

Date of Report: Aug. 16, 2006

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:** Highway 50**B. Fire Number:** P47528**C. State:** Nevada**D. County:** Douglas – Carson City**E. Region:** 4**F. Forest:** Humboldt-Toiyabe**G. District:** Carson**H. Date Fire Started:** 6/17/2003**I. Date Fire Contained:** 6/18/2003**J. Suppression Cost:** \$250,000

K. Fire Suppression Damages Repaired with Suppression Funds

1. Fireline waterbarred (miles): 1.5 miles backbladed and waterbarred
2. Fireline seeded (miles): 0
3. Other (identify):

L. Watershed Number: 1605020104

M. Total Acres Burned: 590

NFS Acres(470) Other Federal () State (70) Private (50)

N. Vegetation Types: 90% brushland, 10% low density eastside pine

O. Dominant Soils: Glenbrook – gravelly loamy coarse sand; Haybourne – sand; Tarloc – gravelly coarse sandy loam; Toll – gravelly loamy sand.

P. Geologic Types: Soils formed in residuum and alluvium from granitic bedrock grMz formation (Mesozoic granitics)

Q. Miles of Stream Channels by Order or Class:

No perennial channels in fire area. All channels within fire perimeter appear to be ephemeral (3 miles), flowing mainly in response to snowmelt and excessive rain.

R. Transportation System

Trails: 0 miles Roads: 2.5 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 300 (low) 290 (moderate) 0 (high)

B. Water-Repellent Soil (acres): Approximately 100 acres with moderate water repellency in Voltaire Canyon.

C. Soil Erosion Hazard Rating (acres):
129 (low) 236 (moderate) 225 (high)

D. Erosion Potential: 5.31 tons/acre

E. Sediment Potential: 2445 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): 25

D. Design Storm Duration, (hours): 6

E. Design Storm Magnitude, (inches): 1.9

F. Design Flow, (cubic feet / second/ square mile): 5.6

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

H. Adjusted Design Flow, (cfs per square mile): 6.2

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

Seeding on this fire was accomplished in 2004 through a contract with the NV Division of Forestry. The final payment to NDF of \$4,887.79 is still outstanding. The purpose of this interim 2500-8 is to establish an H-code so that the final payment can be processed.

Threat to terrestrial ecosystem integrity: Although there is no immediate threat to life and property, the potential expansion of cheat grass (*Bromus tectorum*) into the fire area will increase wind erosion on soils in Voltaire Canyon. Soils in Voltaire Canyon are highly prone to wind erosion when devoid of stabilizing vegetation. The root system of cheat grass is such that it does not help stabilize the soil surface. In addition to the loss of soil productivity, wind blown soil has substantially degraded air quality in the urban area next to Voltaire Canyon.

Invasive weed expansion (cheat grass) into much of the burned area is expected to occur. 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 Mountain Big Sage habitat area adjacent to the Highway 50 wildfire in Voltaire Canyon, that burned in 1996. The fire area that burned in 1996, that was left to recover naturally, now contains extensive stands of cheat grass that has limited the reestablishment of native shrubs, and native perennial and annual grasses.

Photos 1 and 2 - Adjacent to the Highway 50 Fire. There was very little cheat grass in the burned area prior to the fire. However, that is expected to increase significantly due to the response of cheat grass in a 1996 wildfire that occurred adjacent to Voltaire Canyon.



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 (*Bromus tectorum*). 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.

Seeding was not recommended on the remainder of the fire due to exposure, steep (up to 70%) slopes, and very coarse granitic soils that are loose and very well to excessively drained with a low water holding capacity. As illustrated in Photos 3 and 4, these slopes had sparse vegetative cover prior to the fire and displayed no evidence of surface runoff (rills, gullies). Dry ravelling was evident on portions of steep slopes that were bare prior to the fire. Seeding would be very difficult and would most likely have to be done aerially (not recommended by NRCS Plant Guide), significantly reducing chances for successful germination.



B. Emergency Treatment Objectives:

The emergency treatment objective is to prevent the invasion of noxious weeds, specifically cheat grass in the Voltaire Canyon watershed. Direct benefits would be stabilization of surface soil to reduce wind erosion (blowing soil) which is high for bare soils in the Voltaire Canyon area and improved soil productivity. This situation has substantially degraded air quality in the urban areas next to the burn.

