

Date of Report: August 12th, 2002

USDA - FOREST SERVICE / BURNED - AREA REPORT

(**Reference FSH 2509.13**)

PART 1 ... 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 and design analysis
 - () Status of accomplishments to date
- () 3. Final Report - following completion of the emergency work

PART 2 ... BURNED - AREA DESCRIPTION and FIRE LOCATION

- | | |
|--|---|
| A. Fire Name: 747 (complex includes Murray fire) | B. Fire Number: OR-OCF-747 |
| C. State: Oregon | D. County: Grant, Wheeler, and Crook |
| E. Region: R6 / Pacific Northwest | F. Forest: Ochoco |
| G. District: D2 / Paulina | H. Date Fire Started: 07-13-2002 |
| I. Date Fire Contained: 08-09-2002 | J. Date Fire Controlled: Unknown |
| K. Suppression Costs: \$ 8,000,000 (estimated final cost from ICS) | |

L. Fire Suppression Damages Repaired with Suppression Funds:

747 Fire

Fireline Waterbarred & Re-Seeded (miles): ~ 3.4 miles of hand lines and 25 miles of dozer lines. Seeding will be completed around October 2002 on all hand and dozer lines.

Murray Fire

Fireline Waterbarred & Re-Seeded (miles): ~ 0 miles of hand lines and 2.5 miles of dozer lines. Seeding will be completed around October 2002 on all dozer lines.

M1. Watershed 170702010305 – Cottonwood Creek
Numbers: 170702011302 – Youngs Butte
(747 Fire) 170702011308 – Corner Creek / Black Pine Creek
170702011311 – Wind Creek
170702011315 – Black Canyon
170703030507 – Beaver Dam

M2. Watershed 170702011223 – Sunflower Creek
Numbers:
(Murray Fire)

N1. - 747 Fire NFS Acres Burned: 15,300 **Total Acres Burned:** 16,948

Other Land Ownerships ... list as follows (acres):

(X) Private - 993 (X) State of Oregon – 83 (X) BLM – 571

N2. - Murray Fire NFS Acres Burned: 342 **Total Acres Burned:** 342

O. Vegetation Types: The 747 Fire Complex affected areas of ecological significance, including scablands and the Black Canyon Wilderness Area. This 13,400 acre wilderness area preserves a representative example of high elevation mixed conifer forest to low elevation ponderosa pine and western juniper stands. It is characterized by steep slopes, rock outcrops and intermingled scablands. Scablands are recognized as among the most fragile ecosystems on the Ochoco National Forest due to shallow residual soils, which are subject to water saturation and frost heaving.

Riparian areas along Black Canyon Creek, and the South Fork John Day River are characterized by lush, highly diverse woody and herbaceous vegetation. The fire did not have much effect on the riparian vegetation except at the confluence of the two systems. In this area, the fire intensity was high with mortality of most riparian vegetation including grasses and sedges.

The vegetation is a combination of forested and non-forested plant associations. The Forested Plant Association Groups (PAGs) presented are Moist Grand Fir (MGF),

Dry Grand Fir (DGF), Douglas-Fir (DF), Mesic Ponderosa Pine (MPP), and Xeric Ponderosa Pine (XPP). Aspen stands and the Subalpine Fir PAGs are also present. Grand Fir and Douglas-Fir plant associations have ponderosa pine, lodgepole pine and western larch present in the early seral stages. The Non-Forested Plant Association Group is the Juniper Steppe.

P. Dominant Soils:

747 Fire and Murray Fire

Forested Soils: The primary soil is a combination of ash and loess (Y landtype, 12,356 acres), found on plateau and escarpment edges. Soil depths vary from north to south aspects with the norths and leeward aspects having deeper soils and the south aspects being typically more shallow and rocky with less ash.

The surface soils are generally thin to moderately thick, nongravelly to very gravelly and cobbly sandy loams, loams and silt loams. The subsoils are thin to thick, gravelly and cobbly to very cobbly silty clay loams, clay loams and clays.

