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

Date of Report: *July 14, 2004*

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report (Interim-1)

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

B. Type of Action

[ ] 1. Initial Request (Best estimate of funds needed to complete eligible rehabilitation measures)

[**x**] 2. Interim Report
[] Updating the initial funding request based on more accurate site data or design analysis
[x] Status of accomplishments to date

[] 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: **Piru**

B. Fire Number: **CA-LPF-2141**

C. State: **California**

D. County: **Ventura**

E. Region: **Pacific Southwest**

F. Forest: **Los Padres**

G. District: **Ojai Ranger District**

H. Date Fire Started: **10/23/03**

I. Date Fire Contained: **11/06/03**

J. Suppression Cost: **$ 6,336,900 (as of 11/01/03 209 report)**

K. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline water barred (miles): **xx equipment lines, handlines unknown**
2. Fireline seeded (miles): **0**
3. Other (identify): **Roads within and on the perimeter of the fire were graded.**

L. Watershed Numbers (5th field): 1807010208, 1807010211, 1807010209

M. Total Acres Burned: **63,991** NFS Acres (**32534**) Other Federal (**3904** BLM, USFWS) State (0) Private/County (**27,282**)

N. Vegetation Types: **Mixed Chaparral, California Sagebrush, Riparian Woodland, and Canyon Live Oak, Big cone Douglas Fir.**

O. Dominant Soils: **Lithic Xerochrepts-Lithic Haploxeralfs-Rock Outcrop complex**

P. Geologic Types: **Monterey and Sisquoc**

Q. Miles of Stream Channels by Order: **USFS Perennial 13 miles, Intermittent 152 miles; Private (Perennial 1.2, Intermittent 12.2)**

R. Transportation System Trails: **18.3** miles Roads: **Forest System (52 miles)**

PART III - WATERSHED CONDITION

A. Burn Severity (acres): **19,713** (low) **28,839** (moderate) **1,596** (high) **13,843** (unburn**)**

B. Water-Repellent Soil (acres): **30,335 (not severe <2 inches)**

C. Soil Erosion Hazard Rating (acres):
4,454 (low) **8,843** (moderate) **49,367** (high) **1,025** (very high)

D. Erosion Potential: **12** tons/acre

E. Sediment Potential: **7680** tons/square mile

PART IV - HYDROLOGIC DESIGN FACTORS

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

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

C. Equivalent Design Recurrence Interval, (years): **10**

D. Design Storm Duration, (hours): **24**

E. Design Storm Magnitude, (inches): **5.5**

F. Design Flow, (cubic feet/second/square mile): **229**

G. Estimated Reduction in Infiltration, (percent): **47**

H. Adjusted Design Flow, (cfs per square mile): **338**

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

On October 23, 2003, the fire started on the west shore of Lake Piru. The fire grew in size quickly over the next several days due to the unusually hot and dry weather conditions and Santa Ana winds. The fire moved towards the West, reburning the entire 1997 Hopper Fire area and threatened the communities of Fillmore and Piru. The fire destroyed eight structures but most homes and private residences were successfully saved.

Access to the fire was difficult due to the remote nature of the area. Limited access is available to the east side of the fire from private roads off of the Lake Piru Road. On the west side of the fire access is available via the Squaw Flat Road that traverses the western portion to Dough Flat that is the access to the Sespe Wilderness area.

There are scattered islands of vegetation that did not burn. However the steep slopes, dry ravel, and hydrophobic soils caused by moderate soil burn severity combined with high values at risk below the forest necessitated a well orchestrated and thorough Burned Area Emergency Rehabilitation assessment.

A Burned Emergency Area Team Leader was assigned to the incident on November 1, 2003. A team of specialists including heritage, soil science, hydrology, geology, wildlife biology (condor specialists), fisheries biology, engineers, and botany was assembled to perform the initial assessment.

A potential watershed emergency has been created by the Piru Fire's adverse impact to the soil, vegetation, and hydrologic function of the watersheds within the burn perimeter. Background erosion rates, within the assessment area, are high due to the flash flood potential, unstable lithology, structure, and steep topography. Surface erosion rates will increase during the first two years after the fire as a result of vegetation and ground cover consumption. Due to the relatively light fuel load, there was not a lot of soil damage in the context of water repellency and infiltration rate. The water repellency of the soils is generally low to moderate and shallow (<2 inches). More importantly, the Loss of vegetation and ground cover will reduce the rate of transpiration and increase Horton overland flow.

Increased overland flow will accelerate the rate of surface erosion and increase the risk of mass failure. In addition, loss of vegetation and ground cover will increase delivery of sediment to the stream network. These factors combined will increase peak stream flow, suspended sediment load, and bed-material load for at least the first two years post burn. Increased stream flow may further destabilize stream channels providing efficient sediment delivery to the lower reaches of the Piru River, Hopper Canyon, Pole Creek, Sespe Creek, and Tarr Creek. The number of active mass failures will likely increase as well as a result of increased slope moisture, inner gorge instability, and poor road drainage. Increased surface erosion, dry ravel, mass failure, and peak stream flow may adversely impact the identified resources at risk.

