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

Date of Report: October 14, 2004

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[**X**] 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)

[**X**] 2. Interim Report/Request
[**X**] 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: Robb

B. Fire Number: P47537

C. State: Nevada

D. County: Washoe

E. Region: 4

F. Forest: Humboldt-Toiyabe

G. District: Carson

H. Date Fire Started: July 14, 2003

I. Date Fire Contained: July 16, 2003

J. Suppression Cost: $400,000

K. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 8.5
2. Fireline seeded (miles): 8.5
3. Other (identify): No handlines

L. Watershed Number: 1605010201, 1808000302

M. Total Acres Burned:
NFS Acres(1812) Other Federal ( ) State ( ) Private (384)

N. Vegetation Types: sagebrush/grasses (95%), scatterred pine (5%)

O. Dominant Soils: Wedekind gravelly to very gravelly sandy loam; Mizel very gravelly coarse sandy loam; Zephan Complex very gravelly sandy loam; Indiano-Koontz-Flex association gravelly sandy loam; Flex very gravelly sandy loam. Soils are shallow, well drained and not prone to flooding.

P. Geologic Types: Rock outcrops in the area consist of plutonic rocks that range in composition from gabbro to quartz monzonite. The composition in most intrusive masses approximates granodiorite. The metamorphic rock in the area includes both metasedimentary and metavolcanic (majority of fire area) rocks. These are mostly Jurassic in age. The volcanic rock in this area includes welded ash flow tuffs, andesite flows, basalt, basaltic andesite, and other tuffs. These are part of the Hartford assemblage and range in age from early Miocene to early Pleistocene.

Q. Miles of Stream Channels by Order or Class: The fire area is highly disected by about 12 miles of ephemeral channels that flow primarily due to events. Watersheds are small and slopes are short and steep for the most part. Some early seasonal flow may occur in Peavine Creek. There are no channels with perennial flow in the fire area. Runoff not apparent due to the absence of rills and gullies. Channels exhibit low to moderate scouring.

R. Transportation System

Trails: 2 miles Roads: 12 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 1671 (low) 525 (moderate) 0 (high)

B. Water-Repellent Soil (acres): None found

C. Soil Erosion Hazard Rating (acres): **(Hazard of Water Erosion)**
___ (low) 250 (moderate) 1946 (high)

D. Erosion Potential: 2.5 tons/acre

E. Sediment Potential: 1145 cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 15

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

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

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches): 1.1

F. Design Flow, (cubic feet / second/ square mile): .6

G. Estimated Reduction in Infiltration, (percent): 10

H. Adjusted Design Flow, (cfs per square mile): 1.8

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

There is no immediate threat to life and property

Threat to terrestrial ecosystem integrity: Observation of the environmental consequences of wildfire adjacent to the Robb fire suggest that without immediate restoration activities the Robb fire will quickly be invaded with noxious weeds and cheat grass. Due to the increased fire interval, if the area revegetates to cheat grass, the area will most likely re-burn in the next few years possibly leading to a direct threat to housing developments adjacent to Peavine Mountain. The potential expansion of cheat grass (*Bromus tectorum*) and continued increase within the fire area will boost the erodibility of soils because the root system of cheat grass is such that it does not help stabilize the soil surface. An increase in erodibility as well as increasing wind erosion may cause a loss of soil productivity and a reduction in air quality in the urban area adjacent to the fire area.

The area is subject to high erosion due to the granitic nature of the soils. This pre-existing condition has resulted in a favorable environment for the expansion of noxious weeds and cheats grass, which are expected to substantially increase within the burned area. The north portion of the Robb fire burned over the Seneca fire from 2000. Following fire, soil nutrient conditions are more favorable towards noxious weeds and invasive species, thus promoting their introduction over native plant species. In the case of sagebrush and bitterbrush habitats, fire increases these areas susceptibility to invasion by cheat grass. The threat is real, apparent and is illustrated in the Seneca Wildfire of 2000, a Wyoming Big Sage habitat area adjacent to the Robb wildfire. The Seneca Fire that burned in 2000, was left to recover naturally and contains extensive stands of cheat grass that has limited the reestablishment of native shrubs, and native perennial and annual grasses. Some areas of the Seneca Fire were seeded with a mix of perennial native grasses (hand application and not a BAER treatment) that appear to be out-competing cheat grass in the seeded areas.