The secondary soil (P landtypes, 2,925 acres), found on basalt or andesite plateaus, are characterized by mixtures of ash and loess over basalt colluvium. These soils also include the majority of the scablands with shallow soils and the stringers with moderately deep to deep soils.

The surface soils are generally very thin to thin, nongravelly to gravelly, loams and silt loams, with the exception of the P2 landtype, which is thin to thick recent ash deposits with sandy loam, loam and silt loam textures. The subsoils are very thin to thin, nongravelly to gravelly, clay loams to silty clay loams. Occasionally a very thin gravelly clay layer is lying immediately above the bedrock.

The soils are well drained. Rapid to moderate permeability in surface soils and moderate to slow in the subsoils. The ash soils are predominantly P2, P9 and Y2 landtypes.

Non-Forested Soils: These include scablands, meadows and shrublands. Scabland soils (largely P5, P54, P85) are very shallow and shallow (<20 inches to bedrock). Shrubland soils range from moderately deep to deep (from >20 to 60 inches).

Murray Fire

The dominant soils (P landtypes P3, P5, P54) are one third Forested and two thirds Non-Forested, characterized by mixtures of ash and loess over basalt and rhyolite colluvium.

Q. Geologic Types:

747 Fire

Local emplacement of predominantly basaltic lava flows, breccia; interlayered saprolite (ancient soils) underly 100% of the area. Landslide and debris flow deposits composed of chaotic masses of angular blocks, chiefly mixtures of basalt and tuffaceous sedimentary rocks underly 831 acres, 5 percent of the area within the fire

perimeter. The dormant landslide terrain, all within the Black Canyon Wilderness, burned under a combination of high (173 acres), moderate (71 acres) and low (142 acres) severity , for a total of 385 acres. Of that, 70 acres of the dormant landslide terrain within the stream buffers were burned.

A 1 ½ ft. Mt. Mazama ash cap covers the area and has mixed with the soils.

Murray Fire

Local emplacement of predominantly basaltic and rhyolitic lava flows, breccia; interlayered saprolite (ancient soils) underly 100% of the area. The basalt primarily underlies the west-northwest end of the fire. The rhyolite flows underly the east-northeast-southeast-southwest portions of the fire.

A 1 ½ ft. Mt. Mazama ash cap covers the area and has mixed with the soils.

R. Miles of Stream Channels by Order: (Strahler 1952 method, within the fire perimeter)

747 Fire

1st: 35.5 2nd: 9.8 3rd: 5.9 4th: 4.3 5th: 3.7

Murry Fire

1st: 0.5 2nd: -0- 3rd: -0- 4th: -0- 6th: -0-

S. Transportation Systems: (occurring within the fire perimeter)

747 Fire

Trails ... 17.2 miles (USDA - Forest Service) Roads ... 33.2 miles (USDA - Forest Service)

Trails ... 0.4 miles (State of Oregon)

Trails ... 0.9 miles (Private Ownership)

Total Trails ... 18.5 miles

Total Roads ... 33.2 miles

Murray Fire

Roads ... 2.2 miles (USDA - Forest Service)

Total Trails ... 0.0 miles

Total Roads ... 2.2 miles

PART 3 ... WATERSHED CONDITION / NFS PROBLEM **INVENTORY**

A1. Mapping of the Burn Severity Zones – 747 Fire:

(16,947 total acres occur within the perimeter of the 747 Fire)

1,894 High (11 %) 6,410 Moderate (38 %) 8,644 Low / Unburned (51 %)

A2. Mapping of the Burn Severity Zones – Murray Fire:

(342 total acres occur within the perimeter of the Murray Fire)

134 High (39 %) 101 Moderate (30 %) 107 Low / Unburned (31 %)

B1. Estimation of Water-Repellent soils occurring within the 747 Fire:

379 Acres

B2. Estimation of Water-Repellent soils occurring within the Murray Fire:

27 Acres

C. Rating Soils for Potential Erosion Hazards within the Fire Perimeter: (NFS lands ... acres)

<u>747 Fire</u>		
High	Moderate	Low
7,323 (48 %)	4,564 (30 %)	3,389 (22 %)
<u>Murray Fire</u>		
High	Moderate	Low
0 (0 %)	68 (20 %)	274 (80 %)

D. Potential for Accelerated Erosion Losses without applying emergency rehabilitation treatments:

<u>747 Fire</u>			
1st Year	2nd Year	3rd Year	4th Year
14 tons/acre/year	8 tons/acre/year	6 tons/acre/year	5 tons/acre/year
<u>Murray Fire</u>			
1st Year	2nd Year	3rd Year	4th Year
11 tons/acre/year	7 tons/acre/year	5 tons/acre/year	5 tons/acre/year

Overall Total = 419,214 tons (747 Fire)
Overall Total = 9,082 tons (Murray Fire)

(Additional erosion over a 48 month period)

(**Source**) – Disturbed WEPP model ... <http://www.forest.moscowfs1.wsu.edu/fswepp/>

- E1. Total Sediment Potential:** 10,864 tons / mile² ... according to the Disturbed
747 Fire WEPP Model
- E2. Total Sediment Potential:** 3,491 tons / mile² ... according to the Disturbed
Murray Fire WEPP Model

PART 4 ... HYDROLOGIC DESIGN FACTORS with CALCULATED RISK and CLIMATE EVALUATIONS

The following table shows the factors for the Black Canyon subwatershed located in the 747 Fire:

- A. Estimated Vegetative Recovery Period: 5-7 years**
- B. Design Chance of Success: 80 percent**
- C. Equivalent Design Recurrence Interval: 10 year**
- D. Design Storm Duration: 1 hour**
- E. Design Storm Magnitude: 0.5 inches**
- F. Design Flow: 312 ft³ / sec / mi²**
- G. Estimated Reduction in Infiltration: 10-20 percent**
- H. Adjusted Design Flow: 1,350 ft³ / sec / mi²**

Note: The Corner Creek subwatershed design and adjusted design flows are 106 ft³ / sec / mi and 278 ft³ / sec / mi, respectively. The Wind Creek subwatershed design and adjusted design flows are 264 ft³ / sec / mi and 360 ft³ / sec / mi, respectively

The following table shows the factors for the Sunflower subwatershed located in the Murray Fire:

- A. Estimated Vegetative Recovery Period: 5-7 years**
- B. Design Chance of Success: 80 percent**
- C. Equivalent Design Recurrence Interval: 10 year**
- D. Design Storm Duration: 1 hour**
- E. Design Storm Magnitude: 0.5 inches**
- F. Design Flow: 278 ft³ / sec / mi²**
- G. Estimated Reduction in Infiltration: 10-20 percent**
- H. Adjusted Design Flow: 324 ft³ / sec / mi²**

PART 5 ... SUMMARY OF SURVEY & ANALYSIS

A. Describe the Watershed Emergency:

- ◆ **THREATS TO HUMAN LIFE AND PROPERTY** ... Most of the actual threats associated with human life and property would be directly linked to the continued use in and adjacent to the Black Canyon Wilderness, which comprised 10,245 acres (60%) of the burn. The wilderness contains approximately 14 miles of system trail with several trailheads and campgrounds as access points. Wilderness users are at risk of falling burned trees and potential debris flows/torrents. The typical debris flow/torrent is a high velocity, channel, scouring event that significantly threatens any facility and human life in its path. Landslide prone areas (sources of debris flows) are perched up in the steep side drainages along Black Canyon Creek and South Prong. The trail system intersects these drainages. As the tree roots deteriorate over the next 5 to 10 years in the moderate to high burn severity areas it is expected that there will be an increase in shallow debris flows.

