Date of Report: August 16th, 2005
Rec'd at RO with cover letter dated 8/23/05
Revisions (pink) R. Helzner, 8/25,26,30/05 pursuant to phone conversations with Mike Smith & Year 2 monitoring report sent by Forest.

USDA - FOREST SERVICE / BURNED - AREA REPORT

(Reference FSH 2509.13)

PART 1 ... 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

(X) 2. Interim Report … # 2
- (X) Updating the initial funding request based on more accurate site data and design analysis
- (X) Status of accomplishments to date

( ) 3. Final Report - following completion of the emergency work

PART 2 ... BURNED - AREA DESCRIPTION and FIRE LOCATION

A. Fire Name: Johnson
B. Fire Number: P44138 / UT - FIF – 269
C. State: Utah
D. County: Sevier
E. Region: R4 / Intermountain
F. Forest: Fishlake … # 0408
G. Ranger District: D2 / Loa
H. Date Fire Started: 08-28-2002 @ 1619
I. Date Fire Contained: 09-07-2002 @ 1800
J. Expected Date of Fire Control: Unknown

K. Suppression Costs: $ 1,988,784 (cost-to-date) … ICS - 209 / 09-07-2002 - final incident summary

L. Fire Suppression Damages Repaired with EFFS - PF12 Funds:

- Fireline Waterbarred (miles) ~ 3 miles of hand line and 1½ miles of dozer line
- Fireline Re-seeded (miles) ~ 3 miles of hand line and 1½ miles of dozer line
- Other Damages … (identify) ~ 2 acres at the Fire Camp; 1 acre at both the Sevenmile and UM

Helibases; a ¼ mile of road was repaired for dispersed camping areas in Sevenmile … and, we still need ~ ¾ mile of log-worm fence repaired near the Left Fork of UM Trail (# 4121)

M. Subwatershed Numbers: 140700030101 / Sevenmile Creek and 140700030107 / UM Creek

N. NFS Acres Burned: 1,751 **Total Acres Burned:** 1,844

Other Land Ownerships … list as follows (acres):

(X) Private - 93 ( ) State of Utah - 0 ( ) BLM - 0 ( ) UDWR - 0

O. Vegetation Types:	Mixed conifers consisting of Englemann spruce, subalpine fir and Douglas fir along with scattered aspen were found on the majority of the burned-area; these sites occurred on mountainsides, glacial moraines and high mountain plateau sideslopes (66 %). Spruce - fir vegetative communities were mapped on north and northwest aspects along mountainsides having steep terrain (17 %). Stable aspen with perennial grasses dominated some lower mountainsides and glacial moraines located NW of Water Flat (8 %). Mountain big sagebrush with perennial grasses were identified in the mountain meadows and silver sagebrush was found in alluvial-fill valleys in the SE part of the burned-area on nearly level to gently sloping terrain (5 %). Rubblelands having < 10 percent vegetative cover are intermixed throughout the perimeter of the burn (3 %). And … there is a small – but distinct area of wetlands occurring in Water Flat (1 %). *(Fishlake National Forest / GIS Database)*
P. Dominant Soils:	The wildland soils occurring under the mixed conifers with aspen vegetative communities were mapped as Typic Haplocryalfs, Mollic Haplocryalfs, Alfic Argicryolls, Typic Eutrocryepts and Lithic Eutrocryepts. The sites that previously supported spruce - fir type plant communities were identified as having Typic Haplocryalfs, Mollic Haplocryalfs and Lithic Haplocryalfs on steep to very steep terrain. Stable aspen with perennial grass communities had soils classified as Pachic Argicryolls, Alfic Argicryolls and Typic Argicryolls. Areas with silver sagebrush have soil resources classified as Typic Argicryolls or Pachic Argicryolls. Units with mountain big sagebrush and perennial grasses existed on Typic Argicryolls -- small areas of Lithic Argicryolls may have supported inclusion areas of low sagebrush. The wetland soils within Water Flat were determined to be Terric Cryohemists, Histic Cryaquolls and Aquic Haplocryolls. *(Fishlake National Forest / GIS Database)*
Q. Geologic Types:	Most of the burned-area has contrasting soils formed in alluvium, colluvium and residuum derived from mixed igneous rocks such as latite, andesite and basalt; a few small areas were formed in sedimentary deposits of either Flagstaff Limestone and North Horn sediments; many High Mountain landscapes consist of scattered Rubblelands -- which is simply gravitational accumulations of angular rock fragments; some landslide debris exists in the Water Flat area.

