

BURNED-AREA REPORT
(Reference FSH 2509.13)**PART I - TYPE OF REQUEST****A. Type of Report**

- ☐ 1. Funding request for estimated emergency stabilization funds
☐ 2. Accomplishment Report
☒ 3. No Treatment Recommendation

B. Type of Action

- ☐ 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)

PART II - BURNED-AREA DESCRIPTION**A. Fire Name:** Stevens**B. Fire Number:** NV-HTF-EKD-000759

(became part of Hepworth Complex NV-NNS-000749 on 7/18/2007)

C. State: NV**D. County:** Elko**E. Region:** 4**F. Forest:** Humboldt-Toiyabe**G. District:** Ruby Mountains**H. Fire Incident Job Code (P Code):** PDDQ8J**I. Date Fire Started:** 7/16/2007**J. Date Fire Contained:** 7/24/2007 (100%)**K. Suppression Cost:** \$370,000 (estimated)

L. Fire Suppression Damages Repaired with Suppression Funds: There are a total 10.2 miles (0.25 miles on Forest) of fireline. At the time of this report, rehabilitation efforts for the fireline were in progress.

M. Watershed Number: 160401010704, 160401010705, 160401010706**N. Total Acres Burned:** 7,636

NFS Acres(740) Other Federal (0) State (0) Private (6,896)

O. Vegetation Types:

The Stephens Creek Fire entered the Stephens Creek drainage, evidently crossed the creek from the southwest side, and climbed the ridge on the northwest bank. In the East Humboldt Wilderness Area, the fire fingered onto the ridge separating Stephens Creek from West Fork Boulder Creek, where it came to a stop.

Mountain Brush Plant Community – This plant community dominates the steeper mountain sideslopes estimated to be 35-45 percent slope on the west and east facing slopes of the West Fork of Boulder Creek. Woody shrubs common in this community type are serviceberry (*Amelanchier alnifolia*), snowberry

(*Symphoricarpos oreophilus*), snowbrush ceanothus (*Ceanothus velutinus*), antelope bitterbrush (*Purshia tridentata*), mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), chokecherry (*Prunus virginiana*), wax currant (*Ribes cereum*), elderberry (*Sambucus nigra* ssp. *cerulea*) and willow (*Salix* spp.). Understory species include arrowleaf balsamroot (*Balsamorhiza sagittata*), penstamen (*Penstemon* spp.) buckwheat (*Eriogonum* spp.), Columbia needlegrass (*Achnatherum nelsonii*), mountain brome (*Bromus carinatus*) and Sandberg's bluegrass (*Poa secunda*). Cheatgrass (*Bromus tectorum*) is present in this plant community.

Most of the shrubs that dominate these plants communities are re-sprouters and many are considered fire dependent for seed germination. By next spring the grasses and shrubs should be sending up shoots and these sites should recover vigor within two to five years. Regeneration or sprouting of most species is highly dependant upon fire severity. For example, snowbrush ceanothus (*Ceanothus velutinus*) is promoted by severe fires due to heat scarification of the seed, while snowberry (*Symphoricarpos oreophilus*) is a weak sprouter and may be killed if fire severity is high (Fire Effects Information System-<http://www.fs.fed.us/database/feis/index.html>).

Mountain Big Sagebrush Plant Community – This plant community occurs occasionally in the burned area patches on drier slopes. Mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) is the dominant plant species. Other species that occur in this plant community are bitterbrush (*Purshia tridentata*), snowberry (*Symphoricarpos oreophilus*), currant (*Ribes* spp.), Basin wildrye (*Leymus cinereus*), Idaho fescue (*Festuca idahoensis*), Indian ricegrass (*Achnatherum hymenoides*), mountain brome (*Bromus carinatus*), slender wheatgrass (*Elymus trachycaulis*), and bluebunch wheatgrass (*Pseudoroegneria spicata*).

