Date of Report: 11/12/08

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)

Safety: Attends all required training, e.g. Defensive Driving and periodic stand-downs. Participates in unit safety meetings. Reads and complies with all Job Hazard Analysis (JHAs) relating to position tasks.

PART II - BURNED-AREA DESCRIPTION

A. Fire Name: Ukonom, North and South

B. Fire Number: CA-SRF-1126

C. State: CA

D. County: Siskiyou

E. Region: 05

F. Forest: Six Rivers N.F. and Klamath N.F.

G. District: Ukonom and Salmon River

H. Fire Incident Job Code: PSD8RS

I. Date Fire Started: June 20 & 21, 2008

J. Date Fire Contained: Nov. 3, 2008

K. Suppression Cost: $48,000,000+

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 17.65+
2. Fireline seeded (miles): 0
3. Other (identify):

M. Watershed Number: Main Stem Salmon 1801021004, North Fork Salmon 1801021002
Rock-Ti 1801020907, Wooley Creek 1801021003

N. Total Acres Burned:
NFS Acres(58,607) Other Federal ( ) State ( ) Private (32)

O. Vegetation Types: Douglas-fir, madrone, tanoak, canyon live oak, black oak, big leaf maple, deerbrush, manzanita

P. Dominant Soils: Clallam, Deadwood-Clallam, Gilligan-Chawankee, Gilligan-Goldridge

Q. Geologic Types: Granitic rock (diorite), ultramafic rock, along with metavolcanic and metasedimentary rock, (including slate-argillite of the Galice Formation), and marble

R. Miles of Stream Channels by Order or Class: Perennial: 99 miles, Intermittant: 191 miles.

S. Transportation System

Trails: 64.7 miles Roads: 60.5 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 47,390 (low/unburned) 9,575 (moderate) 1,674 (high)

B. Water-Repellent Soil (acres): 15

C. Soil Erosion Hazard Rating (acres):
36,080 (low) 14,478 (moderate) 6,728 (high) 1,354 (very high)

D. Erosion Potential: 3.2 tons/acre

E. Sediment Potential: 120 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

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

B. Design Chance of Success, (percent): 60

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

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches): 3

F. Design Flow, (cubic feet / second/ square mile): 191

G. Estimated Reduction in Infiltration, (percent): 22

H. Adjusted Design Flow, (cfs per square mile): 245

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

Due to the low amount of acreage characterized as high burn severity and work performed under fire suppression repair only a few resource values were assessed which included water quality beneficial uses and associated aquatic habitat for T&E fish species, roads and trails, and noxious weeds. Field

investigations and subsequent analyses/models were used to determine post-wildfire hazard and associated risk from potential debris flows, flooding, soil erosion and accelerated sedimentation.

A sequential evaluation process assessed the post-fire watershed conditions starting at the hillslopes and moving downslope or down the stream channels to determine potential hazards and associated risks to the various resource values. First the hillslope and stream channel burn severities were identified and mapped. Based on the findings of the burn severities, the post-fire watershed stream flows were modeled to assist with determining the potential hazard and associated risk to the aforementioned resource values. Further field investigations of these resource values were conducted to determine if they were at risk from the post-fire induced hazards.

Fisheries - Southern Oregon/Northern California Coast ESU Coho Salmon (SONCC) (Oncorhynchus kisutch) are listed as threatened species (62 FR 24588 and 70 FR 37160) under the Endangered Species Act. Critical habitat (64FR24049) for the SONCC coho salmon ESU encompasses accessible reaches of all rivers (including tributaries) between the Mattole River in California and the Elk River in Oregon. The Klamath River and its tributaries fall within this range.

California Department of Fish and Game has subdivided each coho salmon ESU into watershed recovery units (recovery units). The recovery units are groups of smaller drainages related hydrologically, geologically, and ecologically, and that are thought to constitute unique and important components of the ESU. The Ukonom Fire occurs in the Ukonom hydrologic subarea (HSA). There is limited use of streams that were burned in the Ukonom Fire within the Ukonom HSA by coho. Coho have been occasionally found in the summer in low densities in lower gradient, more accessible reaches in Sandy Bar and Wooley Creeks. Coho use lower tributaries to escape high water temperatures in the Klamath River that can often exceed 80°F in some summers and cause occasional fish kills.

