	Low
Water Quality	Natural Resources	Unlikely	Moderate	Low
Wildlife	Natural Resources	Unlikely	Moderate	Low
Cultural Resources	Cultural Resources	NA	NA	NA

Table 1 Summary of BAER Risk Assessment

B. Emergency Treatment Objectives: The proposed treatments on National Forest System lands can help to reduce the impacts of the fire from storm events, but treatments cannot fully mitigate the post-fire effects of the fire. Detailed information of the treatments summarized below can be found in the specialist reports prepared in support of this funding request. The treatments listed below are those that are considered to be the most effective on National Forest System lands to minimize threats to identified values at risk.

Proposed Land Treatments

The objective of the land treatments are to promote and protect native and naturalized vegetative recovery by reducing the spread of noxious weeds (L1).

Proposed Trail Treatments

The objective of the trail treatments are to protect trail investments from becoming impassible and damaged due to increased post-fire runoff and erosion (T1).

Proposed Protection/Safety Treatments

The objective of the protection/safety treatments are to protect human life and safety by raising awareness through posting hazard warning signs at trailheads (P1).

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

Land **NA (weeds)** % Channel **NA (none proposed)** % Roads/Trails **75** % Protection/Safety **90** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	70	75	80
Channel	NA	NA	NA
Roads/Trails	80	90	90
Protection/Safety	90	95	95

E. Cost of No-Action (Including Loss): \$35,000 (does not include loss of life or native plant communities)

F. Cost of Selected Alternative (Including Loss): \$17,295

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input checked="" type="checkbox"/> Range	<input type="checkbox"/>
<input checked="" type="checkbox"/> Forestry	<input checked="" type="checkbox"/> Wildlife	<input checked="" type="checkbox"/> Fire Mgmt.	<input type="checkbox"/> Engineering	<input type="checkbox"/>
<input type="checkbox"/> Contracting	<input type="checkbox"/> Ecology	<input type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology	<input type="checkbox"/>
<input checked="" type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS	

Team Leader: Shauna Jensen; smjensen@fs.fed.us; 970-882-6815

Team Members:

Shauna Jensen-Hydrology/soils
Tom Rice-Recreation/transportation
Elizabeth Cutright-Smith-Archaeology
Tom Kochanski-GIS
Ivan Messinger-Wildlife/fisheries
Corey Ertl-Weeds/range
Pat Seekins-Fire Management
David Casey-Forestry

H. Treatment Narrative:

(Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments, include species, application rates and species selection rationale.)

Land Treatments:

L1-Invasive Weed Detection and Treatment: Thistle suppression will be accomplished in high risk/high priority areas using broadcast and spot herbicide application. Milestone herbicide will be applied during summer and fall months (June-October) a time period most effective at controlling thistle. This timing targets undesirable vegetation while minimizing side effects to desirable, native species. The herbicide will be applied at rates varying from 5 to 7 ounces per acre, depending on vegetation types. Application will be done by a combination of ATV boom spraying, backpack spraying, and horseback spraying. Open grassland parks are considered most susceptible to thistle infestation, all acres burned within this vegetation type, approximately 200 acres, will be a priority for treatment. It is estimated that another 100 acres of thistle will establish within the mixed conifer vegetation type, in most cases adjacent to the Bear Creek and Little Bear Creek drainages. It is estimated that approximately one half of the 100 acres will be sprayed on foot carrying backpack sprayers or mounted on horseback using a spray platform.

Channel Treatments:

NA

Trail Treatments:

T1-Trail Stabilization: Work will include the installation of water bars, switchback reconstruction, and armored drainage crossings. Hazard trees will be removed for worker safety. This work is necessary to protect the trail asset from anticipated increases in runoff and erosion from the moderate soil burn severity area surrounding the section of trail.

Protection/Safety Treatments:

P1-Hazard Warning Signs: This treatment will install burned area/hazard warning signs to caution forest visitors recreating and administrative users about the potential hazards that exist within the burned area. It is consistent with the language provided in the BAER Treatments Catalog. This treatment will place hazard warning signs and information signs at key entry points or trail junctions, and at recreation trailheads. It will inform users of the dangers associated with entering/recreating within a burned area as well as inform them of closures to help ensure that users are able to access available routes in a safe manner.

