

Date of Report:10-16-03

BURNED-AREA REPORT Cooney
(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:** Cooney Ridge**B. Fire Number:** MT-SWS-149**C. State:** Montana**D. County:** Granite, Missoula, and Ravalli**E. Region:** Northern**F. Forest:** Lolo and Bitterroot N. F.**G. District:** Missoula**H. Date Fire Started:** August 8, 2003**I. Date Fire Contained:** Sept 14, 2003**J. Suppression Cost:** \$17 million as of Sept 12, 2003**K. Fire Suppression Damages Repaired with Suppression Funds**

1. Fireline waterbarred (miles): 15
2. Fireline seeded (miles): 32
3. Other (identify): firecamps, helipads, etc. 2 acres

L. Watershed Number: 170102051501, 170102051306, 170102021306, 170102021403, 170102021302, 170102021403**M. Total Acres Burned:** 26,100

NFS Acres(15,068) Other Federal () State () Private (11,032)

N. Vegetation Types: The fire burned predominantly in mixed Douglas-fir and larch cover types at low to mid elevations within the fire perimeter. There are also significant inclusions of Ponderosa pine and dry Douglas-fir types, primarily at lower elevations on the Bitterroot portion of the fire. At higher elevations cover types are a mix of lodgepole pine, spruce-subalpine fir along with some mixed Douglas-fir/larch. Spruce-subalpine fir types also occur in along Schwartz Creek. Elevations range from 4,500' to 6,500' with cover types growing on a variety of moderately steep mountain sideslopes and ridges.

O. Dominant Soils:___The dominant soils in the burned area are underlain by weak and moderately-weathered Precambrian meta-sedimentary rocks, known as the Belt Supergroup. These soils are well drained to somewhat excessively drained, medium textures (silt loams to sandy loams), and are non-plastic. Rock fragments throughout the soil profile are common, and range from moderate to high percentages. These soils are typically moderately deep to deep on the mountain side-slopes and ridges, and deep on toe-slopes and valley bottoms. Most soils usually have a volcanic ash surface layer with a silt loam texture. Coarse fragments ranging from 5 to 25 percent rock fragments in the surface. The subsoils are typically sandy loams, having 35 to greater than 60 percent coarse fragments.

P. Geologic Types:___Precambrian meta-sedimentary rocks, known as the Belt Supergroup. The Cooney Ridge Fire area major landforms are mostly moderately steep to steep mountain slopes, and range from broad convex ridges to complex slopes. Drainageways are somewhat broad and form a trellis pattern. Streams are predominantly steep (>10% gradient) ephemeral tributaries to Schwartz Creek and Eightmile Creek.

Q. Miles of Stream Channels by Order or Class: Order 1: 20.9, Order 2: 8, Order 3: 5.2

R. Transportation System

Trails:6 miles Roads:107 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 1,711 (low) 9,676 (moderate) 14,713 (high)

B. Water-Repellent Soil (acres): 26,100

C. Soil Erosion Hazard Rating (acres):
22,600 (low) 2000 (moderate) 1,500 (high)

D. Erosion Potential: 6.9 tons/acre

E. Sediment Potential: 1152 cubic yards / square mile
Eight Mile drainage (Plum Creek) estimated at 1774

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 3

B. Design Chance of Success, (percent): 85

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

D. Design Storm Duration, (hours): 24

E. Design Storm Magnitude, (inches):

F. Design Flow, (cubic feet / second/ square mile): 12

G. Estimated Reduction in Infiltration, (percent): 33

H. Adjusted Design Flow, (cfs per square mile): 22.8

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

On Forest Service lands the Cooney Ridge Fire produced a mosaic pattern of canopy burn and surface burn. Soil burn severity was low. Most of the road system is not at high risk for stormflow damage. Areas in upper Schwartz Creek are at risk for increased stormflows. South-facing slopes in the burned area are at risk for rapid invasion of noxious weeds. Plum Creek resources in Eight Mile drainage are at risk from stormflow damage. These define the watershed emergency.