Summer steelhead (Oncorhynchus mykiss) is a sensitive species on both the Klamath and Six Rivers National Forest. This means these species must be managed to contribute to healthy, viable populations. Several other runs (e.g., winter, fall, etc.) of steelhead that are not sensitive also occur within tributaries or downstream of the fire. Fall and spring-run steelhead are the most widely distributed anadromous fish species within the subbasin, often occupying small tributaries and steeper gradient channels not commonly utilized by coho and chinook.

Within the Ukonom Fire winter and summer steelhead have been found in more accessible reaches in Wooley, and Crapo Creeks. Crapo Creek provides the most habitat for winter steelhead (43 miles), followed by Wooley Creek (15 miles).

Spring Chinook (Oncorhynchus tshawytscha) are sensitive species on both the Klamath and Six Rivers National Forests. This means these species must be managed to contribute to healthy, viable populations. Essential Fish Habitat (EFH) has been designated for spring and fall-run Chinook salmon under the Magnuson-Stevens Act. The act requires measures to conserve and enhance the habitat needed by fish to carry out their life cycles. Congress defined EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Within the Ukonom Fire fall-run chinook have been found in the lower portion of Wooley Creek and Crapo Creek.

The North Coast Regional Water Quality Control Board is in the process of developing total maximum daily loads (TMDLs) for the Klamath River in California. The Klamath River and their tributaries are listed on 303(d) for nutrients organic enrichment, dissolved oxygen, and water temperature.

The Klamath River beneficial uses that are impaired include: Cold Freshwater Habitat (COLD), Rare, Threatened, or Endangered Species (RARE), Migration of Aquatic Organisms (MIGR), Spawning, Reproduction, and/or Early Development (SPWN), Native American Culture (CUL).

The CUL beneficial use covers “uses of water that support the cultural and/or traditional rights of indigenous people such as subsistence fishing and shellfish gathering, basket weaving and jewelry material collection, navigation to traditional ceremonial locations, and ceremonial uses”. The CUL

beneficial use in the Klamath River in California is currently impaired due to the decline of salmonid populations and degraded water quality resulting in changes to or the elimination of ceremonies and ceremonial practices and risk of exposure to degraded water quality conditions during ceremonial bathing and traditional daily activities.

Subsistence fishing (FISH) is also listed in the Basin Plan as a beneficial use of the waters in the region. Although, the specific areas in which this use exists has not yet been designated in the Basin Plan, this does not alter the need to protect this existing beneficial use. The FISH beneficial use is currently impaired in the Klamath River basin in California due to the decline of salmonid populations and other Tribal Trust fish populations resulting in decreased use, abundance, and value of subsistence fishing locations, altered diet and associated physical and mental health issues, and increased poverty.

Engineering – The reconnaissance of the roads and trails during the field investigations found several issues pertaining to emergency stabilization and safety. These issues included burned warning signs, and road drainage problems (i.e., plugged culverts, filled in catchment basins and ditches, ruts in the road, etc.). The result of these field investigations identified threats to public safety and deterioration of water quality through possible road failures.

Most of the issues are typical of what is found on or above roads within burned areas. These issues are a result of the road design and location. To further elaborate, the roads are constructed on steep mountain terrain which crosses steep sided 'V' channels. Roads that are not maintained eventually have their catchment basins and ditches filled in from sediment that is washed down from normal storm events and spring runoff. The 'V' shape channels contain channel bottoms and side slopes with grades ranging 50 to 75 percent. These steep slopes are able to deliver highly erosive storm flows which can carry large amounts of sediment and debris in a short time span. With the landscape now burned, the runoff will be larger and more debris is available for transport above these crossings.

Most of these issues pertaining to road and trail stabilization and safety were taken care of during fire suppression repair.

Noxious Weeds – The fire has created suitable habitat for the spread of noxious weeds which are known to threaten natural diversity, habitat for fish, wildlife, native plants, soil stability and ecosystem processes. While weed washing was required for vehicles used during fire suppression and rehabilitation, information on weed washing during the initial attack phase of the fire is unknown. Vehicles could have come from weed infested areas been transported by mud and debris. Water tenders used during the fire may have used drafting sites that contained weeds. Seeds may have been carried to the road system by water tenders. An initial assessment of the potential for spread of invasive weeds has found that yellow star-thistle, Dyer's woad, squarrose knapweed, Spanish broom and spotted knapweed occur within the fire perimeter.

