USDA-FOREST SERVICE

FS-2500-8

Date of Report: ***June 23, 2011***

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: Greaterville

B. Fire Number: AZ-CNF-011042

C. State: AZ

D. County: Pima

E. Region: 3

F. Forest: Coronado National Forest

G. District: Nogalas Ranger District

H. Fire Incident Job Code: 0305 P3F27X

I. Date Fire Started: 5-2-2011

J. Date Fire Contained: 5-8-2011

K. Suppression Cost: $400,000

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): unknown
2. Fireline seeded (miles): None
3. Other (identify): None

M. Watershed Number: HUC 6 Watersheds: Gardner Canyon #150503020101, Empire Gulch # 150503020103, Box Canyon Wash # 150503010703

N. Total Acres Burned: Total 2392 NFS Acres (2335) Other Federal – BLM (0) State (0) Private (57)

O. Vegetation Types: The prominent vegetation type within the fire perimeter consisted of broadleaf evergreen woodlands and desert-fringe grasslands and chaparral communities. Riparian vegetation occurs in the major drainages.

P. Dominant Soils:

Soil Series	Slope (%)	Rock Outcrop (%)	Surface Soil Texture	Rock Fragments (%)	Erosion Hazard Rating	K-Factor	Hydrologic Group	Acres
FrE - Faraway-Rock outcrop complex, 10 to 30 percent slopes	30	35	Very cobbly, fine sandy loam	24	L	0.10	D	894.7
FrF - Faraway-rock outcrop complex, 30 to 60 percent slopes	60	45	Very cobbly, fine sandy loam	24	H	0.10	D	419.3
CmE - Casto very gravelly sandy loam, 10 to 40 percent slopes	40	0	Very gravelly sandy loam	45	M	0.10	D	399.2
BaE - Barkerville-Gaddes complex, 10 to 30 percent slopes	30	0	Cobbly sandy loam	30	L	0.17	C	348.3
WgE - White House gravelly loam, 10 to 35 percent slopes	35	0	Gravelly loam	11	M	0.15	C	173.1
HhE2 - Hathaway soils, 1 to 40 percent slopes, eroded	40	0	Gravelly sandy loam	12	M	0.15	B	93.5

Q. Geologic Types: The Greaterville Fire contains a complex of granite, granodiorite and sedimentary rocks.

R. Miles of Stream Channels by Order or Class: Perennial channels = 0, Intermittent Channels = 11 miles

S. Transportation System

Trails: 0 miles
Roads: 11 miles

PART III - WATERSHED CONDITION

A. Burn Severity by total and FS (acres):

Soil Burn Severity (Acres)	Acres	Percent
High	0	0%
Moderate	143.2	6%
Low	1657.2	69.3%
Unburned	591.5	24.7%
Total	**2392**	

B. Hydrophobic Soils: 200 acres. Hydrophobic conditions were inconsistent and are expected to exist in approximately 10% of the fire area or less.

C. Soil Erosion Hazard Rating (acres):

Low	1306.1
Moderate	666.4
High	419.5

D. Erosion Potential: The erosion hazard rating system used predicts that very few areas will have an increase above natural erosion levels as a result of the fire. ERMiT was used to predict sediment delivery to streams as shown below.

E. Sediment Potential:

Summary of Sediment Yield to HUC 6 Watersheds and other pourpoint watersheds
2 year runoff event

Watershed	Area (Mile^2)	Pre Fire Sediment (yd^3/mile^2)	Post Fire Sediment (yd^3/mile^2)	Sediment Increase (x Pre Fire)
1. Gardner Cyn	50.7	291	316	8
2. Empire Gulch	22.0	223	273	22
3. Box Cyn Wash	35.5	320	320	<1
4. Sawmill Cyn Wash	15.6	378	378	<1

Watersheds may include multiple fires. See soil specialist report.

F. Debris Flow Potential: Debris flow potential has not been exacerbated as a result of the fire.

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): understory forbs and grasses 2-3 years
overstory oak woodland 7 – 10 years

B. Design Chance of Success, (percent): 90

C. Equivalent Design Recurrence Interval, (years): 5

D. Design Storm Duration, (hours): 0.5

E. Design Storm Magnitude, (inches): 1.62

F. Design Flow, (cubic feet / second/ square mile): 195

G. Estimated Reduction in Infiltration, (percent): 0

H. Adjusted Design Flow, (cfs per square mile): 215

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

The Greaterville Fire started on May 2, 2011 and is approximately 2392 acres in size. The fire includes burned areas within several gulches and unnamed drainages. The Greaterville Fire burned moderately steep areas nine miles north of Sonoita AZ. The watersheds are characterized by moderately steep to steep rock armored slopes. A stock pond on Ophir Gulch was identified that may be at risk to fill with sediment from the burned area and future maintenance of the pond may be needed but is not recommended for treatment at this time.