Burned Area Emergency Response
Proposed Noxious Weed
Treatments
BURRO BAER

Dolores Ranger District, San Juan National Forest
 Aug 27, 2018

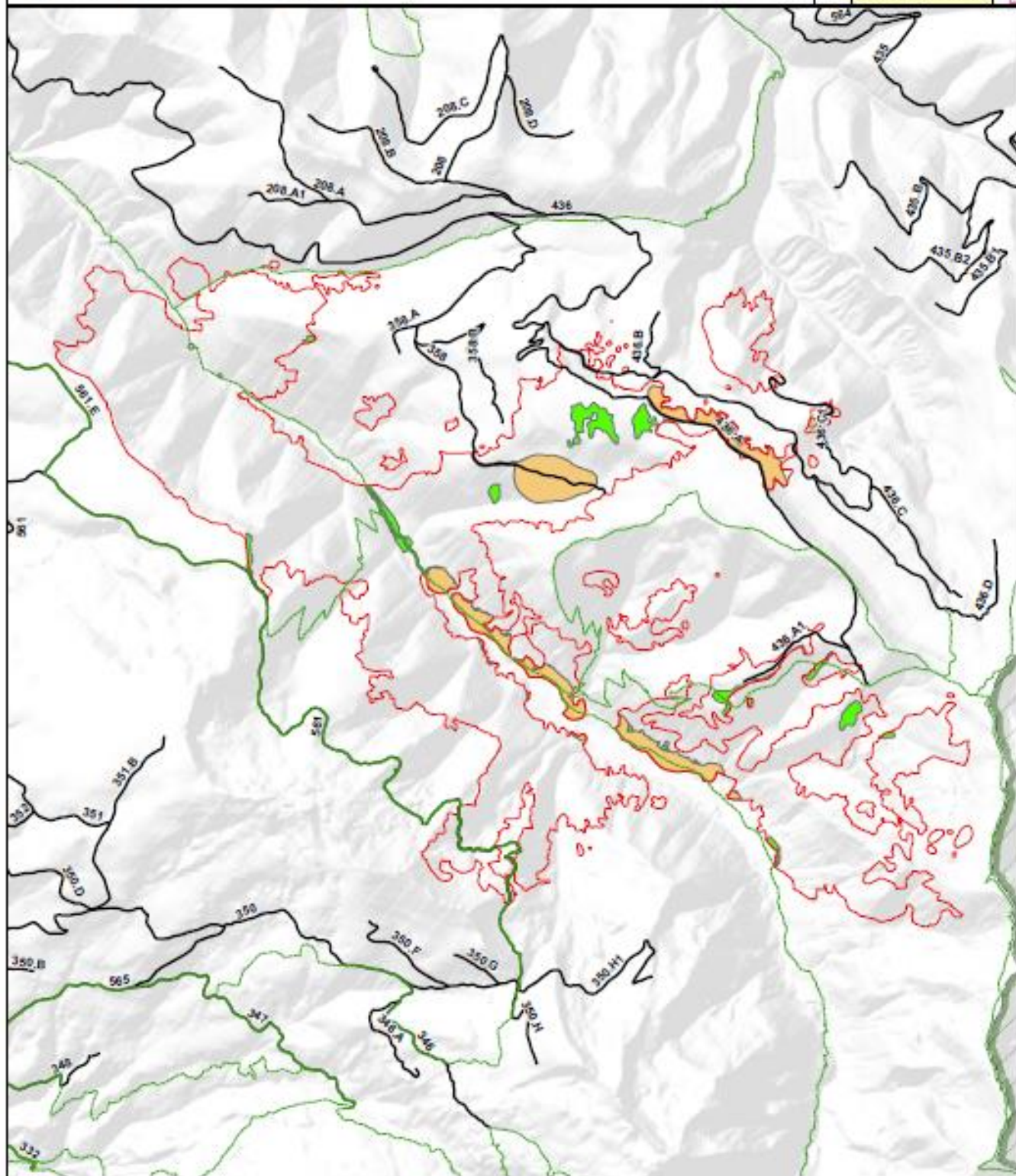


0 0.25 0.5 1.0 Miles



Legend

- Burro Fire Perimeter
- Wilderness
- HUC 12 Watershed
- Bear Creek
- National Forest System Trail
- National Forest System Road
- Mtn Grasslands Not Treated - 93 Acres
- Mtn Grasslands Treated - 297 Acres

