

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

Date of Report: September 26, 2003

**BURNED-AREA REPORT**  
(Reference FSH 2509.13)

**PART I - TYPE OF REQUEST**

A. Type of Report

- ☒ 1. Funding request for estimated WFSU-SULT 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 or design analysis
  - ☐ Status of accomplishments to date
- ☐ 3. Final Report (Following completion of work)

**PART II - BURNED-AREA DESCRIPTION**

- A. Fire Name: Fish and Eagle Creek East
- B. Fire Number: P18528 (Fish) and P18527 (Eagle Creek East)
- C. State: Idaho
- D. County: Idaho
- E. Region: Northern
- F. Forest: Clearwater
- G. District: Powell
- H. Date Fire Started: August 9, 2003  
as of September 26, 2003.
- I. Date Fire Contained: Not Contained
- J. Suppression Cost:
- K. Fire Suppression Damages Repaired with Suppression Funds
  - 1. Fireline waterbarred (miles): 0 Miles
  - 2. Fireline seeded (miles): 0 Miles
  - 3. Other (identify): 0 Miles

L. Watershed Number: Lake Creek (33,327 Acres) 170603030503; Upper Lochsa River 1706030303

M. Total Acres Burned: 3483 Acres (Fish 3166 Acres; Eagle 317 Acres)  
NFS Acres(**3483**) Other Federal (**0**) State (**0**) Private (**0**)

N. Vegetation Types: Field observations show that high elevation forest cover types dominate the fire area. Estimates from the TSMRS (Timber Stand Management Record System) database indicate the following cover types were present within the burn perimeter prior to the fire: subalpine fir (19.3%), lodgepole pine (12.1%), Engelmann spruce (7.6%), Douglas-fir (2.6%), grand fir (1.3%), mountain hemlock (0.9%), unknown and non-stocked (56.3%). The Gypsy fire, which occurred in 1992, covered a portion of the fire perimeter likely accounted for some of the unknown and nonstocked cover types.

O. Dominant Soils: The fire area is dominated by a variety of soil types on high elevation broadly rounded mountain uplands, frost-churned slopes, and high elevation stream terraces. Soils are shallow to moderately deep loams, sandy loams, and silt loams with moderate to high levels of gravel, cobbles, and boulders. Soils are primarily Inceptisols with weak horizonation and little incorporation of organic matter. Rock outcrops are common on higher peaks and mountain slopes. Silt loams derived from the Mazama volcanic ash layer are present throughout much of the fire area, ranging in thickness from absent to approximately 10 inches in depth.

P. Geologic Types: The fire area is underlain by Idaho Batholith granitics (98.6%) with small portions of sedimentary materials (1.3%). The Mazama volcanic ash layer covers much of the area.

Q. Miles of Stream Channels by Order or Class: 8.9 Miles  
Order 1 – 6.2 Miles  
Order 2 – 1.5 Miles  
Order 3 – 1.3 Miles

R. Transportation System

Trails: 0.5 miles Roads: 0.0 miles

### **PART III - WATERSHED CONDITION**

A. Burn Severity (acres):

Fish Lake and Eagle Creek East areas combined: **Unburned and Low:** 2641 acres (75.8%); **Moderate:** 654 acres (18.8%); **High:** 188 acres (5.4%). These figures include 789 acres (22.7%) of unburned to low severity reburn; 30 acres (0.9%) of moderate severity reburn; and 62 acres (1.8%) of high severity reburn.

Fish Lake: **Unburned and Low:** 2455 acres (77.6%) with 789 acres (24.9%) in reburn area; **Moderate:** 542 acres (17.1%) with 30 acres (0.9%) in reburn area; **High:** 169 acres (5.4%) with 62 acres (2.0%) in reburn area.

Eagle Creek East: **Unburned and Low:** 186 acres (58.6%); Moderate: 112 acres (35.3%); High: 19 acres (6.0%).

B. Water-Repellent Soil (acres): 515 Acres (14.8%).

C. Soil Erosion Hazard Rating (acres): See attached maps. Information was available only for the Eagle Creek East Fire because landtypes with associated erosional attributes have not been mapped in the Selway Bitterroot Wilderness portion of the Clearwater National Forest where the Fish Fire is located. However, the soil erosional characteristics of the landforms within the Fish Fire are estimated to be similar to those in the Eagle Creek East Fire.

