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

Date of Report: 5/1/2012

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: Barbours Creek

B. Fire Number: 2012-VAVAF-000053

C. State: VA

D. County: Craig, Alleghany

E. Region: 8

F. Forest: Jefferson NF

G. District: Eastern Divide

H. Fire Incident Job Code: P8GRS9

I. Date Fire Started: 4-7-2012

J. Date Fire Contained: 4-18-2012

K. Suppression Cost: $1,667,545

L. Fire Suppression Damages Repaired with Suppression Funds
1. Fireline waterbarred (miles): 9.8 mi
2. Fireline seeded (miles): 0
3. Other (identify): Firelines rehabed by pulling in berms and organic matter mechanically

M. Watershed Number: 020802010403, 020802010404, 020802011202

N. Total Acres Burned: 7402
NFS Acres(7236) Other Federal ( ) State ( ) Private (166)

O. Vegetation Types: Primarily upland and mesic oak forest (*Quercus* sp) with some Table Mtn Pine (*Pinus pungens*) on dryer ridges. Understories of red maple (*Acer rubrum*), sourwood (*Oxydendrum arboreum*), dogwood (*Cornus florida*), Serviceberry (*Amalanchier sp*) and white pine (*Pinus strobus*). On dryer sites Mountain Laurel (*Kalmia latifolia*) is abundant in the understory.

P. Dominant Soils: Hapludults, Inceptisols and Entisols

Q. Geologic Types: Sandstones and shales of the Northern Appalachian Ridges and Valleys

R. Miles of Stream Channels by Order or Class: 2.7 Perennial 20.5 Intermittent

S. Transportation System

Trails: 10.7 miles Roads: 9.1 miles

PART III - WATERSHED CONDITION

The Watershed Condition Class for all three watersheds is Class 2, Functioning at Risk.

The following descriptions of soil and water conditions are for the entire Easter Complex including the Barbours Creek Fire.

Easter Complex Fires

Burned Area Report

Soil and Watershed Conditions

Burn intensity information from the five fires in the complex indicated that generally the soils in the burned areas remained protected by partially consumed O-horizons (organic duff layer) and tree canopy. Several reports mentioned soil moisture in the organic layer was sufficient to prevent fire from consuming the protective O-horizon. Some thin soils on upper ridges vegetated by pine communities and having some rock outcrops burned hotter and consumed much of the organic layer on the forest floor. These "hot spots" are buffered by lower slopes having organic cover and riparian areas that were lightly burned. Therefore, the areas which burned hottest were well buffered from stream channels downslope. Areas which burned hot enough to consume the shrub layer canopy could result in some short term accelerated soil movement in these areas until full leaf out in 2-3 weeks. This soil movement is not expected to travel very far down the slope due to abundant slope breaks, dead and down trees, rocks and unburned areas. Some riparian areas were used in burn out operations where leaf litter carried the fire through the riparian corridor. Some burn out operations on the Alleghany Tunnels fire used ping pong balls in steep shale derived soils and burned very hot, but this was not widespread and appeared not to need treatment to protect values downstream. Some tree mortality will occur where fires made uphill runs and flame lengths reached crowns. These areas are not widespread and understory growth will be invigorated by nutrients released by the fire, so burned areas are expected to have regrowth of vegetation in one to two years. Temporary loss of some shade will occur with the burning of understory vegetation and lower branches of some trees and shrubs. These conditions will promote germination of native and non-native seeds in the burned areas due to increased sunlight and soil temperatures. Soil moisture could also temporarily increase due to less low canopy interception of precipitation.

Thomas Bailey

Soil Scientist, Easter Complex BAER Team
George Washington and Jefferson National Forests
April 23, 2012

Easter Complex Fires

Burned Area Report

Flooding and Water Quality

Soil moisture in the organic layer was adequate to prevent consumption of the protective O-horizon. Thus the infiltration capacity of the soil was not reduced. Some tree mortality will occur in limited areas where fires made uphill runs and flame lengths reached crowns. The resulting reduction in water use by vegetation could result in small increases in flow in a few headwater streams. Such increases in flow would mainly occur as increases in summer base flow. There would be no increased threat of flooding downstream. Any effects would disappear in two or three years as vegetation regrows.

Since the O-horizon was not consumed and infiltration not reduced, no significant soil erosion is anticipated. Thus there will be no measureable increase in sediment delivered to streams. No significant or long-term effects on water quality are expected.

