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

Date of Report: July 28,2006

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: Millard and Sawtooth

B. Fire Number: Millard: CA-BDF-6773
Sawtooth: CA-BDU-007229

C. State: California

D. County: San Bernardino and Riverside

E. Region: Pacific Southwest Region (R5)

F. Forest: San Bernardino

G. District: Front Country and Mountain Top

H. Fire Incident Job Code: Millard: P5CXH6
Sawtooth:

I. Date Fire Started: Millard: 7/9/06
Sawtooth: 7/9/06

J. Date Fire Contained: Millard: 75% as of 7/30/06
Sawtooth: 7/18/06

K. Suppression Cost: as of 7/20/06 – Millard: $11,000,000
- Sawtooth: $17,000,000

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): Approximately 40 miles of dozer line, 2 miles of hand line.
2. Fireline seeded (miles):
3. Other (identify): Approximately 7 miles of dozer line on BLM (Millard only).

M. Watershed Number: Millard: 1810020001 (San Gorgonio River) and1810020002 (Whitewater River)
Sawtooth: 1810010003 (Pipes Wash) and1810020002 (Whitewater River)

N. Total Acres Burned: Millard: Total Acres: 24,210 acres (as of 7/20/06)
NFS Acres(9,403) BLM (8,606) State (n/a) Private (6,201)
Sawtooth: Total Acres: 62,854 acres
NFS Acres(418) BLM (23,188) State (n/a) Private (39,248)

O. Vegetation Types: pinyon-juniper, semi-desert chaparral, interior sage scrub, and mixed conifer.

P. Dominant Soils: WpG – Wapal family – Lithic Xerothents, cool association, 50-75% slopes

LrG - Lithic Xerothents – Rock outcrop complex, 50-100% slopes
LdG - Lithic Xerothents, cool – Rock outcrop complex, 50-100% slopes
DhG - Lithic Xerothents – Springdale Family – Rubble land Assoc. 50-100% slopes

Q. Geologic Types: Mesozoic Granitic Rocks; Paleozoic marine, undivided; Precambrian igneous and metamorphic rock complex; and Alluvium (mostly Holocene, some Pleistocene), Quarternary nonmarine/Quarternary marine

R. Miles of Stream Channels by Class: Millard: Perennial: 6.9 miles; Intermittant = 24.5 miles
Sawtooth: Perennial: 0.0 miles; Intermittant = 1.2 miles

S. Transportation System: Millard: Roads – 0.2 miles; Trails – 4.9 miles
Sawtooth: Roads – 0.0 miles; Trails – 0.0 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres):							
Millard/Sawtooth (combined)	NFS	558	(low)	1,470	(moderate)	7,793	(high)
	BLM	4,987	(low)	18,511	(moderate)	8,300	(high)
	Private	7,405	(low)	29,307	(moderate)	8,733	(high)
	Total	**12,950**	**(low)**	**49,288**	**(moderate)**	**24,826**	**(high)**

B. Water-Repellent Soil (acres): 7,793 acres

C. Soil Erosion Hazard Rating (acres):
0 (low) 0 (moderate) 9,181 (high)

D. Erosion Potential: 20 tons/acre

E. Sediment Potential: 6,160 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

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

B. Design Chance of Success, (percent): 80%

C. Equivalent Design Recurrence Interval, (years): 2

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches): 1.97

F. Design Flow, (cubic feet / second/ square mile): 16.0

G. Estimated Reduction in Infiltration, (percent): 28

H. Adjusted Design Flow, (cfs per square mile): 24.0

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

1. Threats to Human Life And Property:

a. Human Life – There is an increased risk of localized flooding and debris flows within and down stream of the burned area as a result of the Millard and Sawtooth Fires. Within the Upper Whitewater River subwatershed, a trout farm with several outbuildings; and Bonny Bell, a private residentital area consisting of several occupied homes, exist adjacent to the river. Both locations are on private land and the hatchery is in process of being purchased by The Wildlands Conservancy. These facilities are not considered at risk from any debris flow or flood event generated from NFS lands as a result of the burned area in the Millard or Sawtooth fires.

b. Roads and Trails – There is less than a quarter mile of native surface roads on National Forest System (NFS) within the burn area. Numerous local native surfaced roads exist in both Whitewater River watershed and Mission Creek watershed along with State Highway 62 and Interstate 10. All these roads are downslope and down stream of NFS land and could be affected by increased stream/debris flow generated from the burn area within NFS land. Caltrans informed the BAER team that the bridge on I-10 at the Whitewater River crossing was designed for a thousand year flood event. Two trails are located within the Millard/Sawtooth fire: the Pacific Crest Trail (PCT) and the East Branch Millard Canyon Trail (2E09). About 1¾ mile of the PCT in section 31 and 36, and about 1½ miles of 2E09 in sections 1 and 6, are within the burn area. For both trails, hazards caused by the fire include falling snags, falling debris from steep slopes, diminished drinking water quality from local streams, potentially large burnt out stump holes, and potentially unstable hillsides.