	(Utah Geological and Mineral Survey - SGID Files, 1980)

R. Miles of Stream Channels by Order: (Strahler 1952 method, within the fire perimeter)

Zero: 1.9 1st: -0- 2nd: -0- 3rd: -0- 4th: -0- 5th: -0-

S. Transportation Systems: (occurring within the fire perimeter)

Trails ….. 0.93 miles (USDA - Forest Service)
Trails ….. 0 miles (Private Ownership)
Trails ….. 0 miles (BLM Lands)
Trails ….. 0 miles (State of Utah)
Trails ….. 0 miles (UDWR - Wildlife Reserves)

Total Trails … 0.93 miles

Roads …… 0 miles (USDA - Forest Service)
Roads …… 0 miles (Private Ownership)
Roads …… 0 miles (BLM)
Roads …… 0 miles (State of Utah)
Roads …… 0 miles (UDWR - Wildlife Reserves)

Total Roads … 0 miles

PART 3 … WATERSHED CONDITION / NFS PROBLEM INVENTORY

A1. Mapping of the Burn Severity Zones: (1,844 total acres occurring within the perimeter of the Johnson Fire)

589 High (32 %) 223 Moderate (12 %) 1,032 Low / Unburned (56 %)

A2. Mapping of the Burn Severity Zones: (NFS lands … 1,751 acres)

548 High (31 %) 214 Moderate (12 %) 989 Low / Unburned (57 %)

B. Estimation of Water-Repellent soils occurring within the different Burn Severity Zones:
(NFS lands … 1,751 acres)

493 High (90 %) 107 Moderate (50 %) 49 Low / Unburned (5 %)

Overall Total = 649 acres

C. Rating Soils for Potential Erosion Hazards within the Fire Perimeter: (NFS lands … 1,751 acres)

High	Moderate	Low
613 (35 %)	280 (16 %)	858 (49 %)

D. Potential for Accelerated Erosion Losses without applying emergency rehabilitation treatments:

1st Year	2nd Year	3rd Year	4th Year
38 tons/acre/year	16 tons/acre/year	3 tons/acre/year	< 1 ton/acre/year

Overall Total = 28,000 tons

(additional erosion over a 48 month period)

(Source) – USDA / NRCS … RUSLE model … http://www.sedlab.olemiss.edu/rusle/

E. Total Sediment Potential: 31 tons / mile ^{2} … according to the USDA / NRCS - RUSLE Model

(Note) – the sediment entry assumes a < 1 % delivery efficiency for a period of 4 years

PART 4 … HYDROLOGIC DESIGN FACTORS with CALCULATED RISK and CLIMATE EVALUATIONS

The following table shows the average factors for UM Creek:

A. Estimated Vegetative Recovery Period: 5 - 10 years
B. Design Chance of Success: 73 percent
C. Equivalent Design Recurrence Interval: 10 year
D. Design Storm Duration: 1 hour
E. Design Storm Magnitude: 1.21 inches
F. Design Flow: 15.5 ft^3 / sec / mi^2
G. Estimated Reduction in Infiltration: 3 percent
H. Adjusted Design Flow: 23.2 ft^3 / sec / mi^2

PART 5 … SUMMARY OF SURVEY & ANALYSIS

A1. Status of Accomplishments-to-Date:

- Broadcast seeding was completed on 515 acres during September of 2002; another round of broadcast seeding was approved by the Intermountain / Regional Office and applied to 116 acres in the Sevenmile Valley area during September of 2003.

  In both instances … the seed was **NOT** tested for purity with respect to measuring invasive species and weeds and its germination rate was thought to be about 92 to 98 % according to the tags sewn into the bags.

  Temporary storage facilities for the seed were provided by our Richfield Fire Dispatch Center at no cost to Government

- The removal of hazard trees along FS Trail # 4121 was accomplished during the spring of 2003 by the RIFC / Fire Crew.

- A temporary fence was constructed to protect the Initial BAER seeding treatment by Day Lay and his summer crew in September of 2002.

- Several explanatory signs were purchased by the District and placed throughout the burned-area in 2003.

- To a certain extent, the RIFC / Fire Crew worked to re-condition FS Trail # 4121 during the summer of 2003; several small portions of the trail was re-located away from the most severely burned areas.
- Year # 1 monitoring activities were completed by the District Staff and Resource Specialists working for the Fishlake NF in 2002 – 2003; this information was subsequently reported in our Fishlake NF … BAER Monitoring and NFP / KP2 Projects for the Mourning Dove – Yance Canyon, Oldroyd and Swains Fires of CY 2000 -- and, Cottonwood and Johnson Fires of CY 2002.