B. Emergency Treatment Objectives:

The primary objectives of the Ukonom Burned Area Emergency Stabilization Plan were:

- To insure the BAER team's personal safety and provide for public safety during our assignment
- To coordinate with the NRCS, State, and County on private lands, if appropriate
- To assess the risk to human life and property and/or natural or cultural resources from impaired watershed conditions and to recommend appropriate stabilization actions to protect the following values:
    - Roads
        - All major or minor routes as identified
    - Administrative sites
    - Fish
        - Listed Coho, Spring & Fall Chinook, and Summer Steelhead
    - Water Quality

        - TMDL
        - Nutrients
        - Essential fish habitat
    - Increased infestations of noxious weeds

The BAER assessment evaluated the above objectives for possible mitigation using an array of treatment options and/or actions allowable by Department of Agriculture (USDA) policy. A list of issues specific to the Ukonom Fire is listed below. Treatments will be designed specifically to mitigate the following list of issues:

- An increased threat to roads and culverts due to higher runoff and the likelihood that these facilities will plug, overtop, or wash away.
- Increased erosion from hillslopes, sediment delivery to stream channels and a potential increase in landslide activity, especially in erodible granitics.
- An increase in stream temperature (TMDL) due to increased sediment delivery and reduced shade
- Loss of vegetation increases noxious weed introduction and spread.

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

Land **NA** % Channel **NA** % Roads/Trails **80** % Protection/Safety **80** %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	70	80	NA
Channel	NA		
Roads/Trails	90	75	60
Protection/Safety	100	90	70

E. Cost of No-Action (Including Loss): **$1,832,475**
The values at risk directly lost through No-Action includes: damage to fish and their habitat, loss of soil productivity, impact to water quality below roads, impacts to system roads due to changed conditions, loss of biodiversity due to noxious weed introduction and spread, threats to the public due to fire created conditions unsafe conditions along roads and trails.

F. Cost of Selected Alternative (Including Loss): **$60,899**
It was assumed the primary treatments would be successful in reducing resource values lost through No-Action by 70 percent. The remaining resource values lost (as a factor of success) were added to the cost of the primary land treatment.

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader:John McRae

Email: jmcrae@fs.fed.us Phone: (707) 441-3513 FAX:(707) 442-9242

H. **Treatment Narrative:**

(Describe the emergency treatments, where and how they will be applied, and what they are intended to do. This information helps to determine qualifying treatments for the appropriate funding authorities. For seeding treatments, include species, application rates and species selection rationale.)

Land Treatments:

Noxious Weed Detection and Treatment

Ukonom North

A. General Description:

The Ukonom Fire was the result of several lightning strikes that occurred on June 20 & 21, 2008. Overtime, the fire was split into two pieces. Ukonom North, which merged into the Panther fire, includes that portion of the Ukonom, west of Wooley Creek. The perimeter of the fire, and helicopter drop points will be monitored for weeds that may have been introduced during fire suppression and /or rehabilitation. Dozer line and trails are high priority sites for monitoring. Treat and map any new weed populations. Target weed species would be yellow star-thistle, Dyer's woad, squarrose knapweed, Spanish broom and spotted knapweed.

B. Location (Suitable) Sites:

The importance of inventorying the North Ukonom is to prevent weeds from spreading into the wilderness. This fire involved the use of pack stock to supply wilderness spike camps. The hay purchased was very clean but not certified weed free. Hay storage areas, and holding corrals for pack stock will also be surveyed, as well as trailheads. Roads along the western perimeter of the fire used for access into the fire area will also require assessment for spread from known weed populations. There are several populations of squarrose knapweed, Dyer's woad, and starthistle which are of concern.

C. Design/Construction Specifications:

1. Inventorying will occur twice during the growing season to catch both early and late maturing species. Remote wilderness sites will be visited only once.
2. Inventorying will be conducted by a botanist and/or a technician under direction of a botanist qualified to identify target species and collect data. Weeds of primary concern are Knapweed species, Italian thistle and Yellow Starthistle .
3. New population locations will be mapped using a gps and/or 1:24,000 quad map and flagged on the ground. NRIS and Klamath survey and treatment forms will be filled out and entered into national database.
4. If new populations are small, plants will be hand dug and bagged for removal at time of discovery. Larger poulations will be flagged for later treatment and a request for additional funding will be submitted.
5. Equipment washing for weed prevention is mandatory on all equipment and/or vehicles that may be harboring soil and debris prior to entering burned area for rehab or any other related activity.

