



United States  
Department of  
Agriculture

Forest  
Service

Northern Region

200 E. Broadway  
P.O. Box 7669  
Missoula, MT 59807

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**File Code:** 6520/2520-3

**Date:**

**Route To:**

**Subject:** Monture-Spread Fire, Burned Area Emergency Rehabilitation (BAER)

**To:** Forest Supervisor, Lolo National Forest

Enclosed is the approved Initial Burned Area Emergency Rehabilitation (BAER) request for the Monture-Spread Fire. You are authorized to spend up to \$86,203 for the assessment, land treatment, and monitoring activities shown in Part VI of the report. Only one year of monitoring can be approved at this time. For out year monitoring needs you must submit an annual interim request that describes any additional monitoring required based on previous year's results.

The job code for this action is P-10187. Please provide me with your Final Accomplishment Report (FS 2500-8) describing actual costs and accomplishments, within 60 days of project completion. Based on your monitoring schedule, a monitoring report is due by September 15, 2001. Contact Bruce Sims (406)-329-3447 if you have any questions.

*/s/ Kathleen A. McAllister (for)*

DALE N. BOSWORTH  
Regional Forester

Enclosure



Date of Report: DRAFT 9/28/00 0900

**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: Monture-Spread Complex      B. Fire Number: MT-LNF-089  
C. State: Montana      D. County: Powell  
E. Region: 1      F. Forest: Lolo  
G. District: Seeley Lake  
H. Date Fire Started: 7/13/00      I. Date Fire Contained: N/A  
J. Suppression Cost: \$9,240,000  
K. Fire Suppression Damages Repaired with Suppression Funds  
    1. Fireline waterbarred (miles): N/A  
    2. Fireline seeded (miles): N/A  
    3. Other (identify): N/A  
L. Watershed Number: 17 01 02 03 08 01  
M. Total Acres Burned:         
    NFS Acres(15,260 )    Other Federal ( 0 )    State ( 0 )    Private ( 0 )

N. Vegetation Types: Lodgepole pine was the predominate coverytype that burned in the Center Creek drainage and three drainages south of Center Creek. Minor amounts of Douglas-fir, Subalpine fir and mixed mesic forest coverytypes burned high severity. Subalpine fir was the predominate coverytype that burned in moderate severity areas with minor amounts of Lodgepole pine and Mixed mesic forest coverytypes. Along Monture Creek, the riparian community would be classified as Englemann spruce/skunk cabbage or subalpine fir/bluejoint grass.

O. Dominant Soils: Deep medium textured inceptisols and alfisols on moderately steep, to steep mountain slopes, glaciated terraces and wide riparian valleys.

P. Geologic Types: Glaciated troughwalls and outwash deposits of Pre-Cambrium meta-sedimentary argillites, siltites and limestones.

Q. Miles of Stream Channels by Order or Class: 1<sup>st</sup>: 76, 2<sup>nd</sup>: 34, 3<sup>rd</sup>: 19, 4<sup>th</sup>: 9

R. Transportation System

Spread portion: Trails: 5.0 miles; Roads: 0 miles

Monture Portion: Trails: 27.6 miles; Roads: 0 Miles

**PART III - WATERSHED CONDITION**

A. Burn Severity (acres): 4,638 (low) 5,126 (moderate) 5,496 (high)

B. Water-Repellent Soil (acres): 916

C. Soil Erosion Hazard Rating (acres):  
6,694 (low) 6,093 (moderate) 2,473 (high)

D. Erosion Potential: 6.14 tons/acre

E. Sediment Potential: 468 cubic yards / square mile

**PART IV - HYDROLOGIC DESIGN FACTORS**

A. Estimated Vegetative Recovery Period, (years): 6 years for erosion; 60 years for runoff.

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

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

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches):

F. Design Flow, (cubic feet / second/ square mile): 26\*

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

H. Adjusted Design Flow, (cfs per square mile): 32

\* With a drainage area of 40 square miles, Monture Creek exceeded the optimal size of a watershed that could be modeled for stormflow increases in the NRCS model used on other Lolo NF fire complexes. The U.S. Geological Survey has maintained a stream gage below the forest boundary for 16 years. In a published report on peak flow magnitude and frequency (water Resources Investigations Report 92-4048), the USGS calculates the 10, 25, 50 and 100 year return period floods as:

1,960, 2,290, 2,530 and 2,760 Cubic feet per second.