- Year # 2 monitoring activities were completed by the District Staff and Resource Specialists working for the Fishlake NF in 2003 – 2004.

- We used a D-6 caterpillar tractor to re-contour the fire damaged slopes located directly above the Sevenmile Road in 2003 and 2004. (some of this treatment was paid using NFN3 funds)

- At this time … have not constructed any straw-bale check dams near the Sevenmile Road.

- Culverts were cleaned along the Sevenmile Road by our Engineering Staff and RIFC / Fire Crew during the summer of 2003.

- A new 36" culvert was ordered, brought to the site and placed into the ground by the Engineering Crew during the spring of 2004; after several storm events, the culvert failed once again and continues to be covered by sediment and debris at this time.

- After meeting with the District personnel at the burn, it was decided to obliterate the spur road in question rather than try to re-condition the road surface. The road was closed to the general public during June of 2004 and remains closed and signed at this time. (some of this treatment was paid using NFN3 funds)

- Our Forest Botanist / Dave Tait made an inventory of all noxious weeds occurring within the burned-area; NFN3 funds were used in subsequent years to eradicate these unwanted plant populations.

A2. Describe the Watershed Emergency as it exists at this time:

In 2003 and again in 2004, we experienced several episodes of flooding connected with the Johnson Fire. Small debris flows affected the Sevenmile Road, Sevenmile Creek, private lands within UM Valley, UM Creek and a dispersed camping area located in Sevenmile Valley. Simply stated, the fragile hillsides remain a severely burned landscape at this time. The initial BAER report identified fragile landscapes, including anticipation of hydrophobic conditions for 1-5 years post-burn, high severity burn areas being potential flood source areas, and most soils with 1-5 inches of topsoil material (pp. 4-5). That report identified "few actual threats to human life and property" from this fire, with emphasis on dispersed recreation and trail impacts; broadcast seeding was included to slow runoff to a severely-burned trail and other dispersed camping areas (p.5). However, with the debris flow effects described above on the fire's west side where steep (e.g., 60-70%) slopes were seeded with BAER funds in 2003 and 116 acres re-seeded in 2004, assessing the effectiveness of these treatments is necessary to establish future needs.

We need to monitor the steep to very steep mountainsides we re-seeded in 2003 (116 ac.) for the germination and growth of native grasses; the re-seeding was on the west side of the fire, where the steep slopes and debris flows are concentrated. Due to steep slopes/remoteness, helicopter transport is needed for

safety and efficiency. ~~actually,~~ We should monitor the entire area that has been seeded since 2003 for indications of soil stabilization. If the seeding efforts are deemed to be successful on-the-ground, we should file another Interim / BAER Report asking to have the temporary fence removed from its location in UM Valley. Back in 2002, the Ranger District used some of its existing fencing materials to actually construct a 42 " wildlife fence in order to keep domestic livestock away from the seeded areas.

We need to work with Jess Clark at RSAC in order to acquire a new satellite image of the burned-area. We need to check its severely burned slopes for water-repellent ground conditions once again based upon the information derived from the BARC scene. Since the BARC imagery would provide information on vegetation generally, but not BAER treatments specifically, this would be funded by non-BAER funds.

Trail damage in severly-burned areas, along with a public safety risk from hazard trees (Trail #4121) was identified in the original BAER report (p.5). Our monitoring crew should check the conditions occurring along FS Trail # 4121 to determine if an adequate number of hazard trees were removed from the area for public safety. A fire crew cut and bucked up hazard trees; however, the crew got off the trail, which had to be re-marked. Consequently, the effectiveness of the hazard tree removal along the trail needs evaluation. Secondly, the crew should examine some of the trail segments that were re-located in 2003 by the RIFC / Fire Crew to determine if the new trail segments are limiting or causing soil erosion losses within the burned-area. To my understanding, a few waterbars were constructed on the old trail; these structures ~~should~~ also be photographed during these inspections at no additional cost to BAER.

Our Forest needs to check the current condition and placement of the different explanatory signs. I know the BAER Team moved a few of the signs in 2004 to get them placed in areas where the general public could view them to better understand the existing hazard associated with the burn. Thus, the effectiveness of the locations needs to be confirmed; since some locations would not be co-located with other work, separate funding is needed.

Later this week, I would like to visit the alluvial fan terraces located in Sevenmile Valley to monitor effectiveness and photograph some of our D-6 / cat work from 2004. At that time, several small catch-basins were constructed to trap soil material and sediment from impacting the Sevenmile Road surface (again).

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(Note) – we currently have $ 10,000 in NFN3 funds programmed into our FY ' 05 budget to do additional dirt work in this area if its needed; just another reason to monitor this fragile location once again.

