

Date of Report: 5-22-01**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 DESCRIPTIONA. Fire Name: Jones FireB. Fire Number: CA-KNF1500C. State: CaliforniaD. County: SiskiyouE. Region: Pacific SouthwestF. Forest: KlamathG. District: Oak KnollH. Date Fire Started: 5-9-01I. Date Fire Contained: 5-13-01J. Suppression Cost: \$1,250,000

K. Fire Suppression Damages Repaired with Suppression Funds

- 1. Fireline waterbarred (miles): 4.8
- 2. Fireline seeded (miles): 0
- 3. Other (identify): 10.5 miles of roads (opened for fire suppression) repaired by recontouring and spreading bark mulch in the vicinity of a stream crossing.

L. Watershed Number: 1801020803M. Total Acres Burned: 1,488

NFS Acres (1,441) Other Federal () State () Private (47)

N. Vegetation Types: Jeffrey Pine-Incense Cedar; mountain mahogany-grassO. Dominant Soils: Dubakella family, Lithic Haploxerolfs, Rock OutcropP. Geologic Types: Serpentinized Peridotite

Q. Miles of Stream Channels by Order or Class: 2.42 mi. perennial
2.26 mi. intermittent
0.50 mi. scoured debris flow channel

R. Transportation System

Trails: 0 miles Roads: 0 miles

PART III - WATERSHED CONDITION

- A. Burn Severity (acres): 584 (low) 664 (moderate) 240 (high)
- B. Water-Repellent Soil (acres): 5
- C. Soil Erosion Hazard Rating (acres):
400 (low) 484 (moderate) 604 (high)
- D. Erosion Potential: 10.0 tons/acre
- E. Sediment Potential: 3.5 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

- A. Estimated Vegetative Recovery Period, (years): 20
- B. Design Chance of Success, (percent): 85
- C. Equivalent Design Recurrence Interval, (years): 100
- D. Design Storm Duration, (hours): 6
- E. Design Storm Magnitude, (inches): 3
- F. Design Flow, (cubic feet / second/ square mile): 233
- G. Estimated Reduction in Infiltration, (percent): 10
- H. Adjusted Design Flow, (cfs per square mile): 256

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

Overall watershed effects:

The Jones Fire burned nearly 1500 acres near the community of Klamath River. The fire had a mosaic of fire intensities, with 16% high, 45% moderate and 39% low intensity, and islands of unburned land. The high is mostly in Sec. 3, on the lower half of the slope, with fingers of high severity, from 0.5-10 acres in size, in Sec. 34 and 35. In the SW portion of Sec. 3, high severity burned areas, previously vegetated by shrubs, now have unsupported surface soil material (previously held on the slope by the vegetation), which has a high probability

of moving downslope as small mud/gravel torrents. Although the high severity fingers are relatively small, they are located near the head of the 2 perennial streams within the fire perimeter. These are Dry Creek in the center of the fire area; and Poison Oak Creek, near the west boundary. Both perennial channels have unburned strips of vegetation in the lower reaches, but have lost virtually all riparian vegetation upstream. Portions of the lower ½ mile of Dry Creek burned through the steep inner gorge and dry ravel is occurring. There are several ephemeral to intermittent draws which have either unburned or predominantly moderately burned drainages. The watershed of Woodchopper Gulch, which flows into Lumgrey Ck. near its confluence with the river, had small portions underburned during fire suppression. Although some stringers backed down close to the Woodchopper Gulch, the intensity was low.

Intense summer thunderstorms are not uncommon in this part of the Forest. Flashy runoff peaks due to the higher runoff efficiency associated with cover loss and soil crusting on the high severity sites has the potential to initiate rill erosion. This material, plus any generated by potential debris slides, would be delivered fairly efficiently to the highway and river once it reached the steep gradient, rocky channels.

Threats to private property:

1. Homes – There are about 8 homes directly downslope from the fire area, near where small tributaries to the Klamath enter the river. The structures are sited on either side of Ca. Highway #96, with one being up a steep, quarter mile long driveway. The largest concentrations of homes are at the east and west boundaries of the fire. At the west end, near the fire origin, the slopes are predominantly steep and rocky, with unburned to low fire intensity in the watersheds that drain toward these homes. The threat of abnormally high sediment delivery is considered low due to the thin soils and low burn severity. Debris flow risk is not significantly increased by the fire due to the predominantly low intensities. In addition, the homes are not topographically situated where they will be impacted. Loss of control of water is unlikely, as these channels have adapted to flashy runoff conditions due to their rocky bowl shapes, and little increase in runoff is anticipated. The biggest potential risk in this area is the private driveway, which has a 24" culvert. If it did plug, this could cause minor damage to the driveway from this point down. However, only a small portion of this watershed was burned and pipe capacity is most likely adequate to handle the minimal increase in stormflow. The homes at the east end of the fire at Gottville are situated at the base of gentler slopes with low or moderate burn intensity and are not situated directly below the fire. Thus, the homes at Gottville are not at risk of receiving debris or water from this fire. There are 3 residences located below Highway 96 1/3 mile of Gottville. There is a small drainage ("House Creek") that drains onto the flat where these residences are located. House Creek was burned in low and moderate intensity. It does not appear that these 3 residences are at risk from the Jones Fire. One residence near the center of the south fire perimeter is located below Highway 96. There is a small channel that drains an old landslide basin and debris flow deposit before it crosses Highway 96 in a 24" CMP and discharges into the back yard of the residence. This drainage originates in a slide area that was hotly burned. If debris originates in this slide area and moves down the channel it will plug the 24" culvert, spill out across the highway and onto the yard.
2. Highway 96 – Barring a debris flow event, it is probable that, the first few intense storms will cause fine sediment and ash to be transported to the highway drainage system. The amounts are not expected to exceed the capacity of the existing pipes and inboard ditch, assuming routine maintenance. The steep slope from the western fire boundary to the rock quarry is rocky and has existing indications of rock fall from the slope and debris flows in the channels. There is a high risk that during the first storms rocks and debris will fall and/or wash down slope onto the highway. The risk of debris being transported downstream to the highway is particularly high in Channel #1, and much less so in the other channels due to minimal burn severity. The risk of both rock and debris transport is greatest during summer thundershowers. The size and potential number of rocks constitute the most significant risk to life and property from the fire.

Threats to aquatic resources

The Klamath River is the major fisheries habitat in the vicinity of the fire. The base of the fire borders 2.8 miles of the river, ranging from around 30' to 200' slope distance from it. Highway 96 runs between the fire and the river. This section of the river is habitat for Endangered Species Act-designated critical habitat for

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 direct to the river. If the intense, triggering storms were to occur in the winter, winter flows would probably dilute fire impacts to the river. The higher flow conditions would expand opportunities for fish to find refuge. The greater likelihood of effects on fisheries would be associated with an intense summer thunderstorm, when river flows are already relatively low. Most of the salmonids present during the summer months are juveniles, including coho salmon. As ambient water temperature increases and quality decreases during this season, salmonids are mainly found in refugial areas such as cold-water tributary confluences. Salmon and steelhead fry would be the most vulnerable, experiencing some mortality when forced to flee desired habitat due to ash, and especially suspended sediment and associated turbidity. This stress is expected to last a few days, at most, and would diminish downstream. The long term affect on river habitat from the addition of predominantly fine-grained sediment is not expected to be significant.

Threats to ecosystem integrity

The threat of non-native invasive weed species is a serious concern in the Jones 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; Appendix 1 of the Jones Fire Noxious Weed Monitoring Plan). 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. These species are currently known to occupy sites along the Klamath River, including the Fire Camp location at the Klamath River Community Hall. In addition to the Class A pest, several other species may be of concern. 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 cheatgrass, 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.

Noxious weeds are known to readily invade burned areas, especially if the fire was hot enough to suppress native perennial species. Approximately 16% of the burned area or 240 acres burned at a high intensity. Over 200 acres of the Jones Fire area appear to be especially susceptible. Hundreds of acres of ground disturbance and canopy removal have created prime habitat for weed encroachment.

A vehicle wash station was established within 24 hours of the start of suppression efforts to minimize the amount of seeds imported from other areas, however, a small number of vehicles may have entered the fire area prior to operation of the wash station. In addition to the main fire camp, there are a number of known noxious weed infestation sites at several staging areas. Vehicular and foot traffic between these sites and the burned area may have spread seed from the existing infested areas.

B. Emergency Treatment Objectives:

1. Minimize fire induced risks to public safety when traveling on Highway 96, while keeping the highway open to traffic. This includes mitigating debris flow risk in 3 draws. Treatment in the other intermittent draws and on the slope immediately above the highway is either infeasible or unnecessary. Cal Trans will patrol storms and clear off rocks that reach the highway and warn the public of the hazard.
2. Reduce the volume of sediment transported and prevent channel downcutting by placing check dams in the 2 channels (Slide Creek 1 and Slide Creek 2) located in the E ½ of Sec. 3.

3. Minimize potential sedimentation effects to spawning and rearing habitat for listed coho salmon and associated aquatic species by installing log terraces, and lopping and scattering treetops and shrubs to interrupt overland flow. These treatments would entrain any soil lost from the high severity burned land. Where no vegetative material is available onsite, *straw wattles would be done in strips on contour on high sensitivity land within the high severity burn in Section 3.*
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, or seeding with native plants. See Noxious Weed Monitoring Plan for methodology.
5. Assess natural recovery of untreated fire areas by conducting an inventory of dominant species and soil cover density after the first growing season.
6. Assess the effectiveness of various treatments on the soil resource.

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

Land 75 % Channel 75 % Roads % Other %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	90	95	100
Channel	80	85	90
Roads	90*	95*	95*
Other			

* Road work would be done using non-BAER funds.