Treatment includes seeding with native grasses with the possibility of planting brush in the long-term (non-BAER).

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

Land 80 % Channel NA % Roads NA % Other NA %

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land Seeding	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 \$59,000. In addition to the loss of soil productivity, over time, cheat grass invasion may lead to a type conversion if recurring fires take place. This can be associated with an increase in the cost of fire suppression 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 suppression for this fire alone is used, the figure of \$250,000 can be applied if fires were to occur more frequently in this area.

F. Cost of Selected Alternative (Including Loss):

By seeding in Voltaire Canyon, the invasion of cheat grass can be significantly reduced and the probability for a type conversion can be minimized. 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:

Jim Bergman represented hydrology and soils. Erick Walker was team leader and represented range and natural resources. Consultations were made with the district biologist, forest botanist, and the district archaeologist.

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

Team Leader: Erick Walker

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Phone: 775-884-8120

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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:

In the fall, seed 240 acres in Voltaire Canyon with the following seed mix @ 14lbs/acre.

Basin wild rye (*Elymus cinereous*) – 5lbs/acre
 Indian ricegrass (*Achnatherum hymenoides*) – 5lbs/acre
 Desert Needle grass (*Stipa comata*) – 2lbs/acre
 Bottlebrush Squirreltail (*Elymus elymoides*) – 2lbs/acre

Preferred method of treatment is drill seeding using a small dozer pulling a ½ width range drill. With the above seed mix, the Natural Resource Conservation Service (NRCS) recommends two separate

applications. The first treatment will drill seed Indian Ricegrass to a depth of 2 to 3 inches (NRCS Plant Guides). The second application will drill seed the three remaining species to a depth of ½ to 1 inch.

Estimated cost of seed application @\$225/acre is \$54,000.

Channel Treatments:

None

Roads and Trail Treatments:

None

Structures:

None

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.)

Cheat Grass Invasion: Implement a monitoring study for a period of 3 years to assess cheat grass invasion after the fire and to assess germination rate of the applied seed mix in Voltaire Canyon. Line transects would be established in both treated and untreated areas to represent the variety of terrain and vegetation types in the fire area. Photo points would be established to document recovery, and vegetation species type and height would be collected around the site when photographs are taken.

Costs/year:

2 GS-5 biotechs for 1 pay period (10 days) @ \$112/day	\$2240
1 GS-11 Botanist/Biologist for 2 days @ \$200/day	\$ 400
<u>Vehicle, mileage, supplies</u>	<u>\$ 500</u>
Total	\$3140

Noxious Weeds: Monitor the introduction of noxious weeds along 1.5 miles of dozer lines and 2.5 miles of access roads twice each year for 3 years. Surveyors would walk the 4 miles of dozer lines and access roads in the spring and summer to detect introduction of noxious weeds with different life cycles and blooming periods on and adjacent to the disturbed areas. Surveyors would search for California/Nevada noxious weeds.

Costs/year:

2 GS-5 biotechs for 3 days @ \$112/day	\$ 672
1 GS-11 Botanist/Biologist for 1 days @ \$200/day	\$ 200
<u>Vehicle, mileage, supplies</u>	<u>\$ 200</u>
Total	\$1072

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											
				\$0	\$0			\$0		\$0	\$0
Seeding	Acres	225	240	\$4,888	\$0			\$0		\$0	\$4,888
				\$0	\$0			\$0		\$0	\$0
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Land Treatments				\$4,888	\$0			\$0		\$0	\$4,888
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											
				\$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 Road & Trails				\$0	\$0			\$0		\$0	\$0
D. Structures											
				\$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 Structures				\$0	\$0			\$0		\$0	\$0
E. BAER Evaluation											
				\$0	\$0			\$0		\$0	\$0
Wages					\$0			\$0		\$0	\$0
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Evaluation				\$0	\$0			\$0		\$0	\$0
F. Monitoring											
Plans	Ea		2		\$0			\$0		\$0	\$0
Insert new items above this line!				\$0	\$0			\$0		\$0	\$0
Subtotal Monitoring					\$0			\$0		\$0	\$0
G. Totals				\$4,888	\$0			\$0		\$0	\$4,888

PART VII - APPROVALS

1. /s/Edward C. Monnig
Acting Forest Supervisor (signature)

08/25/2006
Date

2. /s/ William P. LeVere for
Regional Forester (signature)

09/11/2006
Date