USDA-FOREST SERVICE FS-2500-8 (6/06)

Date of Report: 7/24/2008

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[x] 1. Funding request for estimated emergency stabilization funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

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

[x] 2. Interim Report # 1
[x] 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: Clover

B. Fire Number: CA-SQF-967

C. State: CA

D. County: Tulare/Inyo

E. Region: 5

F. Forest: Sequoia/Inyo

G. District: Mt. Whitney/Kern River

H. Fire Incident Job Code: P5D7KH

I. Date Fire Started: May 28,2008

J. Date Fire Contained: Est. July 20,2008

K. Suppression Cost: 8.3 M

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 3 miles of handline rehabilitated
2. Fireline seeded (miles):
3. Other (identify): Safety Zones rehabilitated, seeding to take place in fall

M. Watershed Number: 1809010302

N. Total Acres Burned: 15,300
NFS Acres(15,300) Other Federal ( ) State ( ) Private ( )

O. Vegetation Types: Pinyon, Sagebrush, Lodgepole,Jeffery Pine

P. Dominant Soils: Lithic Cryorthents, Nanamkim Family,Preston, Pass Canyon, Tollhouse, Cienaba

Q. Geologic Types: Granitic, metasedimentary and Volcanic extrusives

R. Miles of Stream Channels by Order or Class:
Perennial: 6.5 Intermittent: 11.3

S. Transportation System

Trails: 7 miles Roads: miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 5680 (low) 7001 (moderate) 855 (high) 1609 (unburned)

B. Water-Repellent Soil (acres): 1200

C. Soil Erosion Hazard Rating (acres):
4000 (low) 5000 (moderate) 3000 (high)

D. Erosion Potential: 10 tons/acre 2 years – (wind erosion on the east side of the fire is expected)

E. Sediment Potential: 6399 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): Shrubs 3-5 yrs, Conifer Trees 50-75 yrs

B. Design Chance of Success, (percent): 90

C. Equivalent Design Recurrence Interval, (years): 5

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches): 2.3

F. Design Flow, (cubic feet / second/ square mile): 173

G. Estimated Reduction in Infiltration, (percent): 30

H. Adjusted Design Flow, (cfs per square mile): 210

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:
Background: This fire started by a lightning strike on the Sequoia National Forest on May 28. It was initally managed as a Wildland Fire Use Incident. A strong wind even on June 22, pushed the fire across the South Fork Kern, on to the Inyo National Forest and down the eastern crest of the Sierra Nevada. At this point the fire was declared a wildfire and was actively suppressed.

Threats to Life:

- Pacific Crest Trail (PCT) Approximately 3.5 miles of the Pacific Crest Trail (PCT) burned on the Sequioa (west) side of the Clover fire. The PCT is a nationally prominent, popular trail that the Forest temporarily closed because of the fire. Many hikers use this section of the trail to "through hike" from the Mexican to Canadian boundary or hike this section to access the Southern Sierra's. The Forest contacted approximately 264 users in the first week the PCT was closed as an indication of use in this Section. The Forest would like to open this section of the PCT as soon as possible while providing for visitor safety. The Forest identified approximately 20 trees along a 1.5 mile stretch that posed an imminent threat to human life. In addition, a crew will be completing erosion control work on the trail. Hazard tree removal is needed for the safety of the crew.

Threats to property:

- Pacific Crest Trail (PCT)The PCT is threatened by accelerated erosion and increased runoff due to the fire and the erosive nature of the surrounding soils. Approximately 3.5 miles of the trail is within the fire boundary Portions of the PCT in the Crag Creek drainage burned at moderate and high severity. The southern Sierras are subject to monsoonal moisture in July and August. This can produce locally heavy thunderstorns that could threaten the integrity and trail tread of PCT and cause increased watershed efficiency in the moderate and high severity areas.