B. Emergency Treatment Objectives:

The following is a summary of treatments recommended for the immediate emergency. Treatment areas were prescribed based on the potential for damaging floods, loss of soil productivity, and for the mitigation of loss of life and property.

These treatments are designed to:

- Protect the USFS road system from increased stormflows where needed
- Protect Schwartz Creek from excessive sediment
- Mitigate effects of increased stormflows in Schwartz Creek
- Reduce loss of productivity on winter range due to noxious weed invasion

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

Land 90 % Channel 90 % Roads 90 % Other %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Roads			
Dip const.	85	85	85
Dip Reconst.	85	85	85
Decommision	85	85	85
Armor culvert	85	85	85
Culvert removal	85	85	85
Storm proof	85	85	85
Culvert clean	85	50	50
Channel			
Land			
Aerial herbicide	85	60	30
Other			

E. Cost of No-Action (Including Loss): **\$594,000** See **CooneyRidgecost-riskAnalysis.xls** for details.

F. Cost of Selected Alternative (Including Loss): **\$410,816** See **CooneyRidgecost-riskAnalysis.xls** for details.

G. Skills Represented on Burned-Area Survey Team: (See Appendix Two for Team Makeup)

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input type="checkbox"/> Geology	<input checked="" type="checkbox"/> Range	<input type="checkbox"/>
<input checked="" 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	

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FAX: 406 587 6768

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:

Aerially spray concentrations of spotted knapweed and other invasive weeds on 760 acres in Schwartz Creek where ongoing weed-control efforts were exacerbated by the Cooney Ridge Fire. Spray 1 pt picloram/ac in the spring of 2004.

Channel Treatments: see roads and trails treatments for channel treatments on culverts.

Roads and Trail Treatments:

The Cooney Ridge fire includes virtually all the upper portions of the Eightmile Creek drainage and a portion of the Threemile Creek drainage on the west side of the Sapphire Mountains (Bitterroot National Forest), and most of the Swartz Creek drainage (North, Middle and Main stems), and the upper portion of the Gilbert Creek drainage on the east side of the Sapphire Mountains (Lolo National Forest)

On the west side of the Sapphire Divide, extensive areas of the Eightmile Creek Drainage were severely burned. Most of the land in Eightmile is owned by Plum Creek Timber, with a small portion being Bitterroot NF. The two main roads – Roads 601 and 1308 – from the valley bottom to Eightmile Divide are USFS jurisdiction, with almost all other roads being owned by Plum Creek Timber. There are no cost share roads. The Eightmile drainage is at significant risk to flooding and erosion due to the extensive area severely burned. Due to the size of the area, the amount of privately owned timberland, and complications in hauling timber over the main FS roads in the area, the Bitterroot NF will address emergency concerns in Eightmile Creek. Treatments for the Bitterroot NF portion of the fire will not be proposed in this report; the remainder of this report will deal only with Lolo National Forest portion of the fire.

On the east side of the Sapphire Divide, roads in the fire area are a mix of USFS and Plum Creek Timber Company roads. The Forest Service is the predominant land and road owner, although Plum Creek Timber holdings are substantial. (The Bonneville Power Administration has maintenance jurisdiction on some short, local roads serving power transmission towers.) Affected roads provide timber and recreation access, as well as access to the powerline towers. Roads within the fire area range from higher standard arterials to very low standard jammer roads. Several roads are cost-shared with Plum Creek timber. Outside the fire area, the Swartz Creek road is a county road serving numerous residences and connecting the forest transportation system to Interstate 90.

