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

Date of Report: July 13, 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: Canyon

B. Fire Number: AZ COF 00527

C. State: AZ

D. County: Coconino

E. Region: 3

F. Forest:Coconino

G. District:Mogollon Rim

H. Fire Incident Job Code: P3GZ6N

I. Date Fire Started: 6/29/2012

J. Date Fire Contained (expected) :7/15/2012

K. Suppression Cost: $575,000 (7/6/2012)

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred and covered with slash (miles): 1.8
2. Fireline seeded (miles): 0
3. Other (identify): hazard tree removal about 1 - 2 miles. Archaeological site stabilized and protected with fire rehab suppression crews. Loacl logs and rocks used for stabilizationa and water diversion.

M. Watershed Number: 1502000805 (Jacks Canyon)

N. Total Acres Burned: 8700
NFS Acres(**x**) Other Federal ( ) State ( ) Private ( )

O. Vegetation Types: Pinyon, juniper, blue grama and bunchgrasses, Ponderosa pine in limited acres

P. Dominant Soils: Lithic and Calcic Ustochrepts, loamy-skeletal and fine-loamy, carbonatic, mesic, shallow and moderately deep, gravelly fine sandy loams and Lithic and Typic Haploborolls, loamy-skeletal, mixed, shallow and moderately deep, fine sandy loams.

Q. Geologic Types: Residuum from limestone.

R. Miles of Stream Channels by Order or Class: 28.5 total. Order 1 – 10, Order 2 - 18.5

S. Transportation System

Trails: 16.5 miles Roads: 9 miles open TMR.

PART III - WATERSHED CONDITION

A. Burn Severity (acres by Coconino NF) (Field mapping only):
(low and unburned) 6994 acres or 79.1%, (moderate) 913 acres or 10.5%, (high) 793 acres (10.4%).

B. Water-Repellent Soil (acres): 290 High severity on 15-40% slopes was slightly to moderately hydrophobic.

C. Soil Erosion Hazard Rating (acres approximate):
4974 (slight) 1907 (moderate) 1819 (severe)

D. Erosion Potential: 2.3 tons/acre

E. Sediment Potential: 1164 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 5

B. Design Chance of Success, (percent): na no treatments

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

D. Design Storm Duration, (hours): 3

E. Design Storm Magnitude, (inches): 2.1

F. Design Flow, (cubic feet / second/ square mile): 1200 cfs/7619 acres or 100.1 cfs/sq. mile

G. Estimated Reduction in Infiltration, (percent): 5

H. Adjusted Design Flow, (cfs per square mile): 105.0

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats: The Canyon Fire (about 8700 acres), which was reported on June 29, 2012 was caused by a lightning strike during the very beginning on the monsoon season. The fire was suppressed. BAER field assessment of burn severity and values at risk was conducted on July 9, 2012. The BAER team contacted the Remote Sensing Application Center (RSAC) for assistance in burn severity mapping using satellite imagery and Burned Area Reflectance Classification (BARC) maps. BARC maps were

not available initially so fined mapping techniques were used on-site to map burn severity. BARC maps will be integrated at a later date.

The fire burned in a mosaic of low and unburned and a few patches of moderate and high burn severity. 6994 acres or 79.1% burned in the low and unburned class. 913 acres or 10.5% burned in the moderate class. 793 acres or 10.4% burned in the high burn severity class.

The vast majority of the fire acres are located on relatively flat ridgetops with less than about 5% slope. Most burned in a low and unburned mosaic with in overall even spilt of about 50% low burn severity and 50% unburned. A few ridgetops burned in the high burn severity class where prefire pinyon-juniper canopies were dense. Where pinyon-juniper stands were converted to seral grasslands, burn severity is mostly low and unburned. Low and unburned areas have adequate vegetative ground cover similar to prefire conditions. High burn severity areas have lost most or all of the protective vegetative ground cover and are susceptible to accelerated erosion. Moderate burn severity has about half of the original vegetative ground cover and should prevent accelerated erosion where the thickness is at least ½ inch. Otherwise, these soils will be subject to accelerated erosion. A few ridge tops and steep canyon slopes did not burn but were included in the low and unburned class. There are small acreage inclusions of high burn severity generally less than 1-3 acres included in the low and unburned class.

WEPP erosion modeling indicates soils will be subject to accelerated erosion during storm events above tolerable limits only on areas of moderate and high burn severity on slopes greater than about 15%. This amounts to about 452 acres and is small in extent (about 6% of fire) and not expected to contribute and deliver large amounts of sediment or rock fall into Jacks Canyon. Low burn severity areas have adequate vegetative ground cover similar to prefire conditions and do not contribute additional sediment downstream. Watershed recovery period is expected to be about 5 years and will gradually approach prefire vegetative ground cover conditions at that time.

Hydrologic modeling on the fire area itself shows prefire flow of 918 cfs. Post-fire modeling dhows a 33% increase or 1200 cfs. However, it is important to realize the fire area modeled is only about 7600 acres and overestimates the actual flow difference between pre and post fire conditions. Since only about 15% of the fire burned in moderate and high burn severity class and only amounts to 1163 acres which is very small in proportion to 6th HUC contributing watershed size of 100,000 acres, post-fire storm events are predicted to be similar to prefire events in magnitude and should not significantly accelerate erosion or runoff and flooding and does not pose a significant risk to any life, property or cultural or natural resources including riparian area habitat and function and emergency watershed treatments are not recommended.