c. Millard Canyon Research Natural Area (RNA) – The 785 acre Millard Canyon RNA represents interior live oak (*Quercus wislizenii*) vegetation and is located on the eastern slope of the middle fork of Millard Canyon. It is estimated that 90 acres burned into the RNA from the ridge line, down slope into Millard Canyon. Since the strategy for this area is to protect and manage natural areas to maintain unmodified conditions and natural processes, the impact of burn is considered a natural process.

d. Power Supply - A gas pipieline and a wind farm (series of electricity generating windmills) are located in the Whitewater River wash south of Interstate 10. These facilities are not considered at risk from any debris flow or flood event generated from NFS lands burned in the Millard or Sawtooth fires.

2. Threats to Water Quality:

a. Threats to water quality and flooding including private wells, municipal water supply sources within and downstream of the burned area - The BAER Team hydrologist contacted High Desert Water District and talked with a pump operator named Joe from Yucca Valley. When asked if there were any facilities downstream of the burned area in flood prone areas, Joe said the District has two facilities they are concerned about downstream of the Sawtooth Complex. There is an access road near the intersection of Ridge R. and Pinyon that crosses Pipes Creek. Joe said that there are flooding problems here during normal high runoff events. He was also concerned about Well #2. The BAER Team passed this information to the BLM field office in Palm Springs.

The BAER Team contacted Mission Springs Water District to determine if there were any company facilities of concern downstream of the Millard Complex. Jeff Nutter told the BAER hydrologist that there is a reservoir tank about a mile downstream of HWY 62. He said that he didn't think there should be any problems because there is a dedicated flood control channel that diverts the storm water runoff in Mission Creek around the facility. He said that water quality should not be an issue because they pump the District's water supply from groundwater wells and there is no surface water diversion from Mission Creek.

3. Threats to Long Term Soil Productivity: None

4. Threats of Noxious Weeds and Invasive Weed Invasion: Trails provide a vector for weed invasion. Weed seeds are carried from other areas on hiking boots, and are also introduced and spread by

horses and other packstock. The disturbed margins of trails provide suitable open site for weed germination and spread along the length of the trail, and subsequently out into adjacent wildland habitats. Fire provides an opportunity for small infestations along trails to invade aggressively into adjacent areas. The following trail sections burned:

1. Pacific Crest Trail, sec 31 and 36, Onyx Quad SW, along the North Fork of Mission Creek; 1 ¾ mi
2. Forest Road 1N05 and trail extending to the east from the road's eastern limit along the NE wilderness boundary; 1mi
3. Middle Fork Jumpoff trail, two sections, sec 28 (San Gorgonio Quad SE) ¼ mi, and sec 17 (San Gorgonio Quad NE) 1/8 mi.
4. Trail 2E09 between Millard Cyn. and Stills Landing, north of Grape Cyn., 1 ½ mi.
5. Kitching Peak Trail SW of Grape Canyon, ½ mi.

Reported infestations within the burn area are limited to two records of tamarisk (*Tamarix cf. ramosissima*) within the San Gorgonio Wilderness. These records are along the Kitching Peak trail and in the upper Whitewater River. By opening habitat structure, fire results in rapid spread of tamarisk through riparian areas, and resulting collapse of riparian biodiversity and reduction in water quality and quantity.

Contingency dozer lines constructed on NFS land as part of the combined Millard-Sawtooth-Heart incident included a total of 10.25 miles of widened trail, 9.75 miles of widened road, 15.65 miles of upland cross-country and 0.55 miles cross country in riparian habitat. These areas are at high risk of new introduction and spread of noxious weeds and other invasive weeds. Weed seeds can be introduced from other areas by heavy equipment, and the disturbed soils provide a receptive environment for rapid invasion along the lines and outward into adjacent wildland habitats.

5. **Threats to Wildlife Resources:** There is designated critical habitat for arroyo toad (ARTO) in the Whitewater River drainage on Bureau of Land Management (BLM) lands. There is also a small amount of modeled habitat for this species within the fire perimeter on the Forest. The concerns are that increased flows of water, sediment, and debris from Forest Service lands higher in the watershed could increase scouring in the drainage and adversely modify the habitat for arroyo toad. Currently, there are no known occurrences of arroyo toad on Forest Service lands within the fire perimeter. However, it is possible that this species could have gone undetected. The concern is that unknown populations may be impacted during the erosion and sedimentation events that occur post-fire.