D. Purpose of Treatment Specifications:

The fire has created suitable habitat for the spread of noxious weeds, and the fire area is currently weed free. While weed washing was required of vehicles used for fire suppression and rehabilitation, information on weed washing during the initial attack phase of the fire is unknown. Vehicles or aircraft could have come from weed infested areas and weeds introduced through mud, debris, or gear. Spike camps have known weed sites and seeds may have been transported by crews; straw used for rehab could have contained weed seeds.

Water tenders used during the fire may have used drafting sites that contained weeds. Seeds may have been carried to the road system via water tenders.

E. Treatment Effectiveness Monitoring:

Monitoring will reduce the potential for establishment of new noxious weed sites.

Ukonom South

A. General Description:

The Ukonom South fire encompassed the portion of the fire on the Klamath National forest, Salmon River District. There was a large wilderness portion that was served by pack stock, helicopters, and crews spiked at trailheads. Known populations of weeds include the only occurrence of Italian thistle in Siskiyou county at Forks of Salmon Treat and map any new weed populations. Target weed species would be the high priority species from the Klamath NF weed list, attached

B. Location (Suitable) Sites

Approximately 3.0 miles of dozer line was constructed along Boyd Gulch and Quail flat; the "Cherry Creek road" is decomposed granite and was used heavily for access to trailheads, which had a population of ISTI; expansion of the Italian thistle at Forks is expected and will need to be surveyed; observation points and staging areas for dozers were quite far from the fire on Picayune ridge; numerous spike camps, trailheads, and water fill sites were used. This fire involved the use of pack stock to supply wilderness spike camps. The hay purchased was very clean but not certified weed free. Hay storage areas, and holding corrals for pack stock will also be surveyed

C. Design/Construction Specifications:

1. Inventorying will occur twice during the growing season to catch both early and late maturing species. Remote wilderness sites may be visited.

2. Inventorying will be conducted by a botanist and/or a technician under direction of a botanist qualified to identify target species and collect data. Weeds of primary concern are Italian thistle, Yellow Starthistle, Scotch Broom and Dyer's Woad.

3. New population locations will be mapped using a gps and/or 1:24,000 quad map and flagged on the ground. NRIS and Klamath survey and treatment forms will be filled out and entered into national database.

4. If new populations are small, plants will be hand dug and bagged for removal at time of discovery. Larger poulations will be flagged for later treatment and a request for additional funding will be submitted.

5. Equipment washing for weed prevention is mandatory on all equipment and/or vehicles that may be harboring soil and debris prior to entering burned area for rehab or any other related activity.

D. Pupose of Treatment Specifications:

The fire has created suitable habitat for the spread of noxious weeds. While weed washing was required of vehicles used for fire suppression and rehabilitation, information on weed washing during the initial attack phase of the fire is unknown. Vehicles or aircraft could have come from weed infested areas and weeds introduced through mud, debris, or gear; straw used for rehab could have contained weed seeds.

Water tenders used during the fire may have used drafting sites that contained weeds. Seeds may have been carried to the road system via water tenders.

Inventorying will reduce the potential for establishment of new noxious weed sites.

E. Treatment Effectiveness Monitoring:

Additional monitoring and treatment will take place in the second and third year after the fire, if new populations are discovered during the first year.

Channel Treatments:

No channel treatments are prescribed at this time.

Roads and Trail Treatments:

Trail Warning Signs

A. General Description:
This treatment is for the installation of burned area warning signs for trailheads and one trail closure sign. Burned area signs consist of a warning to the public identifying of the possible dangers associated with a burned area. It shall contain language specifying of items to be aware of when entering a burned area such as falling trees and limbs, rolling rocks, and flash floods.

B. Specific Treatment Locations:
Burned Area Signs - These signs shall be installed at all trailheads with trails that enter into the fire perimeter: Ten Bear, Stanshaw, Haypress, Let'er Buck, Black Mtn., Wooley Creek, Portuguese Peak, Stienacher Creek, Little North Fork, and Garden Gulch (10 signs).

Trail Closure Sign –
This sign shall be installed at Wooley Creek Trailhead (located just off Salmon River Rd. at Brannons Bar).

C. Construction Specifications
Burned Area warning signs at trailheads shall be printed on durable plastic and, when possible, posted on sign boards. The BURNED AREA lettering shall be a minimum of 2 inches in height.

D. Pupose of Treatment Specifications:

The purpose of the Burned Area signs is to inform trail users of potential hazards within the burned area. The purpose of the trail closure sign is to keep visitors off the trail until it can be restored to a safe condition.

E. Treatment Effectiveness Monitoring:
District personnel, while working in the areas of these signs, shall monitor their effectiveness by observing if they are still installed while they are needed.