The community of Greaterville is just downstream of the fire off of forest service lands; but the assessment team was advised not to visit the area on the ground because of safety concerns. Recommend notifying NRCS for final risk assessment on private land.

The large stock pond on Ophir Gulch was assessed; it is at risk to sediment fillage, but capacity is large so it should be able to be dredged before filling; the pond structure will not be compromised if filled and overtopped. No other values at risk were indentified during field surveys.

The climate is arid overall and precipitation in the fire area is moderate, averaging 19.5 inches per year. Rainfall occurs mostly during the summer months with the monsoons when the potential for intense and localized rainfall can occur. Vegetation consists of woodland forest with an overstory dominated by Oak and Mesquite and also desert grasses. The fire burn severity was mostly low overall with a few areas of moderate and unburned severity.

Summary of Watershed Response

Hydrologic Response: The Greaterville Fire has been analyzed by watersheds or pour points at locations in or downstream of the fire area. Watersheds are various sizes and shapes and are dependent on the analysis of the desired outlet or pour point above a value at risk or area of concern. None of these watersheds are expected to have significant increases in post fire water or sediment yield. This is due to the fact that most of the fire had a low burn severity with small pockets of moderate. Larger rain events do have the potential to increase the risk of flooding and sedimentation, though these risks are present with or without the effects of the Greaterville fire.

Hydrologic design factors used to analyze the effects of the Greaterville fire considered the vegetative recovery period estimated to be 3-5 years; treatment chance of success as 90%. Storm recurrence interval of 5 years and 30 minutes using NOAA Atlas 14 for 5-year-30-minute precipitation yielded a design storm magnitude of 1.62 inches of rainfall. Estimated reduction in infiltration was based on the percentage of hydrophobic soil in the burn area which was assessed at 0%. Pre-fire design flow was estimated at 195 cubic feet per second per square mile and post fire design flow was estimated at 215 cubic feet per second per square mile.

Erosion Response: Burn severity is primarily low and moderate. Erosional pavement consisting of cobbles and stones armors the surface from erosional processes. Erosion from the fire is expected to be low.

Geologic Response: The fire area is located on geologically stable bedrock.

Values at Risk

The risk matrix below, Exhibit 2 of Interim Directive No.: **2520-2010-1**, was used to evaluate the Risk Level for each value identified during 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**

Life: Increased risks to life as a result of the fire are minimal on NF lands. On FS lands the greatest identified risk is on roads in low water crossing and in drainages which are likely to see increased flow and bedload

movement during storms. On private lands the town of Greaterville is along Ophir Gulch. The team did not evaluate the risk but will pass on the information to NRCS and others that need to do further assessment on the level of risk.

Risk Assessment – Private Property

Probability of Damage or Loss: Possible depending on magnitude and duration of storm events.

Magnitude of Consequence: Minor to moderate

Risk Level: Intermediate

Property: Based on minimal expected watershed response, the BAER Assessment team determined that residences and private property within and below the fire area had a slight to moderate increased risk as a result of the Greaterville Fire. Forest Roads within the fire area have several low water crossings that may receive some deposition that would need to be cleaned off after storm events but are considered moderate risk for road damage.

Risk Assessment - Private Property

Probability of Damage or Loss: The probability of increased risk to private property is possible but unknown since the team did not visit the community of Greaterville (forest direction was not to visit site due to local issues).

Magnitude of Consequence: Moderate. This determination is due to the minimal change in watershed response. This determination was made based on the minimal change in watershed response.

Risk Level: Intermediate - Recommendation is to notify NRCS.

Risk Assessment – Forest Roads - Forest Roads within the fire area have several low water crossings that may receive some deposition that would need to be cleaned off after storm events but are considered low to moderate risk depending on storm intensity and duration

Probability of Damage or Loss: Possible

Magnitude of Consequence: Moderate

Risk Level: Intermediate

Water Quality and Quantity: No values at risk identified.

Threats to Soil Productivity: No values at risk identified. There is no emergency to soil productivity due to fire-adapted ecosystem, soil type, and lack of productive timber stands.

Threats to Cultural Resources: No values at risk identified

Threats to Wildlife: No values at risk identified. The wildlife concerns for the Greaterville Fire are: Loss of vegetative cover, foraging habitat.