   Proposed critical habitat occurs within the main stem of the Whitewater River for mountain yellow-legged frog (MYLF). The concern is that increased water flows will scour drainages, sediment may fill in pools, and ash/sediment will reduce water quality, thus reducing the suitability of the habitat for MYLF. Currently, there are no known occurrences of MYLF on Forest Service Lands within the fire perimeter, although it is known to occur historically. It is possible, however, that this species has gone undetected. The concern is that unknown populations may have been impacted during the fire and may be impacted during erosion and sedimentation events that occur post-fire.

   Whitewater River and tributaries have suitable and modeled habitat for least Bell's vireo (LBV) and southwestern willow flycatcher (SWWF). The burn area within the Forest Service boundary is not currently known to be occupied by either of these species. The concern is that increased water and sediment flows will scour out necessary riparian vegetation in drainages, thereby reducing the suitability of habitat for these two species. In addition, riparian habitat that was burned during the fire was reduced in suitability for all of these species.

   Based on the latest data layers, there are 13 California spotted owl (CASPO) territories on the Forest that were impacted by these fires. The concern is that substantial habitat for this declining species has been lost as a direct result of fire.

   Feral cattle occupy areas near the burn perimeter of the Millard Fire. There is a concern that these "wild" bovines may move into riparian areas affected by the burn. Upon further investigation, it was

determined that the cows occupy Stubbe Canyon, a subwatershed unaffected by the burn, and will most likely remain in their present location.

6. Threats to Botanical Resources: *Chorizanthe xantii* var. *leucotheca* is known for multiple records along the Whitewater River. An occurrence west of Wathier Landing on the Eastern Edge of the San Gorgonio Wilderness on the SBNF is the only known record from within the burn area. According to the burn severity map, the general area where this species is known to occur burned at high severity. Based on known distribution and habitat, it is likely that the Whitewater River provides more or less continuous habitat for this species from above Wathier Landing south to Interstate 10. This SBNF watch-list species is not well understood, but members of the genus *Chorizanthe* in general tend to thrive post-fire. The BAER Assessement Team proposes to conduct noxious weed detection surveys during the first year after the fire. Please refer to Appendix A - Noxious Weeds Detection Survey.

7. Threats to Archaeological Resources: There are no known Archaeological resources affected by either the Millard or the Sawtooth Fires. There are no land disturbing treatments proposed for the burned area, except for installing closure/warning signs. Archeaological coverage will be implemented prior to installing signs.

B. Emergency Treatment Objectives:

To protect life and property associated with the Pacific Crest Trail (PCT) and the East Branch Millard Canyon Trail (2E09), the BAER Asssessment Team does recommend the closure of both trails and the installation of signs informing the public of the temporary closures. Emergency closures are currently in place. Administrative closures will be necessary for both the trails until the existing hazards have been fully assessed and the threat of fire no longer exist. Close coordination will also be necessary because the majority of the affected section of the PCT is on BLM land. After lifting the closure, warning signs that address the hazards will need to be posted at various locations of access. The trails will be patrolled using District personnel prior to anticipated storms to ensure drainage structures are functioning and the trail tread is free of fallen material caused by the burned conditions, including rocks and vegetation, which could impede or endanger the public assess of the PCT trail. The BAER Team recommends maintaining communication with other Federal, State, and Local governmental organizations and adjacent private land owners regarding the inherent watershed response to impending precipitation events.

To determine if the fire has enabled the establishment and spread of noxious weeds, and to detect such establishment and spread as early as possible, the BAER Asssessment Team recommends a weed detection survey be conducted by District botany personnel. Early detection dramatically increases the likelihood of successful treatment.

