

USDA-FOREST SERVICE

Date of Report: June 16, 1997

BURNED-AREA REPORT
(Reference FSH 2509.13, Report FS-2500-8)

PART I - TYPE OF REQUEST

- A. Type of Report
☐ 1. Funding request for estimated EFFS-FW22 funds
☒ 2. Accomplishment Report
☐ 3. No Treatment Recommendation
- B. Type of Action
☐ 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 and design analysis
☐ Status of accomplishments to-date
☒ 3. Final report - following completion of work

PART II - BURNED-AREA DESCRIPTION

- A. Fire Name: Marple B. Fire Number: ANF 3504
- C. State: California D. County: Los Angeles
 E. Region: Pacific Southwest (05) F. Forest: Angeles (01)
 G. District: Saugus (53)
- H. Date Fire Started: August 26, 1996 I. Date Fire Controlled: September 9
 J. Suppression Cost: \$ 6,200,000.00
- K. Fire Suppression Damages Repaired with EFFS-PF12 Funds:
 1. Fireline waterbarred (miles) 33
 2. Fireline seeded (miles) 18*
 3. Other (identify) Additional Fireline Rehabilitation - \$69,660.00
 * - Fireline seeded "naturally" by pulling back berms and brush, and adding additional cut brush to develop seed bank and retard erosion.
- L. Watershed Number: 1807010206, 1807010207
- M. NFS Acres Burned: 13,992 Total Acres Burned: 21,418
 Ownership type:
 (5,996)State ()BLM (1,500)PVT ()
- N. Vegetation Types: Chamise chaparral; chamise chaparral, sagebrush
 O. Dominant Soils: Osito-Trigo (25-55% slopes), Trigo-Calleguas families-Haploxeralfs/Rock complex (30-100% slopes, Stonyford Millsholm families complex (30-70% slopes)
 P. Geologic Types: Undivided precambrian metamorphic rocks, paleocene marine; Middle/Lower Pliocene nonmarine, mesozoic granite rocks
- Q. Miles of Stream Channels by Order or Class:
I - 5.1 II - 6.7 III - 62.6 IV - 462.3
- R. Transportation System:
 Trails: Zero (miles) Roads: 3.1 (miles)

PART III - WATERSHED CONDITION

- A. Fire Intensity (Acres): 7,838 (low) 10,897 (moderate) 382 (high)
- B. Water Repellant Soil (Acres): 382
- C. Soil Erosion Hazard Rating (Acres):
0 (low) 0 (moderate) 19,117 (high)
- D. Erosion Potential: 7.0 tons/acre
- E. Sediment Potential: 3770.0 cu. yds/sq. mile

PART IV - HYDROLOGIC DESIGN FACTORS

- A. Estimated Vegetative Recovery Period: 5 years.
- B. Design Chance of Success: 75 percent.
- C. Equivalent Design Recurrence Interval: 20 years.
- D. Design Storm Duration: 24 hours.
- E. Design Storm Magnitude: 4 inches.
- F. Design Flow: 22 cfs.
- G. Estimated Reduction in Infiltration: 0-5 percent.
- H. Adjusted Design Flow: 22 cfs.

PART V - SUMMARY OF ANALYSIS

A. Describe Emergency:

On August 26, a fire start, determined to be the result of an arsonist, occurred in Marple Canyon between the north and southbound lanes of Interstate 5. The fire, known as the Marple Fire, burned aggressively, making runs to the west and east. In seven hours, 8,000 acres burned. The severity and location of the fire necessitated a multi-agency suppression response, and it was six days before the Marple Fire slowed down due to rising humidity. The Fire was officially contained on September 2 and controlled on September 9, 1996.

The fire burned approximately 21,418 acres, of which 5996 acres (28%) were private and 13,992 acres (65%) were Forest Service. Eighty-two percent of the fire area drains into the Castaic Reservoir and the associated power generating facility owned and operated by California Department of Water Resources and Los Angeles Department of Water and Power. The other 18 percent of the total burned area (only 1% of the total Piru watershed) drains into Lake Piru managed by the United Water Conservation District for irrigation and domestic water supply. Fire intensity over the entire area was predominately moderate (2% high, 57% medium and 41% low). Highly erodible steep slopes (averaging about 50% over the fire area) are comprised primarily of mixed chaparral vegetation. Soils within the burned area are formed from sedimentary, metamorphic, and mixed alluvial/colluvial parent materials. Elevations of the fire range from 3843 feet on the ridge above Elderberry Canyon to 1515 feet at the Elderberry Forebay Dam.

