Date of Report: September 26th, 2000

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
(Best estimate of funds needed to complete eligible rehabilitation measures)

(X) 2. Interim Report (# 1)

(X) Updating the initial funding request based on more accurate site data and design analysis

( ) 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: Oldroyd

B. Fire Number: P44030

C. State: Utah

D. County: Piute / Sevier

E. Region: R4 / Intermountain

F. Forest: Fishlake

G. District: D4 / Richfield

H. Date Fire Started: 07-27-2000 @ 1330

I. Date Fire Contained: 08-07-2000

J. Time Fire Contained: @ 1800

K. Suppression Costs: $ 722,000 as of 8-8-2000 ... according to Denise Maddalena / Finance Section

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

- Fireline Waterbarred (miles) 10 (cat lines and hand lines)
- Fireline Re-seeded (miles) 10 (cat lines and hand lines)
- Other Damages ... (identify) 2 miles of trail, ¼ mile of fence and 2 gates

M. Watershed Number: 16030002 / East Fork of Sevier River

N. NFS Acres Burned: 1,149 acres **Total Acres Burned:** 1,329 acres

Land Ownerships … list as follows:

(X) Private (180) ( ) State of Utah ( ) USDI - BLM ( ) Other

O. Vegetation Types:	Most of the vegetation consumed by this unwanted wildland fire consisted of spruce / fir, mixed-conifer with aspen and stable aspen sites occurring upon high mountain plateau sideslopes and the surrounding mountainsides; in addition, a few small areas of mountain big sagebrush intermixed with low sagebrush and perennial grasses were disturbed by the recent burn. To a minor extent ... the riparian plant communities occurring along the Box Creek drainages were slightly charred by this fire incident; these fragile sites were previously supporting scattered patches of willow along with assorted sedges and hydrophytic grasses.
P. Dominant Soils:	The contrasting wildland soils identified within the burned-area consisted of Inceptic Haplocryalfs, Typic Haplocryalfs and Mollic Haplocryalfs within the spruce / fir forests; Alfic Argicryolls and Typic Argicryolls were mapped in areas supporting seral stands of aspen while Pachic Argicryolls were described and documented within stable aspen communities occurring on gently sloping to strongly sloping high mountain plateau sideslopes. To a lesser extent ... a few small areas of Lithic Haplocryolls and Lithic Haplocryalfs actually exist on steep to very steep terrain under low sagebrush with perennial grasses.
Q. Geologic Types:	Most of the soil resources occurring within the Monroe Mountain Subsection on the Fishlake National Forest were formed in colluvium and residuum derived from igneous rocks such as breccia, rhyolite, latite, andesite and basalt. A few small, but distinct areas ... have soils formed in deposits of mixed alluvial sediments.

R. Miles of Stream Channels by Order: (Strahler 1952 method)

1st: 1.1 2nd: 2.6 3rd: N/A 4th: N/A

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

Trails ... 2.52 miles (FS)
Trails ... 0.18 miles (private)

Roads ... 0.91 miles (FS / Maintained)
Roads ... 0.00 miles (FS / 4WD Roads)

Roads ... 0.30 miles (private)

PART 3 … WATERSHED CONDITION / NFS PROBLEM INVENTORY

A. Mapping of the Fire Intensity Zones: (acres)

199 high (15 %)	737 moderate (55 %)	393 low (30 %)

B. Estimation of Water-Repellent soils occurring within the different Fire Intensity Zones: (acres)

168 high (85 %)	184 moderate (25 %)	20 Low (5 %)

Overall Total = 373 acres

C. Rating Soils for Erosion Hazard Potential within the Burned-Area: (acres)

very high	High	Moderate	Low
66 (5 %)	133 (10 %)	439 (33 %)	691 (52 %)

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

1st Year	2nd Year	3rd Year	4th Year
1.3 tons/acre/year	0.28 tons/acre/year	0.06 tons/acre/year	0.01 tons/acre/year

Overall Total = 2,193 tons

(additional erosion over a 48 month period)

E. Average Sediment Potential: 46 cubic yards / mile ^{2} assuming a 25 % delivery coefficient

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

A. Estimated Vegetative Recovery Period: 5 years
B. Design Chance of Success: 95 percent
C. Equivalent Design Recurrence Interval: 100 year
D. Design Storm Duration: 6 hours
E. Design Storm Magnitude: 2.4 inches
F. Design Flow: 4.5 ft^3 / sec / mi^2
G. Estimated Reduction in Infiltration: 1 percent
H. Adjusted Design Flow: 4.6 ft^3 / sec / mi^2

PART 5 ... SUMMARY OF SURVEY & ANALYSIS

A. Describe the Watershed Emergency:

- DETERIORATION OF WATER QUALITY AND AQUATIC RESOURCES ... The Oldroyd Fire Incident occurred upstream of the 303(d) listed -- Lower Box Creek Reservoir. It is on the list for total phosphorus concentrations. Additional phosphorus could be carried into the North Fork of Box Creek through sediment and ash as a result of this burn. The prevention of accelerated erosion and subsequent sedimentation of this stream would help to prevent any further degradation.