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

Land 75% Channel n/a % Roads/Trails 75% Protection/Safety 75%

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	95	n/a	n/a
Channel	n/a	n/a	n/a
Roads/Trails	95	95	n/a
Protection/Safety	95	95	n/a

E. Cost of No-Action (Including Loss): $166,305

F. Cost of Selected Alternative (Including Loss):$45,505

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Tim Biddinger (Forest BAER contact is Marc Stamer)

Email:tbiddinger@fs.fed.us Phone:530-478-6249 FAX:

Core Team
Tim Biddinger (Team Leader)
Rick Weaver (Hydrologist/Geology)
Rob Taylor (Hydrologist/Geology)
Kim Boss (Wildlife Biologist)
Scott Eliason (Botantist)
Jason Bill (GIS)
Uyen Doan (Archaeologist)
Sharon Barfknecht (Wilderness Specialist)
Tim Williams (Wilderness Specialist)

Extended Team
Marc Stamer (Forest BAER Coordinator)
Jan Beyers (Ecologist)
Jim Wilkens (PIO)

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: To determine if the fire has enabled the establishment and spread of noxious weeds, and to detect such establishment and spread as early as possible, the BAER Team recommends noxious weed detection surveys be conducted. Early detection dramatically increases the likelihood of successful treatment. If weeds are detected, a supplemental request for BAER funds will be made for eradication. A detailed weed detection survey plan is attached (Appendix A). The total cost for the noxious weeds detection survey will be $9,980 for the first year after the fire. We request authority to spend $9,980 the first year, and if a noxious weed infestation is found, we will submit an interim report requesting funding to eradicate this population.

Channel Treatments: N/A

Roads and Trail Treatments: Because the majority of the Pacific Crest Trail (PCT) and 2E09 is located inside the San Gorgonio Wilderness, treatment must be minimal. Emergency closures are currently in place due to the fires. Administrative closures will be necessary for both the trails until the existing hazards have been fully assessed and the threat of fire no longer exists. Close coordination will also be necessary because the majority of the affected section of the PCT is on BLM land. After lifting the closure, warning signs that address the hazards will need to be posted at various locations of access. The treatment objective is to protect the general public from immediate hazards, and to warn the general public of potential life threatening hazards after the fire emergency closure is lifted.
Installation of closure and warning signs will occur at various access and information points for both trails. Prior to installation of these signs, Forest Service district archeologists and biologists will be consulted to survey the sites. After lifting the administrative closure, warning signs will replace the closure signs. Therefore, for the second set of sign installations, resource personnel will not be consulted.
Treatment Cost – Unit Cost:
Three employees will be needed for 3 days to install the two sets of signs.

1 GS-11 archeologist at $300/day	$ 900
1 GS-11 biologist/botanist at $300/day	$ 900
1 GS-5 Wilderness Ranger at $200/day	$ 600
17 information signs will be needed:	
7 closure signs at $125 per sign	$ 875
12”x18” brown/white reflective aluminum	
10 warning signs at $1250 per sign	$1,250
12”x18” brown/white reflective aluminum	
10 metal u-posts plus hardware at $25 each	$ 250
Cost of 3 vehicle/days to complete the proposed projects	$ 165
Total Cost of Signs	**$4,940**

PCT Protection/Safety Treatments:

On the Pacific Crest Trail (PCT), a patrol and safety assessment by Forest Service personnel, along with volunteers from the public, will be conducted prior to anticipated storms to ensure drainage structures are functioning and the trail tread is free of fallen material caused by the burned conditions, including rocks and vegetation, which could impede or endanger the public assess of the PCT trail.

Two employees will be needed for 3 days to patrol the PCT.

2 GS-5 Wilderness Rangers at $200/day	$1,200
Cost of Vehicle to access PCT ($55/day)	$ 165
Total Cost of Patrol and Assessment	**$1,365**

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.)

There is no monitoring needs associated with the Millard/Sawtooth Fire complex since no land or channel treatments are proposed.

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										
Weed Survey				$0	$0		$0		$0	$0
GS-12 botantist	days	410	1	$410	$0		$0		$0	$410
GS-11 botanist	days	350	1	$350	$0		$0		$0	$350
GS-9 botantist(2)	days	255	34	$8,670	$0		$0		$0	$8,670
Vehicles	miles	0.55	1000	$550	$0		$0		$0	$550
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$9,980	$0		$0		$0	$9,980
B. Channel Treatments										
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$0	$0		$0		$0	$0
C. Road and Trails										
GS-5 Personnel	days	200	6	$1,200	$0		$0		$0	$1,200
Vehicles	miles	0.55	300	$165	$0		$0		$0	$165
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$1,365	$0		$0		$0	$1,365
D. Protection/Safety										
GS-11 Personnel	days	300	6	$1,800	$0		$0		$0	$1,800
GS-5 Personnel	days	200	3	$600	$0		$0		$0	$600
Closure Signs	sign	7	125	$875	$0		$0		$0	$875
Warning Signs	sign	10	125	$1,250	$0		$0		$0	$1,250
Posts	post	10	25	$250	$0		$0		$0	$250
Vehicles	miles	0.55	300	$165	$0		$0		$0	$165
Subtotal Structures				$4,940	$0		$0		$0	$4,940
E. BAER Evaluation										
Salaries	days	500	56	$28,000	$0		$0		$0	$28,000
Per Diem	days	160	20	$3,200	$0		$0		$0	$3,200
Supplies	1	250	1	$250						$250
Vehicles	use	1000	1	$1,000	$0		$0		$0	$1,000
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Evaluation				$32,450	$0		$0		$0	$32,450
F. Monitoring										
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$0	$0		$0		$0	$0
G. Totals				$48,735	$0		**$0**		**$0**	**$48,735**
Previously approved										
Total for this request				**$48,735**						

