United States Department of Agriculture **Forest Service** **Nez Perce National Forest** **Route 2, Box 475 Grangeville, ID 83530 208 983-1950**

File Code: 6520/2520-3 **Date:** May 15, 2003
Route To:

Subject: Three Bears Fire, Final BAER Accomplishment Report

To: Regional Forester

Enclosed is the final Burned Area Emergency Rehabilitation (BAER) report for the 2000 Three Bears portion of the Wilderness Complex Fire (only the portion on the Nez Perce National Forest.)

Total authorization for the Nez Perce was $25,000. Treatments included weed control and trail drainage improvement. Trail drainage improvement was accomplished: Installed 100 drain dips or water bars, re-graded trail tread on 6000 feet and cleaned ditches, culverts, and French drains.
Only one acre of weed spraying was done. Weed monitoring transects were established in Fall 2000 and have been read each year since. That effort has been funded since 2002 in collaboration with PNW research and National Fire Plan funds.

A total of $22,064 has been expended. This account can be closed out.

Contact Pat Green (208 983-1950) if you have questions.

/s/ Bruce E. Bernhardt
BRUCE E. BERNHARDT
Forest Supervisor

USDA-FOREST SERVICE FS-2500-8
(7/00)

Date of Report: 7 May, 2003

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[ ] 1. Funding request for estimated WFSU-SULT funds
[X] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

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

[ ] 2. Interim Report
[ ] Updating the initial funding request based on more accurate site data or design analysis
[ ] Status of accomplishments to date

[X] 3. Final Report (Following completion of work)

PART II - BURNED-AREA DESCRIPTION

Fire Name: Wilderness Complex
Three Bears (NPNF and BTNF portions

B. Fire Number: MT-BRF-11444 Wilderness Complex
ID-NPF-18703 Three Bears

C. State: Idaho

D. County: Idaho

E. Region: 01 (Northern)

F. Forest: Bitterroot and Nez Perce

G. District: West Fork (Bitterroot)
Red River (Nez Perce)

H. Date Fire Started: July 31, 2000 (other fires in the Complex started as late as August 11, 2000)

I. Date Fire Controlled: 75% contained as of Sept 10, 2000

J. Suppression Cost: $790,000 (Wilderness Complex) /$821,824 (Three Bears, including Payette NF)

K. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): NA
2. Fireline seeded (miles): NA
3. Other (identify): NA

L. Watershed Number: 17060207 (Salmon River including 1706020704: Bargamin Creek, 170602071003: Sabe Creek)
17060301 (Upper Selway River including 1707030103: Middle Selway Canyon, 1706030104: Whitecap Creek, 1706030105: Indian Creek, 1706030107: Selway headwaters, 1706030108: Little Clearwater, and 1706030109: Running Creek)

M. Total Acres Burned: 76,634 (plus approximately 748 acres for Jack and Trail10 fires)
NFS Acres (76,634) Other Federal (0) State (0) Private (0)

N. Vegetation Types: Douglas fir and ponderosa pine forest, lodgepole pine and subalpine fir forest, foothills grassland, Douglas fir and grand fir forest.

O. Dominant Soils: Andic Cryochrepts and Dystric Cryochrepts, sandy-skeletal, and Typic Dystrochrepts and Ultic Haploxerolls, sandy skeletal.

P. Geologic Types: Granitics, with minor schist and gneiss

Q. Miles of Stream Channels by Order or Class:
Echo: 1.6 1st order, 1.3 2nd order
Fitz: 2.6 first order, 1.1 2nd order, 1.8 4th order
Hamilton: 32.7 1st order, 8.7 2nd order, 8.0 3rd order, 1.6 4th order
Jack Creek: 1.3 1st order
Lonely: 35.7 1st order, 11.4 2nd order, 7.2 3rd order, 6.4 4th order, 6.7 5th order
Thirty: 9.8 1st order, 3.0 2nd order, .6 3rd order, .9 4th order, 3.6 6th order
Three Bears: 57.1 1st order, 21.5 2nd order, 4.8 3rd order, 1.0 4th order, 2.6 5th order, 18.4 7th order
Throng: 5.2 1st order,
TOTAL: 146.5 1st order, 47.8 2nd order, 20.6 3rd order, 11.7 4th order, 6.2 5th order, 18.4 7th order

R. Transportation System

Trails:		Roads:	
Echo:	1.6	Lonely	5.5
Fitz:	2.7	Thirty	3.5
Hamilton	7.2	TOTAL:	9.0
Jack Creek	1.8		
Lonely	23.2		
Thirty	7.5		
Three Bears	40.3		
Throng	1.7		
TOTAL	99.5		

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 76% (low) 12% (moderate) 12% (high)
The Hamilton fire experienced 52% severe or moderate fire and the Lonely fire 31% severe or moderate fire.