The USGS calculations include a similar sized unburned tributary to Monture Creek (Dunham Creek). The published figures were adjusted by area and the 100 year peak flow modified by modifying runoff coefficients to account for the moderate and severely burned areas within the fire.

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

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

**Watershed Emergency:** The Monture Creek watershed is a predominately south facing glaciated drainage approximately 40 square miles in size above the bridge on the Cottonwood Lakes Road. Average annual average precipitation ranges from 20 inches at lower elevations along the Cottonwood Lakes road to 50 inches in the headwaters. For the watershed as a whole, the average precipitation is approximately 30 inches per year. The drainage has been identified as a "Priority Watershed" for the recovery of bull trout.

The glaciation of the south facing watersheds from the Clearwater River east to the Continental Divide (includes Monture Creek) filled the valley bottoms with deep deposits of porous and permeable gravels and cobbles. For example, during the Cotton-Dunham Timber Sale analysis, the depth of this fill in neighboring Shanley Creek was calculated to be approximately 75 feet in the area just upstream from the Cottonwood Lakes road. The consequence of this deep valley fill is that most of the streams flowing in this material loose water to the ground and many reaches cease flowing on the surface shortly after peak runoff. Pools and perched reaches thus become critical refuges for resident fish. Additional stress to these refuges from fire induced sediment increases is a serious concern.

The glacially deposited gravels and cobbles have a naturally low cohesion and move readily during high flows. The roots of riparian vegetation provide a critical structure to hold and support the unconsolidated gravels and cobbles in the streambanks. Large woody debris in the channels provides a similar stabilizing function.

In summary, Monture Creek and its adjacent streamside area is a highly "volatile" system subject to potentially large responses to external forces. In this undeveloped watershed large responses may be within the natural range of variability, however any induced human caused additional stress may have extreme consequences in this "priority" recovery stream for a Threatened resident fish.

**Trails Emergency:** The Stress that potentially threatens the watershed system is the heavily used valley bottom trail. The Monture Creek Trail which parallels the stream for about 12 miles is a major portal to the Bob Marshall Wilderness. Heavy stock use on the trail requires frequent placement of log waterbars both to avoid erosion of the trail surface tread and to properly divert runoff to avoid concentrated flow and sediment additions to Monture Creek and tributaries. About 80 percent of the log waterbars on 6 miles this trail was either completely or partially burned. All waterbars on 8 miles of the Hahn Creek Trail (parallel to Hahn Creek on the Flathead NF) were completely burned.

The amount and velocity of post-fire runoff that can be expected to be intercepted by a trail, flow down a trail, and eventually be discharged from the trail to waterways in a concentrated flow is related to the position of the trail within the watershed, the grade of the trail, and the fire intensity upslope -- steep trails present more potential for accelerating erosion from expected increased post-fire runoff than trails with gentle grades, trails on ridgelines intercept less runoff than valley bottom or mid-slope trails, and areas of more intense burning contribute more runoff.

The Monture Creek Trail (Trail #27) is a valley bottom trail and typically has gentle grades on flat ground; grades and sideslopes increase in proximity to Hahn Pass. Soil erosion, however, is a problem on this trail because the flat terrain hinders drainage away from the trail. With poor lateral drainage opportunities available naturally, concentrated, funneled runoff tends to flow down the trail for considerable distances. Expensive handwork has been done on this trail (1992) to offset this deficiency and lessen erosion and sedimentation into Monture Creek. This work has primarily been to install log waterbars to drain surface runoff

either to natural dispersive slopes or to existing or created sediment buffering sumps. A substantial number of the in-place waterbars burned in the Monture Fire. Hence, considering the trail's erosion potential, streamside proximity and the relationship to moderate-to-high intensity burn areas, replacement waterbars are urgently needed to control erosion from expected increases in post-fire runoff.

Four major trail bridges, crossing Falls Creek, Wedge Creek, East Fork Monture Creek, and Middle Fork Monture Creek -- tributaries to Monture Creek, are located on this trail. Stream flow modeling predicts post-fire increases of about 10% in peak flows for these tributaries.

Other trails (Spread Creek, Falls Creek, Fenn Mountain, Limestone Pass, Middle Fork Monture, and Center Creek) typically climb from the Monture Creek valley bottom to the surrounding ridgelines, traverse large areas of hillside, and are characterized by moderate to very steep grades on steep sideslopes. The Hahn Creek and Otter Creek trails are "valley bottom" but are located in the headwater areas of the drainages and thus are on moderate to steep grades and sideslopes. Where they are downslope of areas of moderate to high burn intensity, these trails are likely to intercept and funnel fire induced increased runoff and are of crucial concern regarding maintaining water quality in this bull trout priority watershed.

