GRAND FIRE
BURNED AREA REPORT NARRATIVE
(2500-8)

MAY 10, 1996

BY BOB BLECKER, BURNED AREA EMERGENCY REHABILITATION TEAM LEADER

TREATMENTS APPROVED BY DAVID DAHL, FOREST SUPERVISOR

USDA-FOREST SERVICE Ref. 2520 Watershed Date of Report: 05-10-96

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

PART I - TYPE OF REQUEST

A. Type of Report

[X] 1. Funding request for estimated EFFS-FW22 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 and design analysis
[ ] Status of accomplishments to-date

[ ] 3. Final report - following completion of work

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Grand Fire
B. Fire Number: LPF-327
C. State: California
D. County: Ventura
E. Region: 05
F. Forest: Los Padres (07)
G. District: Ojai (55)

H. Date Fire Started: 04-28-96
I. Date Fire Controlled: 05-13-96
J. Suppression Cost: $ 1,700,000.00

K. Fire Suppression Damages Repaired with EFFS-PF12 Funds:
1. Fireline waterbarred (miles) 25.3
2. Fireline seeded (miles) 0
3. Other (identify) 2 (road)

L. Watershed Number: 1807010211 Sespe Creek; 1807010212 Timber Creek

M. NFS Acres Burned: 2,584 Total Acres Burned: 10,925
Ownership type:
( )State ( )BLM (8,341)PVT ( )____ ____

N. Vegetation Types: Grassland, Mixed Chaparral, Chaparral Scrub, Conifer Timber, Riparian Woodlands

O. Dominant Soils: Lodo, Millerton, Millsholm, Reliz, Los Osos, Soper, Castaic

P. Geologic Types: Sespe, Matilija, Pico, Saugus

Q. Miles of Stream Channels by Class:

	I	II	III	IV
USFS	I - 0	II - 0	III - 1	IV - 2
Private	I - 2.5	II - 0	III - 3	IV - 23

R. Transportation System:
Trails: 0 (miles) Roads: 2 (miles)

PART III - WATERSHED CONDITION

A. Fire Intensity (Acres): 7260 (low/unburned) ____ (moderate) 3665 (high)

B. Water Repellant Soil (Acres): 1,900

C. Soil Erosion Hazard Rating (Acres):
370 (low) 1183 (moderate) 9372 (high)

D. Erosion Potential: 70 tons/acre
E. Sediment Potential: 36,500 cu. yds/sq. mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period: 10 years.
B. Design Chance of Success: 80 percent.
C. Equivalent Design Recurrence Interval: 10 years.
D. Design Storm Duration: 24 hours.
E. Design Storm Magnitude: 5.8 inches.
F. Design Flow: 100 cfsm.
G. Estimated Reduction in Infiltration: 50 percent.
H. Adjusted Design Flow: 180 cfsm.

PART V - SUMMARY OF ANALYSIS

A. Describe Emergency:

Potential loss of soil productivity on high intensity burned soils with an estimate of 70 tons per acre of sediment. Inherent erosion rates are high and could lead to degradation of water quality, debris slides and mud slides which may adversely impact the unincorporated areas through flooding and debris. Loss of water control exists in county watersheds 134Z, 138, 139, 144, 146B, 147A, 149A, 151B, 151E. Cumulative impacts to Sespe Cr. exists from the drainages which are fed by the above mentioned tributaries. Possible threats to human life and property exist for homes, orchards, and developments within the above mentioned watersheds. These areas are subject to debris and mud slides under pre burn conditions and with the removal of vegetation to help stabilize these areas, the threat is further increased. Many of these streams contribute flow for fisheries, especially Steelhead spawning areas in the Sespe and Santa Clara watersheds. Increase in sediment to these areas may adversely impact fisheries habitat which could limit reproduction capabilities.

B. Emergency Treatment Objectives: Treatment objectives are to reduce soil erosion, sediment production, and peak flows in the watersheds where threat to human life and property, loss of soil, and loss of water control and degradation of water quality is anticipated. These watersheds are listed in section A above. Maintain water in the drainages and treat the middle and lower portions of watersheds so that downstream values are protected.

