USDA-FOREST SERVICE FS-2500-8 (6/06)

Date of Report: 8-29-2012

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

[X] 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: Mistake Peak Fire

B. Fire Number: Az-TNF-000937

C. State: Arizona

D. County: Gila

E. Region: 03

F. Forest: Tonto

G. District: Pleasant Valley and Tonto Basin

H. Fire Incident Job Code: P3G5KC

I. Date Fire Started: Aug. 8, 2012

J. Date Fire Contained: Aug. 30, 2012

K. Suppression Cost: $3,100,000

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 3
2. Fireline seeded (miles):
3. Other (identify):

M. Watershed Number:

HUC6 No	HUC6 Name	Acres
150601030803	Upper Salome Creek	213
150601030804	Middle Salome Creek	40
150601050101	Buzzard Roost Canyon	1245
150601050102	Rock Creek	463
150601050405	Oak Creek	222
150601050408	Greenback Creek	2941

N. Total Acres Burned: 5220

NFS Acres(5220) Other Federal ( ) State ( ) Private ( )

O. Vegetation Types: Pinyon pine, juniper, oak brush, chaparral, grass, Ponderosa pine and understory

P. Dominant Soils: Typic Haplustalfs, Udic Paleustalfs

Q. Geologic Types: Apache Group-limestone, shale, quartzite, Diabase, Sandstone

R. Miles of Stream Channels by Order or Class:
Ephemeral – 15.9 miles
Intermittent – 3.9 miiles

S. Transportation System

Trails: 0 miles Roads: 16 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 1814 (low) 977 (moderate) 953 (high)

B. Water-Repellent Soil (acres): 1441

C. Soil Erosion Hazard Rating (acres):
753 (low) 2353 (moderate) 2000 (high)

D. Erosion Potential: 6.9 tons/acre

E. Sediment Potential: 2220 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 4

B. Design Chance of Success, (percent): 70

C. Equivalent Design Recurrence Interval, (years): 10

D. Design Storm Duration, (hours): 1

E. Design Storm Magnitude, (inches): 1.9

F. Design Flow, (cubic feet / second/ square mile): 230

G. Estimated Reduction in Infiltration, (percent): 20

H. Adjusted Design Flow, (cfs per square mile): 315

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

The Risk Matrix from Interim Directive No.: 2520-2012-1 was used to evaluate risk levels for values identified during the assessment.

BAER Risk Assessment

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**

Values at Risk

Life: Private lands with residences occur in Greenback Valley below much of the burned area. Approximately 20 percent of the burned area burned with moderate to high severity. Increases in peak flows are expected in Greenback Creek which passes through Greenback Valley. Changes in peak flows expected in Greenback Creek from the one hour thunderstorm are displayed in the table below.

Greenback Creek Peak Flows[1] (cfs)

Return Interval	1	2	5	10	25	50	100
Prefire	150	480	1210	1895	2980	3890	4860
Postfire	350	810	1755	2580	3840	4875	5990

[1]Peak flows are estimated using the Wildcat5 Computer Model

Residences in Greenback Valley are located on terraces well above the elevation of both pre and post fire peak flows. Burned area emergency threats to life and property appear to be unlikely on these private lands.

Risk Assessment – Threats to life on private lands in Greenback Valley

Probability of Damage or Loss – Unlikely

Magnitude of Consequence – Major. Should flood flows reach residences in Greenback Valley there is potential for loss of life and major damage to property

Risk Level: Intermediate – Treatments considered for threats to human life or safety.

Steep slopes burned with moderate to high burn severity above roads within the burned area. Many of these slopes are rocky and removal of the protective vegetative ground cover will expose travelers on these roads to threats from rolling rocks. Travelers on these roads are also threatened by flash floods and debris piles from several drainages that cross these roads that drain steep slopes. FR 609, although a Maintenance Level 2 road, provides alternative access to Tonto Basin from the Pleasant Valley area. This road in particular passes through areas of steep slopes that have burned with moderate to high severity.

Risk Assessment – Threats to travelers on roads within the burned area

Probability of Damage or Loss – Unlikely. This determination is based on the low level of use that occurs on roads within the burned area

Magnitude of Consequence – Major. This determination is based on the potential consequences of a vehicle traveling on roads within the burned area being hit by a rolling rock, flash flood, or by trying to navigate around debris on the road in areas where the road is bounded by steep slopes

Risk Level: Intermediate. Treatments should be considered for threats to human life or safety.

Property: Residences and outbuildings on private lands in Greenback Valley are unlikely to be affected by post fire peak flows due to their location on terraces above the floodplain of Greenback Creek. Forest Roads within the burned area are subject to damage from increased runoff, erosion, and debris, particularly from areas with moderate to high burn severity.

Risk Assessment – Threats to private property in Greenback Valley

Probability of Damage or Loss – Unlikely. Due to location out of the floodplain of Greenback Creek

Magnitude of Consequence – Minor

Risk Level – Very Low

Risk Assessment – Threats to Forest Service Roads

Probability of Damage or Loss – Likely. Due to location below steep slopes with moderate to high burn severity.

Magnitude of Consequence – Moderate. Determination is based on categorization of most of the roads as Maintenance Level 2 roads and some roads as Maintenance Level 1. FR 609 is an alternative routed from Pleasant Valley to the Tonto Basin area.