The fire area has been split into 9 main hydrologic units for analysis, 6 of these drain into Castaic Canyon (Elderberry Forebay, Fish Canyon, Upper Castaic Canyon, Cold Trough, Grasshopper and Marple Violin), and three of

these drain into the Piru drainage system (Cherry Canyon, Osito Canyon, and Canton Canyon). Both the Castaic and Piru drainage systems eventually drain into the Santa Clara River Basin.

Summary of Primary Resources at Risk

1) Threat to life and property:

Road Surfaces: Roads surfaces are at risk of closure due to increased sediment volumes overtopping or loss of stream crossings due to culvert inability to pass increased flow and sediment volumes. Road fills at risk of accelerated rill and gully erosion. Existing gully systems associated with roads likely to be enlarged due to increases in flows.

Petroleum Pipeline: Human health and safety could be at issue if petroleum pipelines are ruptured by landslides. See Geology report specific risks.

T & E Species: Arroyo Toad is at risk in Elderberry Forebay area extending up into Fish and Castaic Canyons. Increased sediment loads could prohibit successful reproduction, additional impacts to the toad will happen if sediments are removed from the sediment catchment basins which the toads are presently occupying.

View Service Station Heritage Site: Artifacts are at risk to displacement or destruction due to increased sediment movement in the area of this site, a contributing element to a National Register of Historic Places property, where vegetation has been removed.

Castaic Power Plant: Pumps and turbines at Castaic Power Plant are subject to accelerated wear and tear due to increased suspended sediment loads.

2) Loss of Water Control and Water Quality:

The highest risks are focused on the Castaic Powerhouse at risk due to sediment loads that would force plant shutdown. The cost of replacement of pumps and turbines worn due to wear and tear associated with sedimentation that would restrict powerhouse operations. The loss of the ability to pump could also occur if the tailrace area were to clog with sediment.

3) Threat to Long Term Soil Productivity:

Soil types are highly erodible, slopes are steep, burn intensities were slight to moderate with monor hydrophobic soil conditions overall. Average soil loss over the burn area was calculated to be 6 tons per acre, based on Rowe, Countryman and Storey calculations. This figure exceeds the approximate rate of soil formation for forest soils in California which is one ton per year.

B. Emergency Treatment Objectives:

The objective of the proposed treatments include:

- Reduction of sedimentation from hillslopes adjacent to the Castaic Power Plant and Elderberry Forebay. State land will be aerially seeded by the Los Angeles County Department of Fire and Forestry. Straw tubes will be

installed on 90 acres of National Forest Lands between the aerially seeded lands and Castaic Penstocks.

- Control of sediment and mudflows into Elderberry Reservoir from National Forest lands. The existing culvert and road drainage system on Forest Service Road 2N13 will be upgraded to improve sediment handling capacities for the increased erosion from the fire.
- Control of sediment and mudflows onto private land. The Paradise Ranch subdivision and other individual parcels may be impacted from increased sediment flows. Small rock check dams will be installed to slow and meter sediment delivery onto the private land.
- Control of Off-Highway Vehicle access to areas now made accessible from fireline construction. The fire area is in a high use OHV area and fireline construction has increased opportunities for vehicles to get off of roads into areas closed to OHV traffic. Soils are highly erosive and much vegetation was removed during fireline construction. Barriers will be installed to control access until the shrub community regrows.
- Protection of powerlines and petroleum/natural gas pipelines. Extensive landslides were exposed by the fire along major powerline and pipeline corridors. No treatments are proposed as part of the initial BAER process but treatment may be necessary this winter. The easiest method to determine impacts is to obtain post-burn aerial photos of the corridor now at a 1:12000 scale photos so that possible slide areas can be identified and the appropriate permit holders notified of the potential risk.
- Promote efficiency in the coordination of treatment and activities with adjacent jurisdictions and agencies as well as design implementation measures to provide for increased success and efficiency of the USFS applications and treatments. The use of post-burn aerial photos is the most economic way to facilitate this objective being met.

