Date of Report: November 2, 2001

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[X] 1. Funding request for estimated WFSU-SULT funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[ ] 1. Initial Request (Best estimate of funds needed to complete eligible rehabilitation measures)

[X] 2. Interim Report
[X] Updating the initial funding request based on more accurate site data or design analysis
[X] Status of accomplishments to date

[ ] 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Willie

B. Fire Number: MT-CBF-0002

C. State: MT

D. County: Carbon

E. Region: 01

F. Forest: Custer

G. District: Beartooth

H. Date Fire Started: 8/27/00

I. Date Fire Controlled: 9/6/00 (est)

J. Suppression Cost: $2,500,000 (est)

K. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 5
2. Fireline seeded (miles): 5
3. Other (identify): Helispots, drop points, camps, safety zones, staging areas

L. Watershed Number: 100700061405

M. Total Acres Burned: NFS Acres (1500) Other Federal (0) State (0) Private (0)

N. Vegetation Types: Lodgepole pine, Englemann spruce, grouse whortleberry, snowberry, kinnikinnik

O. Dominant Soils: Typic Cryorthents and Cryochrepts; Rock Outcrop/Rubbleland

P. Geologic Types: Pre-cambrian granitics and schists

Q. Miles of Stream Channels by Order or Class: 1st and 2nd – 3.0; 3rd – 0.0

R. Transportation System: Trails: 0.0 miles Roads: 2.5 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 450 (low) 1050 (moderate) 0 (high)

B. Water-Repellent Soil (acres): 1300

C. Soil Erosion Hazard Rating (acres): 0 (low) 1500 (moderate) 0 (high)

D. Erosion Potential: 15 tons/acre

E. Sediment Potential: 96 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 2-3

B. Design Chance of Success, (percent): 90

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

D. Design Storm Duration, (hours): 24

E. Design Storm Magnitude, (inches): 2.5

F. Design Flow, (cubic feet / second/ square mile): 3

G. Estimated Reduction in Infiltration, (percent): 0-5

H. Adjusted Design Flow, (cfs per square mile): 3-3.15

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

The Willie Fire is located in an interfluve zone along Rock Creek, a few miles south of Red Lodge, Montana. The burn area is drained by 1st and 2nd order streams that are tributary to Rock Creek. Most streams are ephemeral and intermittent. There are three streams with perennial flow; Haker Gulch and two unnamed draws draining off Wapiti Mountain. Haker Gulch drains directly to Rock Creek, while the two unnamed draws go subsurface as they cross alluvial fan deposits. Stream types include Aa+, A and G. Channels are well armored with cobbles and boulders. Large woody debris is minimal to non-existent.

Over 90 percent of the burn is within the Dissected Mountain Slope land type. The remaining acreage is in the Valley Bottom land type. Parent material in the predominant land type is pre-Cambrian granitics, schists, and quartzose metasedimentaries. Soils are mostly shallow and coarse textured. Rock fragment ranges from 20 to 80 percent. Approximately 10 percent of the type is rock outcrop. Slopes range from 0 to 60 percent, with the majority of the type being in the steeper range. Permeability ranges from slow to rapid depending upon soil texture.

Parent material in the minor land type includes recent alluvial deposits as well as glacial till and outwash. Soils are moderately deep to deep and course to fine textured. Rock fragment ranges from 20 to 60 percent. Slopes range from 0 to 40 percent, with the majority of the type being in the flatter range. Permeability ranges from slow to rapid depending upon soil texture.

Erosion potential for both land types is low to moderate. Potential fire effects on soil quality is rated low because fire is an ecosystem process in these land types. Revegetation potential is medium for the Dissected

Mountain Slopes land type and high for the Valley Bottoms land type. Productivity on both types is inherently low due to parent material, soil texture, rock fragment, and slope.

Burned areas within the fire perimeter are of low and moderate fire intensity. Fire severity is mostly low, with a few small pockets of moderate. Small islands of unburned vegetation are scattered throughout the burn, resulting in a mosiac pattern. Water repellency exists in both burned and unburned areas, but is mostly confined to the upper ½ inch of the soil profile. The degree of repellency is expected to decrease during the fall and winter season as air temperatures drop and precipitation and humidity increase.

Minor amounts of erosion during snowmelt next spring are expected , but the effects should be minimal. Minor changes to water quality are also expected, and again the effects should be minor. The risk of increased flooding is minor to non-existent.

