Date of Report: 22 July 2002

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

Type of Report

X Funding request
Accomplishment Report
No Treatment Recommendation

Type of Action

X Initial Request (Best estimate of funds needed to complete eligible rehabilitation measures)
Interim Report
Updating the initial funding request based on more accurate site data or design analysis
Status of accomplishments to date
Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

Fire Name:	**North Horn**	Fire Number:	**UT-MLF-2150**
State:	**Utah**	County:	**Emery**
Region:	**4**	Forest:	**Manti-La Sal**
District:	**Ferron**		
Date Fire Started:	**7 July 2002**	Date Fire Contained:	**13 July 2002**
Suppression Cost:			

Fire Suppression Damages Repaired with Suppression Funds

Fireline waterbarred (miles):	Dozer – 1; Hand – 6.7
Fireline seeded (miles):	All firelines will be seeded; however, seeding will be deferred until late fall due to current drought conditions.
Other (identify):	Cross-drainage on classified roads used for suppression in and around the burn perimeter will be reestablished. Fire camp rehabilitation includes decompaction or scarification, repair of irrigation ditches, vehicle control to prevent dispersed camping, and seeding.

Watershed Number: 14060009020 – Cottonwood/Straight Canyon
14060009030 – Ferron Creek

Total Acres Burned: 910

NFS Acres: 910 Other Federal: State: Private:

Vegetation Types: Douglas fir forest (390 ac); aspen (184 ac); big mountain & black sagebrush, mountain brush, mountain mahogany (103 ac); limber pine & bristlecone forest (54 ac); grasslands (98 ac)

Dominant Soils: Rabbitex-Repp families complex (124 ac); Castino family 2-15% slope (83 ac); Greyback family-Echard-cryorthents (19 ac); Senchert-Faim-Behanin families complex 5-40% slope (521 ac); clayey-skeletal, mixed pachic and typic cryoboroll complex 30-75% slope (163 ac)

Geologic Types: North Horn formation (460 ac); Flagstaff limestone (430 ac); quaternary mass wasting (20 ac)

Miles of Stream Channels by Order or Class:

First Order: 0.5 Second Order: Third Order: Fourth Order:

Transportation System: No classified roads or trails within the burn perimeter

Trails: Roads:

PART III - WATERSHED CONDITION

Burn Severity (acres): burn intensity was used as a surrogate for severity

Low: 230 Moderate: 250 High: 250

Water-Repellent Soil (acres): not determined

Low: Moderate: High:

Soil Erosion Hazard Rating (acres):

Low: 83 Moderate: 684 High: 143 Severe:

Erosion Potential (tons/acre): Not calculated

Sediment Potential (cu yd/sq mi): Not calculated

PART IV - HYDROLOGIC DESIGN FACTORS

Estimated Vegetative Recovery Period, (years)	5
Design Chance of Success, (percent)	n/a
Equivalent Design Recurrence Interval, (years)	n/a
Design Storm Duration, (hours)	n/a
Design Storm Magnitude, (inches)	n/a
Design Flow, (cubic feet / second/ square mile)	n/a
Estimated Reduction in Infiltration, (percent)	n/a
Adjusted Design Flow, (cfs per square mile)	n/a

PART V - SUMMARY OF ANALYSIS

Describe Watershed Emergency:

The majority of the burned area is tributary to Straight Canyon. The town of Orangeville diverts its drinking water from Straight Canyon downstream of the burned area. The burned area is surrounded by watershed project areas of contour furrowing/terracing. The watershed project areas provide a buffer zone between the burned area and Straight Canyon. Measures that ensure the continued proper function of the project areas and limit additional disturbance in the burned area allow us to minimize direct treatment of the burned area in order to maintain downstream water quality. As described in the attached document, the no treatment recommendation for the downstream water treatment plant is based in part on the continued proper function of the contour furrowing in the watershed project areas.

Emergency Treatment Objectives:

Maintain the proper functioning of the contour furrows and terraces surrounding the burned area by: repairing the watershed protection fence that excludes cattle from one of the project areas; preventing ATV use in the burned area; and monitoring the burned area and adjacent watershed project areas for additional treatment needs. Possible additional treatment needs are described in the attached document.