These plant communities will be slow to recover from the burn, since mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) does not re-sprout after fire. Some islands and partially or light burned areas of mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*) were left unburned and will provide a seed source for shrub re-establishment, but it is likely these sites will take about 15-20 years to recover. Perennial bunch grasses were evident in the burned area and live roots were located within one inch of the surface. Significant amounts of moisture for re-growth or re-sprouting are unlikely until next spring.

Low Sagebrush Plant Community – This plant community covers a small portion of the burned area. It is located primarily on the ridgelines, higher mountain slopes and some of the high benches within the burned area. The dominant species in this plant community is low sagebrush (*Artemisia arbuscula* ssp. *longiloba*). Other associated species include Idaho fescue (*Festuca idahoensis*), squirreltail (*Elymus elymoides*), Sandberg's bluegrass (*Poa secunda*), milkvetch (*Astragalus* spp.), biscuitroot (*Lomatium* spp.) and longleaf phlox (*Phlox longifolia*).

These plant communities will be slow to recover, since low sagebrush does not re-sprout after fire. It is likely these sites will take approximately 10 to 15 years to recover. Cheatgrass (*Bromus tectorum*) may be present in this plant community.

Aspen Plant Community – Aspen (*Populus tremuloides*) is a major cover type in this area. It is found on the leeward slopes where snow accumulates (prostrate aspen), in moist drainages on steep slopes, and near the riparian zone along the West Fork of Boulder Creek. Associated species in this community include snowberry (*Symphoricarpos oreophilus*), serviceberry (*Amelanchier alnifolia*), snowbrush ceanothus (*Ceanothus velutinus*), chokecherry (*Prunus virginiana*), currant (*Ribes* spp.), Oregon grape (*Mahonia repens*), willow (*Salix* spp.), columbine (*Aquileia formosa*), monkshood (*Aconitum columbianum*), false Solomon's seal (*Maianthemum stellatum*), sweet anise (*Osmorhiza occidentalis*), stickseed or forget-me-not (*Hackelia floribunda*), groundsel (*Senecio* spp.), blue wildrye (*Elymus glauca*), Columbia needlegrass (*Achnatherum nelsonii*), nodding brome (*Bromus anomalus*), mountain brome (*Bromus carinatus*), and slender wheatgrass (*Elymus trachycaulis*).

This species is fire dependant and will re-sprout vigorously. Fire releases sprout primordia on roots from hormonally controlled growth inhibitors (Fire Effects Information System-<http://www.fs.fed.us/database/feis/index.html>). It is expected that numerous suckers will sprout at the

margins of larger clones and throughout smaller clones or those with open canopies to produce a much high canopy of aspen in the burned area.

Woody Riparian Plant Community – This plant community occurs throughout the drainage of the burned area (West Fork of Boulder Creek). The soils in this drainage tend to be rocky and the slopes moderate and occasionally steep. The dominant woody plant is willow (*Salix* spp.). Other woody plants and shrubs found in the area adjacent to the fire or within the burn are Aspen (*Populus tremuloides*), current (*Ribes* spp.), chokecherry (*Prunus virginiana*), wild rose (*Rosa woodsii*), columbine (*Aquileia formosa*), monkshood (*Aconitum columbianum*), false Solomon's seal (*Maianthemum stellatum*), groundsel (*Senecio* spp.), sedges (*Carex*), and rushes (*Juncus*).

The woody species that inhabit these plant communities will readily respond to disturbances such as fire and flooding. In many instances, fire stimulates their re-growth. By next spring, most will be re-sprouting and if adequate moisture is available will facilitate their growth throughout the summer. In two to five years these sites will be mostly recovered. A period of rest from livestock grazing will provide needed protection for re-establishment.

Additional weedy non-native species –

Species seen during the inspection, that may increase with the disturbance of fire include:

- bulbous bluegrass (*Poa bulbosa*) –introduce perennial grass
- cheatgrass (*Bromus tectorum*) –introduced annual grass
- yellow salsify (*Tragapogon dubius*) -introduced annual/biennial forb
- tumbled mustard (*Sisymbrium altissimum*) –introduced annual/biennial forb
- field pennycress (*Thlaspi arvense*) –introduced annual forb

Cheatgrass (*Bromus tectorum*)

Cheatgrass is a non-native (European) invasive annual species that can obtain a competitive advantage over native species after fire. This competitive advantage is created by loss of shade and litter cover on the soil surface and loss of water retention and infiltration with burned soils.