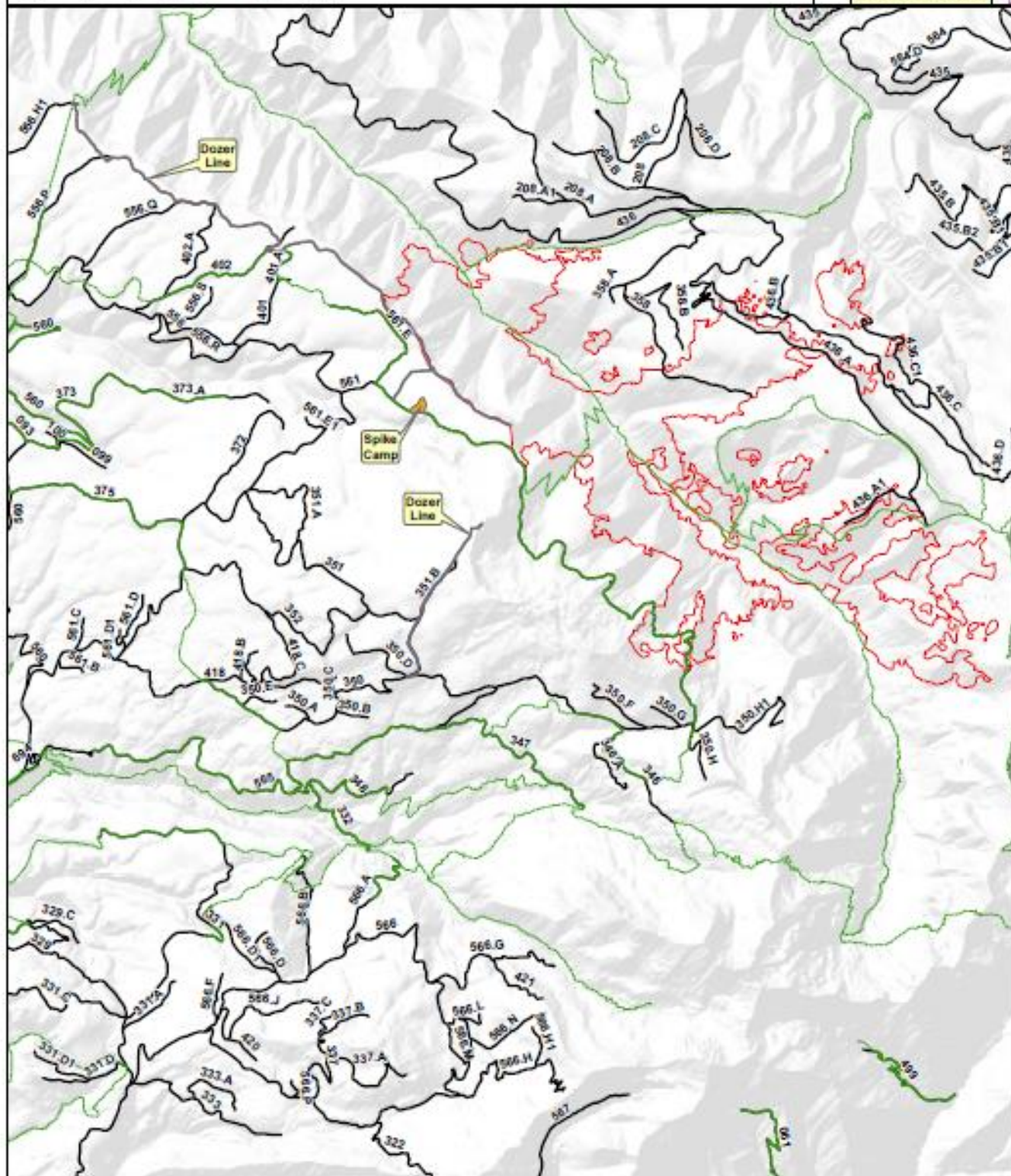


Burned Area Emergency Response
Proposed Noxious Weed
Treatments
BURRO BAER

Dolores Ranger District, San Juan National Forest
 Aug 27, 2018

Legend

- Burro Fire Perimeter
- Wilderness
- HUC 12 Watershed
- Logging Deck Road
- Spike Camp
- Dozer Lines
- National Forest System Trail
- National Forest System Road