- ◆ **LOSS OF SOIL PRODUCTIVITY and ECOLOGICAL INTEGRITY** ... Virtually all of the contrasting soils observed within the HIGH burn severity zones exhibited low to moderate water-repellency at and just below the ground surface. This temporary condition has modified the existing site hydrologic function to the point that infiltration will be reduced, resulting in sheet, rill and gully erosion. **Hydrophobic conditions may persist for a period of up to 1 to 5 years following the burn. All HIGH burn severity zones are recognized as potential flood source areas.** The severely burned landscapes of the 747/Murray Fires have a maximum threshold for soil loss tolerance at about 1 to 4 tons/acre/year. Accelerated rates of erosion, resulting from either natural or human-caused disturbances, that exceed this listed threshold, will definitely result in adverse impacts to long-term soil productivity.

As long as the ashy soils are vegetated, surface erosional processes are not significant. However, once the vegetation cover is removed, these ashy soils on steep slopes have very high erosion hazards. Steep landforms over much of the burned area are highly effective in delivering eroded material to stream channels. Hence, the moderate and high burn severity areas will likely have accelerated surface erosion and shallow landslide risks. The BAER Team used this information in coming up with our recommendations for Log Erosion Barriers (LEBs) and riparian planting outside the Wilderness.

Areas occurring within the burn need to be treated and monitored for noxious weeds. The invasion of either exotic species or noxious weeds within the burned-area is likely due to the loss of native vegetation. The expansion of noxious weeds would adversely affect the integrity of the resources located in and around the Black Canyon Wilderness. A limited number of aspen stands remain on the district and one of those stands was burned. The aspen will re-sprout; however, with the surrounding area burnt the wildlife will likely browse the new sprouts and weaken the overall health and vigor of the aspen.

The fire consumed approximately 6 miles of allotment boundary fence adjacent to the Black Canyon Wilderness. The fence allowed for grazing management while protecting soil productivity, intergery of native vegetation, water quality, Redband trout and Steelhead habitat, and wilderness values in and around the Black Canyon Wilderness. There is an important need to repair the fence and maintain these values.

Heritage sites exist both in and outside of the Black Canyon Wilderness on the Paulina Ranger District. Six sites were identified as being potentially in danger of adverse actions from either rehabilitation efforts to minimize erosion of the soil within the fire's perimeter or directly from erosion itself. The location of pictographs may be more apparent with surrounding vegetation burned from the fire, predisposing the sites to possible looting and vandalism.

- ◆ **LOSS OF WATER QUALITY ISSUES** ... Water quality in the Black Canyon and Murray Creek drainages are critical for many uses including aquatic habitat for Redband Trout and Steelhead, recreational use. Approximately 49 % of the 747 Fire and 69 % of the Murray Fire contained burned-area of moderate or high severity burn; the soils in these areas have been temporarily damaged by the fire disturbance. Severely burned landscapes have limited infiltration properties and, water will not percolate into the subsoil or substratum layers. A high intensity storm will result in the detachment and transport of soil material through surface erosion and/or debris slides, impacting Sensitive and Threatened fish populations and, at any time - pose potential threats to human life and property. The issues related to loss of soil productivity and ecological integrity are also directly related to the water quality issues.

B. Emergency Treatment Objectives:

The primary objective of this Burned-Area Emergency Rehabilitation Report is to recommend **prompt actions** deemed reasonable and necessary to effectively protect, reduce or minimize significant threats to human life and property and, prevent the unacceptable degradation of resources. The emergency treatments being recommended by the Ochoco National Forest / BAER Team are specifically designed to achieve the following results:

- 1) Promote stream bank stabilization and the recovery of hydrophobic ground conditions through riparian planting in order to maintain long-term site productivity, riparian health, and to meet Regional / Forest Plan standards.
- 2) Limit colonization and/or expansion of noxious weeds and exotic plant species within and around the burned areas.

