USDA-FOREST SERVICE FS-2500-8 (7/00)

Date of Report: June 22, 2002

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

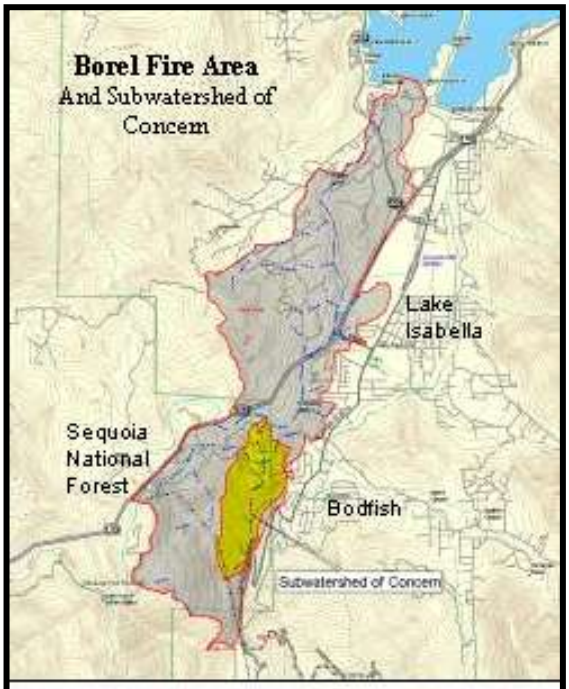
[x] 1. Funding request for estimated WFSU-SULT funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

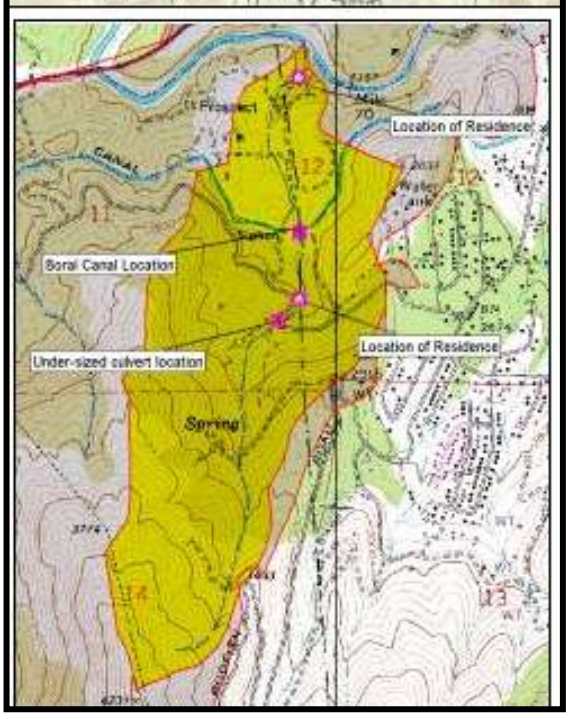
B. Type of Action

[X] 1. Initial Request (Best estimate of funds needed to complete eligible rehabilitation 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: Borel Fire

B. Fire Number: CA-SQF-001139

C. State: California

D. County: Kern

E. Region: 5

F. Forest: Sequoia

G. District: GreenHorn

H. Date Fire Started: 6/15/2002 1250

I. Date Fire Contained: 6/19/2002 1800

J. Suppression Cost: est 1.9 – 2 million

K. Fire Suppression Damages Repaired with Suppression Funds:

Fireline waterbarred (miles): 1.75 miles
Fireline seeded (miles): 0
Other (identify): Closed 1 dozer trail, brushed fireline at OHV trail intersections

L. Watershed Number: 1803000301 Lower Kern River

M. Total Acres Burned: 3416
NFS Acres (1,266) Other Federal: BLM (1,623), Army Corps of Engineers (34) State (0) Private (493)

