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

Date of Report: 07/20/03

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: Link

B. Fire Number: OR-DEF-390 (P63739)

C. State: OR

D. County: Deschutes & Jefferson

E. Region: 06

F. Forest: 01 Deschutes

G. District: 05 Sisters

H. Date Fire Started: 07/05/2003

I. Date Fire Contained:07/13/2003

J. Suppression Cost: 6.2 mm estimated total

K. Fire Suppression Damages Repaired with Suppression Funds
1. Dozer Fireline (miles): 8.8 miles (in the process of rehabing)
2. Hand Fireline (miles): 1.9 miles (in the process of rehabing)
3. Other (identify): Safety zones, drop points, and dozer turnarounds.

L. Watershed Number: 1707030109
Sixth Field Hydrologic Unit Codes (Sub-watersheds)
1. 170703010901 Upper Lake Creek
2. 170703010903 Cache Creek
3. 170703010904 Lower Lake Creek

M. Total Acres Burned: 3,594 acres
NFS Acres(3,489) Other Federal ( ) State ( ) Private (105)

N. Vegetation Types: Forests vary with moisture and elevation gradients from west to east. Diverse wet mixed conifer stands on Cache Mountain contain ponderosa pine, white pine, Douglas fir, Pacific Silver fir, White fir, with understories of manzanita, snowbrush, and bracken fern. Dry hemlock/lodgepole forest types on the western perimeter have understories of huckleberry, and beargrass. Englemann spruce bottomlands are found at Hortense and Cache Lake. Dry mixed conifer forests on the east perimeter of the fire are dominated by ponderosa pine, and white fir along with manzanita and ceanothus.

O. Dominant Soils: Soil profiles have relatively little development due to the young geologic age and similarity of parent materials. This area is predominantly volcanic ash flow and pyroclastics underlain in places by glacial till. Dominant soils mapped in the SRI and NRCS soil surveys classify as Ashy Typic Vitricryands, Ashy-Skeletal Typic Vitricryands, and Asy, frigid Humic Vitrixerands.

P. Geologic Types: Complex volcanic rocks including basalt, andesite, rhyolite tuff and scoria underlain in places by glacial till. Sand Mountain volcanic ash covers all of the glacial features and most of the lava flows and cinder cones.

Q. Miles of Stream Channels by Order or Class: 0.8 (perennial) 3.66 (intermittent)

R. Transportation System

Trails: 3.8 miles Roads: 34.7 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 3061 (Unburned-low) 266 (Low-Moderate) 267 (Moderate) 0 (High)

B. Water-Repellent Soil (acres): 198
Estimated 50% of moderate and 25% of low/moderate burn severity acres. Water repellency was observed as spotty across the landscape with some being natural.

C. Soil Erosion Hazard Rating (acres):
3,397 (low) 120 (moderate) 77 (high)

D. Erosion Potential: 0.31 tons/acre

E. Sediment Potential: 1.42 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 5 yr

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

C. Equivalent Design Recurrence Interval, (years): 25

D. Design Storm Duration, (hours): 0.5

E. Design Storm Magnitude, (inches): 0.75

F. Design Flow, (cubic feet / second/ square mile): 24

G. Estimated Reduction in Infiltration, (percent): 20

H. Adjusted Design Flow, (cfs per square mile): 29

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

The Link Fire is located approximately 15 miles northwest of Sisters, Oregon in Jefferson and Deschutes Counties. The fire started on July 5, 2003 near Cache Lake. The fire is under investegation and is believed to by human-caused. The fire was contained on July 13, 2003, totaling 3,594 arces. Control of the fire is not expected until fall. The Cache Mountain Research Natural Area is located within the fire perimeter, burning 82 percent of the 1,602 acre RNA. The Cache Mtn. RNA was established under the 1990 Deschutes Forest Plan and finalized in the 1996 Establishment Report. The RNA preserves a representative example of mid-elevation lakes and their aquatic and terrestrial habitat. The RNA is managed to preserve natural ecological succession. Most of the Link Fire also falls within the Cache Late Successional Reserve (LSR). The LSR was established in the 1994 Northwest Forest Plan as a regional network of reserves to be managed to protect and enhance old growth forest conditions.