- 3) Trap eroded soil material up on the hillslopes before sediment impacts water quality and Sensitive and Threatened fish and habitat in Black Canyon Creek drainage location in the 747 Fire and the Murray Creek drainage of the Murray Fire.
- 4) Protect soil stability, wilderness integrity, water quality, fish habitat, and vegetation integrity through the repair and maintenance of proper allotment fences lost in the fire.
- 5) Work to protect 6 known archeological sites considered being at risk from accelerated rates of erosion directly associated with the recent burning disturbance.
- 6) Protect a sensitive stand of aspen that is considered to be at risk from increased wildlife browsing due to reduction of forage from the burn.
- 7) Protect archeological sites from accelerated erosion and higher stream flows created by the fire and provide vegetated screen to prevent vandalism.

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

Land ... 80 % Channel ... 80 % Roads ... 85 % Archeology ... 85 %

D. Probability of Accomplishing Treatment Success:

< ----- Years after Treatment ----- >			
	1	3	5
♦ Land	70 %	80 %	90 %
♦ Channel	70 %	75 %	80 %
♦ Roads & Trails	80 %	85 %	85 %
♦ Archeological	80 %	85 %	85 %

E. Cost of Taking No-Action: (including potential loss) **\$ 2,102,000**

F. Cost of the Recommended BAER Treatments on NFS Lands: (including loss)
Approximately **\$ 196,835**

These treatments are expected to be about 70 to 80 % effective during the 1st year after the burn.

G. Skills Represented on the Burned-Area Survey Team:

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

Team Leader: Louis Wasniewski (Hydrologist / Deschutes National Forest)

Phone: (541) 383 - 5566

E-Mail: lwasniewski@fs.fed.us

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.)

Preventative Measures

Education and Warning Signs:

Install 25 signs, as indicated in the recreation report, are recommended for public safety regarding potential flood hazards, falling snags and landslides. Signs would also educate the public about the importance of staying on approved trails to protect soils and promote vegetative recovery following the fire.

Land Treatments

Log Erosion Barriers:

This treatment uses on-site charred timber 4-12 inches in diameter. The trees are felled, cut to a length of 6 to 20 feet, limbed on one side (the side that faces the ground when installed), and secured on the hillslope using 24-inch wood stakes. The log barrier needs to be placed in a shallow (2 inch) depression and backfilled on the uphill side of the log to create a seal that prevents water from running under; this was identified to be most effective (USDA, 1998). The logs are placed parallel to the contour and staggered one upslope, one down slope, and one upslope along the contour with overlap where possible. This treatment is designed on slopes from 5 to 25 % at approximately 200 to 600 linear feet per acre. At the lower slopes (5 %) the spacing between LEB bands would be around 100 feet and at higher slopes (25 %) the spacing would be 50 feet.

Archeology Site Protection (6 sites):

Protect heritage values by revegetating to control erosion and provide a vegetated screen to prevent vandalism of pictographs at 6 sites.

Noxious Weed Survey and Treatment:

Prevent the spread of noxious weeds and undesirable species from noxious weed reservoirs. Prevent the infestation of moderate and high intensity burn areas and fire suppression related disturbances. Protect and preserve existing high quality plant communities and values. Weed control of known infestations, monitoring and inventory on the Paulina Ranger District is done in cooperation with Crook, Wheeler and Grant County Weed Agents.

Existing sites covered under the 1995/1998 Integrated Weed EA will continue to be treated with approved herbicides using program dollars. Areas not covered under NEPA will continue to be hand treated by pulling and grubbing. Expansion of the weed sites caused by fire effects will be treated using BAER funds. A cooperative weed treatment program would be initiated with private landowners. Biological control of Canada thistle would be initiated at Black Canyon Trailhead, in cooperation with County Weed Control experts

Fence Repair:

Reconstruct 6 miles of grazing boundary and pasture fence that was burned in the Wind Creek and Dry Corner Allotments. The Wind Creek allotment contains 4.5 miles of boundary fence that separates the allotment from part of the Black Canyon Wilderness. Grazing of this allotment will continue in June of 2003 since only 9.4% of the allotment burned. Portions of this fence were totally lost and other portions need repair. A balance of repair and replacement was estimated at \$1000/mile. This boundary fence is necessary to protect natural recovery of the native vegetation, protect against accelerated erosion, protect riparian conditions, protect fish and fish habitat for the Redband Trout and Steelhead located in the Black Canyon drainage, maintain the high level of water quality, and maintain the ecological integrity found in the Wilderness.

