Date of Report: 31 August 2012

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

[X] 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: Lake Complex

B. Fire Number: CA-MDF-000429

C. State: California

D. County: Modoc

E. Region: 5

F. Forest: Modoc

G. District: Doublehead RD

H. Date Fire Started: 5 August 2012

I. Date Fire Contained: 9 August 2012

J. Suppression Cost: Estimated at $1,500,000

K. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): utilizing native materials to build sediment traps on roughly 10 mi
2. Fireline seeded (miles): roughly 0.5 miles
3. Other (identify): fence repair, cultural site repair, and road access blocking

L. Watershed Numbers: 180102040110 (Boles Ck) & 180102040302 (Mowitz Ck)

M. Total Acres Burned: 1,666
NFS Acres(1,666 acres in the Lake Fire and roughly 1 acre cumulatively for the other fires in the complex)
Other Federal (0) State (0) Private (0)

N. Vegetation Types: Low sage community with juniper cover. Native perrenial grass species are dominant throughout the fire; however, there are occurrences of *Bromus tectorum* and *Isatis tinctoria* adjacent to the fires within the complex.

O. Dominant Soils: Deven-Bieber-Barnard Family (50 acres) and Deven-Bieber-Pass Canyon Family (1,616 acres).
Deven and Pass Canyon - Lithic Argixerolls
Bieber and Barnard – Aridic Durixerolls

P. Geologic Types: Devil's Garden basalt with a Mowitz shield volcano in the southern edge of the the fire. The area is considered part of the Modoc Plateau, which is typified by undulating basalt plateaus.

Q. Miles of Stream Channels by Order or Class: 2.8 miles of intermittent streams

I. Transportation System

Trails: 0 miles Roads: 0 miles within the perimeter

PART III - WATERSHED CONDITION

A. Burn Severity (acres in Fire): 1,666 (low) 0 (moderate) 0 - trace amount under juniper (high)

B. Water-Repellent Soil (acres): 0

C. Soil Erosion Hazard Rating:
0 (low) 1,666 (moderate) 0 (high) 0 (undefined)

PART IV - HYDROLOGIC DESIGN FACTORS

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

B. Design Chance of Success, (percent): 100%

PART V - SUMMARY OF ANALYSIS

A. Describe Watershed Emergency:

Summary

It is unknown, if suppression equipment was weed-free; therefore, noxious weeds may have been introduced into the burned area and noxious weed detection survey is warranted. There is not an emergency with regard to watershed response (erosion and increased runoff), due to the low burn severity throughout the fire matrix, the fairly flat terrain, the large amount of rock to intercept potential sedimentation, and the mosaic of residual unburned vegetation throughout the fire. No other unacceptable risks were identified.

Findings

The Lake Fire Complex is located in the southeastern edge of the Doublehead District (See Map 1). The Complex is located within the Big Sage Fire Management Unit (BSFMU), which is an area designated to allow fires to burn, if environmental conditions are deemed appropriate. The BSFMU is an fire adapted ecosystem that has few critical values at risk, such as infra structure, municipal watersheds, or high value commercial

timber lands. Boles Creek, a stream containing two federally listed fish species, is within one half mile of the fire perimeter.

The landscape containing the Lake Complex has had a history of disturbance. The most recent fires, the Bell Fire and the Pine Fire burned in 2001 and 1999, respectively. However, the Lake Fire had a significantly smaller impact to the vegetation based on the snags and the herbaceous composition of the Pine Fire area, which is adjacent to the Lake Fire perimeter.

The plant communities in the Lake Fire Complex consisted of low sage (*Artemisia arbuscula*) and rabbitbrush (*Chrysothamnus sp.*) with a matrix dominated by: Sandberg bluegrass (*Poa secunda*), Idaho fescue (*Festuca idahoensis*), buckwheat (*Eriogonum sp.*), phlox (*Phlox sp.*), and other various forbs. Juniper trees are numerous and distributed throughout the Lake fire vegetative matrix. Cheatgrass (*Bromus tectorum*) is a very small component within the fire area, but occurrences of it are adjacent to the boundaries of the various fires within the complex. Dyer's woad (*Isatis tinctoria)* occurrences are adjacent, but not within the perimeter of any of the fires in the complex.

Overall, soil burn severity was "Low". The fire spread rapidly on the evening of 5 August 2012 and made its major run on the afternoon of 6 August. The complex began as part a series of lightning starts in the afternoon and evening of 5 August 2012. The fire behavior was characterized by torching juniper igniting single and small groups of juniper trees. The spread of fire through the grass was sustained by the intense heat from the burning juniper. However, the fire was unable to sustain itself in the grass without the radiant heat from the juniper, causing islands of burned and unburned vegetation throughout the fire perimeter. Roughly 35% of the area within the boundary of the fire remains unburned. The fire flashed across grass leaving the majority of the soil surface unburned except the soils directly under the junipers trees.