Since human occupation, the fire regime has increased from 15-25 years to about every 100 years. The increase in fuel loads and change in plant community structure has caused fires to, at times, burn much hotter. These more intense fires can promote the invasion of exotics, most commonly cheat grass. At elevations below 6,300 feet, cheat grass can begin to out-compete native shrubs and perennial grasses, increasing the risk of fire and reducing the fire interval to one of short-fast moving fires which burn through flashy fuels such as cheat grass. If another fire occurs before native vegetation has the opportunity to become established, the plant community may become entirely dominated by cheat grass so that a type conversion takes place. A more frequent fire cycle may become established that will be a consistent threat to life and property. There is the potential for conversion of the sagebrush communities to annual grasslands especially in areas burned by both the Seneca and Robb fires.

The Robb Fire will contribute further to losses of critical winter range on Peavine Mountain. Cumulative loss of winter deer range has resulted in a decline in the Loyalton-Truckee herd. Unless aggressive revegetation projects take place, it is likely that cheat grass will take over and prevent establishment of foraging habitat over the long term.

Resource damage due to an increase in Off-Highway-Vehicle (OHV) use:

Due to the high density of the native surface road system and extensive urban interface, off highway vehicle (OHV) use is extensive in the fire area. Fire suppression activities caused the construction of about 8 miles of dozer fireline and the widening of some existing roads. This increase in the “apparent” native surface road system is expected to indirectly encourage OHV activities at a level greater than before the fire. In addition, high public visibility and the in-my-back-yard location of the community promotes greater than average OHV use of all kinds in the Peavine area. The expected increased OHV use has a high potential for causing resource damage where activities occur off of the native surface roads and an increase for fire starts in and adjacent to the burned area. Rutting of the steep slopes caused by

uncontrolled off road use increases the potential for channelized water flow and sediment movement during thunderstorm events.

Increased OHV use is also expected to cause an increase the occurence of noxious weeds, especially medusahead, scotch and musk thistle, which have already been identified in scatterred locations in and around the fire. The potential for spreading these specific noxious weeds is high and is displayed in the Seneca Fire of 2000. No BAER treatments were recommended for the Seneca Fire. OHV use was minimally controlled and there was no treatment or monitoring for noxious weeds. As a result, noxious weeds have spread with the vector most likely being OHVs.

B. Emergency Treatment Objectives:

Ecosystem Integrity: The emergency treatment objective is to prevent the invasion of noxious weeds and the expansion of invasive plant species, specifically cheat grass and medusahead, in those areas of the Robb Fire that exhibited continuous burn patterns (excludes areas of patchy burn, islands of green unburned and areas where little to no vegetation was evident before the fire). Direct benefits would be stabilization of surface soil to reduce sheet erosion on the steep slopes and improved soil productivity and reduce the threat of invasion from noxious and invasive weeds.

Recommended treatment includes mechanical drill seeding on 685 acres (360 of moderate severity burn, 325 acres of low burn severity) with native grasses. Seeding is recommended to prevent the introduction and increase of noxious and invasive weeds. In areas of low burn severity the native seed bank is very weak and revegetation potential is very poor if not augmented by seeding of native species. Since wildfire accellerates the rate of spread of invasive species and noxious weeds, it will be difficult to prevent the spread of these species unless additional seed is applied. Healthy stands of perennial vegetation appear to be a barrier to invasion. Open areas created by fire will increase the noxious and invasive weeds and there are known locations of cheatgrass, medusahead, scotch thistle, and musk thistle. Seeding will reduce the likelihood of invasion into the fire area and the increase in weedy species.

Prevent the spread of noxious weeds by direct removal or application of herbicides to noxious weeds that have invaded the fire area and those caused by increased OHV use and fire suppression activities (noxious weeds caused by fire supression activities may not be discovered until the following year due to timing of activities).

Long-term treatment (non-BAER) includes seeding with sagebrush after perennial grasses have become established and the planting of trees to enhance already existing small stands within the fire.

OHV use: The emergency treatment objective is to control the invasion of noxious weeds from OHV use by replacing signs burned in the fire and placing additional signs at access points, staging areas, and at the entrance to dozer firelines on both sides of the fire. Signs for the dozer lines would explain reasons for closure of these areas to OHV use.

