Date of Report: 8/11/2008

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

[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: Cold Springs Fire

B. Fire Number: WA-GPF-000005

C. State: Washington

D. County: Yakama

E. Region: 6

F. Forest: Gifford Pinchot

G. District: Mount Adams

H. Fire Incident Job Code: P6EBQ3

I. Date Fire Started: 7/12/2008 1930

J. Date Fire Contained: August 1, 2008

K. Suppression Cost: $ 10 Million

L. Fire Suppression Damages Repaired with Suppression Funds
1. **Fireline waterbarred (miles)**: Not completed
2. **Fireline seeded (miles):** Not completed
3. **Other (identify):**

M. Watershed Number: White Salmon River -- 1707010510

N. Total Acres Burned: from InciWeb (http://www.inciweb.org/incident/1428/)
[4723] NFS Acres [1623] Tribal [1076] State [307] Private

O. Vegetation Types: Grand fir/elk sedge (26 %), Subalpine fir, mountain hemlock, whitebark pine open parks (22 %), Mountain hemlock/huckleberry/beargrass (16 %), Lodgepole pine, shore pine, climax or stable (12 %), and Subalpine fir – lodgepole pine (9%).

P. Dominant Soils: Nearest established NRCS series similar to these soils are Timberhead and Kingtain. GPNF Soil Resource Inventory (SRI) Soil Map Units 45 and 46 dominate areas of moderate and severe burn severity. Derived from basalt, glacial till and volcanic ash, soils are often shallow with exposed rock on steep slopes.

Q. Geologic Types: Basalt flows, fractured, and glaciated. Areas of Mount Adams are prone to debris avalanches and lahars.

R. Miles of Stream Channels by Order or Class: Class three: 3.3 miles, Class four: 16.1 miles

S. Transportation System

Trails: 8.4 **miles** **Roads:** 1.5 **miles**

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 902 **(low)** 2199 **(moderate)** 347 **(high)**

B. Water-Repellent Soil (acres): < 1 acre

C. Soil Erosion Hazard Rating (acres): 717 **(low)** 3831 **(moderate)** 0 **(high)**

D. Erosion Potential: 7.9 tons/acre (moderate burn severity) to 12.3 tons/acre (high burn severity), in areas with sediment delivery potential (ERMiT model used to estimate delivered sediment).

E. Sediment Potential: 1813 to 3045 cubic yards/square mile.

PART IV - HYDROLOGIC DESIGN FACTORS

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

B. Design Chance of Success, (percent): 70

C. Equivalent Design Recurrence Interval, (years): 10

D. Design Storm Duration, (hours): 24

E. Design Storm Magnitude, (inches): 1.0

F. Design Flow,(cubic feet/second/square mile(CSM)): 114-136

G. Estimated Reduction in Infiltration, (percent): < 1%

H. Adjusted Design Flow, (CSM): 138-170

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats (narrative):

1. **Soils:** Areas of moderate and high burn severity removed effective groundcover in numerous named and unnamed drainages that eventually flow into Gotchen Creek, and then the White Salmon River. The primary difference in mapping between moderate and high burn severity is related to the amount of soil heating and loss of the duff layer. On sites with high burn severity the duff layer is completely consumed, there is deep ground char, and the soil is visibly reddish or orange on severely burned sites. On sites with moderate burn severity the duff may be deeply charred or completely consumed, but the underlying mineral soil surface is not visibly altered. Light colored ash may be present. On sites with moderate burn severity, there is the potential for needlecast, which may provide some protection to the soils. There is no potential for needlecast in areas with high burn severity.

Except for the Aiken Lava Bed and Snipes Mountain cinder cone, the topography of the Forest Service land burned is dominated by flat benches with steep (>30%) intervals where shallow soils may have 30 percent of their surface exposed to bedrock. Exposed rock acts as a reduction in ground cover; it may reduce raindrop impact, but increase overland flow. Where duff has been consumed, there is a higher likelihood of soil particle detachment by overland flow.

Much of the area has a layer of soil 1 to 5 inches below the soil surface which is resistant to wetting, responding similar to a hydrophobic soil in field testing. This layer occurs in unburned areas and its resistance to water absorption is thought to be a natural property of some volcanic ash soils, especially when they are dry.

There is a potential for losses in soil productivity due to an increased risk of soil erosion. The removal of effective soil cover has increased the potential for surface erosion, and off-site sediment transport is elevated above natural conditions. Soil loss is anticipated to be greatest primarily where burn intensity was highest, with moderate burn areas at a higher risk as well.

2. **Roads and Trails**: Increases to erosion and post-fire surface runoff poses a risk to the Cold Springs, Snipes Mountain, and Pineway trails. Approximately 6.0 miles of trail (moderate use) will be affected.

The Cold Springs trail (# 72, about 1.4 miles affected), oriented in an approximately North-South direction is in the portion of the Cold Springs fire west of the lava beds and includes areas of moderate and high burn severity. The Snipes Mountain trail (# 11, about 2.3 miles affected) also oriented in an approximately North-South direction along the eastern edge of the lava beds, passes through areas of moderate and high burn severity. The Pineway trail (# 71, about 2.3 miles affected), is oriented in a Northwesterly direction from the 285 road. The portions of the trail that are affected pass through areas of low, moderate, and high burn severity.