  Aquatic monitoring conducted on lower North Fork of Box Creek in 1999 indicates that this stream stretch is below Forest Plan standards with a Biotic Condition Index (BCI) of 69. Without appropriate actions to stabilize the high intensity burned areas occurring alongside the North Fork of Box Creek and above these sections on the surrounding hillsides ... the lower North Fork of Box Creek will likely degrade even further below Forest Plan standards. This would make recovery of this stream stretch an expensive and time consuming process.

  Water quality monitoring at this station showed exceedences of the State standards for phosphorus in the summer and fall of 1999. Results from the spring 2000 samples have not been received. Sediment and ash in the stream could further reduce the water quality in this segment.

  Boreal toads are a state of Utah sensitive species. Aquatic surveys conducted in 2000 have confirmed the importance of the North Fork of Box Creek for boreal toad populations -- particularly at the confluence of the south fork and the North Fork of Box Creek. This area is just downstream from the more intensively burned-areas on each fork. An influx of sediment into the burned stream reaches could lead to aggradation within the channel, along with lateral erosion, further increasing sediment loading into the confluence area. Increased peak flows and sediment transport could also increase down cutting of the stream below landform. Either could prove very detrimental to boreal toads on this stream stretch, reducing their population dramatically.

  An influx of sediment and ash from the high intensity burned areas could lead to a high mortality rate of trout in these burned areas and/or below.

- LOSS OF SOIL PRODUCTIVITY ... Virtually all of the contrasting soils observed within the high fire intensity zones exhibited a moderate to strong degree of water-repellency at the sampling depths of about ½ to 3 inches below the ground surface. This temporary condition has modified the existing site hydrologic function to the point that ... infiltration will be restricted or (in some cases) actually prevented at the soil surface -- resulting in sheet, rill and gully erosion. Hydrophobic conditions may persist for a period of up to 3 years following the burn. All high fire intensity sites are recognized as potential flood source areas. These severely burned areas of Monroe Mountain have a maximum threshold for soil loss tolerance at about 3 to 5 tons/acre/year. Accelerated rates of erosion, resulting from either natural or human caused disturbances, that exceed this listed threshold, will definitely result in adverse impacts to long-term soil productivity -- which is not consistent with the R4 / Soil Quality Standards (FSH 2509.18) under the guidelines of 1) SEVERELY BURNED SITES and 2) INSUFFICIENT PROTECTION with respect to existing ground cover.

B. Emergency Treatment Objectives:

Simply stated ... the objective of emergency rehabilitation is to initiate *" prompt action "* for the immediate treatment of damaged watersheds following an incident of wildfire in order to minimize the detrimental

impacts of the burn. The emergency treatments being recommended by the Fishlake BAER Team are specifically designed to achieve the following results:

1) stabilize the upland hillsides affected by this unwanted wildland fire by using broadcast seeding within most high fire intensity areas; this land treatment will increase surface infiltration and promote the subsequent percolation of water downward through the soil profile ... which will actually moderate flash flood hazards during the first, second and third years after the burning disturbance.

2) implement a strategy for the protection of the existing ATV connector trail within the burned-area and prevent a loss of water control from the existing transportation surface.

3) treatments are intended to reduce the influx of ash and sediment into the North Fork of Box Creek stream system. Seeding, straw wattling and contour felling are being proposed on the high intensity burned areas adjacent to the stream. These treatments are all designed as prevention measures to slow the movement of mobilized sediments from the hillslopes located adjacent to the streams. This will help prevent any further degradation to the water quality for the 303(d) listed reservoir and its related aquatic resources -- including sensitive species.

In addition the Fishlake BAER Team recommends that the areas being treated with land or trail treatments be monitored for a period of up to 3 years in order to determine the overall effectiveness of these emergency measures. This action would include the monitoring of TES animal populations along with suspected locations of noxious weeds.

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

Land ... 80 % Channel ... N/A Trails ... 80 % Other ... N/A

D. Probability of Accomplishing Treatment Success:

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

	1	3	5
♦ **Land**	**80 %**	**90 %**	**100 %**
♦ **Channel**	**N/A**	**N/A**	**N/A**
♦ **Trails**	**85 %**	**80 %**	**75 %**
♦ **Other**	**N/A**	**N/A**	**N/A**

E. Cost of Taking No-Action: (including loss) $ 3,620,000 ... (approximated w/ District Staff 08-10-2000)

F. Cost of Selected Alternative: (including loss) $ 2,260,000 ... (approximated w/ District Staff 08-10-2000)

G. Skills Represented on Burned-Area Survey Team:

(X) Soils (2)	**( ) Geology**	**(X) Timber**	**(X) TES Plants**
(X) Hydrology (2)	**(X) Range**	**(X) Wildlife - TES**	**(X) Fire Management**
(X) Ecology (2)	**(X) Fisheries**	**( ) Research**	**(X) Archeology**
(X) GIS Staff (2)	**( ) USDI - BLM**	**(X) District Staff (5)**	**(X) Engineering (2)**
(X) Contracting	**( ) USDA - NRCS**	**(X) Utah DWR**	**(X) Biological Tech.**