Road Treatments:

A. General Description:
The fire and suppression activities have generated large amounts of woody debris, some of which is upslope from road stream crossings. This debris could be mobilized by high flows to culvert inlets and cause the crossing to fail. The risk is amplified by the potential for increased storm flows and increased sediment production due to the fire. In addition to removing/reducing woody debris, culvert inlets need to be cleaned to maximize the volume of water and watershed products (wood, sediment) the culvert can handle without failing.

B. Specific Treatment Locations:

15N17 (Camp 3 road)
MP 8.1- Repair inlet, or replace first 5 feet
MP 19.5 – Repair road shoulder

12N07 (Road off Offield Saddle to right-deco?)
Clean culverts (2)

15N17E (Road to Haypress TH)
Clean ditches and culvert inlets of slash and debris (1.6 mi)

13N04 (Road to LET-ER Buck TH)
MP 1.4 – Repair road shoulder

13N42 (Road to LET-ER Buck TH)
Clean ditches and culvert inlets of slash and debris (2 mi)

C. Storm Patrols:

The purpose of the patrols is to evaluate the condition of roads for motorized access and to identify and implement additional work needed to maintain and/or repair damage to road surfaces and flow conveyance structures across roads in order to provide safe access across FS lands. Engineering and District personnel will survey the roads within the fire perimeter after high-intensity summer thunderstorms and high intensity winter rains in 2009, 2010 and 2011 and Spring 2009 and 2010 snow-melt. Survey will inspect road surface condition, ditch erosion, and culverts/inlet basins for capacity to accommodate runoff flows. Estimated costs are as follows:

FISCAL YEAR	UNIT	UNIT COST	# OF UNITS	COST	FUNDING SOURCE	METHOD
2009	Day	$4,198	2	$8,396	ESR	P/C
2010	Day	$4,198	2	$8,396	ESR	P/C
2011	Day	$4,198	1	$4,198	ESR	P/C
TOTALS			5	$20,990	ESR	P/C

FUNDING SOURCES	SPECIFICATION TYPE	METHOD OF COMPLETION
F= Fire Suppression	ES = Emergency Stabilization	P = Agency Personnel Services
ESR = Emergency Stabilization & Rehab.	R = Rehabilitation	C = Contract
OP/O = Agency Operating Fund	FS = Fire Suppression	EFC = Emergency Fire Contract
EWP = Emergency Watershed Program		FC = Crew Labor Assigned to Fire

Protection/Safety Treatments:

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.)

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											
Weed Detection	days	201.28	103	$20,732	$0			$0		$0	$20,732
				$0	$0			$0		$0	$0
				$0	$0			$0		$0	$0
Insert new items above this line!				$0	$0			$0		$0	$0
Subtotal Land Treatments				$20,732	$0			$0		$0	$20,732
B. Channel Treatments											
None				$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											
Road Reconditioning	hrs	231.10	40	$9,244	$0			$0		$0	$9,244
Debris Removal	hrs	63.44	40	$2,538	$0			$0		$0	$2,538
Storm Patrol	days	4198	5	$20,990	$0			$0		$0	$20,990
Insert new items above this line!				$0	$0			$0		$0	$0
Subtotal Road & Trails				$32,772	$0			$0		$0	$32,772
D. Protection/Safety											
Trailhead Signs	sign	163.54	15	$2,453	$0			$0		$0	$2,453
				$0	$0			$0		$0	$0
				$0	$0			$0		$0	$0
Insert new items above this line!				$0	$0			$0		$0	$0
Subtotal Structures				$2,453	$0			$0		$0	$2,453
E. BAER Evaluation											
Evaluation				$4,942				$0		$0	$0
Insert new items above this line!				$0	$0			$0		$0	$0
Subtotal Evaluation				$4,942	$0			$0		$0	$0
F. Monitoring											
				$0	$0			$0		$0	$0
Insert new items above this line!				$0	$0			$0		$0	$0
Subtotal Monitoring				$0	$0			$0		$0	$0
G. Totals				$60,899	$0			**$0**		**$0**	**$55,957**
Previously approved											
Total for this request				**$60,899**							

PART VII - APPROVALS

/s/Tyrone Kelley — 12-1-08
Forest Supervisor (signature) — Date

/s/Patricia A. Grantham — 12-1-08
Forest Supervisor (signature) — Date

/s/ Angela V. Coleman (for) — *12-4-08*
Regional Forester (signature) — Date