

8/03/2006

Date of Report:

BURNED-AREA REPORT
(Reference FSH 2509.13)**PART I - TYPE OF REQUEST**

A. Type of Report

- ☒ 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: San Rafael Complex B. Fire Number: CA-LPF 1442
C. State: CA D. County: Santa Barbara
E. Region: 5 F. Forest: Los Padres
G. District: Santa Lucia H. Fire Incident Job Code: P5C0T1
I. Date Fire Started: 7/22/2006 J. Date Fire Contained: 7/30/2006
K. Suppression Cost: 2.8 million
L. Fire Suppression Damages Repaired with Suppression Funds
 1. Fireline waterbarred (miles): 8 miles
 2. Fireline seeded (miles): 0
 3. Other (identify): 1 mile handline
M. Watershed Number: 1806000801
N. Total Acres Burned: 2022
 NFS Acres(x) Other Federal () State () Private ()
O. Vegetation Types: 80 % mixed chaparral, 10% coastal sage chaparral, 5% redshank chamise chaparral, 3% Bigcone douglas fir, and 2% live oak
P. Dominant Soils: Millsholm – Exchequer-Stonyford family complex on 30-75% slopes A thermic sedimentary soil, shallow to moderately deep, constituting a mass wasting complex

Q. Geologic Types: Un-named marine strata of hard arkosic sandstone which includes interbedded conglomerate and micaceous clay soil

R. Miles of Stream Channels by Order or Class: five miles of 1st order streams at the top of the Horse Canyon Creek.

S. Transportation System

Trails: 0 miles Roads: 0 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 106 (low) 820 (moderate) 1096 (high)

B. Water-Repellent Soil (acres): low water repellency

C. Soil Erosion Hazard Rating (acres):
 (low) (moderate) x (high)

D. Erosion Potential: 20 tons/acre

E. Sediment Potential: 2021 cubic yards / square mile in the 1st yr = 5.1x increase

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 7

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

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

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches):

F. Design Flow, (cubic feet / second/ square mile): 66

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

H. Adjusted Design Flow, (cfs per square mile): 1546.54

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

The BAER team identified critical values and resources at risk and threats near and downstream from the Bald fire by speaking with local specialists, from their own previous work in this area, and from an aerial overflight and video. Threats include the likelihood of noxious weed invasion along the fuelbreak on the north side of the fire, and the loss of water control at the Horse Canyon sediment dam downstream of the fire which may result in damage to heritage resources here.

The Bald Fire, which is a part of the San Rafael Complex of four fires, burned 2022 acres between July 22 and July 30, 2006 and was ignited by a lightning strike about 500 feet below the Sierra Madre Ridge within the San Rafael Wilderness. This is part of the Horse Canyon watershed which is 21.8 square miles in size and within the larger Sisquoc Drainage which is 240 square miles at the confluence of Horse Canyon. The other three fires totaled less than five acres in size. The Bald fire burned for two days, when a thunderstorm dropped ½ inch of rain on it, slowing it down considerably. After two days of drying it burned actively again until coastal humidity slowed the fire enough so that retardant drops along the ridgelines held the fire. This fire had notably few resources on it due to the regional drawdown of forces responding to a many lightning fires which resulted in less than one mile of hand line construction along the ridge. Fire intensities and soil burn severities were relatively high due to the high component of dead fuel that was built up since the last fire in the 1950's.

Erosion potential was determine based on estimates calculated on the nearby Logan Fire in 1997 using the ONEROS model. Sediment potential is based on the Rowe, et al. (1949) technique based on Alamo Creek (table 245). Design flow and adjusted design flow were based on Waananen and Crippen (1977).

The fire area is completely within the wilderness with no recreational access, no recorded or likely heritage resource sites, and no TES species known within the burn. The fire burned up to the ridgeline where it stopped at the pre-existing Sierra Madre fuelbreak. This fuelbreak was re-worked with bulldozers during the fire.