N. Vegetation Types: Oak Woodland

O. Dominant Soils: Cieneba, coarse sandy loam derived granitic rock

P. Geologic Types: Granitic

Q. Miles of Stream Channels by Order or Class:
4.7 miles Class I&II, 8 miles Class 3 2.7 miles of canal numerous dry washes

R. Transportation System
Trails: 3 miles Roads: 15 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 3416 (low) 0 (moderate) 0 (high)

B. Water-Repellent Soil (acres): 0

C. Soil Erosion Hazard Rating (acres):
0 (low) 0 (moderate) 3416 (very high)

D. Erosion Potential: 180 tons/acre (based on very high erosion rating and evidence of excessive erosion in burn area)

E. Sediment Potential: 70 cubic yards / square mile

Soils in the fire area exhibit excessive erosion under pre fire conditions. Headwaters of the fire area are very steep where active dry ravel is currently occurring

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): 2

E. Design Storm Magnitude, (inches): 1.5

F. Design Flow, (cubic feet / second/ square mile): 15[1]

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

H. Adjusted Design Flow, (cfs per square mile): 57[2]

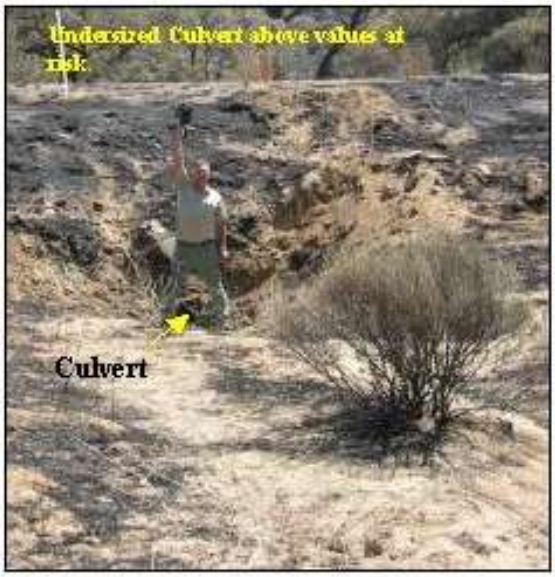
PART V - SUMMARY OF ANALYSIS

[1] Using Equations on page 6 of Magnitude and Frequency of Floods in California, Waananen and Crippen, June 1977
[2] Uses the assumption that the intensity of the burn would cause the average 2-year storm event to cause a discharge of a 5-year event.

A. Describe Watershed Emergency:

The emergency is associated with (1) *inadequate road drainage* that could lead to *debris flows and flooding* in a watershed that drains the southern portion of the fire and (2) *potentially hazardous-material and toxic waste* entering ground water, polluting the soil, or flowing into the Kern River as a result of the 35 residences consumed by the fire.

Field review of the road infrastructure for the Borel Fire burned area revealed the Road 214 has one culvert that is need of replacing. The existing culvert is a 12-inch diameter culvert and is approximately 70 feet in length. It is located in a 15-foot embankment on a curve with an asphalt road surface and berm (see photos below). The project is located in the East ½ of the Southeast ¼ of the Southeast ¼ of Section 11 of Township 32 E. and Range 27 S. Miracle Hot Springs 7.5 minute Quadrangle. This road drains and is located on Sequoia National Forest land.



The drainage area above this culvert is approximately .5 square miles in size with steep terrain. Elevation difference above the culvert is plus 1,200 feet in ¾ mile distance. Terrain is mostly grass with areas of

Sagebrush, Buck brush and Oak and Pine trees. Granitic soils are the primary soil type with pockets of solid rock and boulders.