- *Wildrose Trail #36E01: Approximately 2.5 miles of this trail burn in the Clover Fire. The majority burned at moderate and low severity. Moderate and high severity burn severity is found above the trail. There are multiple ephemeral drainage crossings and loose granitic soils. There is a risk of increased watershed efficiency and loss of trail tread in the moderate burn severity areas and below the moderate and high burn severity areas. This trail receives light to moderate use throughout the hiking season.*

Threats to Ecosystem Stability:

- *During fire suppression activities, many miles of hand line were constructed. Two safety zones were constructed in Haiwee and a canyon south of Johnson Canyon on the east side of the fire. Non-native plants such as cheat grass, red brome and tumble mustard were found in and around the safety zones. Additionally, fire suppression resources were staged with and around the Clover fire. Hand lines, trails, staging areas and helispots can serve as weed dispersal areas and/or corridors. Movement of fire crews can disperse and spread noxious weeds to and from areas within the fire and among home units. Dispersal of weeds from fire equipment traffic poses a significant risk to post-fire recovery. Hand lines, staging areas, and trails will be most impacted by this threat.*

  Existing information showed known weed locations in the following areas:

  ***Scotch Thistle –** Jackass Trail north-west of the fire area and at Kennedy meadows south of the fire.*

  ***Perennial Pepperweed –** Kennedy meadows south of the fire.*

Threats to Heritage Resources:

- *There are approximately 24 sites within the clover Fire area, many of them associated with Clover Meadow and adjacent to the PCT and Crag Creek. At this point no emergency related to Heritage resources is caused from the post-fire environment. There is concern over erosion from and adjacent to the PCT onto Heritage sites. Sites will be further surveyed and protected during implementation of erosion control treatments on the PCT.*

B. Emergency Treatment Objectives:

- To remove hazard trees from the Pacific Crest Trail that pose an imminent threat to human life.
- To stabilize the PCT by installing additional water bars and other erosion control features.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:

Land __ % Channel ___ % Roads/Trails **90** % Protection/Safety **95** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel			
Roads/Trails	90	95	100
Protection/Safety	95	100	100

E. Cost of No-Action (Including Loss): $175,000

F. Cost of Selected Alternative (Including Loss): $125,000

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Todd Ellsworth

Email: tellsworth@fs.fed.us Phone: 760-873-2457 FAX:

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:

1. *Noxious weed Detection survey*

Objectives:

To determine if the fire and associated ground disturbing activities have promoted the establishment and spread of noxious weeds to the extent that eradication efforts are necessary. Early detection dramatically increases the likelihood of successful treatment. If weeds are detected, a supplemental request for BAER funds will be made for eradication.

Methods:
Surveys will begin in 2009 during the flowering periods of weed species. Because of differences in flowering times for all potential species, two visits may be required during the growing season. Completion of surveys in riparian areas, dozerlines, and known invasive and sensitive plant populations will be the first priority. The second survey priorities will be along roads, handlines, drop points, and staging areas. Surveys of general habitats in the burned area will be the lowest priority. All locations of weed species will be documented and mapped using GPS equipment. New weed occurrences will be pulled to root depth, placed in sealed plastics bags, and properly disposed.

Documentation of new infestations will include:

- *GPS negative and positive inspection results*
- *Incorporate data into GIS spatial database*
- *Establish photo points*
- *Map perimeter of new infestation*
- *Estimate number of plants per square meter*
- *Treatment method*
- *Dates of treatment*
- *Evaluate success in subsequent inspection*
- *Inspections and monitoring should be accomplished during May/June 2009. Based upon the first year's survey, additional surveying may be requested for up to three years. BAER funding is only requested for the first year after fire.*

Surveys will be completed using the NRIS protocol available at the national website: http://fsweb.ftcol.wo.fs.fed.us/frs/rangelands/index.shtml. Results will be entered into the NRIS database.

Channel Treatments:
N/A

Roads and Trail Treatments:

1. PCT trail stabilization:
Objective: Upgrade and supplement existing erosion control features on the PCT in moderate and high severity areas to facilitate proper water drainage off the trail, preserve the trail tread and decrease watershed efficiency.

Methods: Place tread retaining structures and water bars in critical points along the PCT in the moderate and high severity burn areas especially in the narrow canyon area. Based on initial surveys.