Probability of Completing Treatment Prior to First Major Damage-Producing Storm:
Land: n/a Channel: Roads: Other :

Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	85	90	100

Cost of No-Action (Including Loss): $20140

Cost of Selected Alternative (Including Loss): $13037

Skills Represented on Burned-Area Survey Team:

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

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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.)

- Repair ¾ mile of watershed protection fence.
- Patrol and enforce travel plan restrictions in the burned area during the 2002 hunting season.

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.)

- Monitor condition/effectiveness of top five contour furrows adjacent to the burned area in the spring of 2003.
- Monitor the burned area and areas disturbed by suppression activities for noxious weeds.
- The no-treatment option in the burned area should be monitored for effectiveness. Therefore, we propose to monitor the re-establishment of ground cover and the recovery of aspen. Monitoring would be quantitative, using established transect or plot methodologies, and would be done annually for at least three years.

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										
repair watershed protection fence	mi	8000	0.75	$6,000			$0		$0	$6,000
				$0			$0			
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Land Treatments				$6,000			$0		$0	$6,000
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										
patrol and enforce travel plan	days	275	8	$2,200			$0		$0	$2,200
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Road & Trails				$2,200			$0		$0	$2,200
D. Structures										
							$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
				$0			$0		$0	$0
Subtotal Structures				$0			$0		$0	$0
E. BAER Evaluation										
initial assessment	days	445	5	$2,225			$0		$0	$2,225
interim report	days	295	4	$1,180			$0		$0	$1,180
F. Monitoring							$0		$0	$0
no funding request for FY2002 - see attached report				$4,700						
G. Totals				**$16,305**			**$0**		**$0**	**$11,605**

PART VII - APPROVALS

Forest Supervisor (signature) Date

Regional Forester (signature) Date

BAER Assessment of Burned Area

Concerns and values/uses potentially at risk

Water treatment plant at mouth of Straight Canyon

The town of Orangevillle has a drinking water treatment plant that diverts surface water downstream of the burned area.

Watershed treatment areas adjacent to burned area

All of the area around the fire has been contour furrowed or terraced. The most recent project area was completed in the early 1990's. Cattle are excluded from several project areas with watershed protection fences.

Critical big-game winter range

There is critical winter range adjacent to the burned area. Elk use most, if not all, of North Horn Mountain as winter range in most years.

Spread of noxious weeds into the burned area

The burned area was weed-free. There are three inventoried noxious weed areas adjacent to the burned area. Species of concern are musk and Canada thistle, and whitetop.

ATV use in the burned area will adversely affect natural recovery

Authorized vehicle use is restricted to an existing road around the perimeter of the fire. Unauthorized use has been limited by dense vegetation and debris. Routes used or developed during fire suppression will be obliterated as part of the repair of suppression damages.

Reconnaissance findings

The burn is patchy. There are several large unburned areas within the burn perimeter. The largest burned patch is approximately 200 acres.
In the northeast portion of the fire there are steep slopes burned at high intensity.
The burned area is entirely surrounded by contour furrowing/terracing.
The burned area is in the Cottonwood/Straight Canyon and Ferron watersheds. It is not tributary to Ferron Creek above Millsite Reservoir. It is tributary to Straight Canyon downstream of Joe's Valley Reservoir.

Assessment of concerns and values at risk and treatment proposals

Water treatment plant at mouth of Straight Canyon

The threat to the water treatment plant appears minimal. A flush of ash into the system is the main concern. However, the contour furrows should detain most of the runoff from the burned area. Runoff that enters the drainage network of gullies and swales could be conveyed to Straight Canyon. Because water is delivered from Joe's Valley Reservoir through Straight Canyon to downstream users, Straight Canyon is running at between 60 and 100 cfs. This augmented flow should provide sufficient dilution to minimize the effect of any ash from the tributary burned area.

Conclusion and treatment recommendation

The water treatments plant and culinary use of the water are not threatened by the fire. No treatment is necessary to protect this value. However, this conclusion is in part based on the protection provided by the contour furrowing adjacent to the burned area.