Values and type of risk:

PUBLIC HEALTH AND SAFETY:
The Cache Mountain Research Natural Area, the view point from the top of Cache Mountain, and the surrounding area are popular spots for many recreationalists year around. For example, there is a astronomy class that uses the top of Cache Mtn to observe the night sky. Hazard trees, created by the fire, inundate the burned landscape and create safety hazards along main access routes. Access roads of main concern are FDR: 1028500, 1028550, 2067, 2067900, 2068, 2068800, 2076, and 2076-600.

ECOLOGICAL INTEGRITY:
The Cache Mountain RNA contains several unique lakes and the associate aquatic and terrestrial habitat that was mainly accessed by foot prior to the fire. The fire has consumed logs and debris that before the fire made it difficult to get off-road and how has opened up areas for illegial OHV use. OHV use in this area was indentified as a trend of concern in the Metolius Watershed Analysis.

Noxious weeds exist in portions of the fire area. The disturbance of the fire, both the fire and suppression activities, create opportunities for weeds to invade uninfested areas. Areas of low/moderate and moderate burn severity are highly susceptible to invasion by noxious weeds and other non-native invasives.

Soils in this area are highly porous and permeable, but can be easily eroded where you have concentration of flow from compaction of roads or OHV use.

T & E HABITAT:
Terrestrial Wildlife values include: northern spotted owls, northern goshawks, northern bald eagles, Great gray owls, Neotropical migratory birds, bats, wolverine, fisher, marten, lynx, Cascade Frogs, Spotted frogs, Long-toed and northwestern salamanders, Larsens collomia, and Peck's penstemon. These species may be directly and indirectly affected by the fire and fire effects.

TRANSPORTATION INFRASTRUCTURE:
Drainage structures along access routes are susceptable to increased erosion causing plugging and potential washout. The lost of these structures would also cause resource damage (ie soil loss and water quality degradation).

CRITICAL HERITAGE RESOURCES:
Increased cultural resource site visibility and threats to vandalism at prehistoric archaeological sites 0601050119SI and 0601050115SI. In addition, site area of 0601050119SI was also subjected to moderate severity burn pulse and might be subject to erosion following storm events.

B. Emergency Treatment Objectives:

PUBLIC HEALTH AND SAFETY:
Remove hazard trees (snags) along main access routes to ensure public safety while recreating on the forest. Signing would also warn the public of fire hazards such as falling snags. Minor access roads within the fire will be considered for closure by the district to help ensure public safety.

ECOLOGICAL INTEGRITY:
Signing and enforcement patrols would protect the integrity of the valuable resources (soil, wetlands, lakes, ponds, wildlife, aquatics etc.) in and a around the Cache Mountain Research Natural Area from illegial OHV use. In addition to our emergency treatments the district will pursue an area closure which will restrict vehicle travel to designated routes.

Monitor disturbed fire areas for new noxious weed infestations. Reduce potential of weed spread with initial treatment to reduce/eliminate flowering plants (i.e., emergency seed reduction). Treat new and existing weed populations and monitor treatment effectiveness. Signs would also education the public of noxious weed spread.

T & E HABITAT:
Reduce the disturbance and destruction of the sensitive species and their habitat from illegal OHV use.

TRANSPORTATION INFRASTRUCTURE:
Patrolling travel routes and cleaning drainage structures during and after storm event to prevent washout and associated resource damage.

CRITICAL HERITAGE RESOURCES:
Prevent the loss of irreplaceable heritage resources.

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

Land* **80** % Channel **NA** % Roads** **95** % Other **NA** %

* Monitoring and treatment of noxious weed will occur the first year with additional treatments occurring in subsequent years under interim BAER requests. OHV/Safety signing and OHV & safety education patrol are the other land treatment.
** Hazard tree (snag) removal and storm patrol.

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	80	80	80
Channel			
Roads	95	95	95
Other			

E. Cost of No-Action (Including Loss): $2,123,000

F. Cost of Selected Alternative (Including Loss): $487,217

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Louis Wasniewski, Assistant Forest Hydrologist, Deschutes National Forest

Email: lwasniewski@fs.fed.us Phone: 541-383-5566 FAX: 541-383-5531

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:

Signing (12 signs) and ranger patrols to enforce and prevent illegal OHV use to minimize resource damage to vegetation, soils, water quality, and aquatic habitat found in and around the Cache Mountain RNA. The signs and patrols will also warn and educate visitors of increased hazards, the fire effects, noxious weed spread, and restoration. The district will pursue an Area Closure that would extend the Cache Fire Area Closure into the Link Fire. The closure would restrict all motorized vehicles (with the exception of over-the-snow) to open roads. This would also close Torso and Cache Lakes to dispersed camping. Consider and investigate the need to close the Link Fire to mushroom picking for one year.