Risk Level - High. Treatments should be considered.

Threatened and Endangered Species Habitat: Mexican Spotted Owl habitat is the only threatened and endangered species habitat in the burned area. Two owl PAC's were located in the fire perimeter. One PAC was completely burned over in an area of primarily moderate and high severity burn, the other was only partially (30%) within the burned area in an area that burned primarily with light burn severity.

Risk Assessment – Threats to Mexican Spotted Owl habitat

Probability of Damage or Loss – Unlikely- One PAC is already destroyed the other is unlikely to be damaged by post fire conditions.

Magnitude of Consequence – Minor. The remaining Spotted Owl Pac is only partially within the burned area and burned with primarily low burn severity

Risk Level – Very Low

Native or Naturalized Communities: Approximately three miles of new dozer line were constructed to control the burn. Dozer work was also completed on roads within the burned area. Equipment used on the

fire came through Tonto Basin to get to the burned area. Several species of invasive plants have been documented in Tonto Basin and it is possible that invasive species were brought to the burned area by heavy equipment or vehicles based in or passing through Tonto Basin.

Risk Assessment – Threats to Native Communities

Probability of damage or Loss – Likely. The probability that nonnative invasive species were transported to the burned area by vehicles and equipment is probable.

Magnitude of Consequence – Moderate. If nonnative invasive species become established in the burned area it will be difficult to remove them. It is likely that if nonnative invasive species become established, their effects will be long term.

Risk Level – High – Treatments should be considered

Threats to Cultural Resources: Cultural resource sites exist within the burned area. Comparison of BARC images with known cultural resource sites and site specific surveys of selected known cultural resource sites was conducted to assess the likelihood of damage to these sites from post-burn conditions.

Risk Assessment – Threats to cultural Resources

Probability of damage or Loss – Unlikely. Comparison of BARC Maps with known sites and site specific surveys of selected sites suggests likelihood of damage from post-fire conditions is low.

Magnitude of Consequence – Minor. Should damage occur it would be limited to localized sites.

Risk Level – Low.

B. Emergency Treatment Objectives:

- Reduce the threat to life and property from rolling rocks, flash floods, and debris on roads within the burned area.
- Reduce the likelihood of damage to Forest Service system roads within the burned area.
- Reduce the potential for nonnative invasive species to become established in the burned area.

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

Land **90** % Channel **60** % Roads/Trails **60** % Protection/Safety **60** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	90	75	75
Channel	75	85	95
Roads/Trails	75	85	95
Protection/Safety	80	80	80

E. Cost of No-Action (Including Loss):

The benefits of the proposed treatments are primarily safety related. Quantification of these types of benefits is difficult. According to Wikipedia the Department of Transportation places a value of $6 million on a human life. If there is a 10% probability of a fatality without treatment then the benefit of the treatment would be about $600,000.

F. Cost of Selected Alternative (Including Loss): $90,400

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology [X] Soils [ ] Geology [ ] Range [ ]
[ ] Forestry [X] Wildlife [ ] Fire Mgmt. [X] Engineering [X]
[ ] Contracting [ ] Ecology [ ] Botany [X] Archaeology [ ]
[ ] Fisheries [ ] Research [ ] Landscape Arch [ ] GIS

Team Leader: Grant Loomis

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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:
Detect and Remove invasive species that may have been introduced by heavy equipment and vehicles entering and working within the burned area.

Channel Treatments:
Remove floatable debris from channels upgradient of Forest System roads in areas of moderate and high burn severity.

Roads and Trail Treatments:
Construct waterbars, clean ditches, and install rolling grade dips below areas of moderate and high burn severity on Forest System roads.

Conduct storm patrols following major storm to ensure road ways remain passable.

Protection/Safety Treatments:
Construct boulder and debris catchments upgradient of Forest System roads in locations where steep slopes with high rock content burned with moderate to high severity. Boulder and debris catchments would consist of fire killed trees felled perpendicular to the slope and anchored behind stumps or other trees.

Install hazard warning signs on roads entering the burned area.

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.)

Part VI – Emergency Stabilization Treatments and Source of Funds **Interim #**

Subtotal Land Treatments				$3,500	$0		$0		$0	$3,500
B. Channel Treatments										
Debris removal	mi	5000	1	$5,000	$0		$0		$0	$5,000
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$5,000	$0		$0		$0	$5,000
C. Road and Trails										
drainage imprvmnts	mi	3000	10	$30,000	$0		$0		$0	$30,000
Rolling Grade dips	mi	750	9	$6,750	$0		$0		$0	$6,750
Storm Patrol	ea	5000	1	$5,000	$0		$0		$0	$5,000
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$41,750	$0		$0		$0	$41,750
D. Protection/Safety										
hazard warning signs	ea	300	7	$2,100	$0		$0		$0	$2,100
Rock & debris ctchmts	ea	1250	20	$25,000	$0		$0		$0	$25,000
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$27,100	$0		$0		$0	$27,100
E. BAER Evaluation										
				---	$5,500		$0		$0	$5,500
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				---	$5,500		$0		$0	$5,500
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				$77,350	$5,500		**$0**		**$0**	**$82,850**
Previously approved										
Total for this request				**$77,350**						

PART VII - APPROVALS

1. _____ 9-5-12
Forest Supervisor (signature) Date

2. _____ _____
Regional Forester (signature) Date