B. Water-Repellent Soil (acres): 34,485 or 45%

C. Soil Erosion Hazard Rating (percent):
0 (low) 74% (moderate) 26% (high)

D. Erosion Potential: .12 tons/acre
Erosion potential ranges from .08 tons/acre for the Echo and Fitz fires to 1.57 tons/acre for the Hamilton fire

E. Sediment Potential: 18 cubic yards / square mile, assuming a bulk density of 1.3 gm/cm^3, unrouted.

Flat Creek is predicted to experience sediment of 34 percent over natural rates in the first year after fire.

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years):	3 herbs and shrubs, 30-40 trees
B. Design Chance of Success, (percent):	80
C. Equivalent Design Recurrence Interval, (years):	10
D. Design Storm Duration, (hours):	24
E. Design Storm Magnitude, (inches):	2.0
F. Design Flow, (cubic feet / second/ square mile):	13.4
G. Estimated Reduction in Infiltration, (percent):	15%
H. Adjusted Design Flow, (cfs per square mile):	19.0

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

Threat to life and private property: Increased risk of snag fall and some potential for high water flows in campsites along stream in confined valleys.

Threat to federal property: Potential loss of road and trail tread or drainage structures due to increased runoff or sloughing.

Threat of soil loss: Predicted soil loss is well within natural range for fire effects in functioning wilderness ecosystems. No emergency exists.

Threat of water quality deterioration: An emergency exists due to projected water yield increases from the fire that are likely to cause road and trail-related sediment increases. Sediment yield is expected to increase slightly in streams draining the Echo, Fitz, Throng, and Three Bears fires. Local small debris torrents are likely in steep first order drainages. Sediment yield is expected to increase moderately in Flat, Hamilton, Kim, Three Lakes, Goat, and Swet Creek as a result of the Lonely and Hamilton fires. These watersheds are otherwise in excellent condition and water quality effects will be of short duration and within natural ranges for functioning wilderness ecosystems. No emergency exists from natural water quality effects, but additional effects from failures of drainage systems of roads and trails will magnify negative water quality effects beyond natural. Relatively small investments in supplementary road maintenance and trail drainage restoration will minimize these effects and protect federal investments.

Threats to ecosystem integrity: The expansion of invasive non-native plants into fire-disturbed areas from nearby source areas poses a significant threat to the integrity of wilderness plant communities and ecosystem processes. This threat is greatest in the Three Bears and Thirty fires. Knapweed, sulfur cinquefoil and rush skeletonweed occur in one or more of the burned areas. The team concludes that invasion or expansion of noxious weeds is likely to alter soil stability, nutrient cycling, wildlife habitat, and fire regimes, with consequences for long-term ecological diversity and stability.

Threats to heritage resources: Emergency has not been determined. Heritage sites have not been completely surveyed because of wilderness travel constraints. Additional funds will be needed (but are beyond the scope of BAER funding) to complete assessments. Several sites within the Lonely and Thirty fire perimeters are thought to be at risk due to fire-caused erosion or increased sedimentation. Site types include prehistoric and historic travel routes, campsites, stone tool manufacturing areas, rock shelters, a cache pit, cambium-peeled trees, and a cabin. Trails where watershed rehabilitation work will be done may be found to be historically significant travel routes and require coordination with heritage resource specialists to protect those values during rehabilitation work.

Threats to threatened and endangered plants and animals: No emergency exists. Aquatic habitats in good condition are well connected and populations of bull trout and steelhead are well distributed in Selway River tributaries. Spring chinook salmon occur in the Little Clearwater. The status and distribution of fish species in Sabe Creek are less well documented but it is thought to support populations of bull trout and steelhead. Although Hamilton Creek may experience increased sedimentation and water yields, this watershed is 37% of the Sabe Creek drainage, and other suitable habitat is well connected to provide source areas for refounding. It was observed in the Swet Creek fire that bull trout, westslope cutthroat trout and steelhead were present the first year after the fire, and as well represented as before the fire in subsequent years.

No emergency exists for threatened or endangered wildlife species. The severity and burn mosaic of the fires may result in short term displacement of some species, and benefit others that require early seral or snag habitat.
Local subpopulations of candystick may have been affected in the Hamilton and Throng fires, where known populations were in areas of moderate or severe fire. Because the fire severity and extent were well within natural ranges, and that large areas of similar unburned communities remain nearby, it is concluded this does not represent an emergency. A population of giant hellebore occurs along the Salmon River in an area of low severity fire. Burn effects on this population have not yet been determined.