Scattered populations of spotted knapweed occur on approximately 170 acres of the burn. Common mullien occurs on approximately 25 acres of cutslope along Highway 212, which was used as the eastern fire line. Canada thistle is present in small amounts along the eastern margin of the fire. Leafy spurge occurs immediately down valley of the burn area. **All of these weed species have the potential to spread into and throughout the burn, which could result in long-term negative effects on soil productivity and ecosystem integrity.** Treatment of existing populations is not practical at this time as plants have already matured. Monitoring next growing season is needed to determine if accelerated spread is occurring.

Six heritage resource sites within and adjacent to the burn could be threatened by erosion and sedimentation if it were to occur. As discussed above, the probability of erosion and sedimentation is low so the threat is minor. Land and channel treatments are not warranted at this time, but monitoring is in order to determine if negative effects are occurring.

In summary, the fire has not resulted in significant threats to life, property and water quality. It has created a minor erosion and sedimentation threat to heritage resources and a significant threat to long-term soil productivity and ecosystem integrity as related to potential spread of noxious weeds. Treatment and monitoring is warranted.

B. Emergency Treatment Objectives:

1. Monitor spread of noxious weeds into and across the burn area.
2. Monitor heritage resource sites within and adjacent to the burn for damage from erosion or sedimentation.

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

Land NA % Channel NA % Roads NA % Other 95+ %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	N/A	N/A	N/A
Channel	N/A	N/A	N/A
Roads	N/A	N/A	N/A
Other	N/A	N/A	N/A

E. Cost of No-Action (Including Loss): $179,200

F. Cost of Selected Alternative (Including Loss): $15,250

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Greg Bevenger, Hydrologist, Shoshone National Forest

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H. **Treatment Narrative:**

Land Treatments:

Treat approximately 147 acres of noxious weed infestation.

An additional project was identified on private lands. As a result of the fire and suppression activities, approximately 2 acres of private land were found to be infested with annual grasses. This area has been relatively free of these annual grasses prior to the fire. Landowners are very concerned about the annyal grasses coming into their property and altering vegetative composition. The proposed treatment is to spray the germinated cheatgrass with roundup, mow the cheatgrass, and seed the area with native seed. Seed viability for cheatgrass is 3 years so it is anticipated that mowing will be needed for 2 more years as the seed on the cheatgrass plants start to develop. This treatment is needed so that the cheatgrass does not expand onto additional private land or onto forest service land. If left untreated this infestation of cheatgrass could threaten the ecological integrity of the private and forest service land. We are requesting either State and Private Forestry Funding or authority to spend BAER funds under the Wyden ammendment to treat this private land. Treatment costs are estimated to be around $1000.00.

Channel Treatments:

No channel treatments are proposed.

Roads and Trail Treatments:

No road and trail treatments are proposed.

Structures:

No structural treatments are proposed.

H. **Monitoring Narrative:**

During the summer of 2001 the Willie Fire area was monitored for noxious weed infestation. It was determined that noxious weed infestations were expanding and that this expansion threatened previously weed free areas. As a result of this evaluation, timeframes involved, and availability of the weed crew this area was treated for noxious weeds at the same time monitoring was taking place. Approximately 18.8 net acres of noxious weeds were treated within a treatment area of 147 acres within the Willie Fire. The monitoring and treatment involved approximately 21 person-days of labor.

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

			NFS Lands				Other Lands			All
		Unit	# of	WFSU	Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	SULT $	$	units	$	Units	$	$
A. Land Treatments										
Noxious Weed Treatment	acres	41	147	$6,027			$0		$0	$6,027
Private land Treatment (includes herbicide, mowing, seeding)		500		$0			$0	2	$1,000	$1,000
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Land Treatments				$6,027			$0		$1,000	$7,027
B. Channel Treatments										
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Channel Treat.				$0			$0		$0	$0
C. Road and Trails										
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Road & Trails				$0			$0		$0	$0
D. Structures										
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Structures				$0			$0		$0	$0
E. BAER Evaluation										
Team cost				$0			$0		$0	$0
				$0			$0		$0	$0
G. Monitoring Cost				$0			$0		$0	$0
H. Totals				**$6,027**			**$0**		**$1,000**	**$7,027**

PART VII - APPROVALS

1. /s/ Nancy Curriden — November 2, 2001
   Forest Supervisor (signature) — Date

2. _____ _____
   Regional Forester (signature) — Date