**Fisheries Emergency:** Monture Creek and its tributaries are priority watersheds for bull trout on the Lolo National Forest, and are Bull Trout core areas for Montana Fish, Wildlife and Parks. Monture and Dunham Creeks are documented to contain bull trout, which are federally listed under ESA as threatened. They also contain the Regionally sensitive westslope cutthroat trout. In addition, these streams support other native coldwater species and several introduced cold water game fish including brook trout, brown trout and rainbow trout. On the Flathead National Forest, in the Bob Marshall Wilderness, both Youngs Creek and Danaher Creek are priority bull trout watersheds.

Based on a field review 9/17/00 of the high severity burn area in Monture Creek (T17N, R12W, Sec. 6 and 7) we saw shrub and forbs already resprouting. As a result of the fire there are adequate down trees on hillslopes to reduce surface erosion potential. Good numbers of young-of-the-year westslope cutthroat trout were observed in Monture Creek.

Effects of the fire, which will impact fish, are:

- 1) Increased sediment, and ash, from surface run off from burned areas.
- 2) Impacts that result from increased stream flow, which may include sediment from increased channel scour.
- 3) Increases in stream temperature resulting from total kill of trees in the high severity burn areas.

The portion of the fire on the Flathead National Forest is in the Bob Marshall Wilderness, and the portion on the Lolo National Forest in upper Monture Creek is proposed wilderness. While native fish have evolved with periodic fire in these ecosystems, any induced human caused additional stress may have extreme consequences in this "priority" recovery stream for a Threatened resident fish.

**Noxious Weed Emergency:** Noxious weeds, including spotted knapweed (*Centaurea maculosa*) and leafy spurge (*Euphorbia esala*), are rapidly invading and replacing native vegetation communities across the west. Such invasions can have devastating impacts on the natural character and wilderness attributes of designated and proposed Wilderness areas. Noxious weeds also out-compete desirable big game forage plants and seriously lower soil productivity of undisturbed forests. Invasion of ungulate winter ranges can reduce forage production by >90%. In western Montana, droughty timber/bunchgrass or timber/shrub communities are most at risk from noxious weed invasions. Disturbance from wildfire significantly increases both the rate of spread of these weeds, and the degree to which these weeds can permanently displace native vegetation and alter natural environments.

This fire has approximately 40 acres along 12 miles of the Monture Creek Trail (a main wilderness portal) that are inherently highly vulnerable to noxious weed invasions because of the burn severity. The spread of weeds into the forest prior to the fire was limited. And while weeds were a minor problem prior to the fire, based on local research by Jack Losensky, we expect noxious weeds to increase by another 3-4 fold due to the

reduction in canopy closure regular horse use along the trail and exposed ground surface. Based on local monitoring and research, we expect these sites to be fully occupied by noxious weeds within 3-5 years without treatment resulting in increased soil loss and a reduction in long-term soil productivity.

**Vegetation Emergency:** The BAER team classified approximately 5232 acres as high severity burn. Lodgepole pine (*Pinus contorta*) was the predominate covertime that burned in the Center Creek drainage and three drainages south of Center Creek. Minor amounts of Douglas-fir (*Pseudotsuga menziesii*), Subalpine fir (*Abies lasiocarpa*) and Mixed mesic forest covertypes burned high severity. Habitat types (Pfister, 1978) are not available for this area but most likely would be in the Subalpine fir (SAF) series. The area would be classified as Fire Group 7, 8 and 9. Historically, stand replacement fires would occur at an average frequency of 50 to 130 years. The Monture fire typifies the type of fire that would've occurred naturally.

Along Monture Creek, the riparian community would be classified as Englemann spruce/skunk cabbage (*Picea englemanni*/Lysichiton) or *Abies lasiocarpa*/Calamagrostis Canadensis). (Hansen et al., 1995)

BAER team members field reviewed a portion of Center Creek, and two unnamed drainages in the high severity area. Lodgepole pine and spruce cones were abundant in the burned area. Recovery of these species should provide ground cover within one to three years. Arno et al., 1985) There is no emergency treatment needed to establish tree species in the high intensity burn area.