Forest Road 8020150 road is the only road in the fire area. Three intermittent streams cross the last half mile of road where the fire induced sediment load and downed wood could be transported downstream of the fire area during a significant runoff event. Currently no culverts exist at these road/stream crossings. These crossings may pond surface runoff allowing deposition of sediment and wood material either above the road, on the road or below the road.

The risk of the runoff and material damaging or blocking the road is high. Construction of rolling dips are recommended at these three stream crossings (swales) at the end of this road.

Two of the intermittent streams join and cross the FR8020 at milepost 0.8 about 3,000 feet downstream. A culvert exists at this road/stream crossing location and is considered to be at a high risk to catch excessive sediment load and plug the culvert inlet during a significant storm event as the stream course runs through disturbed ground (dozer line). The culvert was blocked by a high sediment load during the February, 1996 peak flow event. This road is scheduled for decommissioning. Removal of the culvert along with appropriate erosion control measures would eliminate the risk of the culvert washing out in the event of higher post-fire peak flows and associated sediment loads.

3. **Fisheries**: None of the streams within the fire perimeter are fish bearing due to the lack of perennial streams. Streams within the perimeter of the burned area drain into Gotchen Creek which flows sub-surface about 1.6 miles downstream of the Cold Springs fire boundary. As a result, none of the sediment originating from the burned area will be delivered into any fish bearing streams.

4. **Invasive Plants**: As the number of Cold Springs Fire personnel grew, additional private land was leased for crew sleeping and parking. Spotted and diffuse knapweed Class B noxious weeds were found. Prevention measures included handpulling of existing plants, flagging off heavily infested areas from camping or parking and a weed washing station at Pineside Sno-park. Approximately 80% of the vehicles were washed enroute to the fire. The helibase also had spotted and diffuse knapweed present. Sling loads were dropped at 4 sites in Division D. In addition bulldozers, crew carriers and other equipment used to fight the fire may have brought in noxious weed seeds from many off-site locations. The drop points, parking areas, sling spots and medic sites, dozer lines, handlines and the burned area may be invaded by invasive plants not currently growing in the vicinity of the Cold Springs Fire.

Populations of spotted and diffuse knapweed occur along the Forest Highway 17 right of way and adjacent private land. Isolated populations were found in the pullouts below the junction of Roads 8225 and 8200 and Pineside Sno-park within 4 miles of the westside of the burned area. Noxious weed seeds from the nearby populations may be spread along the road corridors by vehicles, wildlife, hikers, and bikers.

B. Emergency Treatment Objectives (narrative):

Prevent probable fire-related damage to roads and trails due to anticipated increased post-fire streamflows and sediment by performing the minimum amount of drainage/erosion control work necessary to reduce the risk of resource damage.

Warn the public of the dangers associated with hazard trees along trails by signing all trail heads and posting information on the Forest's website.

Ensure the safety of BAER implementation personnel by removing hazard trees along trails where drainage/erosion control work is implemented by removing hazard trees along the trail.

Provide for the early detection of invasive plants invading the burned area from adjacent populations or various fire-fighting equipment (dozers, trucks, etc.).

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

Land NA**%** **Roads 80 %** **Trails** Q1 treatment 90% Q3Treatment – 60% **Protection/Safety** 95**%**

D. Probability of Treatment Success

	Years after Treatment		
	1	**3**	**5**
Land	75	70	70
Roads	90	90	90
Trails	90	90	90
Protection/Safety	90	90	90

E. Cost of No-Action (Including Loss): $ 252,500

F. Cost of Selected Alternative (Including Loss): $ 109,194

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology	**[X] Soils**	**[X] Geology**	**[X] Trails (consulted)**
[X] Forestry	**[X] Wildlife**	**[ ] Fire Mgmt.**	**[X] Engineering (consulted)**
[ ] Contracting	**[ ] Ecology**	**[X] Botany**	**[X] Archaeology (consulted)**
[ ] Fisheries	**[ ] Research**	**[ ] Landscape Arch**	**[X] GIS**

Team Leader: Ivars Steinblums

Email: isteinblums@fs.fed.us **Phone**:503-668-1780 **FAX**: 503-668-1423

H. Treatment Narrative:

Land Treatments:

Treatment # L1, Invasive Species Assessment (Detection)

Purpose: Post fire assessments will ensure early detection and identify subsequent treatment if necessary to prevent the spread of noxious weeds into the Cold Springs fire where they would be difficult and costly to control. Detection assessments are intended to reduce the post-fire potential for significant increase in noxious weed populations that could spread into the burned area and quickly out-compete native vegetation which could cause erosion problems in the future. In order for native vegetation to establish successfully, new populations of noxious weeds need to be located during the first three years after the burn and prevented from establishment and spreading.