Mass Wasting Potential: Low – 244 Acres (77.0%); Mod. – 73 Acres (23.0%); High – 0 Acres (0.0%).

Debris Avalanche Potential: Low – 317 Acres (100.0%); Mod. – 0 Acres (0.0%); High – 0 Acres (0%).

Surface Erosion Potential: Low – 317 Acres (100.0%); Mod. – 0 Acres (0.0%); High – 0 Acres (0%).

Fire Erosion Potential: Low – 263 Acres (83.0%); Mod. – 54 Acres (17.0%); High – 0 Acres (0.0%).

Sediment Delivery Potential: Low – 105 Acres (33.1%); Mod. – 212 Acres (66.9%); High – 0 Acres (0.0%).

D. Erosion Potential: 36.7 tons/acre<sup>1</sup>

E. Sediment Potential: 22,300 cubic yards / square mile<sup>1</sup>

<sup>1</sup> Results are from Disturbed WEPP. Modeled high severity fire in the uplands and riparian; 10-30% slope; 20-50% ground cover; 10-30% rock; Fenn modified climate. This is a worse case analysis. Most of the fire will have no increase in erosion or sediment.

#### **PART IV - HYDROLOGIC DESIGN FACTORS**

A. Estimated Vegetative Recovery Period, (years):

The effects of the Fish and Eagle Creek East fires on recovery of vegetation within its boundaries will vary primarily by the severity of the burning that took place and the available seed sources. In undisturbed soil areas, the native seedbank for shrubs, forbs, and grasses will likely respond favorably to the burn since they have evolved with such natural disturbances. Where the soil has been altered, primarily by trail construction, spread of noxious weeds is a concern that should be monitored over time. Slope, aspect, fuel loadings, and the type of vegetative cover present when the fire burned influenced the severity of the burn.

**Unburned to Low Severity Burn Areas:** In areas where the burn severity was unburned to low, recovery would generally be expected to occur within one growing season. Vegetative recovery is considered to be any vegetation which providing more than 80% cover which effectively intercepts rainfall and provides an extensive root mass as defined on page II-26 of the Clearwater National Forest Plan. These unburned to low severity burn areas are expected to maintain adequate live tree stocking levels and associated understory vegetation in most cases. Tree mortality is expected to average less than 30% in these areas, ranging from 0% to 50%. Perennial grasses, forbs, and shrubs generally will resprout after low severity burns and a duff/litter layer will reform within several years. No tree planting will occur in the Fish fire, located within the Selway Bitterroot Wilderness Area, but some tree planting may be planned within the Eagle Creek East fire where fire has killed significant areas of the live tree cover. All areas on National Forest System (NFS) lands requiring tree planting will have trees established and free to grow within five growing seasons, but tree regeneration will occur at a slower rate within the wilderness. Vegetative recovery will vary from 0 to 5 years.

**Moderate Severity Burn Areas:** In areas where the burn severity was moderate, the majority of the trees are expected to die as a direct result of the fire, with mortality ranging from 50% to 100%. Most of the needles remain on the trees, but have turned red as a result of the burn effects. Tree planting may occur within the Eagle Creek East fire, but no trees will be planted in the Fish fire which is located within the Selway Bitterroot Wilderness Area. All areas requiring tree planting on National Forest Lands will have trees established and free to grow within five growing seasons, but tree regeneration will occur at a slower rate within the wilderness. Vegetative recovery will vary from 1-15 years. Some of the larger areas that burned at moderate severity are a greater distance from surviving seed sources. This will slow the recovery time. Existing seed from shrubs, forbs, and grasses stored deeper in the soil, will provide some vegetative recovery in these areas

**High Severity Burn Areas:** In areas where the burn severity was high, nearly all of the trees were killed or are expected to die as a direct result of the fire, with mortality ranging from 80% to 100%. Tree planting may occur within the Eagle Creek East fire, but no trees will be planted in the Fish fire which is located within the Selway Bitterroot Wilderness Area. All areas requiring tree planting will have trees established and free to grow within five growing seasons, but tree regeneration will occur at a slower rate within the wilderness. Vegetative recovery will vary from 3-20 years. The largest areas that burned at high severity are surrounded by medium severity burn areas and thus are at a greater distance from seed sources. This will slow the vegetative recovery time. The heat produced in the high severity burning in these areas has destroyed much of the existing seed stored in the soil, so shrub, forb, and grass recovery will occur at a slower pace. Encroachment by noxious weeds may be a concern on high burn severity areas adjacent to trail corridors where weeds already exist.