Several circumstances related to fire suppression efforts could contribute to the spread of noxious weeds in the burn area:

1. It is unknown whether equipment on the San Rafael Complex was weed free prior to arriving at the incident. Equipment includes engines, dozers, passenger vehicles, contractor's equipment, aviation equipment, etc.
2. Populations of Italian thistle (*Carduus pycnocephalus*), tocolote (*Centaurea melitensis*), and yellow star thistle (YST) (*Centaurea solstitialis*) occur along one of the major access routes to the fire, Sierra Madre Rd. The fire occurred during the time of year when all three species are dispersing seed. These seed are easily transported on vehicles moving up and down the road during the fire and could also spread through the air to newly exposed soil created in the dozer lines.
3. A population of Russian knapweed (*Centaurea repens*) is of concern. The population is located on the Sierra Madre Rd. (UTM Zone 11, 249013mE, 3857037mN) a major travel corridor for the fire. This population was bladed by a dozer during the Perkins fire late last month and loose material could have been carried to other locations by vehicles traversing this route. This species spreads vegetatively so seeds are not necessarily required. This species was also dispersing seed at the time if the fire.

Two known historic archeological sites exist at the floodplain just downstream from the old debri dam built in 1969 near the mouth of Horse Canyon. In the event that a debri flow resulting from the increased runoff and erosion from the Bald fire was deposited on the surface of sediments behind the existing dam, this may result in a diversion of water around the dam site and over the archeological sites, destroying these surface remains. One prehistoric site also exists in this same area that is at risk of being eroded out by a diverted flow.

Literature Cited

Rowe, P. B, C. M. Countryman, and H. C. Storey. 1949. Probable Peak Discharges and Erosion Rates From Southern California Watersheds As Influenced by Fire. California Forest and Range Experiment Station. USDA Forest Service.

Waananen, A. O. and J. R. Crippen. 1977. Magnitude and frequency of floods in California. USGS, Water Resources Investigation 77-21, Menlo Park, CA 96 pages.

B. Emergency Treatment Objectives:

- 1) Prevent the expansion of existing invasive weed populations found within the Bald Fire.
- 2) Prevent the establishment of invasive weed species not previously found in the Perkins Fire area.
- 3) Mitigate the impact of water flow and erosion through two historic archeological sites and one prehistoric sites in Horse Canyon.

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

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

D. Probability of Treatment Success

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

E. Cost of No-Action (Including Loss):_ Potential spread of Italian thistle (*Carduus pycnocephalus*), tocolote (*Centaurea melitensis*), yellow star thistle (YST) (*Centaurea solstitialis*), and Russian knapweed (*Centaurea repens*) beyond existing localized infestations to significant parts of the 2022 acres Bald Fire area and associated dozer lines. There is also the potential that other noxious and invasive weeds introduced from suppression equipment may become established throughout the area. Both circumstances would result in significant degradation of wildlife habitat. Failure to mitigate the impact to archeological sites in the area would result in irreplaceable loss of cultural knowledge .

F. Cost of Selected Alternative (Including Loss):

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input type="checkbox"/> Range	<input type="checkbox"/>
<input type="checkbox"/> Forestry	<input checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input type="checkbox"/> Engineering	<input type="checkbox"/>
<input type="checkbox"/> Contracting	<input type="checkbox"/> Ecology	<input checked="" 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 type="checkbox"/> GIS	

Team Leader: Kevin Cooper

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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:

Monitoring Plan

Because our policy is to minimize the establishment of non-native invasive species to prevent unacceptable degradation of the burned area, it is necessary to conduct monitoring to evaluate the potential for spread from both existing populations and from the activities associated with fire suppression. Therefore, noxious and invasive weed monitoring is proposed for a period of one to three years to verify the suspected infestations and determine the fire's potential impact on weed populations within the burned area. If the monitoring shows that there is successful reproduction of certain noxious or invasive weed species and a sharp upward trend occurs as a result of the San Rafael Complex, it may trigger the need for further treatment and action. Reports will be turned in to the Regional BAER coordinator annually, which will disclose the prior year funding and explain and justify the future year funding.

It is necessary to monitor of all dozer lines and travel routes for the next three years especially if new weed detections take place in the first year (FY 2007). There are 6 miles of dozer lines that will have to be monitored by walking. All travel routes on the forest will need to be monitored and checked for new weed infestations.

A Weed Detection Survey Report would be submitted to Regional BAER coordinator and to the Santa Lucia District Ranger. If weed introduction and spread has increased due to effects of the San Rafael Complex, an Interim BAER report would be completed to request eradication funding.

The following noxious weeds are present within the San Rafael Complex burned area:

Carduus pycnocephalus (Italian thistle) is found in locations along Sierra Madre Rd. It is a Mediterranean native annual or sometimes biennial. It infests roadsides and waste areas, and can be a major problem in hill pasture land.

Centaurea melitensis (tocolote) is found in locations along Sierra Madre Rd. Although it is not yet on the State Noxious Weed List, it is in the same genus and is often mistaken for yellow star thistle, classified as a "C" Pest. It is an aggressive invasive weed, a Southern European annual common in waste places, fields, along trails, and roads.