An additional objective is to continue the coordinated response to this watershed emergency which was created by the fire by working with the other agencies involved. These agencies include California Dept. of Forestry, Natural Resource Conservation Service and Ventura County Flood Control District. The interagency work in evaluating the emergency up to this point recognizes the importance of working together to ensure the effectiveness of treatments to reduce the impacts of the burn.

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

Land ____ % Channel _____ % Roads 100 % Other _____ %

D. Probability of Treatment Success

	<----Years after treatment-----> 1	3	5
Land			
Channel			
Roads	100%		
Other			

E. Cost of No-Action (Including Loss): $ $8,000

F. Cost of Selected Alternative (Including Loss): $ $5,000

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology	[X] Soils	[X] Geology	[ ] Range
[ ] Timber	[X] Wildlife	[ ] Fire Mgmt.	[X] Engineering
[ ] Contracting	[ ] Ecology	[ ] Research	[X] Archaeology
[X] GIS	[X] Fisheries	[X] Botanist	[X] Rec/Wilderness

Team Leader: Bob Blecker
Phone: 805-683-6711 DG Address: B.Blecker:R05F07A

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 will include road drainage improvements. This treatment is intended to reduce erosion, and to reduce the amount of sediment which may enter the fluvial system.

Road Justification.

Road Treatments: Treatments to San Cayetano Rd. on Forest lands was determined necessary due to both the potential loss of soil productivity and investment already made in this road, and due to off site effects of water being concentrated on areas which burned under a high intensity at the top of the watershed where the roads does traverse. Channel diversion potential was also evaluated on the road. The following treatments are recommended and include reshaping of portions of the road to avoid concentrating flows on already unstable and highly erosive slopes. Road treatments for private roads, and County roads have been recommended. Areas are already experiencing dry ravel and rock fall. Recommendations for county roads based on Forest Service review will be made available to the Ventura County engineers.

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 M$	NFS Lands Number of Units	NFS Lands EFFS-FW22 M$	NFS Lands Other $ ident.	Other Lands Number of Units	Other Lands Fed $ ident.	Other Lands Non-Fed $ ident.	All Total $
A. LAND TREATMENTS									
B. CHANNEL TREATMENTS									
C. ROADS AND TRAILS									
Road Drainage	mile	1.5	2	3.0					
D. STRUCTURES									
E. BAER EVALUATION/ ADMINISTRATIVE SUPPORT									
Salary, travel, admin.	person	2.0	11	22					
F. TOTALS				25					

PART VII - APPROVALS

1. /s/ Lawrence A. Mastic
for Forest Supervisor (Signature)
May 10, 1996
Date

2. /s/
Regional Forester (Signature)
Date

I. INTRODUCTION

A. Description of the Incident

On Sunday April 28, 1996 at approximately 1:30 pm erratic winds downed a power line at the north end of Grand Ave north of Fillmore in Ventura County. The powerlines landed in a brushy area and the spark grew in size over the next six days until it had burned 10,925 acres. The fire advanced slowly after the first 24 hours, and fortunately no lives were lost.

The fire burned 2,584 acres of National Forest, 8,341 acres on private. Several small farms and ranches were impacted which included loss of avacado and citrus orchards.

B. Description of the Watershed

The fire burned portions of 2 large watersheds:

Watershed	TOTAL ACRES of affected trib.	BURNED ACRES Total	HIGH INTENSITY Acres	% BURNED *
SESPE TRIBS	6,800	4,035	1,950	29%
SANTA CLARA TRIBS	10,010	6,645	1,755	18%

* Percent of total acres of affected tributary that burned with high intensity.

Within these watersheds there was a mosaic of burn intensity. A pattern established itself where higher intensity burns and hydrophobic soils were often found at the upper reaches of the watersheds. The remaining fire area burned under a low to moderate intensity. Some watersheds, like Boulder burned into orchards. Downstream values include scattered farm houses, a county park, mobile home developments, and private and public roads and bridges. These developments have encroached or were built adjacent to streams and drainage channels that receive storm flows from the fire area.

The geology of the burned area includes Sespe, Matilija, Pico and Saugus geologic types. Many of these areas are inherently unstable. The team did a preliminary evaluation of the effect of the fire on these already unstable slopes. Climate in the fire area is comprised of dry summers and wet winters, with the influence of the coastal fog on the western portion of the burn.