Threats to Botany: There are no threatened or endangered plants in the fire area. There is no designated critical habitat for plants in the fire area.

Native Vegetation Recovery: Ecosystem stability of native plant communities in the Coronado NF is at risk.There is a high possibility of damage to the native plant community from noxious weed invasion. If new infestations are established the magnitude of the consequences would be moderate-to-major. The fire created

conditions conducive to the spread of the noxious weeds known to be within or near the fire area. The invasion of exotic vegetation, especially grasses and annual forbs as a result of fires reduces or displaces native plant species, thus impacting native vegetative recovery. Suppression activities have likely vectored noxious weed seed from one or more locations. Vehicles and equipment were not washed prior to entering fire area.

B. Emergency Treatment Objectives: Objectives of treatment are to protect life and property by signing roads and stream access areas to warn forest users of potential threats during storm events and to notify NRCS to evaluate the Greaterville community.

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

Land **--** % Channel **--** % Roads/Trails **100** % Protection/Safety **100** %

D. Probability of Treatment Success

	1	3	5
Land	NA	NA	NA
Channel	NA	NA	NA
Roads/Trails	NA	NA	NA
Protection/Safety	90%	100%	100%

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

F. Cost of Selected Alternative (Including Loss): N/A

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology	[X] Soils	[ ] Geology	[ ] Range	[X] Public Information
[ ] Forestry	[X] Wildlife	[ ] Fire Mgmt.	[X] Engineering	[X] BAER coordinator
[ ] Contracting	[ ] Ecology	[X] Botany	[ ] Archaeology	[ ] NRCS
[ ] Fisheries	[ ] Research	[ ] Landscape Arch	[X] GIS	[X} Logistics

Team Leader: Randy Westmoreland
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Core Team Members:

- Eric Nicita – Soil Scientist
- Curtis Kvamme – Soil Scientist (T)
- Mary Moore – Hydrologist
- Jennifer Bridgewater – Hydrologist
- Jim Schmidt – GIS
- Jason Dierberg – GIS (T)
- Tom Goheen - Logistics
- Marcie Baumbach – Wildlife
- Mike Friend - Botany
- Tim Merten – Roads Engineer
- Rebeca Franco - Information
- Bob Ramirez – Information
- Dave Young - BAER Coordinator

H. **Treatment Narrative**

The proposed treatments on National Forest System lands are to add to the existing signage to make forest users aware of the risk on road and near stream use areas during storm events.

Land Treatments

Noxious weed detection surveys are recommended. Common invasives to the area are present around the periphery of the fire, but are not currently present in much of the fire area; suppression activities have the potential to have spread invasive seeds to new areas. Reference the specialist report for species of concern and the recommended detection survey plan.

Channel Treatments

None recommended.

Road and Trail Treatments

Install Flash flood warning signs on roads; no known trails.

Protection/Safety Treatments

Item	Unit	Unit Cost	# of Units	Cost
Sign Installation	Each	$ 300	15	$4500
Total Request				$ 4500

I. Monitoring Narrative

None recommended

Recommendations: Notify NRCS to evaluate the community of Greaterville for potential risks of near stream structures

This report is an initial funding request based on a rapid assessment. If additonal treatment needs are identified through more site specific on the ground investigation in cooperation with interested agencies, and noxious weed detection surveys, interim requests for additional funding will be filed. These funding requests will identify the purpose for each treatment, and specific treatment specifications, locations, and number of each treatment.

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										
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$0	$0		$0		$0	$0
B. Channel Treatments										
				$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										
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$0	$0		$0		$0	$0
D. Protection/Safety										
Warning Signs		300	15	$4,500	$0		$0		$0	$4,500
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$4,500	$0		$0		$0	$4,500
E. BAER Evaluation										
				---			$0		$0	$0
Insert new items above this line!				---	$6,960		$0		$0	$6,960
Subtotal Evaluation				---	$6,960		$0		$0	$6,960
F. Monitoring										
Noxious weed detection survey		2750	1	$2,750	$0		$0		$0	$2,750
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$2,750	$0		$0		$0	$2,750
G. Totals				$7,250	$6,960		**$0**		**$0**	**$14,210**
Previously approved										
Total for this request				**$7,250**						

PART VII - APPROVALS

1. /s/Jim Upchurch — 7/25/2011
Forest Supervisor (signature) — Date

2. /s/ C. L. Newman, Jr. — 7/29/2011
Regional Forester (signature) — Date

Value at Risk Tool calculations were not performed due to lack of VARs and treatments.