******

We should take another look at the Sevenmile Road to determine if its culverts need to be cleaned-out. FYI, this particular road is the major transportation system going from Interstate - 70 up into the Fishlake Basin. Since other BAER work is occurring along the Sevenmile Valley, this could mostly be done in conjunction with other tasks.

Certainly, we should take another look at any spread of invasive plant species and noxious weeds that may be directly related to the wildfire disturbance. We did use NFN3 funds in both 2003 and 2004 to inventory and eradicate Canada Thistle and Musk Thistle from the upland bench located above the UM Valley. No BAER treatment of noxious weeds were performed, so no monitoring would be done by BAER.

B. Monitoring Objectives:

And, we need to complete Year # 3 of our monitoring activities. Then we can prepare a brief report for the Forest and Region which identifies our success and failures with respect to implementing successful BAER treatments intended to stabilize ground conditions within the burned-area. Our document preparation fee was estimated at $ 500 … the BAER Team will need about 5 days of time to accomplish this task.

(Note) – during the preparation of this report, the Monitoring Plan was **updated** to reflect changes in the BAER program (e.g., listing accomplishments and describing the existing emergency), to correct minor mistakes in the original document and to refine the cost estimates shown on the financial table for Year # 3.

C. Expected Probability of Completing Emergency Treatments Prior to Next Damage-Producing Storm:

Land … 85 % Channel … 85 % Roads … 80 % Noxious Weeds … N / A RAWS … N / A

D. Probability of Accomplishing Treatment Success:

< ---------- Years after Treatment ---------- >

	1	3	5
♦ **Land**	**75 %**	**80 %**	**85 %**
♦ **Channel**	**85 %**	**75 %**	**70 %**
♦ **Roads**	**85 %**	**75 %**	**70 %**
♦ **Noxious Weeds**	**95 %**	**90 %**	**90 %**
♦ **Other … RAWS**	**N / A**	**N / A**	**N / A**

E. Cost of Taking No-Action: (including potential loss) The Fishlake NF / BAER Team approximated the values-at-risk to be about $ 1,300,000 in the initial BAER report, which includes the surrounding system roads, trails, dispersed camping areas, fisheries habitat, private lands, commercial timber resources etc.

F. Cost of the Recommended BAER Treatments on NFS Lands: (including loss) Approximately $ 225,000 (estimate in initial BAER report) since the land treatments are only expected to be about 80 % effective during the 1st year after the burn.

G2. Skills Represented on the Interim Burned-Area Survey Team:

(X) Soils	**( ) Geology**	**( ) USDI - BLM**	**(X) Plants … NWs**
(X) Hydrology (3)	**( ) Contracting**	**( ) TES … Wildlife**	**(X) Fire Dispatch**
(X) Aspen Ecology	**(X) Helicopter Crew**	**( ) Timber**	**( ) Archeology**
(X) GIS Staff	**( ) Range**	**(X) Loa District Staff**	**(X) Engineering**
( ) TES … Fisheries	**( ) USDA – NRCS**	**( ) Utah - DWR**	**( ) BAER Assistant**

Team Leader: Michael D. Smith (Soil Scientist / Fishlake National Forest)

Phone: (435) - 896 - 9233 / ext. # 1071 **E-Mail:** mdsmith01@fs.fed.us

RECOMMENDED MONITORING ACTIVITIES

National Forest System Lands

- **MONITORING THE IMPLEMENTATION AND EFFECTIVENESS OF BAER TREATMENTS** … for 1) Soil and Hydrology - monitoring for hydrophobicity within the burned-area, soil movement and debris flows ($1,880); for 2) Erosion Control Measures - to review the broadcast seeding treatment ($1,580); for 3) Emergency Treatment Protection - making assessments of the condition and usefulness of the temporary fences ($830); for 4) Trail Treatments and Hazard Tree Removal - examining the waterbars and trail re-conditioning efforts along with reviewing public safety concerns ($830); for 5) Vegetation Recovery and Invasive Plants - determining the distribution and extent on undesirable plant species ($580); 6) Sign Monitoring - checking locations and condition ($290) and 7) Document Preparation Fees involved with preparing the Final BAER Report and the Final Monitoring Report ($500).

  Total = $ 6,490.

