

Date of Report:

**BURNED-AREA REPORT**

(Reference FSH 2509.13)

**PART I - TYPE OF REQUEST**

## A. Type of Report

- ☒ 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)  
☐ 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: Stanza FireB. Fire Number: CA-KNF-2988C. State: CAD. County: SiskiyouE. Region: 05F. Forest: KlamathG. District: Happy CampH. Date Fire Started: 21 July 2002I. Date Fire Controlled: 4 August 2002 (Containment)J. Suppression Cost: \$4.9 Million

K. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 3 Miles  
2. Fireline seeded (miles): 0 Miles  
3. Other (identify): 3 Miles Dozer line shaped to drain, Campground Waterline repaired.

L. Watershed Number:

M. Total Acres Burned: 2880

NFS Acres (2,880)    Other Federal ( )    State ( )    Private ( )

N. Vegetation Types: Douglas fir, Tan oak, Canyon Live oak, Madrone.O. Dominant Soils: Gilligan-Chawanakee in granitic areas; Skalan-Clallam in metamorphic.P. Geologic Types: Granodiorite and Granite intruding metavolcanic and metavolcaniclastic sediments.

Q. Miles of Stream Channels by Order or Class: 1<sup>st</sup> Order (21.37 mi), 2<sup>nd</sup> Order (4.64 mi.), 3<sup>rd</sup> Order (1.61 mi.), 4<sup>th</sup> Order (0.57 mi).

R. Transportation System

Trails: 0.5 miles      Roads: 16.2 miles

**PART III - WATERSHED CONDITION**

A. Burn Severity (acres): 2341.24 (low); 462.34 (moderate); 76.42 (high)

B. Water-Repellent Soil (acres): Less than 23 acres. In area mapped as High Burn Severity, there was little indication that ground fire had been present for any inordinate amount of time.

C. Soil Erosion Hazard Rating (acres):  
144 (low)   864 (moderate)   1872 (high)

D. Erosion Potential: 3.4 tons/acre

E. Sediment Potential: 2176 cubic yards / square mile

**PART IV - HYDROLOGIC DESIGN FACTORS**

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

B. Design Chance of Success, (percent): 80%

C. Equivalent Design Recurrence Interval, (years): 25 years

D. Design Storm Duration, (hours): 6 Hours

E. Design Storm Magnitude, (inches): 3.6 Inches

F. Design Flow, (cubic feet / second/ square mile): 149 cfs/mi.<sup>2</sup>

G. Estimated Reduction in Infiltration, (percent): 30%

H. Adjusted Design Flow, (cfs per square mile): 194 cfs/mi.<sup>2</sup>

**PART V - SUMMARY OF ANALYSIS**

A. Describe Watershed Emergency:

On 21 July 2002, a lightening storm resulted in more than 500 downstrikes throughout Siskiyou County. More than 11 fire starts resulted from the downstrikes on the Klamath National Forest. The Stanza Fire started in the Stanza Creek area, to the northeast of Sulpher Springs Campground. On 28 July 2002, after the fatalities on Lassen Engine Crew 11, a national Type I Incident Command Team was assigned to the fire on 29 July 2002. On 28 July the fire made its largest run, growing 839 acres in one burn period. The run was halted on the divide between Doolittle and Stanza Creeks by a blackened dozer line, assisted by winds blowing into the previously burned area. All the high intensity burn acres mapped were a result of this fire run. The fire

advance lacked strength because of previous fuels reduction projects in the area, one in 1995 and the other in 1997.

The following table summarizes the fire growth:

Burn Period	Date	Acres	Cumulative Acres
1	July 24	73	73
2	July 25	245	318
3	July 26	296	614
4	July 27	280	894
5	July 28	839	1733
6	July 29	530	2263
7	July 30	402	2665
8	July 31	136	2801
9	August 1	79	2880

The fire left a classic burn mosaic, with the preponderance of high and moderate burn intensities within the Stanza Creek drainage. In general the high intensities occur within aureoles of moderate intensity burn.

Area1 is a piece near the lower portion of the Stanza drainage. It has 30.25 acres of high surrounded by 353.63 acres of moderate intensity. This area is adjacent to Rd. 15N06. Area 2 is 6.86 acres of high intensity within a 22.07 acre piece of moderate burn on the southern headwall of the Stanza drainage. Area 3, on the eastern headwall of Stanza Creek has 14.3 acres of high burn intensity surrounded by 41.78 acres of moderate intensity. Both areas are along Rd. 15N69. There are 25 acres of isolated high intensity burn mapped in the Stanza drainage, that is in reality predominantly moderate. Elsewhere in the fire area there are two isolated areas of moderate burn intensity totalling 44.86 acres.