Crowns of *Menziesia ferruginea* (MEFE) were burned but roots are still alive. According to the Fire Effects Information System, Stickney found MEFE developed slowly after an intense burn. Others found MEFE tripled in coverage after a moderate burn. Based on observation of these east-facing aspects, I anticipate MEFE will recover within one to two years. There is no emergency treatment needed to establish shrub species in the high intensity burn area.

Beargrass (*Xerophyllum tenax*) and fireweed (*Epilobium angustifolia*) were sprouting on the hillsides within the high severity burn area. There is no emergency treatment needed to establish grass or forb species in the high intensity burn area.

Along Monture Creek, Calamagrostis, Salix, and Lysichiton were sprouting. There is no emergency treatment needed to establish grass, shrub or tree species in the high intensity burn area along Monture Creek.

Subalpine fir was the predominate covertime that burned in moderate severity areas with minor amounts of Lodgepole pine and Mixed mesic forest covertypes. Approximately 2307 acres burned in discontinuous patches. All patches except one are on north and east facing aspects and adjacent to live trees, shrubs and grasses which will provide seed for natural regeneration. There is no emergency treatment needed to establish grass, shrub or tree species in the moderate intensity burn areas.

#### Cultural Resources Emergency

There are no previously identified cultural properties within the Montour-Spread fire complex. Four historic structures were located near the fire and were protected using a combination of hose-lays and shelter wrap but none were actually impacted by the fire or fire suppression. There is a small chance that the fire has revealed undocumented sites that may be subject to increased erosion and degradation. Regardless, in keeping with Section 106 of the National Historic Preservation Act and 36CFR800, both the fire and proposed BAER rehab activities must be evaluated for their effects on significant and eligible cultural resources and consultation with the State Historic Preservation Office (SHPO) and the Confederated Salish and Kootenai Tribes (CSKT) on these effects must occur.

#### B. Emergency Treatment Objectives

Emergency treatment efforts will focus on restoring erosion control structures to trail systems where established drainage was destroyed by the fire. Recommended treatment objectives are proposed to reduce the risk of water quality impacts, tributary channel degradation and loss of fish habitat. Treatment details are provided below.

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

Trails 75 % Channel N/A % Roads N/A % Cultural 70 %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Trails	100	100	100
Channel	--	--	--
Roads	--	--	--
Cultural	50	70	90

E. Cost of No-Action (Including Loss): The cost of not doing these treatments now would include future repair work plus additional drainage features and constructed sediment traps to account for expected accelerated erosion as a result of the fire. This is estimated to be about 150 percent of the proposed emergency drainage replacement cost or \$56,000. Failure to treat the weeds at this time would lead to rapid invasion of the wilderness by noxious weeds. Eradication of the weeds once they reach the wilderness would necessitate expensive hand pulling and chopping. The estimated cost of supporting a crew to accomplish this (at an early stage) is \$50,000. Total estimated cost of no-action is \$106,000, or \$12,797 less than the proposed treatments.

F. Cost of Selected Alternative (Including Loss): **\$93,203**

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 checked="" type="checkbox"/> Wildlife	<input type="checkbox"/> Fire Mgmt.	<input checked="" 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 Leader: Arne Rosquist

Email: arosquis@fs.fed.us

Phone: (406) 329-3811

FAX: (406) 329-3795

H. Treatment Narrative:

**Trail Treatments**

**Restore surface drainage to trails, post hazard-warning signs, and remove obvious hazard trees.**

Trail treatments primarily involve waterbar replacement and spot trailbed drainage work to eliminate anticipated post-fire concentrated runoff, and subsequent erosion, down steep trail grades in moderate to high burn severity areas. Stabilization of short sections of trail in order to reduce erosion potential may be appropriate in specific areas. Trail signs describing potential fire-caused hazards (potential for snag windthrow and burned-

out voids in the trailbed for example) will be installed at burn area entry points and at trail-road junctions within the burn area. Specific hazard trees (imminent danger of falling across the trail) that resulted from the fire will be removed.

There are 32.6 miles of Forest Development Trails in the Monture - Spread Fire areas (see table).