Two Mexican spotted owl PACs (Jackie O and Jack in the Box) are located within or partially within the fire perimeter. Jack in the Box only burned in the low and unburned class. Almost all of Jackie O burned in the Low and unburned class but 2 small polygons burned in the high (less than about 60 acres) and moderate class. Additionally, the roost tree located in Jackie O did not burn. Overall, the fire was confined to the ground and lower branches on the ponderosa pine trees and should stimulate herbaceous growth in the understory.

The nearest connected stream with perennial water is East Clear Creek some 30 miles downstream so contributed sediment should not accumulate in the water.

Two small gallery coniferous forest burned on the bottom of Jacks Canyon. The gallery located in the NW quarter of section 27 only burned in the low class while the gallery in in NE quarter of section 28 burned in the moderate class. Riparian areas are resilient and frequently subject to disturbances (including flooding) that are necessary to regenerate tree seedlings and riparian forests. Therefore, both galleries may experience a bit higher peakflows that should not negatively affect riparian forest sustainability.

Two climbing areas along Jacks Canyon are within the fire perimeter. Neither was subject to direct fire and neither has burned areas directly above the climbing walls. It is possible that heat from adjacent fire may have weakened the actual walls and may have caused instability. Hydrologic and soil modeling show only a slight increase in erosion and peak flows. Since there is a very slight increase in peakflow (flooding) and erosion (debris flow) compared to unburned conditions, there is a slight risk to human safely in the event climbers

attempt to cross Jacks Canyon during an intense storm but probably not much more than prefire conditions. The contributing watershed is so much larger than the small area that burned in the fire. Therefore the expected postfire storm runoff, debris flow and flooding is not believed to pose a substantial risk to life safety and property.

A total of 77 previously recorded cultural sites occur within the burn perimeter area, the majority of these occur within the NW quarter of the fire, south and upslope of Chavez Draw. By prioritizing sites with likely subsurface deposits in areas of high-moderate burn severity, a total 15 sites were assessed. These sites include: (03-04-07) -79, -122, -123, -124, -125, -334, -444, -574, -735, -752, -753- 754, -772, -778, and -781. All of these sites fall within unburned, low, and moderate burn severity. No sites appeared directly threatened by post-fire watershed conditions. Accordingly, none of the assessed sites warrant BAER treatments.

One lithic scatter site, located at the confluence of Chavez Draw and Jack's Canyon, is recorded as a lithic scatter with "bone and charcoal eroding out of the west bank." No bones were found. The site was protected using local fire suppression rehab personnel. Local materials including downed logs and rocks were used to stabilize and protect site from possible runoff and no further BAER treatment is necessary.

There are many hazard trees along SR 87 between mileposts 309.6-313.6 northbound and 311.15-311.6 south bound that are expected to fall within close proximity to passing motorists within 1-2 years and pose risk to public safety. However, SR 87 is a maintenance responsibility of ADOT and not USFS unless we are planning to maintain areas within the hazard ones and therefore not eligible for BAER treatment funding.

Identified values include the following, MSO PACS, recreational climbing access, soil productivity, stockwater sites, roads and public safety along roads and riparian habitat. Identified values at risk are public safety along SR 87 and public safety to climbing areas.

Summary: Since only about 21% of the fire burned in moderate and high burn severity class and only amounts to 1706 acres which is very small in proportion to 6th HUC watershed size, post-fire storm events should not significantly accelerate erosion, runoff or flooding and does not pose a significant risk (possible but very improbable Value at Risk Category) to any life, property or cultural or natural resources and emergency watershed treatments are not recommended.

B. Emergency Treatment Objectives:

1) Reduce risk of injury to recrational climbers in the Jacks Canyon climbing areas by posting warning signs.

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

Land __ % Channel ___ % Roads/Trails _ % Protection/Safety __**25**__ %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel			
Roads/Trails			
Protection/Safety	100	100	100

E. Cost of No-Action (Including Loss): Injury to human life possible.

Per VAR worksheet, if life and safety are the justification for treatment, no monetized value is required and no calculations are made

F. Cost of Selected Alternative (Including Loss): **$2000 and safety to life**

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Rory Steinke

Email: rsteinke@fs.fed.us Phone: 928-527-3451 FAX: 928-527-3600

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: none
Channel Treatments: none
Road and Trail Treatments: none

Protection/Safety Treatments: Several warning signs will be posted at entrances to two climbing areas in Jacks Canyon. Signage at the dispersed camping aeras of the Asylum and the main dispersed camping area along FR 9736V. Signage will inform climbers and hikers that flashfloods and falling rocks and debris could result as a result of the wildfire.

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.)

No monitoring requested.

Part VI – Emergency Stabilization Treatments and Source of Funds Interim

			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
				$0	$0		$0		$0	$0
				$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
				$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										
Hazard Tree Removal	miles			$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 Road & Trails				$0	$0		$0		$0	$0
D. Protection/Safety										
Warning Signage & Im	each	200	10	$2,000	$0		$0		$0	$2,000
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$2,000	$0		$0		$0	$2,000
E. BAER Evaluation										
	pdays	15	375	---	$5,625		$0		$0	$5,625
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				---	$5,625		$0		$0	$5,625
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				$2,000	$5,625		**$0**		**$0**	**$7,625**
Previously approved										
Total for this request				**$2,000**						

PART VII - APPROVALS

1. /s/ M. Earl Stewart. — July 13, 2012
   Forest Supervisor (signature) — Date

2. /s/ Gilbert Zepeda (for) — July 18, 2012
   Regional Forester (signature) — Date