Based on field reconnaissance, the roots of most of the grasses remain intact. Minimal plant mortality in the juniper was observed as well. As stated above, unburned patches of vegetation were common within the burned area perimeter.

Pedestalling was common throughout the area, so that the fine fuels in general (aka the tops of the grasses) were significantly higher than the soil surface. The elevation of the flames off of the soil surface minimized the fire effects to soils except under the burned juniper trees. The soils exhibiting white ash were checked for fine roots and the presence of hydrophobic soils. Although there were no fine roots left under the burned junipers, there was no presence of hydrophobic soils at any of the areas sampled.

The soils consisted of Argixerolls and Durixerolls. The soil surface texture throughout the fire complex was typed as loams, although there were inclusions with higher clay contents. The maximum erosion hazard rating was moderate according to the soil survey.

The stream channels in the fire area were often diffuse and not well defined, dominated by upland vegetation. Although there was presence of scour along some of the reaches, it was discontinuous. Stream channels in this portion of the Modoc Plateau typically do not have connectivity, because water percolates down through the soil surface. Due to the gentle slopes, the large percentage of rock, and the low severity of the fire, there are no values at risk from a watershed and soils perspective.

The roads tied into the dozer lines were categorized as four wheel drive roads. The bulldozers removed the vegetation in the road matrix to aid in suppression efforts. None of the roads had water bars before the fire. Based on observations of the roads adjacent to the Lake Fire, the Forest Transportation Engineer recommended the four wheel drive roads should be monitored to ensure that there were no future impacts to the roads adjacent to the fire used by suppression forces. At present, no road values are deemed at risk.

All of the fire lines were constructed using bulldozers. No water barring was recommended, due to the greater potential for disturbance during the construction of water bars as well as the pervasive amount of rock on the dozer lines (which are acting as barriers to soil movement). The conditions are similar to the Scorpion Fire, where Barbara Machado, a hydrologist, and Sue Goheen, Modoc National Forest Soil Scientist, concurred with

the recommendation to forego water barring. In lieu of water barring, berms will be removed strategically, native plants will be seeded, weed free mulch will be placed on seeded areas, and juniper branches will be used to trap potential sedimentation as part of suppression rehabilitation.

There are no federally listed wildlife species within the Lake Fire Complex. The closest known greater sage-grouse (*Centrocercus urophasianus*) occurrences based on telemetry data are in the Clear Lake area, which is roughly six miles northwest of the complex. The juniper density within the Lake Fire perimeter makes the area less suitable for potential greater sage-grouse use. There is one active bald eagle (*Haliaeetus leucocephalus*) nest upstream from the fire; this species is a Region 5 Forest Service Sensitive Species. The most common species detected were woodrats (*Neotoma sp.)* and western fence lizards (*Sceloporus occidentalis*). There are no wildlife values at risk, except for the potential spread of noxious weeds into the fire perimeter in the intact native plant communities.

There are no previously recorded cultural resources within the Lake Fire Complex, and no known cultural resources downstream that could be potential affected by a watershed response.

Within the Lake Complex, no threatened or endangered plant species occurrences were recorded in the Modoc National Forest plant database, although there are also no documented botany surveys there. A vernal pool located west of the fire is potential T&E plant habitat. No sensitive plant species were found within the burned area; however, low sage flats are potential habitats for certain sensitive plant species such as Lemmon's milkvetch (*Astragalus lemmonii*) and basalt cinquefoil (*Potentilla basaltic).* **There is a risk of displacement of the native plant species on site and further degradation of the existing plant community by the introduction of noxious weeds.**

Noxious Weeds

The majority of the site is characterized by intact native plant communities: sparse juniper woodlands within low sagebrush intermixed with native perennial bunchgrasses. Healthy native plant communities are less susceptible to invasion by noxious weeds than plant communities, which have large components of non-native primary colonizers. However, many invasive weeds are adept at colonizing and rapidly expanding within burned areas and other soil-denuding ground disturbances such as dozer lines. Non-native invasive weeds have the potential to displace native vegetation, degrade habitat function, and lower ecosystem stability. Ecological stability relates to the value of native plant communities for wildlife habitat and watershed function.