B. Emergency Treatment Objectives:

Primary objectives of the treatments are to sustain ecological integrity in the wilderness, minimizing water quality effects from roads and trails, minimizing spread of noxious weeds. Additional treatments to stabilize heritage resources or capture data from damaged or destroyed heritage sites may be recommended pending completion of further assessments.

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

Land **80** % Channel ___ % Roads **80** % Other **80** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	80	90	95
Channel			
Roads	80	90	95
Other			

E. Cost of No-Action (Including Loss): Total: $4,170,000 includes costs of road and trail reconstruction in event of failure, and cost of ecological restoration of weed dominated sites. Replacement costs of heritage resources cannot be computed but need to be considered. Chronic effects to water quality and listed and sensitive fish as a result of no action should also be considered. Lost recreation visitor days from lack of trail access and displacement from weed-dominated campsites are also a factor

F. Cost of Selected Alternative (including loss):_ $253,300 Potential loss of heritage sites are difficult to value.

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Pat Green

Email: pgreen@fs.fed.us Phone: 208-983-1950 FAX:208-983-4099

Team members and contributors:	Expertise	Unit
Ken Andrews	Engineering	BTNF, SO
Steve Armstrong	Heritage	NPNF, SO
Steve Blair	Wildlife	NPNF, SO
John Crotinger	Engineering	NPNF, SO
Laurie Doman	Trails	NPNF, SO
John Fantini	Trails	NPNF, Clearwater RD
Judith Fraser	Trails	BTNF, West Fork RD
Nick Gerhardt	Hydrology	NPNF, SO
Dave Green	GIS	NPNF,SO
Nick Hazelbaker	Trails	BTNF, West Fork RD
Bart Hoag	Fire	BTNF, West Fork RD
Mike Jakober	Fisheries	BTNF, RD
Bill Koncerak	GIS	NPNF, Red River RD
Betsey Koncerak	Fisheries	NPNF, Red River RD
Leonard Lake	Botany	NPNF, SO
Jill Lamb	Weeds	NPNF, Red River RD
Gary Loomis	Trails	NPNF, Red River RD
Charlie Mabbott	Trails	BTNF, West Fork RD
Dave Mays	Fisheries	NPNF, Red River RD
Linda Pietarinen	Botany	BTNF, SO
Randy Borniger	Wilderness	NPNF, Red River RD
Mary Williams	Heritage	BTNF, SO

H. **Treatment Narrative:**

Land Treatments:

Weed treatments

Objective

The purpose of the treatment is to maintain ecosystem integrity by treating selected sites where burned, susceptible habitats have been invaded by knapweed, sulfur cinquefoil, or rush skeleton weed, and the nearby infestations serving as source areas to the invasions. By reducing the amount of weed seed in the area, and treating new populations, native plant communities can have time to recover with less competition from non-native invasive plants.

Methods

Treat burned areas within or adjacent to source weed populations, selected trails and roads with picloram (Tordon) in spring 2001 using a backpack sprayer within 500 feet either side of selected trails and within 500 feet of the Salmon river, where source areas are present, or new invasions present (25 acres). Treat 2 acres with hand grubbing on riverside beaches. Selected sites are shown on the Treatment Map for the Three Bears Fire. Treat 50 feet on each side of the Paradise road 6223 and Montana road 468 between Magruder Crossing and Kim Creek Saddle, both within the Thirty fire perimeter and in unburned infested areas that

would provide seed to invade burned areas (19 miles, 230 acres). Treat upslope areas within the Thirty fire perimeter and areas long the 6223 road and 468 road with approved bio-control agents (100 releases). Effects of bio-control and herbicide treatments at the proposed rates and locations are addressed in USDA Weed EIS (1999) for the Frank Church and USDA Weed EA (1996) for the 6223 and 468 road corridors.

Channel Treatments:

None requested.

Roads and Trail Treatments:

Road Storm Patrols

Objective
The most critical objective is to clear existing drainage structures of debris, clean and reshape drainage ditches, and road blading to maintain effective out sloped drainage capacity.

Methods
Forest road crews will perform inspections, clean culverts, repair and clean ditches, and re-grade road segments to maintain drainage effectiveness on out sloped segments after storms and runoff events. Highest priority is the 468 road from Observation Point to Kim Creek Saddle. The Paradise road 6223 from Indian Creek to Sheep Creek is second priority, because lower risk to drainage effectiveness is predicted. This treatment is preferred over more intensive structural modifications because the enabling legislation for the wilderness area specifies that the road be maintained as a narrow, low standard road to provide a primitive driving experience. If the storm patrols are not adequate to prevent unacceptable erosion and road damage, a request for funds to provide additional drainage structures (culverts, waterbars, dips) will be submitted.