E. Cost of No-Action (Including Loss): \$352,978

F. Cost of Selected Alternative (Including Loss): \$302,511

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Roberta Van de Water

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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:

Contour fall small-diameter dead conifers. Lop and scatter the tops on 20 acres of highly burned area. The combination contour falling and lop-and-scatter is prescribed to break up runoff, act as upland sediment traps and control erosion. The boles of the trees will be bucked into lengths that can be handled by two people, and have contact with the soil and have shallow trenches to ensure contact with the soil. The trenches should turn upslope slightly. The tree tops will have their branches removed and scattered on the slope. Small diameter dead trees (3 to 16 inch dbh) will be used.

Straw Wattle placement: 60 acres of high severity burned land. The purpose of this treatment is to disturb the water repellent (hydrophobic) layer, slow surface runoff, catch sediment, increase infiltration and break up rill development. Wattles would be placed on the contour such that overland flow no longer has a straight path down the slope. The slope distance between rows of wattles would not exceed 50 feet in width. The target density is approximately 400 to 600 linear feet per acre. Priority is given to the areas where tree cover is minimal (insignificant needle cast anticipated) and on benchy terrane with numerous irregular drainages. Wattles will parallel these swales and contour across the steeper portions of the hummocky terrane. Straw wattles are a proven, effective treatment. The high cost is due to the relative inaccessibility of the treatment area.

Channel Treatments: Construct 4 rock gabion check dams in Channel #1 (Sec. 9), and 1 check dam each in Slide Creeks 1 and 2 (Sec. 10) to slow the velocity of potential debris flows, and retain debris in the channel upstream of the highway. Construct 17 smaller gabion check dams in channels in Sec. 3, to break up streamflow and debris flow velocity in the channel above the residence at greatest risk. These would also help protect the highway. The gabion baskets would have to be transported via helicopter to the site for the structures in Sec. 17.

Road and Trail Treatments: Cal Trans plans to place straw wattles in several ditch/culvert intersections to prevent fine sediment and ash from plugging culverts. They will also clean out culverts as necessary to ensure proper drainage (Cal Trans funds).

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.)

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), BAER treatment sites where straw was utilized, and areas adjacent to roads and staging areas. Areas near known sites will also be monitored for spread. Hand grubbing will be done in conjunction with monitoring if only a few plants are discovered during monitoring. If initial monitoring indicates larger infestations, and 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. Recovery of native vegetation in the moderate to highly burned untreated areas will be monitored in order to determine the need for further treatments. Soil cover density will be used as an indicator. Sites will be selected at different aspects and elevations and compared with similar sites on unburned areas. More detailed information will be provided in the Soil Resource Monitoring Plan.

Storm Patrol - Cal Trans plans to monitor Highway 96 after storms for debris and rock falling or washing onto the traveled way or obstructing ditch or culvert drainage (State funds).

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

			NFS Lands				Other Lands			All	
		Unit	# of	WFSU	Other		# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	SULT \$	\$		units	\$	Units	\$	\$
A. Land Treatments											
Straw wattles	acres	1500	60	\$90,000				\$0		\$0	\$90,000
Contour fell/lop/scat'r	acres	350	20	\$7,000				\$0			\$7,000
Subtotal Land Treatments				\$97,000				\$0		\$0	\$97,000
B. Channel Treatments											
Sm.Gabion checkdams	each	2500	17	\$42,500				\$0		\$0	\$42,500
Lg.Gabion checkdams	each	1500	6	\$9,000				\$0		\$0	\$9,000
Subtotal Channel Treat.				\$51,500				\$0		\$0	\$51,500
C. Road and Trails											
Culvert cleanout	hours	300		\$0				\$0	50	\$15,000	\$15,000
Rock sweeping	hours	300		\$0				\$0	50	\$15,000	\$15,000
Rock removal	hours	90		\$0				\$0	100	\$9,000	\$9,000
Culvert replacement	pipes	20000		\$0				\$0	1	\$20,000	\$20,000
Warning signs	each	500		\$0				\$0	2	\$1,000	\$1,000
Subtotal Road & Trails				\$0				\$0		\$60,000	\$60,000
D. Structures											
				\$0				\$0		\$0	\$0
Subtotal Structures				\$0				\$0		\$0	\$0
E. BAER Eval., Adm.											
Survey	day	1200	8	\$9,600				\$0		\$0	\$9,600
Implem. Administr.	day	610	50	\$30,500				\$0		\$0	\$30,500
Subtotal BAER				\$40,100				\$0		\$0	\$40,100
F. Monitoring											
Noxious weeds				\$9,000							\$9,000
Treatment effectiven.				\$6,000							\$6,000
Storm patrol	day	1000							15	\$15,000	\$15,000
Subtotal Monitoring				\$15,000				\$0		\$15,000	\$30,000
G. Totals				\$203,600				\$0		\$75,000	\$278,600

PART VII - APPROVALS

/s/Ray A. Haupt for
MARGARET J. BOLAND
Forest Supervisor (signature)

May 23, 2001
Date

2. /s/ Gilbert J. Espinosa for
Regional Forester (signature)

May 24, 2001
Date