Centaurea repens (Russian knapweed) is found along Sierra Madre Rd at Lyon Canyon. It is an Eurasian perennial widely established in the west that spreads aggressively by black adventitious roots that penetrate to a depths of over 8 feet.

Centaurea solstitialis (yellow star thistle) is found in locations along Sierra Madre Rd. It is a southern European annual with longer spines than tocolote, rated as a "C" Pest on the State Noxious Weed List. Yellow star thistle is spread almost exclusively by seed, which may lie dormant for as long as 10 years and is known to cause "chewing disease" and death in horses. Studies have shown that repeated prescribed burns (at least 3 consecutive years) may reduce the yellow star thistle seed bank, but burning during the appropriate phenological stage is critical for the elimination of seed production. Although yellow star thistle is not known

to out compete chaparral, it is critical to minimize potential spread while native vegetation recovers within the burned area. It will persist along roads and continuously disturbed areas.

Costs:

Fiscal Years 2007, 2008, 2009 – Total estimated costs = \$7,496.04

FY 2007 – Monitor extent of noxious weed species occurrence, concentrating in the burned area along travel routes and dozer lines. Submit report to Regional BAER Coordinator. Evaluate need for further action and treatment.

GS –11 Botanist - Simpson	\$372.96/day x 5 days = \$1,864.80
GS – 9 Forester - Murphey	\$193.47/day x 10 days = \$1,934.70
Mileage:	200 miles 0.45/mile = \$90.00

Total Cost Estimate for FY 2007 = \$ 3,889.50

FY 2008 – Monitor extent of noxious weed species occurrence, concentrating in the burned area along travel routes and dozer lines. Submit report to Regional BAER Coordinator. Evaluate need for further action and treatment.

GS –11 Botanist - Simpson	\$372.96/day x 2 days = \$745.92
GS – 9 Forester - Murphey	\$193.47/day x 5 days = \$967.35
Mileage:	200 miles 0.45/mile = \$90.00

Total Cost Estimate for FY 2008 = \$ 1,803.27

FY 2009 – Monitor extent of noxious weed species occurrence, concentrating in the burned area along travel routes and dozer lines. Submit report to Regional BAER Coordinator. Evaluate need for further action and treatment.

GS –11 Botanist - Simpson	\$372.96/day x 2 days = \$745.92
GS – 9 Forester - Murphey	\$193.47/day x 5 days = \$967.35
Mileage:	200 miles 0.45/mile = \$90.00

Total Cost Estimate for FY 2009 = \$ 1,803.37

Channel Treatments:

Roads and Trail Treatments:

Protection/Safety Treatments:

In order to completely survey the two known historic and one prehistoric site in danger of washing out near the existing debris dam, one archeologist will need to spend one or two field days on sight and then complete the documentation from an office. These sites are known of but have incomplete surveys. The purpose of the complete surveys would be to capture the information about the site so that it is not lost in the event that loss of water control at the dam site destroyed it.

Cost for a GS-11 archeologist is 260/day. Total cost estimate is \$1040

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.)

See noxious weed treatment narrative.

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										
Weed detection	Surv		1	\$3,890	\$0		\$0		\$0	\$3,890
Archeological surv.	site		3	\$1,040	\$0		\$0		\$0	\$1,040
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Land Treatments</i>				\$4,930	\$0		\$0		\$0	\$4,930
B. Channel Treatments										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Channel Treat.</i>				\$0	\$0		\$0		\$0	\$0
C. Road and Trails										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Road & Trails</i>				\$0	\$0		\$0		\$0	\$0
D. Protection/Safety										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Structures</i>				\$0	\$0		\$0		\$0	\$0
E. BAER Evaluation										
							\$0		\$0	\$0
<i>Insert new items above this line!</i>				---	\$0		\$0		\$0	\$0
<i>Subtotal Evaluation</i>				\$6,225	\$0		\$0		\$0	\$6,225
F. Monitoring										
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Monitoring</i>				\$0	\$0		\$0		\$0	\$0
G. Totals				\$11,155	\$0		\$0		\$0	\$11,155
Previously approved										
Total for this request				\$11,155						

PART VII - APPROVALS

1. /s/ GLORIA D. BROWN
Forest Supervisor (signature)

8/03/06
Date

2. /s/ BETH PENDLETON (for)
Regional Forester (signature)

8/14/06
Date