Stanza Creek is a IV Order tributary to Elk Creek. Elk Creek is host to anadromous fisheries spawning and rearing habitat, and also hosts a resident trout population. In addition, Elk Creek is the municipal water supply for the community of Happy Camp.

Intense rainfall events are not uncommon in this part of the Forest. Flashy runoff peaks due to the higher runoff efficiency associated with cover loss and increased hydrophobicity in the high and moderate burn severity areas have the potential to increase rill and shallow debris torrent erosion. This material, plus any generated by potential fire induced debris slides, would be delivered fairly efficiently to Elk Creek by the high gradient tributary channels.

#### Threats to Aquatic Resources:

The base (west flank) of the fire area borders about 2.5 miles of the east side of Elk Creek. Elk Creek is a major fisheries habitat in the Klamath Mountains Province. This section of the Klamath river is habitat for Endangered Species Act-designated critical habitat for Chinook and Coho salmon, and is used for migration, adult holding, spawning, and juvenile rearing of salmonid fishes, as well as habitat for other anadromous and native fishes. All potential fire-caused soil and water impacts would be delivered directly to Elk Creek. The estimated value of \$2,000,000 has been given for the value of anadromous and resident fisheries spawning and rearing habitat. The municipal water supply value is estimated at \$1,500,000.

#### Long term Soil Productivity:

Loss of soil productivity was assumed to occur on moderate and high burn severity areas. By equating high and moderate burn severity to a loss of one site class; the value of the loss in soil productivity can be quantified as a loss of timber production values. Timber production values before and after the fire were used to determine the value of soil productivity loss across the fire area as a result of the wildfire. The calculated loss of soil productivity is \$60,930.

Threats to ecosystem integrity:

The threat of non-native invasive weed species is a serious concern in the Stanza fire area. Several undesirable, non-native invasive species either currently are established or have the potential to become established in the burn area (see Draft Northern Province Noxious and Invasive Weed Program Strategy, KNF Invasive Species List). Burned areas are vulnerable to weed infestation because fire disturbs sites and eliminates competing vegetation, which creates a favorable environment for establishment of invasive species. Of particular concern are species that are rated by the State of California as Class A pests. Class A pests are competitors that are targeted for priority eradication in the county before their numbers are too great to successfully eliminate. These species include spotted, diffuse and squarrose knapweed and leafy spurge.

Many undesirable plants that didn't occupy the burned area prior to the fire, now have the potential to spread into the burned area from sources of seed adjacent to the fire or through suppression activities. These species include, but are not limited to yellow star thistle, dyers woad (known locally as Marlahan mustard) and cheat grass, to name a few. Many Class A pests such as knapweed are especially aggressive, and will with compete with native vegetation in a wide range of conditions from harsh rocky and dry sites to more productive deep soils.

B. Emergency Treatment Objectives:

1. Minimize potential sedimentation effects to spawning and rearing habitat for listed Coho salmon and associated aquatic species. These treatments would also protect the intake and water quality for the municipal water supply for the community of Happy Camp, California.
2. Assess natural recovery of untreated fire areas by conducting an inventory of dominant species and soil cover density after the first growing season.
3. Assess the effectiveness of various treatments on the soil resource.
4. Assess encroachment of noxious weeds into the fire area by monitoring for knapweed species, mustard and star thistle encroachment next growing season. If results of monitoring identify new infestations, treat by manual pulling, manual herbicide spraying (if approved through subsequent NEPA), or seeding with native plants. See Noxious Weed Monitoring Plan for methodology.

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

Land 90 % Channel 90 % Roads 75 % Other    %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	95	100	100

Channel	85	95	100
Roads	85	95	100
Other			

E. Cost of No-Action (Including Loss): \$17,108,000

F. Cost of Selected Alternative (Including Loss): \$8,171,973

G. Skills Represented on Burned-Area Survey Team:

<input checked="" type="checkbox"/> Hydrology	<input checked="" type="checkbox"/> Soils	<input checked="" type="checkbox"/> Geology	<input type="checkbox"/> Range	<input type="checkbox"/>
<input checked="" type="checkbox"/> Forestry	<input checked="" type="checkbox"/> Wildlife	<input checked="" type="checkbox"/> Fire Mgmt.	<input checked="" type="checkbox"/> Engineering	<input type="checkbox"/>
<input type="checkbox"/> Contracting	<input checked="" type="checkbox"/> Ecology	<input checked="" type="checkbox"/> Botany	<input type="checkbox"/> Archaeology	<input type="checkbox"/>
<input checked="" type="checkbox"/> Fisheries	<input type="checkbox"/> Research	<input type="checkbox"/> Landscape Arch	<input type="checkbox"/> GIS	

Team Leader: Bill Snavelly

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Team Members: Bill Snavelly, Geology, Hydrology, Soils,  
 Bill Bemis, Fisheries  
 Bill Schoepach, Vegetation  
 Sue Daniels, Fire Management  
 Max Creasy, Ecologist  
 Sam Cuenca, Wildlife.