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

Land 100 % Channel 100 % Roads 90 % Other 80 %
(recreation)

D. Probability of Treatment Success

	<----Years after treatment----->		
	1	3	5
Land	75%	75%	100%
Channel	75%	75%	75%
Roads	90%	80%	75%
Other	80%	70%	70%

E. Cost of No-Action (Including Loss): \$ 28,879,652.00

F. Cost of Selected Alternative (Including Loss): \$ 8,019,585.00

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: William Brown

Phone: (818) 574-5258 DG Address: B.Brown:R05F01A

H. Final Treatment Narrative:

1. Further Fire Suppression Rehabilitation

The following fire suppression rehabilitation activities were accomplished:

Signing and Barriering of firebreak at road junctions

Installation of approximately 50 OHV resource protection signs.

Installation of approximately 30 post and cable and/or brush barriers.

2. Emergency Resource Rehabilitation Treatments -

- Reduction of sedimentation from hillslopes adjacent to the Castaic Power Plant and Elderberry Forebay was accomplished through the installation of straw tubes. Straw tubes were installed on 90 acres of National Forest Lands. In addition to this, Los Angeles County, Department of Water and power installed straw tubes on approximately 10 acres of State land directly adjacent to the Power House and Elderberry Forebay.
- Control of sediment and mudflows into Elderberry Reservoir from National Forest lands was accomplished by upgrading the existing culvert and road drainage system on Forest Service Road 2N13 to improve sediment handling capacities for the increased erosion from the fire.

Work accomplished included 1) the installation of three culvert risers and armoring of the road bank at these locations to serve as check dams; 2) replacement of an existing culvert that was undersized to meet predicted flow/sediment requirements; 3) construction of six catchment basins at the base of small drainages; and 4) construction of two trash racks at selected culvert crossings to catch and retain large woody material and boulders washing down from the burned area.

- Control of sediment and mudflows onto private land at the Paradise Ranch subdivision and other individual parcels was accomplished by installing approximately 40 small rock/straw check dams within upper Canton and Big Oak Flat Canyons.
- Control of Off-Highway Vehicle access to areas made accessible from fireline construction was dropped from consideration.
- Extensive landslides were exposed by the fire along major powerline and pipeline corridors. No treatments were proposed as part of the initial BAER process. However, in order to gain a better understanding of potential impacts, the corridor was flown and photographs at a 1:12000 scale were taken so that possible slide areas could be identified and the appropriate permit holders notified of the potential risk.
- Heritage site protection was accomplished through the surface collection of artifacts. It was determined to be more economical to remove the artifacts at risk rather than install measures which may have the potential of failure and the loss of this information.

PART VI - EMERGENCY REHABILITATION TREATMENTS AND SOURCE OF FUNDS BY LAND OWNERSHIP

NOTE: Emergency rehabilitation is work done promptly following a wildfire and is not to solve watershed problems that existed prior to the wildfire.

Line Items	Units	Unit Cost \$	NFS Lands			Other Lands			All Total \$
			Number of Units	EFFS-FW22 \$	Other \$ ident.	Number of Units	Fed \$ ident.	Non-Fed \$ ident.	

A. LAND TREATMENTS

Straw Tubes	1.f.	1.55	88,000	136,400					136,400
OHV Control	ea	500	10	5,000					5,000
Heritage Site Prot.	ea	430	13	5,590					5,590
*Seeding	ac	75				900		67,500	67,500

* LA County Dept of Fire and Forestry

B. CHANNEL TREATMENTS

Small Rock Check Dams	ea ₃	84	175	10,500					10,500
**Debris Basin Cleanout	yd	5				200000		1000000	1000000

* Los Angeles Department of Water and Power

C. ROADS AND TRAILS

Trash Racks	ea	95000	2	190,000					190,000
Risers	ea	9800	3	29,400					29,400
Culvert Clearing	ea	30	400	12,000					12,000
Low Water Crossing	ea	16000	1	16,000					16,000
Armored Road Slope	yd	60	230	13,800					13,800

D. STRUCTURES

PCT Trail Crib Wall	ea	2000	2	4,000					4,000
Treatment deleted									

E. BAER EVALUATION/ ADMINISTRATIVE SUPPORT

***Aerial Photos	ac	0.3	25,000	7,500					7,500
Rehab Team	dys	250	184	46,000					46,000

*** See Part V, Section B

F. TOTALS				476,190				1067500	1543690
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PART VII - APPROVALS

1. /s/ MICHAEL J. ROGERS
Forest Supervisor (Signature)

06/19/97
Date