Vegetative Recovery Period on Fish and Eagle Creek East fires - Years

Burn Severity	Total Acres	Reforestation Period	Vegetative Recovery Period *
None to Low	2641	0-5 years	<b>0-5 years</b>
Medium	654	1-10 years	<b>1-15 years</b>
High	188	3-10 years	<b>3-20 years</b>
Total	3483		

\*Vegetative Recovery is considered be any vegetation which provide >80% cover which effectively intercept rainfall and provides an extensive root mass.

B. Design Chance of Success, (percent):	<u>80%</u>
C. Equivalent Design Recurrence Interval, (years):	<u>25 Years</u>
D. Design Storm Duration, (hours):	<u>1/4 Hours</u>
E. Design Storm Magnitude, (inches):	<u>0.53 Inches</u>
F. Design Flow, (cubic feet / second/ square mile):	
G. Estimated Reduction in Infiltration, (percent):	<u>10%</u>
H. Adjusted Design Flow, (cfs per square mile):	<u>110 cfs<sup>1</sup></u>

<sup>1</sup> For design storm analysis, we used a 15 minute, 25 year storm that occurred in Sleeping Child Creek. This storm produced a 110 cfs<sup>1</sup> runoff in a 1.8 mi<sup>2</sup> burned watershed (Site 14), which was greater than a 500 year runoff. This watershed was selected for the design storm because the runoff was water only (not debris) and the watershed was small (Less than 2 Mi<sup>2</sup>), where impacts are most likely to roads or other facilities.

Road drainage in watersheds less than 2 Mi<sup>2</sup> should be designed to handle these flows. In watersheds 5 to 20 mi<sup>2</sup>, the design storm should be approximately 23 cfs<sup>1</sup> (Parrett and Others, Fire Hydrology, 7/2003).

## **PART V - SUMMARY OF ANALYSIS**

### **A. Describe Watershed Emergency:**

Based upon the BAER Teams' field survey and analysis, the following emergencies exist on National Forest System lands:

#### **Threat to Federal property and aquatic ecosystem integrity:**

Accelerated sheet and rill erosion will occur due to the lack of canopy, ground cover, and water repellency of soils. Increased sediment delivery to the stream channels will result in degraded water quality and loss of channel capacity. Runoff will increase due to loss of infiltration capacity. Increased stream flows from high intensity burns in the Fish Fire poses a threat to Trail #211 in the Fish Fire.

### **B. Emergency Treatment Objectives:**

The emergency treatment objectives are to protect life and property, maintain soil productivity and water quality to protect high value fisheries, and prevent the invasion of noxious weeds. Specifically we are concerned with the potential for (See Treatment Map):

1. Erosion of Trail #211 in the Fish Fire.

Treatments designed to reduce the risk of the potential adverse effects of the fire include:

1. Trail erosion control, including installation of cross drains and water bars on Trail #211 (1.0 Miles).

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

Land \_\_\_ % Channel \_\_\_ % Roads \_\_\_ % Trails **80** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land			
Channel			
Roads			
Trails	80%	100%	100%

E. Cost of No-Action (Including Loss):

Two parameters were used to determine the loss of resources if no treatment were applied. These include loss of the bull trout valued at \$50,000 and the loss of Trail 211 due to flooding valued at \$8,000. Total cost of the no action is **\$58,000**.