A Threat to Life and Property is determined to exist on public and private roads from loss of control of water. Specific areas of concern include Forest Roads 6N16 and 5N37, the Piru Creek Road, and, outside of the Forest boundary, State Highway 126. The infrastructure associated with the Sespe Oil Field development (primarily pipelines and access roads) is also threatened by loss of water control. The BAER Team evaluated public and private structures, and a threat exists outside of the Forest boundary to homes in Fillmore, the Pole Creek area, Piru, and Dominguez Creek.

Deterioration of Water Quality is a concern on Sespe Creek, Pole Creek, Hopper Creek, and Piru Lake. After analyzing the potential impacts from areas with high severity burn, the team focused on Sespe Creek and Piru Lake. Sespe Creek is a Wild and Scenic River, and Piru Lake stores water for hydropower generation, domestic and irrigation water supply, and recreation.

A Threat to Wildlife and Fisheries is determined to exist around the Condor Recovery Center in Hopper Creek and Southern Steelhead habitat in Sespe Creek. Access to the Condor facility is critical to implementation of the Condor Recovery efforts, and loss of that access through road failure would jeopardize those efforts. There is a moderate threat to approximately 2 miles of the 20 miles of Steelhead habitat in Sespe Creek by increased sedimentation.

A Threat to Heritage Resources exists throughout the burned area. The fire has uncovered many sites, exposing them to damage from erosion and looting of archeological resources.

Spread of Noxious Weeds was identified as a potential problem. Many of the noxious weed species present in the area are adapted to spread in areas disturbed by the fire. The fire area supports several listed plan species that could be impacted by noxious weeds.

Loss of soil productivity was not identified as a problem due to the natural landscape instability and vegetation types.

B. Emergency Treatment Objectives:

The base analysis used for the formulation of Emergency Treatment Objectives for the Piru Fire was the review of Emergency Treatment Objectives developed for BAER analyses. This was combined with information from previous wildfires in the area, local resource "corporate" knowledge, and close coordination with other agencies and groups to assess values at risk during the preliminary assessment of the Piru Fire burn area. The following goals for emergency rehabilitation of watersheds after wildfires were followed (not listed in priority):

- Threat to Human Life and Property
- Deterioration of Water Quality
- Threat to Wildlife and Fisheries
- Threat to Heritage Resources
- Spread of noxious weed

The BAER Team worked in cooperation with Federal, State, and local responsible agencies and landowners to reduce the possible hazards to downstream values at risk, both public and private, from increased flows and sedimentation. The following entities were represented at two informational meetings:

- USDA Forest Service
- USDA Natural Resource Conservation Service
- NOAA Fisheries
- California Department of Forestry
- Ventura County Watershed Protection District
- United Water District
- Southern California Edison
- Seneca Resources
- Vintage Petroleum, Inc.
- Federal Emergency Management Agency
- Ventura County Sheriff
- Bureau of Land Management

The following agencies were contacted but were unable to attend:

- California Department of Oil and Gas

Local private landowners were contacted and referred to the NRCS.

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

Land __% Channel **50** % Roads **90**% Other **90**%

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel	75	90	95
Roads	75	65	55
Other	95	90	90

E. Cost of No-Action (Including Loss): $41,000,000

F. Cost of Selected Alternative (Including Loss): $4,000,000

G. Skills Represented on Burned-Area Survey Team:

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

The Piru BAER team also consulted with the Southern California BAER team for contracting support, and will be coordinating with the Southern California contracting unit for additional support during implementation.

Team Leaders: **Jim Fitzgerald and Carolyn Napper**

Email: **cnapper@fs.fed.us and jkfitzgerald@fs.fed.us** Phone: **530-258-6641 and 530 628-1222**

Implementation Coordination: Al Hess (805) 646-4348, x 311

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.)

The following treatments have been proposed to mitigate the threat to life, property, fish and wildlife habitat, heritage resources, water quality, and reduce the spread of noxious weeds.

Pubic Warning Systems
Purpose: To alert the Forest Service of precipitation events and warn Forest users of flood hazards.

Treatment: Signs and gates will be installed to close some hazard areas and to warn Forest users of hazards from flooding and debris flows. A telemetered recording rain gage, anenometer, and thermometer will be installed in the burn area to alert the Forest Service of precipitation events so that storm patrols can be initiated. This station will be integrated into the existing Ventura County Watershed Protection District flood early warning system.

Accomplishment: Four gates have been installed on the roads in the Sespe oil fields. Two closure signs were purchased. Three days of storm patrol work was done. The recording rain gauge was installed and used as part of the county's flood warning system during this past winter.

Roads and Trail Treatments
Purpose: To improve road drainage and prevent material from plugging culverts, reducing the risk of washouts, loss of access to the Condor Recovery Center, and downstream damage.

Treatment: Culverts will be upgraded through replacement, addition of risers, rip rapping culvert inlets, and installing k-rail barriers. This combination of treatments will be implemented at critical stream crossings on Squaw Flat Road, Lake Piru Road, Dominguez Canyon road on Forest Service and private lands and roads within the Sespe Oil Fields on Forest Service lands and private lands.

