USDA-FOREST SERVICE FS-2500-8 (6/06)

Date of Report: October 13, 2011

BURNED-AREA REPORT
(Reference FSH 2509.13)

PART I - TYPE OF REQUEST

A. Type of Report

[X] 1. Funding request for estimated emergency stabilization funds
[ ] 2. Accomplishment Report
[ ] 3. No Treatment Recommendation

B. Type of Action

[X] 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: Ruth Fire

B. Fire Number: CA-SRF-001848

C. State: California

D. County: Trinity

E. Region: 5 – Pacific Southwest

F. Forest: Six Rivers

G. District: Mad River

H. Fire Incident Job Code: P5GG2W

I. Date Fire Started: September 23, 2011

J. Date Fire Contained: September 30, 2011

K. Suppression Cost: $3,400,000

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 4.75
2. Fireline seeded (miles):
3. Other (identify):

M. Watershed Number: 180101020202 (180102120402)

N. Total Acres Burned: 1451
NFS Acres(**1200**) Other Federal ( ) State ( ) Private (251)

O. Vegetation Types: Canyon live oak, Douglas fir, Douglas fir – Ponderosa pine, Douglas fir – white fir, mixed conifer pine, and annual grassland.

P. Dominant Soils: Generalized soils are gravelly to very gravelly loams overlying gravelly loam to clay loam subsoils with moderate permeability, hydrologic groups B-C. Dominant soil series are Skalan, Kistirn, Holland, Albus, Race, and Clallam families, all deep phases on 35-70% slopes.

Q. Geologic Types: Geology is Franciscan Formation of Jurassic to Cretaceous age: Pickett Peak (South Fork Mountain Schist) and Yolla Bolly (Graywacke of Hammerhorn Ridge) terranes. Bedrock is metabasalt and metavolcanic rocks, quartz mica schist, metagraywacke, and cherts.

R. Miles of Stream Channels by Order or Class:

Order	Miles
1	10.4
2	2.8
3	1.3
4	1.4
7	0.5

S. Transportation System

Trails: 0 miles Roads: 3.9 miles

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 1000 (low) 400 (moderate) 50 (high) **gross estimate; no imagery or aerial flight available and limited ground access.

B. Water-Repellent Soil (acres): 35 **portion of high soil burn severity area, none observed in mod sbs

C. Soil Erosion Hazard Rating (acres):
140 (low) 490 (moderate) 821 (high) **most all soils are moderate EHR unburned, and transition to high at low-moderate soil burn severity; none have very high EHR.

D. Erosion Potential: 24.1 tons/acre **modeled using ERMiT, 'background' erosion = 7.2 tons/ac.

E. Sediment Potential: 807 cubic yards / square mile **assuming 10% delivery ratio.

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 30

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

C. Equivalent Design Recurrence Interval, (years): 2

D. Design Storm Duration, (hours): 24

E. Design Storm Magnitude, (inches): 4.5

F. Design Flow, (cubic feet / second/ square mile): 64.4

G. Estimated Reduction in Infiltration, (percent): 0

H. Adjusted Design Flow, (cfs per square mile): 64.4

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats: The Ruth Fire started on September 23,2011 on private property near the community of Ruth on the Mad River Ranger District, Six Rivers N.F. (approx. 900 acres) and burned in a Northeasterly direction over South Fork Mountain and onto the Yolla Bolla Ranger District on the Shasta-Trinity National Forests (approx. 300 acres). The cause of the fire is currently under investigation. Four residences and 27 outbuildings were destroyed by the fire. The fire burned in a mosiac pattern in live oak woodland, Douglas fir, white fire and grassland vegetation types. Approximately 6 tractors were used during suppression. Of the 4.75 miles of tractor line constructed, 3.10 miles were on existing non-system trails. The tractor lines will be treated during suppression rehab. Additionally, hazard trees were fallen and power lines were restored during suppression rehab. An initial assessment of emergency restoration needs performed by Six Rivers NF hydrologists and Shasta Trinity NF soil scientist has determined that soil stabilization/hillslope erosion treatments, and channel treatments are not needed. An initial assessment of the potential for spread of invasive weeds by Botanists on Six Rivers and Shasta Trinity NF has found that the area that was burned has not been inventoried for the presence of invasive weeds. However, County road 501 that was used to access the fire and from which a tractor line was constructed to access the fire, is currently infested with yellow starthistle. Forest route 23 which the fire burned over on top of South Fork Mountain from which tractor lines were built is infested with diffuse knapweed. Additionally, an equipment cleaning station was not set up for the fire. Safety inspections were made on 2 local excavators and a locally owned grader and the inspector said the equipment appeared clean. Additionally, three locally owned tractors were used during initial attack and it is unlikely that they were cleaned or inspected prior to use. The fire camp was set up at the Flying Double A Ranch which is also infested with yellow starthistle.

Critical Values: Critical values within or in close proximity of the burned area are native communities and range lands where yellow starthistle or diffuse knapweed are not known to occur.

Values at Risk

The following values were identified during the initial phase of the Ruth Fire assessment process and validated throughout the assessment process at risk from threats as a result of post-fire effects. The risk matrix below, Exhibit 2 of Interim Directive No.: **2520-2010-1**, was used to evaluate the Risk Level for each value identified during Assessment:

Probability of Damage or Loss	**Magnitude of Consequences**		
	Major	Moderate	Minor
	RISK		
Very Likely	**Very High**	**Very High**	**Low**
Likely	**Very High**	**High**	**Low**
Possible	**High**	**Intermediate**	**Low**
Unlikely	**Intermediate**	**Low**	**Very Low**

Potential Threats to Critical Values and Level of Risk: Introduction and spread of yellow starthistle and diffuse knapweed is very likely to occur due to introduction and spread of invasive plant species from contaminated equipment traversing access routes, building tractor lines, or propagules transported by fire crews from fire camp to disturbed areas where vegetative cover has been significantly reduced by the fire.