Much of the fire was of low to moderate severity, although some areas did burn with high severity. Most of the high severity areas occurred in a swath along the Sapphire Divide. As a result, the high severity areas stretch across the higher reaches of several sub-drainages, with the lower portions having burned at lower severities, instead of whole sub-drainages being burned at high severity. Road treatments, then, are designed to address higher runoff in individual sub-drainages and ultimately higher flows in the main stems, compared to concerns

with an individual sub-drainage “blowing out”. Culverts will be cleaned and dips added, for instance, and lower reach culverts will be removed, but mid-slope jammer roads will not be obliterated.

Road treatments designed for the Cooney Ridge fire area include:

- Maintenance-type activities to ensure proper drainage. These activities include cleaning existing culverts, cleaning and reshaping drivable dips, and constructing new drivable types where needed. This type of work is appropriate where the road is needed for on-going access and properly designed and maintained drainage structures can handle the anticipated increased runoff.
- Storm-proofing roads where access is not immediately needed. This consists of removing drainageway and ditch relief culverts altogether, and constructing waterbars as needed across the roadway. By removing the culverts, the drainage capacity is practically unlimited and there simply is no longer a structure that could plug; hence, maintenance and monitoring of structures is not needed.
- Culvert Removal. This consists of removing individual failed (or at high risk of failure) culverts that have been identified. The three-pipe installation across the main stem of Swartz Creek at Road 17182 has been identified for removal. The three pipes, if working efficiently, would handle anticipated flows. One pipe, however, has failed, and the pipes are misaligned. Hence, the pipes are not adequate to handle storm flows and a washout of the pipes and road fill is probable.
- Construct armored overflow dips at the North Fork Swartz Creek culvert crossing. Armored dips will be constructed on both sides of the 48-inch culvert carrying the North Fork of Swartz Creek (at the intersection of Road 502 and 4245) to provide overflow capacity for the marginally sized culvert.

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.)

See monitoring reports for details.

- (1) **Monitor effectiveness of runoff dispersion treatments of system roads** at selected indicator sites by establishing photo points. Photo points would be established this fall and observations and photo documentation of site condition would be completed. These observations and photography would be repeated after snowmelt runoff and again late in the fall of 2004 after the summer thunderstorm season. Effectiveness would be determined by the degree of rilling or gulying observed (photographed), amount of off-site sediment movement and the degree of re-vegetation of the treatment. The cost is estimated at 20 work-days plus photography costs for \$3,000.
- (2) **Monitor effectiveness of culvert protection treatments of system roads** at selected culverts by establishing photo points. Photo points would be established this fall and observations and photo documentation of site condition would be completed. These observations and photography would be repeated after snowmelt runoff and again late in the fall of 2004 after the summer thunderstorm season. Effectiveness would be determined by evaluating the degree to which the treatment successfully accommodated post-fire runoff increases and minimized the impact to the road while preventing sediment delivery to the stream at the culvert location. The cost is estimated at 10 work-days plus photography costs for \$1,500.
- (3) **Monitor effectiveness of noxious weed treatment** by standard vegetation plot transect methodology and road surveys. Survey would be conducted mid-to-late summer 2004. Estimated cost of monitoring ten work-days is Monitor known and high potential infestation sites for noxious weed species in the burned area; determine need and extent of control treatment to be implemented. The

objective is to identify the spread and potential threat of weed infestation in burned areas. Data gathered will be used to facilitate prompt treatment to control weed populations for the purpose of protecting native plant diversity and ecological integrity of the plant communities in the burned area.\$1,500.

- (4) **Monitor Costs and Accomplishment Schedules of Recommended BAER Treatments** by monthly reconciliation of financial transaction records, time sheets, project notes and other accounting records. Spreadsheets tracking expenditures and accomplishments will be updated on a monthly basis and reports provided to the Regional BAER Coordinator on demand. The estimated cost for monitoring and recording costs and accomplishments is 15 work-days at \$2,500.
- (5) Monitor changes in fish distribution and relative abundance inside and outside the fire perimeter using electrofishing techniques in Schwartz Creek. If eastern brook trout (EBT) populations expand or begin to outcompete westslope cutthroat trout (WCT), then additional habitat protection treatments should be designed and implemented. If EBT populations do not expand or do not begin to outcompete WCT, then BAER treatments should be considered successful from a fisheries standpoint.