Watershed treatment areas adjacent to burned area
The fire did not burn into any of the project areas; however, it did damage a section of watershed protection fence that excludes cattle from a project area. The burned area is tributary to the watershed treatment areas. Under more normal moisture conditions, we would anticipate good natural recovery of ground cover. However, continued drought combined with thunderstorms or spring runoff could adversely affect natural vegetative recovery and result in surface erosion from the burned area filling the top several furrows. This would affect the effectiveness of the watershed projects and the protection they provide to downstream water uses in Straight Canyon.

Conclusion and treatment recommendation
Repair the watershed protection fence. Estimated cost $6000.
No initial treatment for the furrows is proposed. Monitor condition of top five furrows in the spring of 2003; estimated cost - $1000. Restore capacity as needed; estimated cost - $7200
Monitor vegetative recovery in the burned area.

Critical big-game winter range
Critical winter range was not affected by the fire. There are no emergency treatment needs. However, post-fire restoration should include seeding to speed the recovery of big-game forage.
There are several aspen stands in the burned area. We are concerned about their recovery given the current drought conditions and the anticipated browsing by elk in the next several years.

Conclusion and treatment recommendation
Monitor the recovery of one burned aspen stand.

Spread of noxious weeds into the burned area
Elk travel through known infestation areas on their way to winter range on North Horn Mountain. Elk are one mechanism for the spread of weeds to susceptible areas; ATV use in the burned area, should it occur, is another.

Conclusion and treatment recommendation
The spread of noxious weeds into the burned area is likely.
The weeds of concern are biennial. Monitor the burned area in 2003 and 2004. Take control action to ensure that the area remains weed-free. Estimated cost for monitoring - $1200 in 2003 and $1300 in 2004. Treatment costs were not estimated.

ATV use in the burned area will adversely affect natural recovery
Routes used or developed within the fire perimeter during fire suppression will be obliterated as part of the repair of suppression damages. The dozer and hand lines will also be obliterated as part of the repair of suppression damages. Additional measures will be taken to discourage/prevent ATV use where the travel ways and firelines intersect the existing road. With the loss of visual and physical barriers in areas of moderate and high fire intensity, we anticipate an increase in unauthorized ATV use. A network of user-developed tracks and trails through the burned area would interfere with vegetative recovery, spread noxious weeds, and would likely cause gullying in areas that are currently ungullied.

Conclusion and treatment recommendation
We will attempt to get user cooperation to limit unauthorized ATV use through education, coordination with local user groups and public land councils, and enforcement.
In lieu of preemptively installing gates to control access, patrol and enforce the travel plan during the 2002 hunting season. If necessary, issue a closure order and install three gates to secure the area. Estimated cost for monitoring - $4000. Cost for gates and installation not estimated.

Summary of adaptive treatment and monitoring strategy to be funded by BAER

Given the national and regional direction and preference for no treatment, we are proposing an adaptive approach of limited initial treatments, monitoring, and follow-up actions as necessary based on monitoring information.

Treatments/actions – FY2002

Repair watershed protection fence; estimated cost - $6000.
Patrol and enforce travel plan restrictions in the burned area during the 2002 hunting season; estimated cost - $2200

Treatments/actions – FY2003

Patrol and enforce travel plan restrictions in the burned area during the 2002 hunting season; estimated cost - $2200
Monitor condition/effectiveness of top five contour furrows adjacent to the burned area in the spring of 2003; estimated cost - $1000.
Monitor the burned area and areas disturbed by suppression activities for noxious weeds; estimated cost - $1200.

Possible treatments/actions based on monitoring

Restore capacity of contour furrows; estimated cost - $7200
Issue closure order for FR 50020 and FR 52133 and area enclosed by FR 50020. Install three gates to secure the closed area.
Treat noxious weeds found in the burned area and areas disturbed by suppression activities.

Additional monitoring to be funded by BAER

We are assuming that natural vegetative recovery will provide adequate ground cover in a two to three year period. The no-treatment option should be monitored for effectiveness. Therefore, we propose to monitor the re-establishment of ground cover and the recovery of aspen in the burned area. Monitoring would be quantitative, using established transect or plot methodologies, and would be done annually for at least three years. Estimated cost for FY2003 - $2500.
In addition, treatments implemented following initial monitoring proposed above would be monitored for effectiveness. Costs are not estimated.