Cheatgrass was seen on a few isolated rock outcrops within the burned area. While the presence of cheatgrass does pose a potential threat, it is likely not an immediate threat to the integrity of the native plant population.

Bulbous bluegrass (*Poa bulbosa*)

Bulbous bluegrass is a non-native, invasive, perennial species that is abundant on the lower private lands and is found occasionally on the Forest. If properly managed, this species will likely have only a slight increase after the fire.

P. Dominant Soils:

There are two soil subunits in the burned area, fine loamy and loamy, and one miscellaneous landtype, stony rock land. The fine loamy soils occupy mainly southerly exposures are deep (3-5 ft to fractured gneiss bedrock), stony, well drained, with a moderate erodibility (Crockett 1967). The loamy soils occupy mainly northern exposures are deep, well drained, with a moderate erodibility. The rock lands comprise about 20% of the area and consist of rock outcrops of gneissic or other metamorphic rocks, talus slopes, and extremely stony rubble lands (Crockett).

Q. Geologic Types:

The terrain is steep and mountainous with deeply incised canyons and sharp crested ridges. The stream bed is well armored with cobbles and boulders. The dominant erosive agent has been mass wasting and running water. The geology of Stephens Creek drainage is that of the East Humboldt Mountains in general: "Metamorphic rocks (Devonian? to Proterozoic?)—Granite to dioritic gneiss, and biotite and muscovite schist, locally containing sillimanite; quartzitic schist, quartzite, calc-silicate rocks, and marble. Includes some younger granitic rocks (Coats 1987)."

R. Miles of Stream Channels by Order or Class:2nd order perennial: 1 mile**S. Transportation System:**Trails: 2.3 miles Roads: 0 miles**PART III - WATERSHED CONDITION****A. Burn Severity (acres):** 740 (low) 0 (moderate) 0 (high)**B. Water-Repellent Soil (acres):** 0**C. Soil Erosion Hazard Rating (acres):** 0 (low) 740 (moderate) _ (high)**D. Erosion Potential:****Erosion Potential for Typical Steep Slope (tons/acre)**

Treatment	Year following the fire				
	1st year	2nd year	3rd year	4th year	5th year
Untreated	6.90	5.55	3.38	2.56	1.83
Seeded	6.90	3.38	2.56	1.83	1.83
Mulch (0.5 tons/acre)	2.74	2.91	3.38	2.56	1.83
Mulch (1 tons/acre)	1.51	2.40	3.38	2.56	1.83
Mulch (1.5 tons/acre)	1.50	2.23	3.38	2.56	1.83
Mulch (2 tons/acre)	1.48	2.00	3.38	2.56	1.83

Values were calculated by the Erosion Risk Management Tool (ERMiT), with an accuracy of plus or minus 50% (Robichaud and others, 2006).

E. Sediment Potential:**Sediment Potential for the Typical Steep Slopes (cubic yards/square mile)**

Treatment	Year following the fire				
	1st year	2nd year	3rd year	4th year	5th year
Untreated	4,416	3,552	2,163	1,638	1,171
Seeded	4,416	2,163	1,638	1,171	1,171
Mulch (0.5 tons/acre)	1,754	1,862	2,163	1,638	1,171
Mulch (1 tons/acre)	966	1,536	2,163	1,638	1,171
Mulch (1.5 tons/acre)	960	1,427	2,163	1,638	1,171
Mulch (2 tons/acre)	947	1,280	2,163	1,638	1,171

Values were calculated by the Erosion Risk Management Tool (ERMiT), with an accuracy of plus or minus 50% (Robichaud and others, 2006).

PART IV - HYDROLOGIC DESIGN FACTORS
(Calculated for natural recovery with no treatment.)