The burn area is also of major importance to downstream anadromous fish resources in Sespe creek and Santa Clara River. This area has been under study for several years by the Santa Clara River Working Group and the Forest Service. Restoration efforts for Sespe and Santa Clara focus on efforts to reduce sediment delivery to the area.

Steelhead Trout migrate up the Santa Clara river to spawning grounds in the Sespe creek drainage. Sensitive plant species are throughout the area. The watersheds within the fire perimeter also have provided historic habitat for the California Condor (see technical reports).

II. ASSESSMENT OF THE ON-THE-GROUND CONDITIONS

Assessment of the entire burned area was made following the procedures outlined in FSH 2509.13 and FSM 2523.02. The purpose of such a post fire assessment is to determine if an

emergency to life, property, site productivity and loss of control of water and deterioration of water quality has been caused by the wildfire.

A. Initial Reconnissance

Initial reconnissance was made by Forest personnel who were pulled into the fire to address suppression rehabilitation efforts as the fire burned. As a result of their exposure to the fire, they worked with the California Department of Forestry Laison on the Fire, Jim Carter in developing a team to formally evaluate the effect of the fire on the watershed. The burned area rehabilitation team consisted of the following members:

Title	Person
Team Leader	Bob Blecker, USFS, Los Padres NF
Forester	Jim Carter, CDF, Riverside
Dist. Conservationist	Steve Jewett, Natural Resources Cons. Service
Soil Scientist	Barry Cohn, Los Padres, USFS
Wildlife	Kevin Cooper, Los Padres NF
Fisheries	Sara Chubb, Los Padres NF
Archeology	Jim Lopez, Los Padres, NF
Recreation	John Boggs, Los Padres, NF
Resources	George Garcia, Los Padres, NF
Botanist	Karen Danielsen, Los Padres, NF
Engineer	John Weikel, Ventura County Flood Control
Geologist	Allen King, Los Padres, NF
Forester	Terry Austin, Los Padres NF
GIS Coordinator	Don Bedford, Los Padres NF

All agencies agreed from the start that the team would assess all lands regardless of jurisdiction and develop a coordinated plan for rehabilitation of the watershed as deemed necessary by the findings of the team.

B. Findings From the On-The-Ground Survey

AREAS OF CONCERN

Watersheds listed below are numbered according to Ventura County Flood Control Districts flood maps.

WS 134Z, 134A:(Grand Ave)

Hill slope above dirt road segment near Van Trees.
All Grand Ave culverts, channels, orchards.
House on hillside within WS 138 (NW 1/4 Sec 12).

WS 139:

Homes near channels, where channels have been highly modified.
Culverts may be too small to handle flows, look at culvert capacity.

WS 144:

Review downstream improvements within the watershed.

WS 146B:

Homes adjacent to channel.
Culvert capacity.

WS 147A:(Snow CYN)

Problems to homes and roads from flows and debris.
Culvert capacity, road and bridge capacity to handle flows.

WS 149A:

Kenny Grove Park and mobile homes.

WS 151B (Boulder Creek):

Sespe and Oak Villages.
Check culverts and improvements.

WS 151E:

Sespe and Oak Villages.

Goodenough Road:

Oil & Gas developments, roads and pipelines.
Look at landslide potential as it relates to the above improvements.

San Cayetano Road:

Road drainage improvement.

1. Loss of soil and site productivity;

It was determined, by evaluating vegetation canopy cover, ground cover density, soil hydrophobicity, and burn intensity, that erosion rates over the entire 10,925 acres averaged a soil loss of 25 tons per acres. Approximately 3,700 acres burned under a high intensity, on steep slopes with a high erosion hazard rating prior to the fire. In coordination with a Forest Service botanist, the team evaluated what natural revegetation would occur and where it was most likely to resprout. Seed banks within the soil were felt to be high in many areas and these areas were excluded from any specific treatment in order to allow for natural recovery. This fire was an early season burn and extensive re-sprouting is expected to occur due to late spring rains prior to the fire. Monitoring of vegetation recovery will occur during the summer and fall. If re-sprouting will not provide an adequate soil cover, seeding will be considered at that time.