F. Cost of Selected Alternative (Including Loss):

Implementation of the proposed treatments would have the following affect on the two selected parameters. The potential effects on the bull trout would be reduced by \$50,000 to \$10,000. The loss of Trail 211 would be mitigated to \$0. The total value of resource loss after implementation of the proposed treatments is reduced to \$10,000. The cost of implementing the proposed treatments is \$6336. Assuming an 80% treatment success, the total value of successful implementation of treatments is  $(0.8) \times (\$10,000 + \$6336)$  for a total of \$13,068. Added to this amount is the cost of the values lost do to 20% of the treatments not being successful. This amounts to  $(0.2) \times (\$10,000 + \$6336)$  or \$3267. The total cost of this alternative is the value of successful implementation (\$13,068) plus the value of unsuccessful implementation (\$3267) or **\$16,335**.

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input type="checkbox"/> Range	<input type="checkbox"/>
<input type="checkbox"/> Forestry	<input type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input type="checkbox"/> Engineering	<input type="checkbox"/>
<input type="checkbox"/> Contracting	<input checked="" type="checkbox"/> Ecology	<input type="checkbox"/> Botany	<input checked="" type="checkbox"/> Archaeology	<input type="checkbox"/>
<input checked="" type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input checked="" type="checkbox"/> GIS	

Team Leaders: Dick Jones and Jim Mital

Email: [rmjones@fs.fed.us](mailto:rmjones@fs.fed.us) and [jmital@fs.fed.us](mailto:jmital@fs.fed.us)

Phone: Dick (208-476-8274) Jim (208-476-8348)

FAX: 208-476-8329

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: None

Channel Treatments: None

Roads and Trail Treatments: Trail treatments only. Erosion control work is needed on the Fish Lake Trail 211. Erosion control work will include installing waterbars and drainage dips on the trail tread. The work should be completed before July 15, 2004 to prepare for increased runoff from the fire. Estimated costs are \$6336 for contract erosion control work on one mile of the Fish Lake Trail 211.<sup>1</sup>

Structures: None

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 Weed Monitoring-existing weed populations, primarily of spotted knapweed along trails, will be monitored for encroachment into areas of moderate

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<sup>1</sup> See Recreation BAER Report

to high burn intensity where populations of noxious weeds had not previously been observed. Walk through weed surveys will be conducted within one year to determine if weed invasion is occurring in burn areas. If such monitoring identifies encroachment of noxious weeds into such areas, appropriate treatment measures will be identified and an interim 2500-8 report will be submitted for weed treatment funding. \$500.



**Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership**

Line Items	Units	Unit Cost	# of Units	WFSU SULT \$	Other \$	# of units	Fed \$	# of Units	Non Fed \$	Total \$
<b>A. Land Treatments</b>										
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Land Treatments</i>				\$0	\$0		\$0		\$0	\$0
<b>B. Channel Treatments</b>										
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Channel Treat.</i>				\$0	\$0		\$0		\$0	\$0
<b>C. Road and Trails</b>										
Trail Erosion Control	Miles	\$6,336	1	\$6,336						\$6,336
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Road &amp; Trails</i>				\$6,336	\$0		\$0		\$0	\$6,336
<b>D. Structures</b>										
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Structures</i>				\$0	\$0		\$0		\$0	\$0
<b>E. BAER Evaluation</b>										
Salary	Ea	4920	1	\$4,920	\$0		\$0		\$0	\$4,920
Travel/Per Diem	Ea	170	1	\$170						\$170
Imagery/Equip	Ea	1140	1	\$1,140	\$0		\$0		\$0	\$1,140
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Evaluation</i>				\$6,230	\$0		\$0		\$0	\$6,230
<b>F. Monitoring</b>										
Weed Monitoring				\$500	\$0		\$0		\$0	\$500
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Monitoring</i>				\$500	\$0		\$0		\$0	\$500
<b>G. Totals</b>				<b>\$13,066</b>	<b>\$0</b>		<b>\$0</b>		<b>\$0</b>	<b>\$13,066</b>

**PART VII - APPROVALS**

1.     /s/ ***Larry J. Dawson*** \_\_\_\_\_                      09/26/03  
Forest Supervisor (signature)                                      Date
  
2.     \_\_\_\_\_                                                              \_\_\_\_\_  
Regional Forester (signature)                                      Date