**Forest Development Trails in the Monture - Spread Fire Burn Area.**

TRAIL	FIRE	FOREST	WILDERNESS	BURN AREA MILES
Spread Cr #166	Spread	Lolo	No	2.8
Falls Cr #16	Spread	Lolo	No	1.7
Fenn Mtn #88	Spread	Lolo	No	0.5
Limestone Pass #402	Monture	Lolo	No	1.5
Middle Fork Monture #371	Monture	Lolo	No	1.5
Center Cr #463	Monture	Lolo	No	3
Center Ridge #246	Monture	Lolo	No	4.6
Blackfoot Divide #278	Monture	Lolo	No	4.4
Monture Cr #27	Monture	Lolo	No	8
Hahn Cr #125	Monture	Flathead	Bob Marshall	2.3
Otter Cr #279	Monture	Flathead	Bob Marshall	2.3

The trails on the Lolo National Forest are in the Monture Creek watershed. The trails on the Flathead National Forest are in the Youngs Creek watershed. Both drainages are important bull trout and westslope cutthroat trout fisheries.

The amount and velocity of post-fire runoff that can be expected to be intercepted by a trail, flow down a trail, and eventually be discharged from the trail to waterways in a concentrated flow is related to the position of the trail within the watershed, the grade of the trail, and the fire intensity upslope -- steep trails present more potential for accelerating erosion from expected increased post-fire runoff than trails with gentle grades, trails on ridgelines intercept less runoff than valley bottom or mid-slope trails, and areas of more intense burning contribute more runoff.

The Monture Creek Trail #27 is a valley bottom trail and typically has gentle grades on flat ground; grades and sideslopes increase in proximity to Hahn Pass. Soil erosion, however, has been a problem on this trail in the past because the flat terrain has hindered drainage away from the trail. With poor lateral drainage opportunities, concentrated, funneled runoff has tended to flow down the trail for considerable distances. Substantial work has been done on this trail (1992) to lessen erosion and sedimentation into Monture Creek; this work has primarily been to install waterbars to drain either to natural slopes or to existing or created sumps. Unfortunately, many of the existing waterbars burned. Hence, considering the trail's erosion potential and the relationship to moderate to high intensity burn areas, replacement waterbars are needed to control erosion from post-fire runoff.

Four major trail bridges, crossing Falls Creek, Wedge Creek, East Fork Monture Creek, and Middle Fork Monture Creek -- tributaries to Monture Creek, are located on this trail. Stream flow modeling predicts post-fire increases of about 10% in peak flows for these tributaries; no problems with the trail bridges passing the flows and debris are expected, but stream cross-sections and profiles at the bridges are needed to substantiate this.

Other trails (Spread Creek, Falls Creek, Fenn Mountain, Limestone Pass, Middle Fork Monture, and Center Creek) typically climb from the Monture Creek valley bottom to the surrounding ridgelines, traverse large areas of hillside, and are characterized by moderate to very steep grades on steep sideslopes. The Hahn Creek and Otter Creek trails are "valley bottom" but are located in the headwater areas of the drainages and thus are on moderate to steep grades and sideslopes. Where they are downslope of areas of moderate to high burn intensity, these trails are likely to intercept and funnel fire induced increased runoff and are of high concern regarding maintaining water quality and soil productivity.



The Center Ridge and Blackfoot Divide trails generally traverse ridgelines; trail grades and sideslopes are generally gentle to moderate, intercepted runoff is relatively small, and areas of moderate to high burn intensity uphill from the trail are also small. Consequently, intensive rehabilitation work to prevent erosion is not anticipated on these trails.

All trails within the burn area will be posted with signs describing potential hazards caused by the fire and fire-caused hazard trees will be removed.

Consequences of not doing this work are significant as it relates to maintaining soil productivity downslope of trails, protecting water and fish resources, and providing for trail user safety, and maintaining surface material on trails.

Probability of Completing Treatment: 75% prior to December 1, 2000  
100% prior to July 1, 2001

Probability of Treatment Success:

Year 1	Year 3	Year 5
100	100	100

### Noxious Weed Treatment:

The proposed herbicide treatment will be limited to picloram (brand name TORDON), applied @ 1pt/ac in 2 gal water. Application will be limited to licensed applicators and will follow all label restrictions. Herbicide effectiveness monitoring and weed reoccurrence monitoring will be accomplished with walk-through exams. Access for treatment will be by foot or by horse; all materials will be horsepacked. 40 acres along 12 miles of trail will be treated at a cost of \$100. per acre.

The decision to use herbicides to treat noxious weeds was analyzed and documented in the 1991 Lolo National Forest Weed EIS on file at the Supervisor's Office, Bldg 24, Ft. Missoula, Missoula, MT 59804.