The Dry Corner Allotment contains 1.5 miles of pasture fence that separates the north and south pastures located in the allotment. Ninety percent of the north pasture was burned and very little of the south pasture was burned. It is recommended to rest the north pasture for the upcoming grazing season (5/16-8/15). This would also exclude livestock from entering Black Canyon Wilderness which currently exists through the north pasture. This fence is necessary to protect the same values as stated with the Wind Creek Allotment fence.

Temporary Fence:

The new temporary fence recommendation is being dropped due to Wilderness/NEPA issues for fence construction within the wilderness where no structure had existed. This recommendation will be directed towards the Paulina Ranger District as a suggestion for future allotment management plans. Therefore the pasture fence located in the Dry Corner Allotment, as stated above, is even more critical to restrict livestock from entering the Wilderness.

Temporary Aspen Protection Fence:

Construct 0.5 mile of fence to protect the ecological integrity of a sensitive aspen stand located near the Mud Springs campground. The aspen stand is a limited vegetation type that has been partially burned along with the surrounding

vegetation. The new aspen shoots are expected to sprout and will be at risk from increased wildlife browsing due to a reduction of forage created by the burn. The new sprouts are the most sensitive for the first couple of years because of the residual nutrients stored in the root system. The loss of growth during the first couple of years through browsing will greatly impact the long-term health and vigor of the stand.

Channel Treatments

Riparian Planting: Planting of native shrubs such as along a tributary to South Prong (section 4) in the area of high burn severity. Desired species to plant: scouler willow, squaw current (ribes cereum), rose (rosa spp.). Planting design: plant along stream banks and floodplain with willow and rose; plant every 3 feet with "clumps" to provide variation and biological diversity. Riparian shrub plantings are intended to accelerate recovery of riparian area and bank stability where fire has severely impacted existing plant stock. Planted vegetation should be effective within 2 years.

Roads and Trail Treatments

Improve Trail Drainage:

Install drain dips on 14.0 miles of recreation trails (Black Canyon Trail #820, S. Prong Trail #821, and Payten Trail #820D) within the burned area to divert anticipated increases in surface run off. Dips will be constructed with peeled and anchored native wood material, and/or native rock materials (as specified). Enhance existing armored stream crossings to provide greater filtration of sediments and add additional drainage in trails above stream crossings.

Storm Proofing/Patrolling Roads:

Clean ditches in existing culvert basins of fire debris. Patrol roads following major storms. Initial assessment has identified 5 miles of road.

Remove Culverts and Install Rock Fords:

Road treatments are intended to reduce the potential for road fill failures, rilling and gully erosion at drain crossings due to inadequate, missing or poorly maintained culvert. Eight locations have been identified: (2) 580rd, (1) 570rd, (3) 600rd, and (2) 601rd.

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.)

Upland treatments: erosion control treatments will require monitoring after (and ideally during) precipitation events to determine effectiveness and need for

additional treatments. Monitoring should occur for 3 years depending on recovery of vegetation and stability, with decreasing frequency in subsequent years.

Noxious Weeds: weed treatment effectiveness, spread and species invasion will need to be closely monitored. Monitoring will need to occur at appropriate times to track development stages of the various species to determine need for treatments and timing. Additional detail may be found in the Botanical Report.

Heritage: monitoring includes documenting the overall site and the treated areas for evidence of increased erosion, if applied treatments are damaged or fail to sprout, if vandalism occurs due to increased visibility.