There is already a forest order restricting OHV use to designated routes and native surface roads in the Peavine area. Monitoring of the Seneca Fire ,immediately adjacent to the Robb Fire, showed that OHV use was one of the primary vectors in spreading noxious weeds into the burn area. Without signing, OHV use will most likely result in a similar situation of spreading noxious weeds and impacting recovery of the native vegetation.

Monitoring: The emergency treatment objective of monitoring is to control OHV off-road use and prevent the spread of noxious weeds.

Signing and patrol is recommended to prevent off-road vehicles (motorized and non-motorized) use while the vegetation is re-establishing after the fire. Weed monitoring is recommended to prevent and control the spread of noxious weeds and invasive species.

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

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

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	50%	70%	70%
Channel			
Roads			
Other			

E. Cost of No-Action (Including Loss):

The primary cost of no-action would be the loss of soil productivity valued at $100/acre for about $220,000. Within two years, cheat grass invasion will lead to a type conversion. This can be associated with an increase in the cost of fire surpression needs, increased fire risk, the continued loss of resource values in the more frequently burned areas, and a more consistent threat to life and property. It's difficult to attach a monetary value to this, but if the cost of fire supression for this fire alone is used, the figure of $400,000 can be applied if fires were to occur more frequently in this area.

The cost of not conducting the noxious weed monitoring, treatments, and seeding is calculated as follows: Estimated cost to hand spray with herbicide is about $150 per day and can increase in steep terrain. Add to this an exponentially greater cost if noxious weeds spread beyond the dozer lines and roads into the newly disturbed burn and the difficulty to treat cheatgrass and medusahead. If noxious weeds were allowed to spread over 500 acres throughout the fire, it would cost $75,000 per year to control. Multiple years would be required for treatment followed by restoration activities. This does not include costs associated with the loss of mule deer habitat and the native plant biodiversity.

F. Cost of Selected Alternative (Including Loss):

Seeding in specified areas of the Robb Fire will significantly reduce the invasion of cheat grass and minimize the probability for a type conversion. Soil productivity will be increased with the addition of a native plant biomass and better soil surface stabilization will be realized. By maintaining a diverse plant community and structure, cheat grass invasion will be kept to a minimum. Potential effects of the fire on soil productivity can be reduced by 50% and the effects of recurring fires will be reduced to $100,000 when related to potential fire suppression costs and the continued loss of soil productivity associated with a type conversion and more frequent burning.

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Jim Bergman

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H. **Treatment Narrative:**

I. **Monitoring Narrative:**

Monitoring of noxious and invasive weeds: The Robb fire is adjacent to known sites of noxious weeds (medusahead, scotch thistle, and musk thistle) with few known sites within the fire area. Noxious and invasive weeds were present on roads used to access the fire during suppression while known sites were limited within the fire. Monitoring treatment effectiveness and the spread of noxious plants are important to prevent further spread of invasive species. Monitoring will be concentrated on treated areas and disturbances that occurred during suppression, roads, and known locations and include early seasons.

Noxious weed monitoring crew	(GS-5)	
Vehicle, equipment, supplies	($500 per year)	
	FY05	$1,880
	Total	$1,880

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										
		Unit	#of	WFSU	Other	#of	Fed	#of	Non-Fed	Total
Line Items	Units	Cost	Units	SULT$	$	Units	$	Units	$	$
A. Land Treatments										
							$0		$0	$0
							$0		$0	$0
							$0		$0	$0
Insert new items above this line!										
Subtotal Land Treatments				$0	$0		$0		$0	$0
B. Channel Treatments										
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Channel Treat.				$0	$0		$0		$0	$0
C. Road and Trails										
					$0		$0		$0	$0
					$0		$0		$0	$0
Insert new items above this line!										
Subtotal Road & Trails				$0	$0		$0		$0	$0
D. Structures										
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Structures				$0	$0		$0		$0	$0
E. BAER Evaluation										
					$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!										
Subtotal Evaluation				$0	$0		$0		$0	$0
F. Monitoring										
					$0		$0		$0	$0
Noxious weeds	Job	1880	1	$1,880			$0		$0	$1,880
Insert new items above this line!										
Subtotal Monitoring				$1,880	$0		$0		$0	$1,880
G. Totals				**$1,880**	**$0**		**$0**		**$0**	**$1,880**

PART VII - APPROVALS

1. /s/ Robert Vaught — 10/14/2004
   Forest Supervisor (signature) — Date

2. /s/ Joe Kennedy for — 01/06/2005
   Regional Forester (signature) — Date