Conduct a Invasive Species (i.e, noxious weeds) detection asessment in 300 acres along the 6 miles of fire line which is in close proximity to known noxious weed populations, drop points, parking areas, sling spots and medic sites. Detection assessments would be conducted to determine if treatment of noxious weeds is warranted. If noxious weeds are detected the first year, an invasive species emergency stabilization treatment and assessment plan would be submitted to request funding for treatment and effectiveness assessment the second year, and third year if necessary.

Acres (300) identified for detection assessment were calculated based on a 300' buffer from the center (both sides) of 6 miles of fire line at the west edge of the burned area in sections 35,1, 2, 11,12,18,17,16 and 32 and the drop points, parking areas, sling spots and medic sites and the burned area may be invaded by invasive plants not currently growing in the vicinity of the Cold Springs Fire. An assumption has been made that this area of the Cold Spring Fire is at greatest risk for spread of noxious weeds due to the risk of exposure from invasives in base camp and proximity of known sites to seed dispersal corridors along roads that connect to the fire line, and their proximity to "Soil Burn Severity 3 and 4"burned areas.

Personnel costs were calculated based on a high intensity survey method which would require transects approximately 5'-8' apart through the survey area as defined above. Using the high intensity survey method it is expected that approximately 20 acres per day would be surveyed by a Forest Service botanist.

Roads and Trail Treatments:

Purpose: Implement measure to prevent damage to roads and trails from increased runoff and sediment delvivery from the burned area.

Treatment # R1---Dips in FR8020150 at MP 2.2, 2.5, and 2.7 in Q4 FY08 and/or Q1 FY09: Dips will be constructed on 3 sites on this road where intermittent streams cross the road.

Treatment # R2---FR8020150 MP 0.8 in Q4 FY08 and/or Q1 FY09: Remove 48" culvert/fill and implement stabilization/erosion control measures on the site.

Treatment # T1---Clean all drainage features (water bar outlets) in Q4 FY08 - Clear all drainage feature to ensure proper function prior to the first significant rains.

Treatment # T2---Trail drainage in Q3 FY09: Construct additional waterbars, etc., to reduce the potential for significant trail damage from accelerated runoff concentration and surface erosion from anticipated fire effects on approximately 6.0 miles of trail.

Protection/Safety Treatments:

Purpose: Implement actions to allow for the safe implementation of BAER treatments along the Cold Springs, Pineway, ans Snipes Mountain Trails.

Treatment #S1---Close/sign trails in Q4 FY08. Install trail closure signs, produce information packages, and send press releases to inform the public of post fire trail hazards.

Treatment #S2---Trail Hazard Tree Abatementin Q3 FY09: Remove high hazard trees along approximately 6.0 miles of trails to reduce the risk to BAER team implementation personnel and crews doing the trail drainage work.

I. Monitoring Narrative:
(Describe the monitoring needs, what treatments will be monitored, how they will be monitored, and when monitoring will occur. A detailed monitoring plan must be submitted as a separate document to the Regional BAER coordinator.)

Effectiveness Monitoring will be completed in **Q1 of 2009** to document the objectives of native ground cover re-establishment in the areas of Moderate Burn Severity. Effectiveness Monitoring of all other BAER treatments with the exception of Invasive Weeds will be conducted after the snows have melted (Q3 2009).

Implementation assessment will be conducted on invasive treatments for eradication and supression and BAER treatments to meet objectives and ensure no noxious weeds are introduced with treatment. The assessment strategy will be developed. Assessment will occur shortly after treatment.

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

			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										
L1-Invasive Species	assessr	20500	1	$20,500	$0		$0		$0	$20,500
detection				$0	$0		$0		$0	$0
L1-Invasive Species Trea	acres	600	25	$15,000	$0		$0		$0	$15,000
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$35,500	$0		$0		$0	$35,500
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										
R1-Dips in FR8020150	each	1200	3	$3,600	$0		$0		$0	$3,600
R2 - Remove Culvert	each	1	10000	$10,000						$10,000
T1-Clear Trail drainage	each	800	6	$4,800	$0		$0		$0	$4,800
T2-Construct Water bars	miles	1600	6	$9,600	$0		$0		$0	$9,600
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Road & Trails				$28,000	$0		$0		$0	$28,000
D. Protection/Safety										
S1-Close/sign trails	area	1000	1	$1,000	$0		$0		$0	$1,000
S2-Trail hazard tree	miles	1600	6	$9,600	$0		$0		$0	$9,600
abatement				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$10,600	$0		$0		$0	$10,600
E. BAER Evaluation				$22,500						
				---			$0		$0	$0
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				---	$0		$0		$0	$0
F. Monitoring										
Field Review Q1&Q3	Field Reviews			$6,000	$0		$0		$0	$6,000
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$6,000	$0		$0		$0	$6,000
G. Totals				$80,100	$0		**$0**		**$0**	**$80,100**
Previously approved										

PART VII - APPROVALS

1. /s/ Nancy Ryke — 08/12/08
NANCY RYKE — Date
District Ranger

2. /s/ Lynn Burditt (for) — 08/12/08
CLAIRE LAVENDEL — Date
Forest Supervisor

3. /s/ Rick Brazell (for) — 8/22/08
CALVIN JOYNER — Date
Acting Regional Forester