**PART 6 ... EMERGENCY REHABILITATION REATMENTS
& SOURCE OF FUNDS BY LAND OWNERSHIP(s)**

Line Items	Units	NFS Lands					Other Lands				All
		Unit	# of	WFSU	Other		# of	Fed	# of	Non Fed	Total
		Cost	Units	SULT \$	\$		units	\$	Units	\$	\$
A. Land Treatments											
Public Safety/Education Signs	each	\$250	25	\$6,250			\$0		\$0	\$6,250	
Archeology Site Protection (6 sites)	project	\$3,480	1	\$3,480			\$0		\$0	\$3,480	
Weed Survey to Location Treatment Areas	day	\$200	30	\$6,000			\$0		\$0	\$6,000	
Weed Treatment Manual Removal	acre	\$330	48.5	\$16,005			\$0		\$0	\$16,005	
Weed Biological Control	release	\$1,500	1	\$1,500			\$0		\$0	\$1,500	
Weed Treatment Herbicide	Acre	\$150	3	\$450			\$0		\$0	\$450	
Weed (medusahead) Manual Removal	Acre	\$2,500	3.5	\$8,750			\$0		\$0	\$8,750	
Log erosion barriers	Acre	\$375	80	\$30,000			\$0		\$0	\$30,000	
Fence Repair	Mile	\$1,000	6.1	\$6,100			\$0		\$0	\$6,100	
Temporary Fence	Mile	\$0	0	\$0			\$0		\$0	\$0	
Temporary Aspen Protection Fence	Mile	\$8,200	0.5	\$4,100			\$0		\$0	\$4,100	
Subtotal Land Treatments				\$82,635			\$0		\$0	\$82,635	
B. Channel Treatments											
Riparian planting	Mile	\$1,500	2	\$3,000			\$0		\$0	\$3,000	
Subtotal Channel Treat.				\$3,000			\$0		\$0	\$3,000	
C. Road and Trails											
Improve Trail Drainage	Mile	\$3,900	14	\$54,600			\$0		\$0	\$54,600	
Storm Proofing/Patrol	Mile	\$800	5	\$4,000			\$0		\$0	\$4,000	
Remove Culvert/ Install Rock Ford	Each	\$1,000	8	\$8,000			\$0		\$0	\$8,000	
Subtotal Road & Trails				\$66,600			\$0		\$0	\$66,600	
D. Implementation Cost - Adminstration and Oversight											
Implementation Leader	Day	\$300	20	\$6,000			\$0		\$0	\$6,000	
Subtotal Road & Trails				\$6,000			\$0		\$0	\$6,000	
E. BAER Evaluation											
Personnel, p.d.,veh.	Each	\$25,300	1	\$25,300			\$0		\$0	\$25,300	
Helicopter	Hrs	\$800	2	\$1,600			\$0		\$0	\$1,600	
Imagery	Each	\$700	1	\$700			\$0		\$0	\$700	
Subtotal Evaluation				\$27,600			\$0		\$0	\$27,600	

G. Monitoring Cost - 1st year										
Watershed treatments	Day	\$250	4	\$1,000			\$0		\$0	\$1,000
Archeology treatments	Day	\$250	2	\$500			\$0		\$0	\$500
Weed, veg. treatments	Day	\$250	2	\$500			\$0		\$0	\$500
<i>Subtotal Monitoring</i>				<i>\$2,000</i>			<i>\$0</i>		<i>\$0</i>	<i>\$2,000</i>
H. Totals				\$187,835			\$0		\$0	\$187,835

NOTE ... if necessary, additional monitoring dollars can be acquired by the FS during Years 2 and 3 using an Interim type BAER Report to request and secure the appropriate funding; the individual to contact at the Pacific Northwest Regional Office is Bruce McCammon – R6 / Hydrologist and BAER Coordinator at (503) 808 – 2986

**747 & Murray Fire Complex / Fund Code for Initial BAER Assessment Work
... H69999 – 0607 Override Code**

PART 7 ... APPROVALS

1. Forest Supervisor:

Date:

/s/ Tina Welch

August 12, 2002

Tina Welch,
Acting Forest Supervisor Ochoco National Forest

2. Regional Forester:

Date:
