Date of Report: 9/16/2008

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

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

[**X**] 2. Interim Report # 1
[**X**] 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: Bear Creek

B. Fire Number: UT-DIF-080179

C. State: UT

D. County: Garfield

E. Region: R4

F. Forest: Dixie

G. District: Escalante

H. Fire Incident Job Code: P4D80C

I. Date Fire Started: June 26 2008

J. Date Fire Contained: 6/29/2008

K. Suppression Cost: $941,000 as of 7/3/2008

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): No Dozer Line, Handline 8 miles
2. Fireline seeded (miles): 0
3. Other (identify):

M. Watershed Number: 140700050209 Bear Creek – Boulder creek 28,821 acres 45 sq mi
140700050206 Headwaters Boulder creek 33,972 acres 53 sq mi
140700050202 Sweetwater Creek 19,473 acres

N. Total Acres Burned: 1,464
NFS Acres (1464) Other Federal ( ) State ( ) Private ( )

O. Vegetation Types Ponderosa Pine, aspen, mixed conifer, oak

P. Dominant Soils: The soils are typically very deep in the Ponderosa Pine with loam and stony loam surface textures formed from in a mantle of landslide debris derived from Tertiary volcanic rocks.

Q. Geologic Types: Mantle of Tertiary Volcanics over Claron Formation (shale, limestone and sandstone).

R. Miles of Stream Channels by Order or Class:
4.0 miles perennial stream
0.5 miles intermittant stream

S. Transportation System

Trails: 0 miles Roads: 11 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 1138 (78%) (unburned/low) 292 (20%) (moderate) 34(2%) (high)

B. Water-Repellent Soil (acres) Water Repellant Soils Acres - Low-1,403 acres, Moderate-58 acres, High-0 acres.

C. Soil Erosion Hazard Rating (acres): 22 (low) 1419 (moderate) 20 (high)

D. Erosion Potential: .019 tons/acre

E. Sediment Potential: WEPP modeling showed a very small increase in erosion and sedimentation, the high amount of effective ground cover present and low burn severity has moderated erosional processes.

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PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 3-5 years grasses, oak, aspen (groundcover)

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

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

D. Design Storm Duration, (hours): 0.25

E. Design Storm Magnitude, (inches): 5 yr 0.41

F. Design Flow, (cubic feet / second/ square mile): Prefire 0.0 cfs (0 cfs/sqmi) Bear ck drainage
Pre fire 7.31 cfs (0.3 cfs/sq mi) W Fk boulder drainage

G. Estimated Reduction in Infiltration, (percent): 30%

H. Adjusted Design Flow, (cfs per square mile): Post fire 1.0 cfs (0.8 cfs/sq mi) Bear ck drainage
Post fire 7.35 cfs (0.3 cfs/sq mi) W Fk boulder drainage

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

Threats to Human Life
Field reviews within and downstream of the burn 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 threats to human life.

Threats to Road Infrastructure

The main road in the area is FR 30166, this road is generally on a flat bench and there is only a small area that burned upslope/up drainage of this road. Therefore no post fire runoff problems are anticipated. The lower section of FR 30296 is fairly sandy. There is a gate half way down and this road could be closed for a few years until the area stabilizes. FR 30514A runs down the bottom and is parallel to Bear Creek. This road also has a gate and could be closed off for a few years until the area stabilizes. The FR 30514A road connects to the FR 30296 road. The FR 30887 road is fairly rocky and rough. Only a small portion of this road is within the burn area. No road work is anticipated as a result of this fire.

Updated Sept. 17 2008 Interim #1 – Road conditions on FR30166, 30296 and 30514A have been hydrologically impacted more than expected from the initial analysis. FR30166 has numerous culverts (16) that have partially and/or fully plugged inlets with sediment and additionally one new cross drain culvert and a low water crossing will be needed to complete the emergency protection on this road. FR30296 has five culverts that have completely plugged inlets with sediment and an additional 20 rolling dips are needed for emergency protection. FR30514A needs an additional 30 rolling dips to deter direct sedimentation into Bear Creek.

Threats to Unacceptable Resource Degradation

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. During the fire suppression activities, fire transportation equipment and engines utilized areas near Escalante and Boulder where noxious weeds are present. Assessments will begin in fiscal year 2008.

Habitat effects to Colorado Cut-throat Trout, Goshawk, Deer/Elk Winter Range, and Mexican Spotted Owl were also analyzed.

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Within the Boulder Creek drainage, including the West Fork of Boulder Creek, the fire is located on the west side of the drainage, and did not cross over the streams (West Fork and mainstem) at any point. Also, the East Fork of Boulder Creek and Short Lake are located outside of the burn perimeter. Burn characteristics within the drainage are generally low to moderate severity. Within the riparian zone, creeping and smoldering fire behavior with occasional torching occurred. This condition largely left the riparian vegetation intact, and resulted in very little effect on fish habitat conditions. No evidence of direct effects to fish populations was observed, and no substantial effects are expected in the long-term. The viability of the CRCT population within the West Fork of Boulder Creek, and mixed trout fishery within Boulder Creek have not been impaired.

The fire burned approximately 1068 acres within the Bear Creek drainage. Roughly 1.6 fish-bearing miles of Bear Creek are included within this burned area. Burn characteristics within the drainage are variable with low, moderate, and high severities all present. Approximately 0.5 miles of Bear Creek is located within a moderate to high severity area. Effects to fish and aquatic habitat within this area are quite pronounced. Essentially all riparian vegetation has been burned, and over-stream shading has been eliminated. Additionally, the brook trout population that was present pre-fire has been appreciably reduced, as evidence of widespread fish-kill is apparent within this stream reach. However, live brook trout were observed within the burned area, both upstream and downstream of this severely burned area. The presence of these live fish, and the perennial connection to other source populations (i.e. upper Bear Creek, Boulder Creek), will allow for trout densities to recover within the affected reach.

The Bear Creek fire altered a limited amount of riparian vegetation and older shrub stands into early seral conditions within the ponderosa pine and aspen community. The burn was spotty and good hiding cover remained post-burn. Motorized access was not increased into the area during fire operations. The area burned relative to the surrounding available habitat for big game species is very small and is not likely to create a hardship for the local big game population and will result in an increase in forage in the future. The risk of noxious weed or invasive species infestation is small.

Range and Forage

The Bear Creek Fire took place partially within the Bear Creek pasture of the Sand Creek grazing allotment and also within the Between-the-Creeks pasture of the Boulder grazing allotment. There were no acres of 6A Livestock Management burned however 68.9% (1009.3 acres) of the total acres burned were deemed suitable/capable for cattle grazing with only 23.9 of those acres receiving high intensity burn. Approximately a 2 mile section of the Sand Creek/Boulder allotment boundary fence and a 300 foot section of the Between the Creek/Nazor Draw pasture division fence were burned over during the fire. Fence damage consisted of partial and total consumption of most of the wood posts and stays as well as a few trees that have fallen and knocked the fence down.

Threats to Water Quality

Field reviews within and downstream of the burn confirmed there are threats to water quality. There will be sediment, ash output and changes to chemical water quality. 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 low eroision potential and topography and conditions of the landscape.

Threats to Long-term Soil Productivity and Ecosystem Integrity

Field reviews within the burn indicate there is a low threat to long-term soil productivity and ecosystem integrity. This threat is related to a potential increase in cheatgrass (Bromus tectorum). The threat is due to past management of the area coupled with consumption of rangeland vegetation by the fire. Past management decisions of allowing fire exclusion, grazing pressure, and invasion of cheatgrass has resulted in a burn area where vegetation succession processes have been interrupted. This invasion can result in very poor range land condition and subsequent accelerated soil erosion and associated loss of long-term soil productivity.

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, property, noxious weeds and invasive plants. 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 warning signs in three locations. FR30166 entering fire area from the east by East Fork Boulder Creek, FR30154 entering the fire area from the west, and the FR30699 road system accessing the area from Pretty Tree Bench area
2. Provide protection from unregulated grazing on burned areas through instructions in annual operating plans.
3. Limit colonization and/or expansion of noxious weeds.
4. Protect the road infrastructure (FR30166, 30296 and 30514A).
5. Provide protection to critical riparian areas with the temporary closure of the roads in the Bear Creek drainage.

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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	NA	NA	NA
Channel	NA	NA	NA
Roads	NA	NA	NA
Protection/Safety	90	90	70

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

Value At Risk	Estimated Cost
Loss of FR30166, 30296 and 30514A	$125,000
Public Safety	$90,000 (Safety is difficult to cost.)
Noxious Weed Encroachment	$25,000
Total	**$240,000**

F. Cost of Selected Alternative (Including Loss):

Value At Risk	Estimated Cost
Loss of FR30166, 30296 and 30514A. This treatment is estimated to be 75% effective in reducing the road damage. 25% (failure rate from slow implementation or exceedingly high precipitation) of $125,000 plus $14,850 of the cost of the treatment.	$46,100
Public Safety and Vehicle Damage from road erosion/washouts. 10% (failure rate from exceedingly high precipitation) of $90,000 plus the $900 for signs.	$9,900
Noxious Weed Encroachment. 25% (failure rate from undetected noxoius weeds) of $25,000 plus $600 for the cost of the treatment.	$6,850
Total	**$62,850**

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Rich Jaros, DNF Soil Scientist and Bill Goodman, DNF ERD Hydrologist BAER leader trainiee

Email: sjaros@fs.fed.us or wgoodman@fs.fed.us Phone: 435 865 3722 (Jaros) or 435 826 5434 (Goodman)

H. **Treatment Narrative:**

Land Treatments:
none
Channel Treatments:
none
Roads Treatments:
Purpose: To protect road for severe erosion and and loss of infrastructure investment.
Treatment: Install 50 rolling dips, clean 21 culverts, add one cross drain culvert and one low water crossing. ($14,850)
Protection/Safety Treatments:
Purpose: To protect life and property by installing road warning signs.
Treatment: Install 3 hazard warning signs; FR30166 entering fire area from the east by East Fork Boulder Creek, FR30154 entering the fire area from the west, and the FR30699 road system accessing the area from Pretty Tree Bench area ($900)

Example of Road Warning Sign

BURNED AREA

BEWARE OF:

FALLING TREES
& LIMBS
ROLLING ROCKS
FLASH FLOODS

I. **Monitoring Narrative:**
Monitor fire suppression DP's (Drop Points) 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
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$0	$0		$0		$0	$0
B. Channel Treatments										
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$0	$0		$0		$0	$0
C. Road and Trails										
Culvert Cleaning	each	100	21	$2,100	$0		$0		$0	$2,100
Rolling Dips	each	175	50	$8,750	$0		$0		$0	$8,750
Low Wat Xing Aggr.	cu yds	40	60	$2,400			$0		$0	$2,400
Install 24" Culvert	ft	50	32	$1,600	$0		$0		$0	$1,600
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$14,850	$0		$0		$0	$14,850
D. Protection/Safety										
Hazard Warning Signs	each	300	3	$900	$0		$0		$0	$900
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$900	$0		$0		$0	$900
E. BAER Evaluation										
BAER Team	days	300	20	---	$6,000		$0		$0	$6,000
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				---	$6,000		$0		$0	$6,000
F. Monitoring										
Nox Weed	days	300	2	$600						
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$600	$0		$0		$0	$0
G. Totals				$16,350	$6,000		**$0**		**$0**	**$21,750**
Previously approved				$1,500						
Total for this request				**$14,850**						

PART VII - APPROVALS

1. /s/ Gretchen Merrill (Acting for) — 9/16/2008
   Forest Supervisor (signature) — Date

2. /s/ William P. LeVere for — 09/18/2008
   Regional Forester (signature) — Date