A. Estimated Vegetative Recovery Period, (years):	<u>2</u>
B. Design Chance of Success, (percent):	<u>90</u>
C. Equivalent Design Recurrence Interval, (years):	<u>25</u>
D. Design Storm Duration, (hours):	<u>6</u>
E. Design Storm Magnitude, (inches):	<u>1.8</u>
F. Design Flow, (cubic feet / second/ square mile):	<u>29.0</u>
G. Estimated Reduction in Infiltration, (percent):	<u>0.08</u>
H. Adjusted Design Flow, (cfs per square mile):	<u>29.02</u>

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

Threats to Human Life: Field reviews within and downstream of the burn confirmed that there are no significant threats to human life.

Threats to Property: The field assessment within and downstream of the burn confirmed that there are no situations where private property is within flood prone areas. Therefore, the effects of the fire do not appear to have created any significant threats to private property.

Threats to Drainages: The field assessment within and downstream of the burn confirmed that there are no significant threats to water quality in the drainages. There will be sediment and ash output and minor, inconsequential changes to chemical quality, but the effects to on-site and downstream water quality are expected to be minor.

Threats to Long-term Soil Productivity and Ecosystem Integrity: No threats to long-term soil productivity or ecosystem integrity were identified during the field assessment. There were a few isolated occurrences of invasive cheatgrass within the fire area. The native vegetation, however, are expected to recover and out compete the cheatgrass. No noxious weeds were found within or near the burned area.

B. Emergency Treatment Objectives: None recommended

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

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

D. Probability of Treatment Success

	Years after Treatment		
	1	3	5
Land	NA		
Channel	NA		
Roads/Trails	NA		
Protection/Safety	NA		

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

F. Cost of Selected Alternative (Including Loss): \$0

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

Team Leader: Ron Hudson

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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: Not necessary.

Channel Treatments: Not necessary.

Roads and Trail Treatments: Not necessary.

Protection/Safety Treatments: Not necessary.

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.)

Recovery of the burned area will be monitored as part of the Forest's range program. No monitoring or reporting will be conducted under the BAER program.

Part VI – Emergency Stabilization Treatments and Source of Funds

Interim #

Line Items	Units	Unit Cost	NFS Lands		Other \$	Other Lands				All Total \$
			# of Units	BAER \$		# of units	Fed \$	# of Units	Non Fed \$	
A. Land Treatments										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Land Treatments				\$0	\$0		\$0		\$0	\$0
B. Channel Treatments										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$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
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Road & Trails				\$0	\$0		\$0		\$0	\$0
D. Protection/Safety										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Structures				\$0	\$0		\$0		\$0	\$0
E. BAER Evaluation										
3 person Team	total	2400	1	---	\$2,400		\$0		\$0	\$2,400
<i>Insert new items above this line!</i>				---	\$0		\$0		\$0	\$0
Subtotal Evaluation				---	\$2,400		\$0		\$0	\$2,400
F. Monitoring										
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
Subtotal Monitoring				\$0	\$0		\$0		\$0	\$0
G. Totals				\$0	\$2,400		\$0		\$0	\$2,400
Previously approved										
Total for this request				\$0	\$2,400		\$0		\$0	\$2,400

PART VII - APPROVALS

 1. _____
 Forest Supervisor (signature)

 Date

 2. _____
 Regional Forester (signature)

 Date

BIBLIOGRAPHY

- Coats, R.R. 1987. Geology of Elko County, Nevada. Nevada Bureau of Mines and Geology Bulletin 101:1-112.
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- Miller, J.F., R.H. Frederick, and R.J. Tracey. 1973. Precipitation-Frequency Atlas of the Western United States, Volume III Nevada. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service
- Robichaud, Peter R.; Elliot, William J.; Pierson, Frederick B.; Hall, David E.; Moffet, Corey A. 2006. Erosion Risk Management Tool (ERMiT) Version 2006.06.20. Moscow, ID: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Available online at <http://forest.moscowfs.wsu.edu/fswepp/>.
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- U.S. Geological Survey (USGS). September 1999. The National Flood-Frequency Program: Methods for Estimating Flood Magnitude and Frequency in Rural Areas in Nevada. USGS Fact Sheet 123-98.