PART 6 … EMERGENCY REHABILITATION TREATMENTS & SOURCE OF FUNDS BY LAND OWNERSHIP(s)

A1. Primary Land Treatments

| < --- **Recommended Treatments** --- > | < ------ **Suggested Treatments** ------ > |

NFS Lands **Other Lands**

Line Items	Unit Type	Unit Cost $	Number of Units	WFSU–SULT $	Number of Units	State of Utah $	UDWR $	BLM or County $	Total $
Subtotal for Section A1	---	---	---	---	---	---	---	---	---

B. Channel Treatments

Line Items	Unit Type	Unit Cost $	Number of Units	WFSU–SULT $	Number of Units	State of Utah $	UDWR $	BLM or County $	Total $
Subtotal for Section B	---	---	---	---	---	---	---	---	---

C. Roads, Trails and Other Treatments

Line Items	Unit Type	Unit Cost $	Number of Units	WFSU–SULT $	Number of Units	State of Utah $	UDWR $	BLM or County $	Total $
Subtotal for Section C	---	---	---	---	---	---	---	---	---

D. Treatment for the Direct Control of Noxious Weeds

Line Items	Unit Type	Unit Cost $	Number of Units	WFSU–SULT $	Number of Units	State of Utah $	UDWR $	BLM or County $	Total $
Subtotal for Section D	---	---	---	---	---	---	---	---	---

E1. Interim BAER Evaluation / Administrative Support Services

Line Items	Unit Type	Unit Cost $	Number of Units	WFSU–SULT $	Number of Units	State of Utah $	UDWR $	BLM or County $	Total $
BAER Team Preparing our Funding Request and Interim BAER Report # 2	Team	$ 330	1.5	$ 495	---	---	---	---	$ 495

Line Items	Unit Type	Unit Cost $	Number of Units	WFSU–SULT $	Number of Units	State of Utah $	UDWR $	BLM or County $	Total $
BAER Team Preparing the Final Monitoring Report – Team members (6) include several GS-12's and 2 GS-9's; estimate 1 day each	Team	$ 330	5	$ 1,650	---	---	---	---	$ 1,650
Interim BAER Team / Helicopter Flights **(Low Level) Transport 6 crew members (3/flight) to/from remote areas (Initial Attack craft)** Type III / Bell 206 L-1	Hour	$ 611	2	$ 1,222	---	---	---	---	$ 1,222
BAER Team Supplies	Misc.	$ 150	1	$ 150	---	---	---	---	$ 150
RSAC Satellite Image - BARC	Misc.	$ ~~580~~	1	$ ~~580~~	---	---	---	---	$ ~~580~~
Subtotal for Section E1	---	---	---	$ ~~4,097~~ $3,517	---	---	---	---	$ ~~4,097~~ $3,517

E2. Implementation and Effectiveness Monitoring Activities

(Forest Service … Implementation and Effectiveness Monitoring - Year 3 of 3)

NOTE … if necessary, additional monitoring dollars can be acquired by the FS during Year 3 using an Interim type of BAER Report to request and secure the appropriate funding; the individual to contact at the Intermountain Regional Office is Jeff Bruggink -- R4 / Soil Scientist and BAER Coordinator at (801) - 625 - 5357

Line Items	Unit Type	Unit Cost $	Number of Units	WFSU–SULT $	Number of Units	State of Utah $	UDWR $	BLM or County $	Total $
1) Soil & Water Hydrophobic conditions, soil movement, debris flows etc. Work is similar to that in initial BAER report (check hydrophobic soil conditions) plus additional work related to debris flows/soil movement). 6-person team (estimate average $330/day - GS-levels 9,12 , long hours, some costs covered under Erosion Control, below).	Year 3	$ 1,880	1	$ 1,880	---	---	---	---	$ 1,880
2) Erosion Control Measures Reviewing the seeding and straw-bale check dams; this work is mostly in same locations as soil/hydrology above and requires helicopter access. Work comparable to vegetation transects identified in initial BAER report. Same 6-person team.	Year 3	$ 1,580	1	$ 1,580	---	---	---	---	$ 1,580
3) Protection for BAER Treatments Assessment of the fence conditions if fence is to be continued (vs. removal based on successful seeding)	Year 3	$ 830	1	$ 830	---	---	---	---	$ 830
4) Road and Trail Treatments Waterbars, Re-Conditioning & Hazard Tree Removal -- Trail #4121	Year 3	$ 830	1	$ 830	---	---	---	---	$ 830