2. Threat to life and property:

The team identified watersheds where conditions indicated that there was a threat to life and property. The findings indicated the highest risks exist within the area of concern watersheds which are steep, geologically unstable areas. Flood potential is high given that the some areas within the watershed burned under a high intensity. The team felt that if these watersheds were not treated individually then the off-site downstream effects may be significant. The team evaluated the unincorporated areas and established that some homes were in jeopardy in terms of flooding and Natural Resources Conservation Service and Ventura County Flood Control District will further evaluate these areas and developed treatments to protect these areas, if necessary.

A detailed geologic review of the fire area with an emphasis on slope stability/landslides will be conducted. A Forest Service Geologist and a Geologist with the State Division of Mines and Geology with assistance from Natural Resources Conservation District and Ventura County Flood Control District will conduct the review. The review will completed by May 20, 1996.

The San Cayetano Forest Service road was evaluated to determine if treatment would be required. The preventative strategy of reshaping the road was developed to reduce accelerated erosion caused by concentrated flows.

Key transportation routes for the public were reviewed in conjunction with Ventura County Flood Control.

Overall the team felt that the highest risk to life and property was found on the front country area of the burn where farms, residences, and developments were often on the edge of the burn. Fliers and informational packets will be disseminated to inform interested residents about potential hazards after the fire.

3.) Loss of water control and deterioration of water quality;

Evaluation of the watersheds indicated that water quality and water control would be a problem in some areas of the burn. Site specific concerns were focused on the area of concern watersheds. Cumulative impacts on downstream water quality was seen as a threat to the Santa Clara River as a result of sediment being carried into the system from the ten watersheds within the burn.

Based on the above findings the team determined that an emergency does exist as a result of the Grand fire.

III. MITIGATION OF THE EMERGENCY

To the extent possible the following treatments have been proposed to mitigate the loss of soil, loss of control of water, and reduce the potential threat to life and property.

Proposed treatments to Mitigate the Emergency

National Forest Lands.

1. Impacts to improvements (Roads/Bridges/Pipelines/Homes/Orchards)

Road Drainage Improvement:

Effective. Improve drainage on San Cayetano Road.

Recommendation - Improve drainage on 2 miles of San Cayetano Road by installing drainage dips with dozer. Cost estimated at $3,000.

Mulching - Road will be monitored to determine if mulching is required prior to winter. At this time, the team feels that the native vegetation will re-sprout and provide adequate ground cover. If adequate ground is not present in the fall, mulching will be considered.

Private Lands.

1. Channel/Culvert capacity failure.

   Debris removal. Remove dead & down material in channel.

   Increased channel capacity, make deeper and wider.

   Install trash racks and/or sediment basins.

   Increase size of culverts and bridges.

   Create overflow channels.

2. Impacts to improvements (roads/bridges/pipelines/homes/orchards)

   Install silt fences/waddles.

   Hydro mulch/straw mulch.

   Seed site specific areas around homes and irrigate.

   ALERT system (Kenny Grove, Sespe and Oak Villages, Van Trees, etc)

   Increase protection of pipelines and monitoring of pipelines.

   Increase maintenance of roads and road drainage structures.

   Review culverts and drainage structures along Grand ave and Sycamore road.

IV. CONCLUSIONS

The Grand fire burned 10,925 acres. The effect of the fire on not only the watershed but the farmers and residence of the community will be felt for the next few years.

The treatments proposed for emergency rehabilitation of the Grand fire have been designed by a coordinated group of agency experts to try and reduce the adverse impacts of the fire. The findings of the group indicate that a large component of the burned area should recover well without any treatment. It is also recognized that some areas within the burn will be difficult and even impossible to mitigate, and in these areas it is important to inform and pre warn residents of the potential threats. This process of education and informing the public has already started. There are, however, several key areas where the team felt that treatments could be effective and would help to reduce the anticipated erosion and increased peak flows. The team worked to determine which treatments would be responsive to the watershed emergency created by the fire, while taking into consideration the communities concerns for their environment. Based on the combination of these factors we provide the attached request for emergency funding.