Team Leader: Michael D. Smith / Soil Scientist

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Fishlake BAER Team

Rationale for Requesting Additional WFSU - SULT Funds

During the past few days, the Fishlake National Forest has had the opportunity to collect more accurate site information in order to complete a design analysis of the land treatments being scheduled for the Oldroyd Fire Incident. Our initial estimate of conducting broadcast seeding on 168 acres of HIGH intensity burned-areas was correct; the requested authorization of $ 6,300 should be adequate to cover this planned expenditure. *(FYI, the 2,000 lbs. of seed arrived in Richfield, Utah on 9-25-2000 and will be flown over the burned-area using a Type III helicopter on Thursday 9-28-2000)* I spent much of yesterday meeting with Robert Sanders, Assistant Fire Control Officer here on the Fishlake National Forest to discuss the upcoming contour felling treatments. We plan to use the RIFC / Fire Crew - Richfield Unit to implement this treatment on-the-ground. We've utilized the DEM files of GIS to determine the appropriate spacing between the log barriers *(i.e. 10 feet, 20 feet, 30 feet etc.)* based upon the slope of the upland terrain within the different treatment areas. In addition, we traveled with the District Ranger out to the Oldroyd burn in a Type III helicopter to view the disturbed landscapes and discuss the schedule of implementation for the different land and trail treatments. At this time, we are requesting an interim authorization to add another 30 acres of contour felling treatments at a cost of $ 525 / acre for a total of $ 15,750. It should be noted, we have increased our cost / acre for this additional tree felling compared to our Initial BAER Report -- due to the difficult access and location of these burned-areas within the perimeter of the Oldroyd Fire. In addition, we will require approximately $ 1,900 in funding for miscellaneous supplies (24 " wood stakes, 3/8 " re-bar, timber carriers, replacement bars, chains, files, air filters, bar oil, 2 cycle fuel, wedges etc.) to be used by the RIFC crew. When combined with our initial approval and authorization of $ 10,625 ... this would make the overall total for the contour felling treatments at $ 28,275 for the Oldroyd Fire Incident.

Secondly, we need another $ 1,750 to complete the implementation of the 3,000 linear feet of straw wattles along the Box Creek drainages. The wattles were recently purchased from the Granite Seed Company of Lehi, Utah and will be anchored to the ground using 24 " wood stakes during the next few days by resource specialists working at the Supervisor's Office, employees of the Richfield Ranger District and again, members of the RIFC Fire Crew. When combined with our initial approval and authorization of $ 4,500 ... this would make the overall total for the straw wattle treatments at $ 6,250 for the Oldroyd Fire Incident.

Otherwise ... the funding currently authorized by the initial report for the temporary fence, signs and trail treatments seems adequate to complete these jobs in a timely manner. FYI ... we're going to use the implementation of these different treatments as an opportunity to get some photographs for our upcoming monitoring study. We will be using hand-held GPS units to establish some photo points and plan on marking these sites in the field with metal fence posts. Looking forward to it .....

Michael D. Smith

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

(Interim Report # 1 ... Oldroyd Fire Incident -- P49074)

A1. Primary Land Treatments

			NFS Lands			Other Lands			
Line Items	**Units**	**Unit Cost $**	**Number of Units**	**WFSU–SULT $**	**Other $**	**Number of Units**	**Fed $**	**Non – Fed $**	**Total $**
Surface Stabilization & Protection ... (contour felling)	**Acre**	**$ 525**	**30**	**$ 15,750**					**$ 15,750**
Supplies for RIFC Fire Crew ... to be used during contour felling treatments on Monroe Mountain	**Job**	**$ 1,900**	**1**	**$ 1,900**					**$ 1,900**
Surface Stabilization & Protection ... (transport and anchor straw wattles along the Box Creek drainages)	**Job**	**$ 1,750**	**1**	**$ 1,750**					**$ 1,750**

A1. Supplemental Land Treatments

N/A									**-0-**

B. Channel Treatments

N/A									**-0-**

C. Roads, Trails and Other Treatments

N/A									**-0-**

D. Ecosystem Management

N/A									**-0-**

E. Initial and Interim BAER Evaluations / Monitoring / Administrative Support Services

FS / BAER Team (M.Smith - salary)	**Day**	**$ 350**	**3**	**$ 1,050**					**$ 1,050**
BAER (supplies)	**Misc.**	**$ 175**	**1**	**$ 175**					**$ 175**
Type III Helicopter	**Hour**	**$ 505**	**1**	**$ 505**					**$ 505**

F. TOTALS	**---**	**---**	**---**	**$ 21,130**	**-0-**	**-0-**	**-0-**	**-0-**	**$ 21,130**

PART 7 … APPROVALS

1. **Forest Supervisor: /s/ Rob Mrowka** **Date: September 27, 2000**

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