Line Items	Unit Type	Unit Cost $	Number of Units	WFSU–SULT $	Number of Units	State of Utah $	UDWR $	BLM or County $	Total $
5) Invasive Plants and Noxious Weeds (Russian knapweed, musk thistle and Canada thistle)	Year 3	~~$ 580~~	1	~~$ 580~~	---	---	---	---	~~$ 580~~
6) Explanatory Signs Placement & Condition **MONITOR SIGNS MOVED IN 2004**	Year 3	$ 290	1	$ 290	---	---	---	---	$ 290
7) Final Document Preparing the Final BAER Report and Monitoring Document	Year 3	$ 500	1	$ 500	---	---	---	---	$ 500
Subtotal for Section E2	---	---	---	~~$ 6490~~ $ 5910	---	---	---	---	~~$ 6,490~~ $ 5910
F. TOTALS	---	---	---	~~**$ 10,587**~~ **$ 9,427**	---	**-0-**	**-0-**	**-0-**	~~**$ 10,587**~~ **$ 9,427**

Fund Code for Implementing Authorized BAER Treatments … H44138

PART 7 … APPROVALS

1. **Forest Supervisor: __/s/Diane Freeman Acting For MARY C. ERICKSON** **Date: August 16th, 2005**

2. **Regional Forester: _____** **Date: _____**

JOHNSON FIRE / MONITORING PLAN - UPDATED 08-16-2005

Introduction: Why Monitor?

Monitoring is the periodic assessment of BAER treatments to evaluate their success and / or failure, recommend adjustments to treatments and report on these findings to management. Forest Service Manual 2523.03 directs that the implementation and effectiveness of treatments, as well as the consequences of decisions not to treat certain areas, will be monitored for a period of up to 3 years. This plan will assess BAER measures taken to assist in rapid recovery of the burned sites and nearby lands and resources affected by the burned sites. The monitoring identified below is the minimum necessary and is directly linked to the applied treatments. Direction in this monitoring plan complies with the Fishlake National Forest Land and Resource Management Plan. The Forest Service Handbook 2509.13, Section 61.1 requires that, as a minimum, the following conditions be monitored:

1. The effectiveness and proper functioning of stabilization measures, especially road drainage facilities and channel structures.
2. Need for retreatment, maintenance and removal of temporary structures.
3. Quality and quantity of water leaving the burned-area, and the location and causes of problems.
4. Rate of recovery of vegetation.
5. Effects of resource utilization and restoration activities and emergency stabilization measures on each other.

Fishlake National Forest / District and Supervisor's Office personnel (with any requested assistance) will be assigned by the Leadership Team to conduct the implementation and the effectiveness monitoring (FSH 2509.13 Section 61.04). All evaluations are to be documented in a written report.

Types of Monitoring Planned

Implementation Monitoring: Did the job get done correctly on-the-ground?

Determine if the following proposed treatments were implemented as outlined in the BAER report:

- ***Broadcast Seeding:*** Are the seed mixtures applied to the intended sites with the proper rates of application?

- ***Temporary Fencing:*** Was the work performed safely and without injury? Was the fence constructed in the proper locations and does it completely enclose the treatments? Did any contracts proceed in an efficient and timely manner? Was installation timely? Did costs approximate budgeted allocations?

- ***Waterbars and Trail Re-conditioning:*** Was work performed safely and without injury? Were the waterbars constructed in the proper locations, at appropriate intervals, and do they direct water off the trail? Was the trail reconditioned in the right places, according to the treatment plan? Did any contracts proceed in an efficient and timely manner? Was installation timely? Did costs approximate budgeted allocations?

- ***Hazard Tree Removal***: Was work performed safely and without injury? Were all hazard trees removed from areas near the equestrian trail? Are there additional hazard trees to be removed? Did any contracts proceed in an efficient and timely manner? Was work completed in a timely manner? Did costs approximate budgeted allocations?

- ***Explanatory Signs (hazard or information and education types):*** Are the signs installed at the designated locations (on NFS lands) with the intended messages? Were the correct materials used? Are the signs clear and legible? Was installation timely? Did costs approximate budgeted allocations?

Effectiveness Monitoring: Did the expected response occur?

This monitoring is specifically designed to answer the question: Did the BAER treatments provide the planned protection and stabilization of the burned-area? Said another way, have the objectives of the treatments been met – and, if not, why? The purpose is NOT to prove, for example, that increased ground cover reduces erosion; rather, it is to see if the ground cover improvement treatment was implemented and verify if ground cover is increased.

As the Forest Service Handbook (2509.13, 62.23) directs, this monitoring includes on-the-ground review by a team of emergency rehab specialists, normally 2 growing seasons after the burn but may also be after the first runoff season or after unusual climate. Both successes and failures are to be addressed, along with reasons. Sensitive areas are given priority.

Are the emergency treatments successful in:

- protecting long-term soil productivity,
- preventing the deterioration of water quality,
- preventing a loss of water control,
- protecting long-term ecological structure and function,
- reducing the threats to human life and property?