In the area below the culvert site exists private property and a large canal owned by the Southern California Edison company. At 150 feet below the culvert in question exists private property with a well built home and several out buildings such as garages, sheds including other misc. property items and owner built roads. The home is approximately 300 feet from the culvert. Further down at approximately 900 feet is a twelve (12) foot diameter metal canal structure that rests upon a concrete based structure. The concrete structure has three – 36-inch metal culverts used to drain water under the canal pipe. In the same drainage further down to the river at ¼ mile is two other homes. Both homes are up out of the drainage at a minimum of 15 feet vertically. A tack shed and coral for horses exists in the center of the drainage. The tack shed and homes are all approximately 300 feet from the Kern River at a location known as Quonset Beach. All of these structures lie in the drainage of concern and would be in the path of an earth flow or flood waters. The preceeding maps show the location of the subwatershed of concern within the fire area and the location of values at risk within the subwatershed of concern.

The photo shows the upstream dwelling, the Borel canal lying in the drainage of concern, and dwellings located about 3000 feet downstream of the undersized culvert. The drainage of concern flows directly into the Kern River. The culvert in question drains the road just off the left hand side of the photo. In addition to the road drainage concern, there is concern of the potential for toxic runoff into the Kern River from hazardous material from burnt residences located in the immediate watershed. All of the residences are located on private lands. Randy Cohl (661-330-0188) of Kern County Fire was contacted regarding this concern and has since contacted Kern County Health Services.

B. Emergency Treatment Objectives:

- Minimize the risk of damage, flooding or debris flow to Road 214 on Forest Service Lands, private dwellings, Borel Canal, and possibly the hydroelectric power plant.

- Minimize or eliminate the risk of toxic material entering the water table, soil profile, or Kern River from hazardous material resulting from residences consumed by the fire.

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

Land 0 % Channel 0 % Roads 90 % Other 0 %

D. Probability of Treatment Success

	Years after Treatment		
	1	**3**	**5**
Land	Na	Na	Na
Channel	Na	Na	Na
Roads			
Culvert Replacement	80%	85%	90%
Other	Na	Na	Na

E. Cost of No-Action (Including Loss): $1,744,000

F. Cost of Selected Alternative (Including Loss): $453,000

Cost-Risk analysis included is in report. Resources at risk include the two concentrations of dwellings in the upper and lower subwatershed and the Borel Canal conduit that crosses the drainage of concern. Also included in the resource at risk estimate is the loss of power generation resulting from failure of the canal during the time required for repairs. Lands officer Eric Ostly was consulted for cost estimates.

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Terry A. Kaplan-Henry

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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:

Other than removal of hazardous materials there are no land treatments prescribed.

Channel Treatments:

None

Roads and Trail Treatments:

Replace existing 12 in culvert on Road 214 above residences and canal with a 36-inch culvert with metal end Section and riprap material. (See engineering design). Instillation of this culvert will be able to meet new design flow requirements that resulted from the fire. It is expected that flows would increase to roughly four (4) times the average storm. This action would increase protection of downstream values at risk.

Structures:

None

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.)

Monitor the instillation of the culvert as per design and the effectiveness of the culvert to pass storm-flows and maintain the integrity of drainage. BMPEP forms would provide and adequate evaluation of implementation and effectiveness for project. Monitoring would occur during and after instillation for proper implementation and effectiveness would be evaluated after the first precipitation event has occurred.

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

			NFS Lands				Other Lands			All
		Unit	# of	WFSU	Other	# of	Fed	# of	Non Fed	Total
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
Subtotal Land Treatments				$0			$0		$0	$0
B. Channel Treatments										
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Channel Treat.				$0			$0		$0	$0
C. Road and Trails										
	job	17,000	1	$17,000			$0		$0	$17,000
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Road & Trails				$17,000			$0		$0	$17,000
D. Structures										
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Structures				$0			$0		$0	$0
E. BAER Evaluation										
	day	300	6	$1,800			$0		$0	$1,800
				$0			$0		$0	$0
F. Monitoring	day	300	4	$1,200			$0		$0	$1,200
G. Totals				**$20,000**			**$0**		**$0**	**$20,000**

PART VII - APPROVALS

1. /s/ Arthur L. Gaffrey — 06/26/02
   Forest Supervisor (signature) — Date

2. /s/Gilbert Espinosa (for)_____ — 7/03/02
   Regional Forester (signature) — Date