#### 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:

Road fill slopes are a continuing source of sedimentation in the western portion of the Klamath National Forest. In the High and Moderate burn intensity mapping it was seen most of the fill slopes were totally devoid of vegetation and ground cover. Treatments proposed are to contour mulch the fill slope areas within the high and moderate burn intensity, and to a distance of 100 feet below the toe of the fill slope on natural ground. Rd. 15N06A is scheduled for decommissioning this year. The fill slopes would not be mulched, but the 100 foot swath below the toe of the fill would be mulched.

Barley straw would be the preferred mulching agent. Monitoring of the Swillup BAER treatments applied in October 2001, show that sprouts from the mulch did not persist for any undue length of time. mulching (2 tons/acre rate) with certified weed-free straw is proposed for 42.5 acres on granitic soils in the high and moderate burn severity areas. The purpose of the treatment is to provide suitable ground cover where there presently is none.

##### Channel Treatments:

Three hay bale check dams and six straw wattle check dams would be installed in intermittent swales and the Stanza Creek channel between Rd. 15N06 and Elk Creek, at the base of the burned area. These measures would retard mobilized sediment from reaching Elk Creek, the municipal water supply for the community of Happy Camp, California.

**Straw Wattle Dams:** These dams are one to two wattles high with a wattle protected spillway (3-4 wattles wide). The purpose of these dams are to temporarily capture sediment in the upper reaches of watersheds, control runoff and prevent gullyng. These dams have been proven effective in similar burned areas in their ability to capture sediment in the first two years after a fire. The use of this treatment is concentrated in watersheds serving as domestic water sources (from Swillup BAER monitoring Report, Laurent, 2002).

**Straw Bale Check Dams:** This treatment proposes to install 3 straw bale check dams to temporarily capture sediment in the upper reaches of ephemeral or intermittent stream channels. Wood will be used to dissipate the overflow of water on the downstream side (spillway) of each dam and to provide a longer term storage capacity once the straw bale has decomposed. Certified weed-free straw will be used. The use of this treatment is concentrated in watersheds serving as domestic water sources. The use of this treatment is concentrated in watersheds serving as domestic water sources (from Swillup BAER monitoring Report, Laurent, 2002).

#### Roads and Trail Treatments:

There is much easily mobilized material, (dead limbs, etc.) above the culvert intakes along Rd. 15N06. This material presents a risk to the stream crossings below. This would be diminished by intake cleaning and installation of trash racks at the Stanza crossing and another area just to the south along the same road. Cleaning would consist of clearing out dead woody debris at the inlet area of 5 cross drains.

#### Structures:

The Stanza fire melted the fabric on several fabric walls along the top portion of Rd. 15N69, no other structural damage was noted. These fabric walls are used to gain foundation strength for road prisms across unstable areas. Most of the damage occurred on the lower 3 layers of the wall but not along the entire length of the layers. The recommendation for the lower 3 layers is to place borrow or aggregate up against the exposed soil portion of the wall. For areas that have burned above the third layer it is recommended that a 5 gallon of asphalt roof patch cement or crack sealer be brushed on so it seals up the holes.

#### **H. 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.)

Noxious weeds – Monitoring throughout the burned area will be done in order to determine if new populations of spotted or squarrous knapweed, star or Scotch thistle, or dyers woad have spread into new areas as a result of ground disturbance and canopy removal. Samples will be selected at different aspects, elevations and site conditions. Particular attention will be paid in areas of high burn intensity and mechanical disturbance (cat lines, hand lines, safety zones) and areas adjacent to roads and staging areas. Areas near known sites will also be monitored for spread.

Treatment—hand grubbing (can be done in conjunction with monitoring if only a few plants are discovered during monitoring) and herbicide use (if approved through subsequent NEPA) of newly discovered weed populations. If initial monitoring indicates hand treatment is possible, the Forest may request additional BAER or supplemental funding.

**Treatment Effectiveness Monitoring** - The purpose of this monitoring is to evaluate effectiveness of soil stabilization treatments on erosion rates. The following treatments will be monitored: contour falling/lop-and-scatter, and strip mulching, as well as untreated control areas of similar soil type, slope, elevation and aspect. More detailed information will be provided in the Soil Resource Monitoring Plan.

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

[illegible]

## **PART VII - APPROVALS**

1. /s/ MARGARET J. BOLAND 08 12 02  
Forest Supervisor (signature) Date
2. \_\_\_\_\_  
Regional Forester (signature) Date