Burned Area Emergency Response

Proposed Treatments

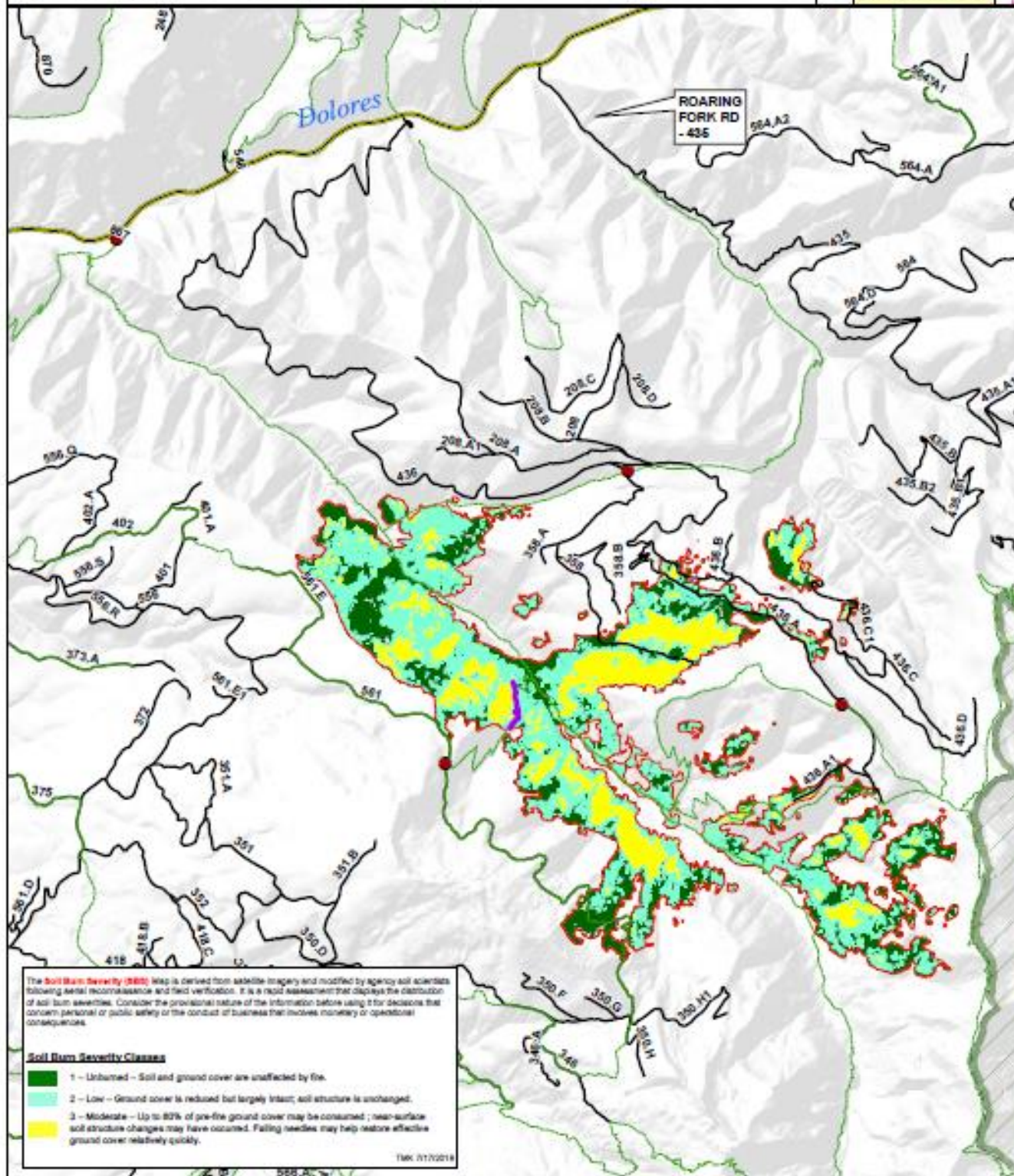
BURRO BAER

Dolores Ranger District, San Juan National Forest
Aug 27, 2018



Legend

- Burro Fire Perimeter
- Wilderness
- HUC 12 Watershed
- National Forest System Trail
- National Forest System Road
- Sign locations
- Trail Stabilization



I. Monitoring Narrative:

(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)

L1-Invasive Weed Detection and Treatment:- Implementation monitoring will be accomplished during the spraying. Areas sprayed will be mapped. An effectiveness monitoring plan will be submitted under an interim 2500-8 once the treatment has been implemented.

T1-Trail Stabilization: Monitoring will be done through trail patrol.

P1-Hazard Warning Signs: Monitoring will be done during trail patrol monitoring (T1).

Part VI – Emergency Stabilization Treatments and Source of Funds

Interim #

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										
L1-Noxious Weed Trtmt	acres	162	235	\$37,975	\$0		\$0		\$0	\$37,975
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Land Treatments				\$37,975	\$0		\$0		\$0	\$37,975
B. Channel Treatments										
NA				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Channel Treat.				\$0	\$0		\$0		\$0	\$0
C. Road and Trails										
T1-Trail Stabilization	each	17295	1	\$17,295	\$0		\$0		\$0	\$17,295
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Road & Trails				\$17,295	\$0		\$0		\$0	\$17,295
D. Protection/Safety										
P1-Safety Signs	each	754.5	4	\$3,018	\$0		\$0		\$0	\$3,018
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Structures				\$3,018	\$0		\$0		\$0	\$3,018
E. BAER Evaluation										
				---	\$11,500		\$0		\$0	\$11,500
Insert new items above this line!				---	\$0		\$0		\$0	\$0
Subtotal Evaluation				---	\$11,500		\$0		\$0	\$11,500
F. Monitoring										
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Monitoring				\$0	\$0		\$0		\$0	\$0
G. Totals				\$58,288	\$11,500		\$0		\$0	\$69,788
Previously approved										
Total for this request				\$58,288						

PART VII - APPROVALS

 1. _____
 Forest Supervisor (signature)

 Date

 2. _____
 Regional Forester (signature)

 Date