Noxious weeds – Survey the fire area for unmapped infestations, assess potential for spread into burned or suppression impacted disturbed areas, and remove seed sources to prevent spread.

Roads and Trail Treatments:

Storm Patrol – To occur during or directly following major thunderstorm, rainstorms and/or snow melt events in low to moderate and moderate severity burn areas with the potential for culvert blockage to reduce the possibility of breaching and/or washing out the fill at plugged culverts. The fieldwork revealed approximately 10-12 culverts needing monitoring for the first two to three events.

Hazard Tree Removal – Roads to be patrolled and hazardous trees to be felled as per FS Specification 201, “Dead trees over 150 mm in diameter measured 300 mm above the ground that lean toward the road and are sufficiently tall to reach the roadbed are designated for cutting”. The BAER team recommends that tree designation and diameter for falling be established by the District Road Manager, Ray Horgen, and/or the Forest Road Maintenance Engineer, Kelsey DeJean. Costs for snag removal were based on time and equipment @$ 51.00/tree, approximately 30 trees/per mile for approximately 14.5 miles along the roads shown below.

The following table lists the roads of highest concern for storm patrol and/or snag removal, this does not negate the need to review other roads within the Link Fire burn area or used for suppression activities:

Road Number	Snag Removal	Storm Patrolling
1028-500 – Old Santiam Road	X	X
1028-550 – Road to Cache Mtn	X	
2067 – Road to Cache Cr Toll Station	X	X
2067-900 – Road to Cache Mtn	X	
2068 – Road to NW corner of fire	X	X
2068-800 – Heavy Admin Use	X	X
2076 – Road from Corbett Snopark		X
2076-600 – Road to Cache Lake	X	X

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.)

Noxious weeds: Early detection and treatment of new weed populations and expansion of existing populations, and weed treatment effectiveness. Monitoring will occur at appropriate times to track development stages of the various weed species to determine need for and timing of treatments. Additional detail may be found in the Botanical Report and the forthcoming monitoring plan from the district specialists.

Critical Heritage: Monitor these two site locations (0601050115SI & 0601050119SI) at least 2x/yr, for increased vandalism, and in the case of 0601050119SI additionally storm monitoring should be performed to assess affects, if any, from soil erosion following storm events.

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										
OHV & safety signing	sign	$140	12	$1,680	$0		$0		$0	$1,680
OHV patrol	person	$5,200	1	$5,200	$0		$0		$0	$5,200
Noxious weeds	each	$7,320	1	$7,320	$0		$0		$0	$7,320
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$14,200	$0		$0		$0	$14,200
B. Channel Treatments										
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$0	$0		$0		$0	$0
C. Road and Trails										
Hazard tree removal	miles	$1,530	14.5	$22,185	$0		$0		$0	$22,185
Storm patrol	miles	$240	11.8	$2,832	$0		$0		$0	$2,832
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$25,017	$0		$0		$0	$25,017
D. Structures										
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$0	$0		$0		$0	$0
E. BAER Evaluation										
personnel,p.d,veh.	team	$14,730	1	$14,730	$0		$0		$0	$14,730
landsat 5 imagery				$0	$0					
helicopter	hrs	$1,500	1	$1,500	$0		$0		$0	$1,500
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Evaluation				$16,230	$0		$0		$0	$16,230
F. Monitoring										
Noxious weed	yrs	$900	1	$900	$0		$0		$0	$900
Heritage	yrs	$3,000	1	$3,000	$0		$0		$0	$3,000
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$3,900	$0		$0		$0	$3,900
G. Totals				**$59,347**	**$0**		**$0**		**$0**	**$59,347**

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PART VII - APPROVALS

1. *Leslie A. C. Weldon* *7/20/03*
   Forest Supervisor (signature) Date

2. _____ _____
   Regional Forester (signature) Date