Specific objectives of the treatments are described below:

Broadcast Seeding: Establish vegetative cover on the site quickly to:

- ❒ stabilize severely burned soils to maintain long-term productivity and meet Regional and Forest Plan standards,
- ❒ prevent production and delivery of off-site erosion to the stream channel network,
- ❒ reduce overland flow caused by raindrop splash that seals the soil surface,
- ❒ and suppress the spread of invasive species -- including noxious weeds.

Temporary Fencing: build a temporary fence around seeding treatment to:

- ❒ encourage increased ground cover by protecting seeding treatment from grazing, foot and vehicle traffic,

- ❒ protect aspen regeneration in fenced areas.

Waterbars and Trail Reconditioning: construct waterbars and re-condition equestrian trail to:

- ❒ direct water off of the trail,

- ❒ prevent loss of control of water,

- ❒ prevent excess erosion and damage to the trail.

Hazard Trees: Remove hazardous trees from hiking and equestrian trail to:

- ❒ reduce threats to human life and property by preventing trees from falling on people and horses or becoming dangerous obstructions on the trail,

- ❒ Protect the people who are implementing other emergency BAER treatments on the trail.

Explanatory Signs: Place signs as described in the treatment map to provide for public safety and promote fire recovery by communicating the potential flooding hazards and the need to adhere to motorized access restrictions.

- ❒ signs are clearly understandable,

- ❒ signs are placed with optimum visibility in concert with visual objectives,

- ❒ signs use language to encourage the public to make informed and safe decisions.

General Data Collection Procedures

The information to be recorded and documented will include the dates and type of emergency treatments implemented along with the total number of structures, acres and actual costs associated with these rehabilitation projects.

Photos will be taken during and after these treatments and actual treatment locations will be plotted on maps or using GPS. These photo points will be established above, within and below the various treatments. Digital photography is recommended. Regular film may be scanned so that digital reporting can be accomplished.

Any monitoring item having a specific location will be mapped using GPS and loaded into the corporate GIS database (e.g., weed infestations).

The Implementation Team Leader will ensure that all data being collected meets the established standards. Data collected for inclusion into the Forest GIS database will meet corporate standards.

For all monitoring projects, as a minimum, record:

- The dates of installation or accomplishment,

- Name(s) of person(s) collecting data and name of person, organization, or contractor performing work with a lead contact name if possible,

- Types of equipment used,

- Time for project completion (length of treatment),

- GPS location as well as a detailed map and narrative of directions to the site,

- Short narrative explaining how the job was completed, any problems encountered and how they were solved,

- Recommendations for continued use of the treatment on other fire rehabilitation projects considering both implementation and effectiveness concerns,

- Evaluation of whether treatments supported the " minimum necessary " goal.

Specific Data To Be Collected

Erosion Control Seeding:

- What were the soil moisture conditions at the time of seed application?

- What moisture events followed the seeding?

- Was seed spread uniformly over all intended treatment sites?

- Is there between 50 and 80 % soil cover to protect the soil three years post seeding?

- Which species did well?

- Which species did poorly?

- Are there any more effective ways of doing business compared with the treatment recommendations presented with the Initial Request for WFSU - SULT funds?

Noxious Weeds, Invasive Species and Rare Plants:

(NOTE) – Suppression of the Johnson Fire involved heavy equipment used in the Cottonwood Fire, where Russian knapweed was present. Although the equipment was washed before it arrived at the Johnson Fire, the burned-area should still be carefully monitored for presence of Russian knapweed, Canada thistle and musk thistle.

- What is the response of those rare species affected by the fire?

- Is there evidence of post fire rehabilitation of burned individuals?

- Were the habitats of sensitive species avoided?

- What is the location and species of any noxious or invasive weeds present (with special attention to recognizing and recording any occurrence of Russian knapweed)?
- Are there previously uninfected areas where noxious weed treatments are now necessary?

Waterbars and Trail Reconditioning:

- Are the waterbars too low to be effective or too high to allow for easy use of the trail?
- Is the spacing of the waterbars appropriate?
- Are waterbars maintaining their integrity or being washed away?
- If there are damaged waterbars, how many are there and where are they?
- Has trail the reconditioning been effective in preventing loss of control of water and increased erosion?

Hazard Trees:

- Are there hazard trees that remain in the area? If so, how many are there and where are they located?
- Are any fallen trees obstructing the trail? If so, where are they located?

Explanatory Signs:

- Are signs still standing? Are they in good shape? Have the signs remained clear and legible?