Probability of Damage: **Likely** The probability of damage to native communities and range land, particularly grasslands consumed by the fire, is likely considering that fire lines were built through the grassland communities and grassland was used as a sling site. County road 501, which is currently infested with yellow starthistle, was used to access the fire area and from which a tractor line was constructed to access the fire. The entire fire burned in the Van Horne range allotment. Yellow starthistle and diffuse knapweed are early seral species that quickly invade disturbed grasslands once propagules that cling to clothing or vehicles are introduced.

Magnitude of Consequences: **Major** The consequences of not managing yellow starthistle and diffuse knapweed infestation are major resulting in damage to critical natural resources, primarily grassland communities and range, having considerable long term effects. Grassland and range lands do not recover naturally from infestation by these species. Infestations are most effectively dealt with during initial introduction. If not treated early and left to spread infestations become so entrenched that the cost to eradicate becomes prohibitive, the impacts more extreme, and the damage irreversible. Yellow starthistle is considered one of the most serious rangeland weeds in the western United States. Additionally, yellow starthistle contains a compound that causes nigropallida encephalomalacia, or chewing disease in horses and permanently damages the area of the brain that controls fine motor movement, including mouth and lip movement. Toxic effects are cumulative. Adjoining land owners keep horses in the vicinity of the fire which could be threatened by untreated infestations of yellow starthistle resulting from the fire. Diffuse knapweed replaces traditional wildlife and livestock forage on range and pasturelands and while it is not poisonous, the presence of diffuse knapweed in hay or on rangeland can decrease feeding value to livestock and wildlife species. Mature knapweed plants are coarse and fibrous and the spines on the bracts can be very irritating or may even cause injury to the mouths and digestive tracts of grazing animals.

Risk Evaluation and Emergency Determination: **Very High Risk Level** Because the probability of damage or loss is likely and the magnitude of the consequences is major an unacceptable risk exists, hence the following actions are proposed to manage the risk.

B. Emergency Treatment Objectives: The objective of the land treatment proposal is to identify and treat invasive plant introductions or existing sites that were introduced or are spreading as a result of the Ruth Fire in order to reduce the probability of occurrence or lessen the anticipated consequences.

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

Land 70 % Channel ___ % Roads/Trails ___ % Protection/Safety ___ %

D. Probability of Treatment Success (Invasive weed treatment 1 year with BAER funds)

	Years after Treatment		
	1	3	5
Land	70		
Channel			
Roads/Trails			
Protection/Safety			

E. Cost of No-Action (Including Loss): $100,000

F. Cost of Selected Alternative (Including Loss): $9,000

G. Skills Represented on Burned-Area Survey Team:

[X] Hydrology [**X**] Soils [ ] Geology [ ] Range [ ]
[ ] Forestry [ ] Wildlife [ ] Fire Mgmt. [ ] Engineering [ ]

[ ] Contracting [ ] Ecology [X] Botany [ ] Archaeology [ ]
[ ] Fisheries [ ] Research [ ] Landscape Arch [ ] GIS

Team Leader: John McRae

Email: jmcrae@fs.fed.us Phone: 707-441-3513 FAX: 707-442-9242

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:

Invasive plant treatment inventories would begin in June of 2012 when the invasive plant species are first identifiable. Treatment would be limited to manual removal by pulling entire plants, including roots, by hand. Newly constructed tractor lines and roadsides within the Ruth Fire perimeter would be inventoried. Any infestations found would be treated in 2012 with BAER funds. The monitoring and treatment of sites after 2012 would be accomplished with program funds other than BAER. Past experience on Six Rivers NF has shown that the strategy of early identification of high priority weed sites and repeated treatment of small infestations over time can effectively reduce the risk of introduction and spread and can ultimately eradicate invasive plant species sites. New infestations can more readily be eradicated the first year if they can be treated before the weeds produce viable seed. The ability to manage invasive plant sites diminishes as the seed bank increases over time. The cost estimate for this proposal is $9,000.

Detect and Treat

	Cost per Day	Days	Total
GS-11 SRF	$320	10	$3,200
GS-11 STF	$310	5	$1,550
GS-09 SRF	$260	10	$2,600

Forest Service Vehicle, Travel, Per Diem Cost

Equip/Vehicle Cost	$650
Travel/PerDiem Cost (3 people 3 days each)	$1,000

Channel Treatments: None

Roads and Trail Treatments: None

Protection/Safety Treatments: 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.)

Part VI – Emergency Stabilization Treatments and Source of Funds **Interim #**

			NFS Lands				Other Lands			All
		Unit	# of		Other	# of	Fed	# of	Non Fed	Total
Line Items	Units	Cost	Units	BAER $	$	units	$	Units	$	$
A. Land Treatments										
Detect and Treat	Jcb	$7,350	1	$7,350	$0		$0		$0	$7,350
Vehicle, Travel, PD	Jcb	$1,650	1	$1,650	$0		$0		$0	$1,650
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$9,000	$0		$0		$0	$9,000
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. Protection/Safety										
				$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 Initial Assessment	Jcb	$1,900		---			$0		$0	$0
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				---	$0		$0		$0	$0
F. Monitoring										
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$0	$0		$0		$0	$0
G. Totals				$9,000	$0		$0		$0	$9,000
Previously approved										
Total for this request				$9,000						

PART VII - APPROVALS

SHARON HEYWOOD
Forest Supervisor
Shasta Trinity National Forests

3/07/11
Date

TYRONE KELLEY
Forest Supervisor
Six Rivers National Forest

Nov 9, 2011
Date

for RANDY MOORE
Regional Forester

11/18/11
Date