

BURNED-AREA REPORT

(Reference FSH 2509.13)

I. Type of Report: George Fire, Initial BAER Request

- I. Type of Action**

- ## **PART II - BURNED-AREA DESCRIPTION**

B. Fire Number: CA-SQF-1384

D. County: Tulare

F. Forest: Sequoia

I. Estimated Fire Contained: N/A

K. Fire Suppression Damages Repaired with Suppression Funds

- L. Watershed Number: Freeman Creek Basin - 180300103**

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

O. Dominant Soils: Boomer-Cozier-Rock Outcrop, Chawanakee- Rock Outcrop, Holland-Dome- Chaix

P. Geologic Types: **Granodiorite (85%), with some Miocene flood basalt.**

Q. Miles of Stream Channels by Order or Class: **1st Order – 0.0 Miles, 2nd Order – 0.1 Miles,
3rd Order – 2.0 Miles**

R. Transportation System

Trails:0.5 miles

Roads:1.35 miles

PART III - WATERSHED CONDITION

A. USFS Burn Severity (acres): 412 (low) 1175 (moderate) 20 (high)
USFS Burn Severity (%): 24 (low) 68 (moderate) 2 (high)

B. Water-Repellent Soil (acres): **Majority of soils within the fire are naturally water repellent.**

C. Soil Erosion Hazard Rating (acres):
310 (low) 494 (moderate) 896 (high)

D. Erosion Potential: Pre-Fire 0.80 tons/acre, Post-Fire 1.51 tons/acre

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 4 to 6

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

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

D. Design Storm Duration, (hours): 6.0

E. Design Storm Magnitude, (inches): 2.2 inches

F. Design Flow, (cubic feet / second/ square mile): 3.84

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

H. Adjusted Design Flow, (cfs per square mile): 6.2

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

TRAILS

Two Forest Service system hiking/stock trails of concern were identified within the fire perimeter as potential values at risk and were surveyed on the ground to determine if an emergency existed. The emergency is defined as a loss of the trail tread and trail infrastructure, loss of recreational use of the trails, and the potential for trail related watershed degradation due to post-fire impacts. Another consideration was if the trails became severely damaged by post-fire runoff, the cost of rebuilding of the trails would be very high. The trail stream crossings on the main channels were evaluated to determine if stream flow would have a potential to divert onto the trails and cause damage.

The two trails surveyed are as follows:

Freeman Creek Trail (Trail # 32E20) - One trail mile was assessed just adjacent to the south-west fire perimeter. This section of trail surveyed was from the Lloyd Road to the wooden trail bridge just above the Bush Tree.

Fish Creek Meadow Trail (Trail # 32E12) – One-half trail mile was assessed within the fire perimeter. The section of trail surveyed was from the junction of the Forks-of-the-Kern Road to the northern fire perimeter.

With the burned condition on the slopes within and adjacent to the identified treatment sections of the trails, storm runoff is likely to be increased and concentrate onto the trails. Considering the conditions found on the trails surveyed, as described in this report, moderate trail damage and some off-trail erosion/sediment delivery to channels is likely to occur along the identified trail sections (see BAER Soil Burn Severity/Treatment Map). Trail incision and loss of trail tread could occur, therefore resulting in loss of trail infrastructure possibly leading to significant repairs and costs to restore sections of the trails. Loss of water control could lead to off-trail slope erosion and gully formation. Once active gullies are developed, gullies will continue to erode during each storm event and contribute to downstream sedimentation and trail instability.

The risk of damage occurring to the trails without treatment is likely. The magnitude of the consequences would be moderate. Using the Risk Assessment Matrix, the treatment priority would come out as high.

ROADS

Forks-of-the-Kern Road, No. 20S67, begins at the Lloyd Meadow Road and ends at the Forks-of-the-Kern Trail parking area. The road has two culverts downstream from the George Fire. The first culvert on the Lloyd Meadow Creek is an 8-foot culvert with cemented abutments. A willow is covering part of the culvert. Farther down the road there is a second culvert about 5 feet in diameter and has debris (live and dead willows) blocking the inlet.