Richard Patton
Hydrologist, Easter Complex BAER Team
George Washington and Jefferson National Forests
April 25, 2012

A. Burn Severity (acres): 6602 (low) 800 (moderate) 0 (high)
Burn severity was determined by field reconnaissance and observations from the district resource advisor. The majority of the area was burned through with a backing fire, but some dryer slopes and a burnout area were subjected to a higher intensity burn. The area had received a rain event about 5 days prior to the fire, so there was some residual soil moisture under the leaf litter. But, 100 and 1,000 hour fuel moistures were very low for this area, thus total consumption was not uncommon of some larger fuels.

B. Water-Repellent Soil (acres):

C. Soil Erosion Hazard Rating (acres):
___ (low) ___ (moderate) ___ (high)

D. Erosion Potential: ____ tons/acre

E. Sediment Potential: ____ cubic yards / square mile

PART IV - HYDROLOGIC DESIGN FACTORS

A. Estimated Vegetative Recovery Period, (years): 1-2

B. Design Chance of Success, (percent): n/a

C. Equivalent Design Recurrence Interval, (years): 5

D. Design Storm Duration, (hours): 24

E. Design Storm Magnitude, (inches): 3.7

F. Design Flow, (cubic feet / second/ square mile): 125

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

H. Adjusted Design Flow, (cfs per square mile): 125

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:
This is a human-caused fire that created a threat to several residences and private property. In addition, resource values of the Barbours Creek Wilderness were threatened by the potential of a high intensity fire that could have killed hundreds of acres of beautiful hardwood stands. Given rehabilitation efforts on the 9.8 miles of dozer line, no significant increases in sedimentation are anticipated. A majority of the burn was determined to be of low fire intensity by the BAER Team. However, wildfire activity created holes in the forest canopy (several hundred acres) that could be suceptible to seeding in from adjacent non-native invasive (NNI) plant species, known to have highly invasive tendicies. It is proposed to control these perimeter NNI species with herbicides to prevent or limit the potential of NNI species becoming established in the wilderness.

Threats to Ecosystem Integrity – Non-Native Invasive Plants

The main concern is to provide protection to the Barbours Creek Wilderness from encroachment from invasive plants that are currently found on the immediate perimeter of the wilderness. It is highly likely these seed sources of NNI species will promote establishment in the wilderness. It is proposed to control these perimeter NNI species with herbicides to prevent or limit the potential of NNI species becoming established in the wilderness. The George Washington and Jefferson National Forests' are currently covered under an environmental assessment (EA) entitled "George Washington and Jefferson National Forests Forestwide Non-Native Invasive Plant Control" with a Decision date of December, 14, 2010 by then Forest Supervisor Maureen Hyzer. This EA covers treatment of NNI species along roads and existing open areas and gives special emphasis to controlling invasives near wilderness areas.

Five non-native invasive plant species, Autumn olive (*Elaeagnus umbellata*), tree-of-heaven (*Ailanthus altissima*), Japanese barberry (*Berberis thunbergii*), Tatarian honeysuckle (*Lonicera tatarica*), and multiflora rose (*Rosa multiflora*) were either noted within the burn periphery or just within the burn extent. All three of these species are known throughout Craig and Alleghany Counties. The perimeter roads, especially VA 617 and Forest Service 176 contained the largest populations and the largest individuals of all five species. These populations could provide a threat for spread of the invasive plant into the burned, more open areas. If these invasive species increased post burn, the result would diminish the level of plant species diversity as well as degrade the pristine nature of this wilderness area. This would further degrade the watershed condition, which is currently rated as "Functioning at Risk." It is recommended that control efforts be undertaken to control the existing seed source before they have the opportunity to seed into the wilderness areas that burned hotest. In addition, it is recommended that monitoring be completed within the dryer areas that burned hotest to determine if additional treatment is warrented. If these species or other unforeseen non-native invasive plants become established, it is recommended that supplemental funds be requested for immediate control within the fire perimeter.

B. Emergency Treatment Objectives: Treat all adjacent NNI plant species within 100 feet of either side of firelines existing as roads surrounding the Barbours Creek Wilderness. Also, treat all NNI plant species within 50 feet of either side of dozer line established to control the Barbours Creek fire. Monitor the hottest burned areas to determine if NNI plants have become established and monitor the effectiveness of control of perimeter NNI that are proposed fro herbicide treatment.

