Date of Report: 7/24/09

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[X] 1. Funding request for estimated emergency stabilization funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[X] 1. Initial Request (Best estimate of funds needed to complete eligible stabilization 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: Horse Valley

B. Fire Number: UT-DIF-090224

C. State: Utah

D. County: Garfield

E. Region: Intermountain

F. Forest: Dixie

G. District: Cedar City

H. Fire Incident Job Code: P4E1FP

I. Date Fire Started: July 2, 2009

J. Date Fire Contained: July 18, 2009

K. Suppression Cost: $2,200,000

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 0.5
2. Fireline seeded (miles): 0
3. Other (identify):

M. Watershed Number: Butler Creek (160300010404) and Haycock Creek (160300010403)

N. Total Acres Burned: 2889
NFS Acres(2508) Private (381)

O. Vegetation Types: 51% Aspen/Mixed Conifer, 25% Shrub/Grass, 12% PJ/Curlleaf Mountain Mahogany, 7% Ponderosa Pine and 5% Spruce/Fir.

P. Dominant Soils: Typically very deep and well-drained formed in alluvium, residuum and colluvium derived from tertiary volcanic rocks. The dominant soils have a surface that is covered with a thin duff layer about 1 inch thick. The surface layer is brown gravelly loam about 3 inches thick. The subsoil is brown gravelly clay

loam and very gravelly loam about 25 inches thick. The substratum to a depth of 60 inches or more is brown extremely gravelly loam. Rock fragments cover 15 to 25 percent of the surface and are gravels, cobbles, stones and boulders.

Q. Geologic Types: Tertiary Volcanic Rocks

R. Miles of Stream Channels by Order or Class: 6.2 Intermittent and 3.8 Perennial

S. Transportation System
Trails: 1.6 miles Roads: 7.6 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 1962 (unburned & low) 530 (moderate) 397 (high)

B. Water-Repellent Soil (acres): 40 acres (approximately 10 percent of the high burn severity)

C. Soil Erosion Hazard Rating (acres):
2 (low) 2887 (moderate) 0 (high)

D. Erosion/Sediment Potential: 6.1 tons/acre (dominant soil type on high burn severity)

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 5-10

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

C. Equivalent Design Recurrence Interval, (years): 2-5

D. Design Storm Duration, (hours): 24

E. Design Storm Magnitude, (inches): 1.89 – 2.33

F. Design Flow, (cubic feet / second/ square mile): Haycock Cr 13.56-31.72 and Butler Cr 6-14.30

G. Estimated Reduction in Infiltration, (percent): 15

H. Adjusted Design Flow, (cfs per square mile): Haycock Cr 14.15-33.25 and Butler Cr 7.15-15.55

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

Threats to Human Life

Downstream Subdivisions

Field reviews within and downstream of the fire confirmed there are no situations where human occupancy of flood prone areas exists. Therefore, the effects of the fire do not appear to have created any significant threat to human life from a flooding event, specifically in the area north of Panguitch Lake near Haycock Creek.

Life Safety Hazards from Post-Fire Effects

Falling trees, washouts, mudflows and sediment movement is expected after this fire. To lessen the potential of injury from these items occuring within the fire perimeter hazard warning signs will be placed on the roads entering the area. Signs will warn forest visitors of surrounding hazards. Also, road treatments proposed below will also decrease hazards from washouts and sediment movement on roads.

Threats to Property, Road and Trail Infrastructure

Fences

The potential vegetative recovery of aspen/grasses is currently at risk along 5 miles of boundary between NFS and private land. The threat of slow vegetative recovery on NFS lands without barriers to prevent grazing on NFS land will restrict recovery on these burned watersheds. Natural vegetation thickets on mixed conifer stands with little forage acted as a barrier for livestock grazing in the past. These natural barriers have been consumed by fire in many areas adjacent to the private land/NFS boundary and these areas may be subject to slow aspen regeneration/grass recovery in areas of un-controlled grazing.

Roads

There are numerous culvert crossings and road dips on 30082, 31964, 30084 and 30407 that are undersized, even for pre-fire conditions. With flood flows expected to increase as a result of the fire, there could be debris loading over the next few years that could result in culvert plugging and loss of the road prism in critical locations. Loss of this road due to poor drainage/design could close access to private land inholdings. Closing these transportation routes is not feasible due to the connectivity of the surrounding road system and access to private land. On the roads within the fire perimeter, 11 culverts will need to be increased in size and 77 intercepting dips will need to be constructed as soon as possible to properly handle anticipated flows.

Trails

Two system trail segments (Right Fork Haycock Trail and Caddy Creek Trail - combined 1.6 miles) have been heavily impacted by high and moderate burn severity and are subject to excessive runoff and subsequent loss of the trail tread. Treatments are proposed to provide for proper trail drainage to protect this resource.

Off-Road Motorized Travel Emergency Situation: The objective of the treatment stated above is to prevent OHV/ATVs from leaving designated routes, creating resource damage, and accelerating erosion and sedimentation.

Trail Hazard Notification: The objective of the treatment stated above is to alert trail users to the hazards present to give sufficient information for them to make an informed decision about using that section of trail.

Threats to Unacceptable Resource Degradation

Noxious Weeds

To determine the need for future treatments, noxious weed assessments will be conducted to document if increased noxious weed invasion is occurring within the wildfire perimeter. Assessments will begin in fiscal year 2010.

Goshawk, Deer/Elk Winter Range, and Mexican Spotted Owl Habitat

Effects to Goshawk, Deer/Elk Winter Range, and Mexican Spotted Owl habitat was also evaluated and determined that through the mosiac of the fire and the effect to these species will be minimal.

Aquatic Habitat

The overall effects to fisheries and aquatic biota resources are limited. The fish populations in both watersheds are located outside the burn area. The minimal impact to riparian vegetation should allow for an effective buffer from excessive sedimentation and erosion within the headwaters of Haycock and Butler Creeks; therefore, negative impacts to downstream fish populations and aquatic habitat from the Horse Valley fire should be limited.

Threats to Water Quality

Field reviews within and downstream of the burn confirmed there are threats to water quality. There will be sedimentation, ash output and changes to water chemistry. The effects to on-site and downstream water quality and aquatic resources are expected to be short term (3 years). No erosion control methods were recommended due to topographic anf vegetative controls.

Threats to Long-term Soil Productivity and Ecosystem Integrity

Invasive Plants – Bromus tectorum (Cheatgrass)

The major concern was for cheatgrass proliferation into the burned area. During this survey, south facing slopes of curl-leaf mountain mahogany and mountain big sagebrush were targeted to be at the highest risk for cheatgrass invasion. These warmer and drier microclimates are more conducive for the spread of cheatgrass at these high elevations. Cheatgrass is present only in small pockets underneath individual curl-leaf mountain mahogany trees where there has been past disturbance from livestock bedding down at the edge of meadows in the shade of these trees. These small and isolated pockets are infrequently scattered on south facing slopes dominated by curl-leaf mountain mahogany. The small and isolated pockets will not be substantial vectors for distribution and proliferation of cheatgrass at this high altitude. It is expected that these small pockets of cheatgrass will stay small and patchy as they were pre-fire. Native grasses in the understory of mountain big sagebrush and curl-leaf mountain mahogany on these south facing slopes include mountain muhly, needle-and-thread, squirreltail, mountain wheatgrass, muttongrass, Kentucky bluegrass, and Letterman's needlegrass. Associated shrubs include antelope bitterbrush, viscid rabbitbrush, and snowberry. In the mixed conifer and aspen vegetation types, Kentucky bluegrass, Squirreltail, needle-and thread, muttongrass, and mountain muhly are dominant. For all cover types affected, in the short-term, native grasses are expected to increase in the burned areas following the fire. Aspen is expected to re-generate in the mixed conifer/aspen vegetation types. Other invasive species (noxious weeds) in the areas burned were not found and their proliferation is not of concern. The Horse Valley burned area is expected to naturally recover with little threat of invasive plant species invasion without any additional treatment.

Soil Erosion

Approximately 331 acres of high severity burned soils are modeled to exceed the soil tolerance in the first year following the fire. Due to a lack of a viable threat and/or value at risk associated with these soil types no emergency treatment has been recommended at this point in the initial evaluation.

Threats to Heritage Resources

Field reviews within and downstream of the burn confirmed there are no significant threats to heritage resources.

B. Emergency Treatment Objectives:

The primary purpose of the emergency response is to take prompt action necessary to effectively protect, reduce or minimize significant threats to unacceptable resource degradation and property. The emergency treatments being recommended by the Dixie BAER Team are specifically designed to achieve the following results.

1. Protect life and property by installing road and trail warning signs of post fire flooding and falling tree hazards.
2. Protect roads in the area from post fire runoff.
3. Protect trails in the area from post fire runoff.

C. Probability of Completing Treatment Prior to Damaging Storm or Event:

Land __ % Channel ___ % Roads/Trails **70** % Protection/Safety **90** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5

Land			
Channel			
Roads/Trails	90%	80%	80%
Protection/Safety	80%	80%	75%

E. Cost of No-Action (Including Loss): See VAR Worksheet

F. Cost of Selected Alternative (Including Loss): See VAR Worksheet

G. Skills Represented on Burned-Area Survey Team:

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

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H. **Treatment Narrative:**

Land Treatments:
None

Channel Treatments:
None

Roads and Trail Treatments:
Purpose: To protect roads from anticipated runoff and reestablish road drainage where sediment deposits have impaired the function of the road drainage system.
Treatment: Road drainage will be improved by replacing old plugged culverts, increasing the size of culverts, and removing piles of debris (rocks, logs) from culvert inlets. Rolling dips on the roadway will be mainatined. ($35,322)

Purpose: To protect trails from anticipated runoff and reestablish drainage where sediment deposits have impaired the function of the trail drainage system.
Treatment: Trail drainage will be improved by installing proper trail drainage on 1.6 miles. ($2,080)

Protection/Safety Treatments:
Purpose: To protect life and property by installing road and trail warning signs.
Road Treatment: Install 3 hazard warning signs; 2 on FR30082 entering fire area and on FR30084. ($900)
Trail Treatment: Off-Road Motorized Travel Emergency Situation: The objective of the treatment stated above is to prevent OHV/ATVs from leaving designated routes, creating resource damage, and accelerating erosion and sedimentation. Trail Hazard Notification: The objective of the treatment stated above is to alert trail users to the hazards present to give sufficient information for them to make an informed decision about using that section of trail. Install 25 trail warning signs ($1,875)

I. **Monitoring Narrative:**
Monitor fire DP's (Drop Points), fire camp and the road system for invasive and noxious weeds. ($600)

Part VI – Emergency Stabilization Treatments and Source of Funds **Interim # 1**

			NFS Lands				Other Lands			All
		Unit	# of		Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER $	$	units	$	Units	$	$
A. Land Treatments										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
B. Channel Treatments										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
C. Road and Trails										
Road Drainage Dips	each	$210	77	$16,170	$0		$0		$0	$16,170
Road Culverts	L.F.	$84	228	$19,152	$0	55	$4,620		$0	$23,772
Tral Drainage	miles	$1,300	1.6	$2,080	$0		$0		$0	$2,080
				$0	$0		$0		$0	$0
D. Protection/Safety										
Road Hazard Signs	each	$300	3	$900	$0		$0		$0	$900
Trail Hazard Signs	each	$75	25	$1,875	$0		$0		$0	$1,875
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
E. BAER Evaluation										
BAER Team				---	$8,900		$0		$0	$8,900
				$0	$0		$0		$0	$0
F. Monitoring										
Nox. Weed				$600	$0		$0		$0	$600
				$0	$0		$0		$0	$0
G. Totals				$40,777	$8,900		**$4,620**		**$0**	**$54,297**
Previously approved										
Total for this request				**$40,777**						

PART VII - APPROVALS

1. /s/ Robert G. MacWhorter — 7/27/2009
   Forest Supervisor (signature) — Date

2. /s/ Jerry Perez (for) — 7/29/09
   Regional Forester (signature) — Date