Probability of Completing Treatment (before noxious weed invasion): 100%

Probability of Treatment Success:

% Control of Weeds	Year 1 (6/1/01)	Year 3 (6/1/03)
	90%	99%

**Monitoring Narrative:** Monture Creek and its adjacent streamside area is a highly "volatile" system subject to potentially large responses to external forces. Streams flowing in this material loose water to the ground and many reaches cease flowing on the surface shortly after peak runoff. Pools and perched reaches thus become critical refuges for resident fish. Additional stress to these refuges from fire induced sediment increases is a serious concern. In this undeveloped watershed large responses may be within the natural range of variability, however any induced human caused additional stress may have extreme consequences in this "priority" recovery stream for a Threatened resident fish.

### Proposed Activities:

- (1) **Monitor effectiveness of trail waterbar replacements on runoff control and reduction of erosion.** Effectiveness will be determined by observation and photo documentation of selected representative

structures and site conditions. Monitoring will be accomplished by one person either hiking or riding the trail to inspect and photograph waterbars, and outlets. Estimated cost is \$1000.

- (2) **Monitor effectiveness of noxious weed treatment** by standard vegetation plot transect methodology. Survey would be conducted mid-to-late summer 2001. Access for monitoring will be by foot or horse. Estimated cost of monitoring 40 acres at \$25.00 per acre is \$1,000.

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

Line Items	Units	Unit Cost	NFS Lands		Other \$	Other Lands				All Total \$
			# of Units	WFSU SULT \$		# of units	Fed \$	# of Units	Non Fed \$	
<b>A. Land Treatments</b>										
Weed Spraying - hand	acres	\$100	40	\$4,000						\$4,000
<i>Subtotal Land Treatments</i>				<i>\$4,000</i>			<i>\$0</i>		<i>\$0</i>	<i>\$4,000</i>
<b>B. Channel Treatments</b>										
<i>Subtotal Channel Treat.</i>				<i>\$0</i>			<i>\$0</i>		<i>\$0</i>	<i>\$0</i>
<b>C. Road and Trails</b>										
Trail Water Bars	ea	\$50	316	\$15,800			\$0		\$0	\$15,800
Trailbed Drainage	ft	\$1.25	12000	\$15,000			\$0		\$0	\$15,000
Trail Hazard Signs	ea	\$100	31	\$3,100			\$0		\$0	\$3,100
Tr Hazard Tree Remov	miles	\$500	16.2	\$8,100			\$0		\$0	\$8,100
Trail Water Bars - Wild	ea	\$75	103	\$7,725			\$0		\$0	\$7,725
Tr Hazard Tree Remov	miles	\$1,000	4.6	\$4,600			\$0		\$0	\$4,600
Trail Stabilization	ft	\$3	2000	\$6,000			\$0		\$0	\$6,000
<i>Subtotal Roads and Trails</i>				<i>\$60,325</i>						<i>\$60,325</i>
<b>D. OTHER</b>										
	ea	0	0	\$0			\$0		\$0	\$0
<i>Subtotal Other</i>				<i>\$0</i>			<i>\$0</i>		<i>\$0</i>	<i>\$0</i>
<b>E. BAER Evaluation</b>										
Survey Asst. form	days	250	38	\$9,500			\$0		\$0	\$9,500
Contract Support	days	250	10	\$2,500			\$0		\$0	\$2,500
Team trvl/per diem	days	120	12	\$1,440						\$1,440
<i>BAER Subtotal</i>				<i>\$13,440</i>						<i>\$11,440</i>
<b>F. Monitoring</b>				\$0			\$0		\$0	\$0
Trail Rehab effectiveness	ea	1000	1	\$2,000						\$1,000
Herbicide trt. Effectiveness	acres	25	40	\$2,000						
<i>Subtotal monitoring</i>				<i>\$4,000</i>						<i>\$11,000</i>
<i>Subtotal</i>				<i>\$81,765</i>						<i>\$88,765</i>
Overhead (.05%)				\$4,438						\$4,438
<b>G. Totals</b>				<b>\$86,203</b>			<b>#REF!</b>		<b>#REF!</b>	<b>\$93,203</b>

## **PART VII - APPROVALS**

1. /s/ Deborah Austin 10/05/00  
Forest Supervisor (signature) Date
  
2. /s/ Kathleen A. McAllister 10/06/00  
Regional Forester (signature) Date