It is not known whether suppression equipment was weed-free before being used in the burn area. A weed detection survey is therefore needed to determine, if weeds were introduced. The potential values at risk, in relation to invasive noxious weeds, are the ecological stability of native plant communities and the degradation of wildlife habitat. Once weeds become established, they provide a seed source for further spread to unimpacted and uninfested areas via livestock, wildlife, and human activities. Prevention, combined with early detection-rapid response, is the most effective means of controlling noxious weeds and protecting native plant communities.

Probability of Damage or Loss: Likely. If any weed seeds were transported to the site on fire suppression equipment, they could take advantage of the disturbance associated with the fire. Infestations of dyer's woad are known to exist within a mile of the fire perimeter along Forest Road 46, a major road leading to the area of the fire; and dyer's woad seeds are already beginning to mature in hot, dry areas of the Forest such as those around the Lake Complex.

Magnitude of Consequence: Moderate. If noxious weeds become established, they could spread rapidly and degrade habitat, producing an abundant seed source for spread of noxious weeds to nearby relatively intact native plant communities. This could result in displacement of native vegetation, degradation of habitat function, negative impacts to wildlife species, and lowered ecosystem stability.

Risk Level: High.

B. Emergency Treatment Objectives:

Evaluate and eliminate the potential for noxious weed establishment and spread in all areas affected by the Lake Fire Complex suppression activities.

C. Skills Represented on Burned-Area Survey Team:

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

Core Team Members:

- Forest Jay Gauna – Botanist and GIS
- Mary Flores - Wildlife and Soils (with input from Sue Goheen, Forest Soil Scientist)
- Chris Orr - Assistant District Fire Management Officer
- Marty Yamagiwa – Fisheries Biologist
- Peggy O'Keefe – Transportation Engineer
- Linn Gassaway – Archaeology
- Jenna Matthews - Archaeology trainee

Team Leader: Mary Flores

Email: mflores@fs.fed.us Phone: 530-279-6116 FAX: 530-279-8309

D. Treatment Narrative:

Treatment Category
The treatment is noxious weed detection surveys of the roads that were improved by bull-dozers as well as the fire lines created by bull-dozers affected by suppression activities in the Lake Fire Complex. These areas will be surveyed for evidence of introduction and spread of noxious weeds. If any new or outlying populations are found in these surveys, a supplementary request for noxious weed treatment will be submitted.

Treatment Description
Inspect all areas for newly established weed occurrences. Monitoring will include documentation and hand-pulling of small new weed occurrences at the time of inspection. New weed occurrences will be pulled to root depth and, if necessary, placed in sealed plastic bags to prevent seed from dropping, and properly disposed.

- GPS record of survey tracks
- GPS polygon of any noxious weed occurrences discovered
- Incorporate data into GIS spatial databases
- Record treatment method
- Dates of treatment

Inspections should be accomplished during April-July 2013, depending on annual climatic variation and plant phenology.

Treatment Cost

Botany Crew (4 GS-5 Bio Techs)	$635/day x 4 days	$2,600
GS-11 Botanist	$295/day x 3 days	$900
Supplies		$200
Total Cost Estimate		**$3,700**

Discussion/Summary/Recommendations
Any noxious weed occurrences discovered and treated in 2013 should receive follow-up monitoring and treatment as needed to ensure eradication.

Land Treatments: Noxious Weed Detection Survey. No other land treatments proposed.

Channel Treatments: N/A

Roads and Trail Treatments: None warranted, per Forest Transportation Engineer

Structures: N/A

E. Monitoring Narrative:

No BAER treatment effectiveness monitoring is proposed.

PART VI – EMERGENCY REHABILITATION TREATMENTS AND SOURCE OF FUNDS

LINE ITEM	UNITS	UNIT COST	# OF UNITS	BAER FUNDS
A. Lands Treatments				
NoxiousWeed Detection Surveys	Each	$3,700	1	$3,700
			Subtotal Land Treatments	*$3,700*
B. Channel Treatments				
			Subtotal Channel Treatments	*$0*
C. Roads and Trails				
	Each			$0
			Subtotal Roads and Trails	*$0*
D. Protection and Safety				
Interagency Coordination	Days			$0
Sign Installation	Each			$0
			Subtotal Protection and Safety	*$0*
E. BAER Assessment				
Assessment Team	Each	$3000	1	$3000
			Subtotal Assessment	*$3000*
F. Monitoring				
Treatment Effectiveness	Each			$0
			Subtotal Monitoring	*$0*
G. Totals				
			Previously Approved	N/A
			Totals for this Request	**$6,700**

Line Officer Signatures

Forest Supervisor (signature) */s/ Kimberly H. Anderson* Date September 14, 2012
Kimberly H. Anderson

for Regional Forester (signature) Barri T. Gyant Date 12/5/2012
Randy Moore