Interim Evaluations

The Implementation Team Leader will conduct periodic evaluations (annually as a minimum) with the District and Forest Implementation Team to assess implementation progress, effectiveness monitoring and to determine if parameters measured and sampling frequency meet the planned objectives. **The BAER team understands that monitoring funds could be available for effectiveness monitoring in years 2 and 3 provided that the Fishlake National Forest submits interim reports to request addition funding and provided that the Forest documents and shares their findings.**

Reports

- A DRAFT INTERIM REPORT will be prepared.

  The overall results will be presented in a detailed report during 2004. This report will be submitted to the Forest Supervisor, other unit District Rangers, the Regional Office and all cooperating agencies and other interested parties.

  - Annual Financial Requirements

The annual cost of monitoring is itemized in the following table. The total cost for Year 1 is **$ 7,060**; **$ 6,610** for Year 2; and **$ 6,490** for Year 3. Costs for the first year are higher because of program initiation and establishing the monitoring sites.

(see attached financial worksheet on the following page – updated 08-16-2005)

Financial Worksheet	Year 1	Year 2	Year 3
1. Soil and Hydrology (costs are in present-year dollars)			
MONITORING - 2 storms in Years 1 and 2, with 1 storm in Year 3 - Gather data 1 day; write-up 1 day in Years 1, 2 and 3. Hydrologist and Soil Scientist. Install a tipping rain bucket gage w/ hobo recorder in Year 1. Two people 1 day.	$ 2,500	$ 2,500	$ 1,880
MONITORING - Check hydrophobic soil conditions (done in conjunction with Erosion Control Monitoring)	See Below	See Below	See Below
SUPPLIES - tipping rain bucker gage w/ hobo recorder and software	$ 200	$ 0	$ 0
Soil and Hydrology … Subtotals	$ 2,700	$ 2,500	$ 1,880
2. Erosion Control Measures			
MONITORING - Vegetation Transects—2 days and 3 people to install and measure in Year 1; 2 days and 2 people to measure in Years 2 and 3; 2 days and one person to summarize and write report each year—(total of 8 person days for Year 1 and 6 person days for Years 2 and 3).	$ 2,000	$ 1,500	$ 1,500
SUPPLIES - Film and developing, digital media	$ 90	$ 80	$ 80
Erosion Control Measures … Subtotals	$ 2,090	$ 1,580	$ 1,580
3. Emergency Treatment Protection			
MONITORING – assessment of fence condition and effectiveness – 2 people, 1 day to monitor, 1 person, 1 day to write a report in years 1 through 3. Total of 9 person days over 3 years.	$ 750	$ 750	$ 750
SUPPLIES - Film and developing, digital media	$ 90	$ 80	$ 80
Emergency Treatment Protection … Subtotals	$ 840	$ 830	$ 830
4. Road / Trail Treatments and Hazard Tree Monitoring			
MONITORING – assessment of trail condition and effectiveness of waterbars and trail reconditioning and monitor for presence of hazard trees. 2 people, 1 day to monitor; 1 person, 1 day to write a report in years 1 though 3. Total of 9 person days over 3 years.	$ 750	$ 750	$ 750
SUPPLIES - Film and developing, digital media	$ 90	$ 80	$ 80

Financial Worksheet	Year 1	Year 2	Year 3
Trail Treatment / Hazard Tree …Subtotals	$ 840	$ 830	$ 830
5. Vegetation Recovery and Invasive Plant Monitoring MONITORING – assessment vegetation recovery and monitoring of invasive plant infestations. 1 person, 1 day to monitor; 1 person, 1 day to write a report in years 1 and 2. Total of 4 person days.	$ 500	$ 500	$ 500
SUPPLIES - Film and developing, digital media	$ 90	$ 80	$ 80
Vegetation Recovery and Invasive Plant Monitoring …Subtotals	$ 590	$ 580	$ 580
6. Sign Monitoring MONITORING – monitoring condition of signs. 1 person, 1 day to monitor in years 2 and 3. Total of 2 person days.	$ 0	$ 250	$ 250
SUPPLIES - Film and developing, digital media	$ 0	$ 40	$ 40
Sign Monitoring … Subtotals	$ 0	$ 290	$ 290
7. Document Preparation BAER REPORT AND MONITORING – payment for fees and services required to print, copy and bind a final copy of the BAER Report and Final Monitoring Report; copies will be provided to the Regional Office, Forest and District Staff.	$ 0	$ 0	$ 500
Document Preparation … Subtotals	$ 0	$ 0	$ 500
TOTALS	$ 7,060	$ 6,610	$ 6,490

(Michael D. Smith, Soil Scientist; David Tait, Botanist; Dale Deiter, Hydrologist)