Trail Stabilization

Objective
Approximately 39 miles of trail are expected to be at risk. The threats are from failure of trail drainage systems because of their damage in the fire, or drainage systems inadequate to handle increased post-fire runoff. This may cause soil erosion on the trail, and the trail may divert runoff to streams, increasing stream sediment loads. Stream diversion onto trails may also result in loss of trail by rilling, gullying, or mass wasting. Trail numbers are 96, 502, and 577 on the Nez Perce portion of Three Bears, 113 and 114 on the Bitterroot portion of Three Bears, and 3, 7, 13, 19, 27, 74, 89, and 575 on the Wilderness Complex.

Methods
Treatments include installation of 447 water bars on 39 miles of trail, installing 11 grade dips, cleaning ditches, drains and culverts of rock and debris on 1 miles of trail, or reconstruction of ditches, drains and culverts, and spot stabilization and outsloping trail to provide for better drainage on 1417 feet of trail.

Other Treatments

Stabilize the Nez Perce Trail

Objective
This will prevent loss of the significant historic trail features as well as minimize erosion and sediment from impaired drainage capacity of the trail.

Methods
Addition of waterbars and tread grading to drain runoff and avoid concentrations of water, rilling, or trail failure on 1.7 miles of trail 7 and 13 between the trailhead on Montana Road 468 and Flat Creek.

H. **Monitoring Narrative:**

Monitoring will be focused on first year effectiveness of BAER treatments and, for fisheries, the consequences of no treatment or to identify the need for subsequent treatment.

Fisheries: In Flat Creek, monitor the effectiveness of no land or channel treatments. This stream supports sensitive spring chinook, listed bull trout and sensitive westslope cutthroat. There is a prior basin wide survey and a repeat survey in 2001 would provide much needed information to corroborate the conclusions drawn from the Swet Creek fire, which provided the basis for no treatment in the Wilderness Complex. Additional funds would be sought for monitoring in 2003. Responsibility: Bitterroot

Vegetation: Monitor noxious weed encroachment into burned areas, with and without herbicide or other treatment. Responsibility: Nez Perce

Heritage: Trail stabilization work on historic trails will require some monitoring by heritage specialists. Responsibility: Bitterroot and Nez Perce (2/3:1/3 in funding)

Roads: Road patrols to ensure road drainage effectiveness are considered a treatment, because problems will be treated as part of the inspections. However, if road storm patrols are not adequate to address road erosion from post-fire watershed response, this information will be used to develop an alternative recommendation for road erosion control. In addition, monitor road crossings in spring 2001 to assess distance traveled of road-produced sediments. Responsibility: Bitterroot

Trails: Monitor effectiveness of trail drainage work to ensure it is effective in controlling erosion and loss of federal investments. Responsibility: Bitterroot and Nez Perce (2/3:1/3 in funding)

Part VI – Emergency Rehabilitation Treatments and Source of Funds by Land Ownership

			NFS Lands				
		Unit	# of	WFSU	Bitterroot NF	Nez Perce NF	Total Nez Spent
Line Items	Units	Cost	Units	SULT $			
A. Land Treatments							
Weed treatments	acres	$57	1252	$71,740	$64,000	$7,740	300
Subtotal Land Treatments				$71,740	$64,000	$7,740	300
B. Channel Treatments							
Subtotal Channel Treat.				$0			
C. Road and Trails							
Road storm patrols	mile	$1,500	9	$13,500	$40,500	0	0
Trail stabilization	miles	$1,892	39	$73,788	$53,936	$19,852	$15,564
Subtotal Road & Trails				$87,288	$94,436	$19,852	$15,564
D. Structures							
Subtotal Structures				$0			
E. BAER Evaluation							
Salary	days	$225	65	$14,625	$4,000	$10,625	$4,000
Heritage site damage surveys					$30,000	0	0
Per diem	days	$80	15	$1,200		$1,200	$1,200
Helicopter	hours	$700	2	$1,400		$1,000	
Subtotal BAER evaluation				$17,225	$34,000	$12,825	$5,200
G. Monitoring Cost							
Weeds, roads, streams, trails	yrs	$20,000	1	$20,000			
Subtotal Monitoring				$20,000	$23,160	$11,500	$1,000
H. Totals				**$196,253**	$215,596	$51,917	$22,064

PART VII - APPROVALS

1. /s/ Jeffrey S. Amoss for — October 1, 2000
   Forest Supervisor (signature) — Date

2. Bruce Bernhardt — Sept. 30, 2000
   Forest Supervisor (signature) — Date

3. /s/ Kathleen A. McAllister, for — October 12, 2000
   Regional Forester (signature) — Date