PART VII - APPROVALS

1. /s/ Max Copenhagen 8/1/06
   Forest Supervisor (signature) Date

2. /s/ Beth G. Pendleton (for) 8/2/06
   Regional Forester (signature) Date

Appendix A
Noxious weeds detection survey:

Noxious Weeds

Invasive species are one of the Forest Service Chief's "Four Threats to the Nations Forests and Grasslands", and reducing the introduction and spread of non-native invasive species has been identified as a Forest Service Strategic Goal for 2003-2008. Dandelions are known from mountain meadows within the burned area that provide habitat for the endangered California taraxacum. Tamarisk is also known from two wilderness areas within the burn perimeter. Fire is known to enhance the establishment of all of the weeds present as weeds are aggressive at invading newly disturbed open areas.

Management concerns: Noxious weed invasions interfere with habitat recovery and ecosystem health within burned areas. In particular, noxious weeds interfere with the recovery of habitat, especially in meadow and riparian areas. Heavy equipment can introduce weed seeds to dozerlines and associated safety zones and staging areas, and dozer lines provide a highly invasible corridor into wildlands. Dandelions can not only spread aggressively through montane meadows post-fire, but can pollute the gene pool of the endangered California taraxacum through hybridization. Trails can be vectors of weed invasion, and small infestations along trails can rapidly expand post-fire. Tamarisks can invade riparian systems aggressively post fire, collapse the riparian ecosystem, and reduce water quality and quantity.

Objectives: 1) To determine if the fire has enabled the establishment and spread of noxious weeds, and to detect such establishment and spread as early as possible; and 2) To determine if heavy equipment use and dozerline construction has resulted in weed introduction and spread along dozerlines and associated disturbed areas. Early detection dramatically increases the likelihood of successful treatment. If weeds are detected, a supplemental request for BAER funds will be made for eradication.

Parameters: Invasive weed presence, density and persistence.

Locations: Riparian areas, meadows, trails, contingency dozerlines and associated disturbed areas (*e.g.* staging areas, safety zones), and existing recorded occurrences.

Weed Detection Survey Design and Methodology: Surveys will begin in 2007 during the flowering periods for weeds. Surveys will focus on meadows, trails and known weed locations. Surveys will also be performed along dozerlines created as part of the Millard-Sawtooth-Heart incident. Surveys during this year (FY06) would not be effective at detection due to seasonality and insufficient time post-burn and/or post disturbance. Any locations of weeds would be mapped. Surveys would be completed using the NRIS protocol available at the national web site: http://fsweb.ftcol.wo.fs.fed.us/frs/rangelands/index.shtml. Results will be entered into the NRIS database.

Reporting: A Weed Detection Survey Report will be submitted to Regional BAER coordinator, the forest weed coordinator, and to the District Ranger. If weed introduction and spread has occurred, an Interim BAER report would be completed to request funding for eradication and subsequent surveys. Reporting costs are included in figures below.

Costs: Weed Detection Surveys for 1 year = $9,980.00.

FY 2007

GS-12 botanist ($410/day x 1 day)	=$	410.00
GS-11 botanist ($350/day x 1 day)	=$	350.00
2-GS-9 botanists ($255/day x 17 days x 2)	=$	8,670.00
Vehicle mileage (1000 miles @ 0.55/mile)	=$	550.00
TOTAL for weed detection surveys for FY07 =	$	9,980.00

Personnel: SBNF staff will be used for surveys under direction of the Forest or District Botanist. The San Gorgonio Wilderness Volunteers may also assist in survey and eradication efforts.

Responsible staff: Melody Lardner, Forest Botanist; Scott Eliason, Mountaintop District Botanist; or Front Country District Botanist (possibly to be filled FY07).

Follow-up actions: Design and implement follow-up treatments as needed. Plan for integrated weed management and NEPA process if necessary using non-BAER funding.

Appendix B
Figures

Sawtooth - Millard Combined Incident Burn Severity Map