B. Emergency Treatment Objectives:

TRAILS

Objectives of the trail treatments are to minimize trail degradation and off-trail erosion and reduce the potential loss of trail tread that could cause loss of trail recreational use along with expensive trail rebuilding costs. If treatments are not implemented, the trail tread will likely sustain damage that would require repair costs that would likely exceed stabilization costs significantly.

ROADS

The objective of the culvert treatment (clearing the debris from the inlets) is designed to accommodate increased flow and sediment.

C. Probability of Completing Treatment Prior to First Major Damage-Producing Storm:

TRAILS Land % Channel % Roads 90 % Trails 90 %
ROADS Land % Channel % Roads 90 % Trails 90 %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel			

Roads	90%	90%	90%
Trails	80%	80%	80%

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

TRAILS

Having to rebuild/reroute 3 miles of trail at an approximate cost of \$110,000

ROADS

Having to rebuild road after culvert plugs, water ponds and overtops the road. Cost \$105,000

F. Cost of Selected Alternative: \$7,986

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input checked="" type="checkbox"/> Recreation	<input type="checkbox"/>
<input type="checkbox"/> Forestry	<input type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input type="checkbox"/> Engineering	<input type="checkbox"/>
<input type="checkbox"/> Contracting	<input checked="" 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: Email: flinton@fs.fed.us Phone: (559) 784-1500 x1185

H. Treatment Narrative:

Land Treatments: N/A

Channel Treatments: N/A

Roads and Trail Treatments: In the identified treatment areas (see BAER Soil Burn Severity & Treatment Map) all existing water control features such as water bars should be maintained and repaired to meet best effectiveness. Additional water bars should be installed along steep trail sections in high and moderate burn severity areas where concentrated runoff is likely to occur and likely to channel flow onto the trail sections. Approximately 1.2 miles of trail will need stabilization treatments.

Water bar treatments consist of installing both rock lined and earth fill (rolling dip or berm) structures and rock or log grade stabilizers (checks). Rock and soil will be collected from adjacent sources near the work sites (rock is available).

Road treatments consist of cleaning debris obstructing the water flow through the culverts.

Structures: N/A

I. Monitoring Narrative: It is important that the treatment sites be monitored post-implementation to determine prescription effectiveness, for documentation purposes, and to assess maintenance needs. Without monitoring and maintenance, treatments (roads and trails) could lose their effectiveness and the initial investment could be lost. The monitoring sites should also be surveyed by a qualified watershed or trails specialist. Monitoring of treatments should be completed after the first post-fire damage and any other major events thereafter for at least 2 years to identify maintenance and additional treatment needs.

Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership

Line Items	Units	Cost	Units	SULT \$	\$	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										
Trail Stabilization	Miles	4,155	1.2	\$4,986	\$0		\$0		\$0	\$4,986
Culvert Clearing	Each	1,000	2	\$2,000	\$0		\$0		\$0	\$2,000
Implementation Lead	Days	250	4	\$1,000	\$0		\$0		\$0	\$1,000
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Road & Trails				\$7,986	\$0		\$0		\$0	\$7,986
D. Structures										
				\$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 Structures				\$0	\$0		\$0		\$0	\$0
E. BAER Evaluation										
	Days	2,833	6	\$17,000	\$0		\$0		\$0	\$17,000
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Evaluation				\$17,000	\$0		\$0		\$0	\$17,000
F. Monitoring										
		0		\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Monitoring				\$0	\$0		\$0		\$0	\$0
				\$0						
G. Totals				\$24,986	\$0		\$0		\$0	\$24,986

Forest Supervisor (signature)



Date 2 JULY 2012

Regional Forester (signature)



Date 7/12/12