2. Wildrose Trail #36E01:
Objective: Supplement existing erosion control features on this in moderate burn areas to facilitate proper water drainage off the trail, preserve the trail tread and decrease watershed efficiency.
Methods: Initial field surveys recommended the following work be completed: 45 tread retainers, 5 waterbars, 50' of trail definition (above active seep)and 80 feet of rock retaining wall.

The BAER team evaluated an alternative of 600' of trail reroute in two sections to minimize the number of structure needed and provide for long-term stabiliity.

Protection/Safety Treatments:

1. Remove Hazard Trees

Remove approximately 20 hazard trees from a 1. 5 stretch of the PCT that pose an imminent hazard to users. The Forest has a crew that is able to complete this work in a timely manner. The crew would utilize a helicopter to reach the work site and hike out at the end of the day. The removal would be consistent with wilderness and visual objectives.

2. Advisory Signs

Objective and Methods

This treatment is preventative. Signs will be placed on the PCT to inform users they are entering a burned area. Signs will be placed on wooden posts for durability. Language could include "Caution: burned watershed, risk of flash floods and rock fall." Approximately 4 signs are needed.

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.)

See appendix A below:

Part VI – Emergency Stabilization Treatments and Source of Funds **Interim # 1**

Line Items	Units	Unit Cost	# of Units	BAER $	Other $	# of units	Fed $	# of Units	Non Fed $	Total $
A. Land Treatments										
NX Weed Detection	days	537	10	$5,370	$0		$0		$0	$5,370
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$5,370	$0		$0		$0	$5,370
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										
PCT trail stabilization	mi	10000	3	$30,000	$0		$0		$0	$30,000
Wildrose Trail Stab	mi	10000	2	$20,000	$0		$0		$0	$20,000
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$50,000	$0		$0		$0	$50,000
D. Protection/Safety										
Hazard Tree (PCT	mi	4666	1.5	$6,999	$0		$0		$0	$6,999
advisory signs	ea	500	4	$2,000	$0		$0		$0	$2,000
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$8,999	$0		$0		$0	$8,999
E. BAER Evaluation										
Team costs	days	500	13	$6,500			$0		$0	$6,500
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				$6,500	$0		$0		$0	$6,500
F. Monitoring										
PCT	days	3	400	$1,200						$1,200
Wildrose Trail	days	2	400	$800	$0		$0		$0	$800
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$2,000	$0		$0		$0	$2,000
G. Totals				$72,869	$0		**$0**		**$0**	**$72,869**
Previously approved										
Total for this request				**$72,869**						

PART VII - APPROVALS

1. /s/ Tina J. Terrell _____ 10/6/08
Forest Supervisor (signature) Date

/s/ Jim Upchurch _____ 10/7/08
Forest Supervisor (signature) Date

2. /s/ Beth G. Pendleton (for) _____ 10/15/08
Regional Forester (signature) Date

Appendix A:

PCT trail and adjacent heritage sites/ Wildrose Trail
Effectiveness monitoring

1.Monitoring questions: Were the trail treatments proposed for the trails effective in retaining trail tread and retarding erosion.? Did erosion adversely impact heritage sites adjacent to the trail?

1. Measurable indicators:
   - Integrity of trail tread
   - Evidence of off-site rill or gully erosion.
   - Integrity of heritage sites.

2. Data Collection Techniques
   - Photo Inspection (Before and after photographs would be taken to observe and document changes in trail condition. In addition, the monitoring would document effectiveness of specific treatments in specific areas to fine tune future prescriptions.)
   - Trail Inspection Checklist (see below)

4. Analsyis, evaluation and reporting techniquest
   - Monitoring will be conducted after storm events. If the monitoring shows the treatment to be ineffective at stabilizing the trail and there is extensive loss of trail bed or infrastructure an interim report will be submitted.
   - A several page report would be completed after the site visit. The report would include photographs and a recommendation on whether additional treatments are necessary.

Trail Inspection Checklist

Date:_____ Inspector_____
Time:_____ Forest Trail_____

Describe locations reviewed during inspection:_____

Was there trail damage?_____.
(GPS)_____

Was there damage/erosion to heritage sites?_____

Describe damage and cost to repair? (GPS)_____

Photo taken of trail damage_____

Recommended actions to repair:_____