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

D. Probability of Treatment Success
Probability of Treatment Success: For non-native invasive plants the probability of success is high (75%) since the invasive plants along the fire perimeter are located in linear patterns that can readily be gotten to. However it should be noted invasive plants may be an ongoing problem within the area since there is a dense infestation on private property south of the burn perimeter**.**

E. Cost of No-Action (Including Loss): The cost of no action is the spread of non-native invasive species into open areas of the burned area. It is difficult to estimate a cost of this action since it involves the loss of native plant diversity and potentially higher costs of treatment at a later date due to significantly higher density of stems to treat.

F. Cost of Selected Alternative (Including Loss): See Below.

G. Skills Represented on Burned-Area Survey Team:

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

Team Leader: Tom Bailey

Email: tbailey@fs.fed.us Phone: 540-265-5100 FAX:

H. **Treatment Narrative:**

Land Treatments: Nonnative Invasive Plant Control
The activity will consist of control of the five non-native inavsive species (Tree-of-heaven, autumn olive, Japanese barberry, multiflora rose, and Tartarian honeysuckle) located on the periphery or within the burn perimeter. For all of these a foliar application of 10% glyphosate for trees/bushes below approximately 6 feet in height will be used. Larger invasive trees/shrubls will be treated with tricolpyr ester (Garlon 4) as a basal spray application. Within 30 feet of water only a formulation of glyphosate labelled for aquatic use (Rodeo) will be used as a foliar or cut surface application.

Treat all adjacent NNI plant species within 100 feet of either side of firelines existing as roads surrounding the Barbours Creek Wilderness (approximately 446 acres). Also, treat all NNI plant species within 105 acres of wildlife openings/logged areas adjacent to the wilderness. In addition, treat NNI species within 50 feet of either side of dozer line established to control the Barbours Creek fire (83 acres – this area has not been thoroughly surveyed). The total area of control will be about 634 acres. Treatment will be completed in mid to late summer of 2012 when the chemical treatments will be most effective.

Costs

Herbicide glyphosate 12.00/acre	$ 7608
Herbicide Garlon 4 Ultra	$ 1680
Mineral Oil for Garlon	$ 800

Personnel costs ;
Assume GS-5 labor rate ($218/day)

Assume average 2 ac/day treated	
Thus $109/per acre x 600ac	$69,106
Totals	$ 79,194

Channel Treatments:

Roads and Trail Treatments:

Protection/Safety Treatments:

I. **Monitoring Narrative:**

Nonnative Invasive Plant Control

Monitoring will be completed across the portions of the burned area next summer (2013) that burned the hottest (400-600 acres) to deterime the presence of non-native invasive species (Autumn olive, Japanese barbeery, tree-of-heaven, Tartarian honeysuckle, and multiflora rose). In addition, monitoring along the periphery of the burn area will occur to ensure existing seed producers of NNI species were eliminated in 2012.

If the monitoring locates small isolated infestations with invading seedlings, control efforts will be completed at the same time as monitoring. Larger outbreaks may require requests for additional funds for control efforts. Data on the size of the infestations and GPS coordinates will be collected during the monitoring activity. For larger outbreaks GPS coordinates will be collected across the periphery in order to create a GIS spatial polyogon. The monitoring will be completed in late September of 2013 or early October to allow a sufficient period of time for the previously located non-native plant species to invade more of the burned area. If the monitoring reveals concentrated infestations of these species or other unforseen invasive plants, supplemental funds will be requested for further control within the burn area.

Costs	
Monitoring personnel costs per year	$ 2500
X 3 years	
Totals	$ 7500

Part VI – Emergency Stabilization Action and Source of Funds **Interim # 1**

				$0	$0		$0		$0	$0
				$0	$0		$0		$0	$0
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Land Treatments				$79,193	$0		$0		$0	$79,193
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										
				$2,800			$0		$0	$0
Insert new items above this line!				---	$0		$0		$0	$0
Subtotal Evaluation				$2,800	$0		$0		$0	$0
F. Monitoring										
	years	2500	3	$7,500	$0		$0		$0	$7,500
Insert new items above this line!				$0	$0		$0		$0	$0
Subtotal Monitoring				$7,500	$0		$0		$0	$7,500
G. Totals				$86,693	$0		**$0**		**$0**	**$86,693**
Previously approved										
Total for this request				**$86,693**						

PART VII - APPROVALS

1. */s/ Michael L. Balboni* *5-1-12*
   Forest Supervisor (signature) Date

2. _____ _____
   Regional Forester (signature) Date