Treatment: Road drainage will be improved by out sloping road surfaces, installing cross drains and rolling dips, and paving steep road sections near stream crossings. This combination of treatments will be implemented on Squaw Flat Road, Lake Piru Road, Dominguez Canyon road, and roads within the Sespe Oil Fields on Forest Service lands and private lands.

Treatment: Gabions walls will be installed at several locations on the Squaw Flat Road to stabilize failing fill slopes.

Treatment: Road drainage structures will be maintained during storm events to prevent plugging.

Accomplishment: All of the above treatments have essentially been accomplished on a total of 23.5 miles of roads in the Sespe oil fields and 3 miles in Dominguez Canyon. About 5% of the work in Dominguez Cyn. remains and should be completed by the end of this month, July 2004.

Heritage Resource Treatments
Purpose: To protect exposed Heritage Resource sites from damage by erosion and looting.

Treatment: Known sites will be assessed and treated with stabilizing fabric to reduce erosion and protect artifacts.

Accomplishment: Only assessment work has been done to date.

Noxious Weed Treatments
Purpose: To reduce the spread of noxious weeds.

Treatment: Known infestations will be monitored and treated if they expand into areas disturbed by the fire and fire suppression.

Accomplishment: Populations of yellow star thistle have been observed, particularly in the area along the Squaw Flat Road between Tar Cr. and Dough Flat. Much of this weed has been eradicated using other (Forest health fire recovery appropriation) funds.

Channel Treatments
Purpose: To minimize sedimentation and protect water quality in Lake Piru.

Treatment: In-channel, native log structures will be constructed in Dominguez and Reasoner Canyons to help stabilize the channel and to minimize sediment flow into Lake Piru. Deterioration of water quality is of concern or at risk. This treatment is specific to the immediate emergency, which is described in this document. Furthermore, getting these structures in place prior to the first significant precipitation events is important, as there is probably little resource benefit to be gained by doing this

after the first few runoff events. The majority of burn related sediment will move downstream with the first couple of significant precipitation events.

Accomplishment: Thirty of these structures were installed in Dominguez Cyn. Methods widely used in Region 3 were applied with limited success due primarily to the steep slope of the drainage and rapid rate of runoff (streamflow). The effectiveness of these "log erosion barriers" has been widely critiqued and monitored. Some of them have since been removed and the remaining barriers will continue to be monitored.

(NOTE: The following is is a copy of the treatment table included in the December 15, 2003 interim 2500-08. The work approved is listed in the first series of columns on the left side of the table. Work accomplished is listed on the right side. Costs are approximate.)

TREATMENTS	WORK APPROVED				WORK ACCOMPLISHED			
			NFS Lands				NFS Lands	
		# of	Unit	WFSU		# of	Unit	WFSU
Line Items	Units	Units	Cost	SULT $	Units	Units	Cost	SULT $
A. Hillslope Treatments								
B. Channel Treatments								
Dominguez Canyon Structures	**each**	**50**	**2300**	**$115,000**	**each**	**2**		**$110,000**
Subtotal Channel Treatments				$115,000				
C.Hazmat Treatments								
C. Road and Trails								
Storm Patrol (Forest system lands)								
Fillmore to Doe Flat and Condor Reserve roads	days	10	4000	40000	days	3		5,000
Piru Lake roads	days	10	4000	40000	days	0		0
Public Warning System								
Warning Signs	supplies	10	750	7500	each	0		0
Precipitation gaging station at Doe Flat	Equipment	1	15000	15000	each	0		0
Gate	supplies	4	7000	28000	each	4		24,000
Closure signs	supplies	4	1000	4000	each	2		3,000
Road Storm Proofing								
Oak Flat to Dough Flat Road upgrade	**per mile**	**8.7**	**110000**	**957,000**	**per mi.**	**8.7**		**850,000**
Maple to Bumu Road upgrade	per mile	3	110000	330000	**per mi.**	3		250,000
Tar to Burma Road upgrade	per mile	3.2	110000	352000	**per mi.**	1		50,000
Beginning to Burma Saddle Road upgrade	**per mile**	**10.8**	**110000**	**1188000**	**per mi.**	**10.8**		**629,000**
Dominguez Road	**per mile**	**3.1**	**50,000**	**155,000**	**per mi.**	**3**		**150,000**
Subtotal Road & Trails				$3,116,500				$1,961,000
D. Structures								
Subtotal Structures								
E. Other								
Heritage Protection Signs	supplies	4	0	6745	each	0		0
Subtotal Other				$6,745				
F. BAER Evaluation								
Planning Team				$160,856	total			$183,000
G. Monitoring								
Heritage Resource Protection								
Assessment of known Heritage sites	salary	na	204	6703	total			2,000
Noxious Weed								
noxious weed monitoring	salary	4	3371	13483	total			4,000
Subtotal Other				$20,186				

TOTALS: $3,419,287 was approved; $2,260,000 has been spent as of the date of the most recent job code summary statement (JCSS) which covers through the end of June 2004.

PART VII - APPROVALS

1. **/s/ Gene Blankenbaker** _____
Forest Supervisor (signature) Date

2. _____ _____
Regional Forester (signature) Date