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

PART VI -- EMERGENCY REHABILITATION TREATMENTS AND SOURCE OF FUNDS BY LAND OWNERSHIP

COONEY RIDGE FIRE (EIGHTMILE CREEK AMMENDMENT)

Line Items	Units	Unit Cost	Bitterroot N. F.		Other	OTHER LANDS		All
			# of Units	FED \$		# of Units	Non Fed \$	Total \$
A. Land Treatments								
Aerial Herbicide								
<i>Subtotal Land Treatments</i>								
B. Channel Treatments								
<i>Subtotal Channel Treatments</i>				\$0			\$0	\$0
C. Road and Trails								
Drainage Dip Reconstruction	each	\$176	147	\$25,872				
Drainage Dip Construction	each	\$360	63	\$22,680				
Install New Culverts	each	\$3,000	11	\$33,000				
Culvert Removal								
Road Fill Protection (Rip-Rap)	each	\$6,000	1	\$6,000				
Culvert Cleaning and Repair	each	\$500	40	\$22,500				
<i>Subtotal Road & Trails</i>				\$110,052			\$0	\$110,052
D. Structures								
<i>Subtotal Structures</i>				\$0			\$0	\$0
E. BAER Evaluation								
Assessment	days	\$350	20	\$7,000				
Implementation and Inspection	project	45,000	1	\$45,000				\$0
BAER Team Liaison	days	350	40	\$14,000				\$0
<i>Subtotal BAER Evaluation</i>				\$66,000			\$0	\$66,000
F. Monitoring								
Monitor culvert protection,								
runoff on treated roads,								
costs and accomplishments								
	project	3,500	1	\$3,500				\$0

Subtotal Monitoring				\$3,500				\$0	\$3,500
G. Totals				\$179,552				\$0	\$179,552

PART VII - APPROVALS

1. _____ 10/16 /2003
Forest Supervisor (signature) Date

2. _____ _____
Regional Forester (signature) Date

Appendix One: Team Makeup

Lolo BAER TEAM MEMBERS

POSITION	TEAM MEMBER / AGENCY
Team Leader	Henry Shovic, USFS, Gallatin NF
Private Liaison	Kit Sutherland, Private Lands
Administrative Support	Becky Chapman, USFS, Lolo NF Carol Goffe, USFS, Region One
Archaeology	Roger Free, USFS, Lolo NF Sydney Wimbrow, Lolo, NF
Engineering (Roads & Trails)	Randy Gage, USFS, Lolo NF Roger Billadeau, USFS, retired, Lolo NF Alan Christian, USFS, Lolo, NF
Fisheries	Pat Price, USFS, Kootenai NF
Soil and Watershed	Scott Hagerty, USFS, Olympic NF John Blaine, NRCS Neill Svenson, NRCS Jeff Collins, DNRC
Vegetation	Steve Dagger, USFS, Lolo, NF
Wildlife	Mike Hillis, USFS, retired, Lolo, NF
GIS	Dan Hurlbert, NPS, Shenandoah NP Kendall Cikanek, USFS, Superior, NF
Hydrology	Ted Geier, USFS, Region Nine Rob Davies, USFS, Idaho Pan, NF Amy Rollins, USFS, Lolo, NF Renee Hannah, DNRC
Plans and Logistics, PIO/Writer/Liaison	Marcia Hogan, USFS, Region One Sue Reel, USFS, Lolo, NF
Other Support	Skip Rosquist, USFS, Lolo, NF Shane Hendrickson, USFS, Lolo, NF Rob Mcleod, USFS, Lolo, NF Janet Krivacek, USFS, Lolo, NF Dennis Gordon, USFS, Bitterroot, NF