

Date of Report: 5/1/2012

**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: Alleghany Tunnels                      B. Fire Number: 2012-VAVAF-000052  
C. State: VA    D. County: Alleghany  
E. Region: 8    F. Forest: George Washington NF  
G. District: James River                              H. Fire Incident Job Code: P8GRS7  
I. Date Fire Started: 4-7-2012                      J. Date Fire Contained: 4-19-2012  
K. Suppression Cost: \$840,205  
L. Fire Suppression Damages Repaired with Suppression Funds  
    1. Fireline waterbarred (miles): 4 FS 4 Pvt All dozer  
    2. Fireline seeded (miles):  
    3. Other (identify):  
M. Watershed Number: 020802010302, 020802010303, 020802010304  
N. Total Acres Burned: 11,381  
    NFS Acres(7548)    Other Federal ( )    State ( )    Private (3833)  
O. Vegetation Types: Upland oaks, yellow pine (pitch, Virginia, Table Mountain), Mt. Laurel, rhododendron, huckleberry, blueberry. Dry Mesic Oak and Xeric Pine/Pine-Oak including chestnut oak, scarlet oak, pitch pine, table mountain pine, mountain laurel, fetter bush.

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: 15.3 Perennial 42.8 Intermittent

S. Transportation System

Trails: 13.4 miles

Roads: 18.5 miles

### **PART III - WATERSHED CONDITION**

The Watershed Condition Class for all three watersheds is Class 1, Functioning Properly.

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

#### **Easter Complex**

#### **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

### 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): 6260 (low) 4894\_\_\_ (moderate) 228\_\_\_ (high)

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): 3.6

F. Design Flow, (cubic feet / second/ square mile): 121

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

H. Adjusted Design Flow, (cfs per square mile): 121

## **PART V - SUMMARY OF ANALYSIS**

### **A. Describe Critical Values/Resources and Threats:**

The cause of this fire is under investigation. It created a threat to several residences and private property. 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 that could be susceptible to seeding in from adjacent non-native invasive (NNI) plant species, known to have highly invasive tendencies. It is proposed to control NNI species that occur around the perimeter of the fire, as well as NNI species that occur in openings and along roads within the burned area, with herbicides to prevent or limit the potential of NNI species becoming established in the burned area. 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 in Hot Spots of NNIP Infestation, Wildlife Openings, areas Disturbed by Fire, Insect, or Disease or Storm damage, and Other Disturbed Areas (Salvage/Regeneration Cut).

#### **Threats to Ecosystem Integrity – Non-Native Invasive Plants**

Three non-native invasive plant species, autumn olive (*Elaeagnus umbellata*), multiflora rose (*Rosa multiflora*) and garlic mustard (*Alliaria petiolata*), were noted along and just within the burn periphery, and in openings and roads within the burned area. All three of these species are known throughout Alleghany County (VA). Perimeter roads contained populations all three species, however, the biggest threat appears to be from the internal roads and openings where large populations of autumn olive occur. These populations could provide a threat for spread of the invasive plant into the burned and more open areas. If these invasive species increase post burn, the result would diminish the level of plant species diversity, invade regeneration cuts, and diminish viewsheds. This could move the watershed condition toward "Functioning at Risk." It is recommended that control efforts be undertaken to control the existing seed sources before they have the opportunity to seed into the regeneration cuts, view sheds, and areas within burn that burned hottest. In addition, it is recommended that monitoring be completed within the dryer areas that burned hottest to determine if additional treatment is warranted. 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 25 feet of either side of firelines existing as roads or bulldozer lines surrounding the burned area. Treat all NNI species within 100 feet of clearings within the burned area. 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 for herbicide treatment.

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

N/A

### **D. Probability of Treatment Success**

For non-native invasive plants the probability of success is high (90+%) since the invasive plants along the fire perimeter are located in linear patterns that can be readily accessed and invasive plants in openings within the burned area are also easily accessible. However it should be noted invasive plants may be an ongoing problem within the area since there are infestations on private property in the vicinity of the burn.

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:

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

Team Leader: Tom Bailey

Email: tbailey@fs.fed.us

Phone: 540-254-5152

FAX: \_\_\_\_\_

#### 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:

##### Nonnative Invasive Plant Control

The activity will consist of control of the three non-native invasive species autumn olive, multiflora rose, and garlic mustard 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/shrubs 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 25 feet of either side of firelines existing as roads surrounding the burned area (67 acres). Also, treat all NNI plant species within 100 feet of openings (25 acres) within and adjacent to the burn. The total area of control will be 92 acres. Treatment will be completed in summer of 2012 to fall/winter of 2012/2013 when the chemical treatments will be most effective.

##### Costs

Herbicide glyphosate	\$ 6,614
Herbicide tricolpyr	\$ 1,546
Mineral Oil for tricolpyr	\$ 3,440
Personnel costs	\$ 10,028
Total	\$ 21,628

#### 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.)

#### Nonnative Invasive Plant Control

Monitoring will be completed next summer (2013) across the portions of the burned area that burned the hottest and/or resulted in canopy openings to determine the presence of non-native invasive species (autumn olive, garlic mustard, and tree-of-heaven). In addition, monitoring along the periphery of the burn area will occur to ensure existing seed producers of NNI species were eliminated by 2013.

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 polygon. 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 unforeseen invasive plants, supplemental funds will be requested for further control within the burn area.

#### Costs

Monitoring personnel costs per year (2 GS-5 (\$218/day for 5 days)

2013	\$ 2,180
2014	\$ 2,180
2015	\$ 2,180
Total	\$ 6,540

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

<b>A. Land Treatments</b>										
	acres	235	92	\$21,620	\$0		\$0		\$0	\$21,620
				\$0	\$0		\$0		\$0	\$0
				\$0	\$0		\$0		\$0	\$0
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Land Treatments</i>				\$21,620	\$0		\$0		\$0	\$21,620
<b>B. Channel Treatments</b>										
				\$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
<i>Subtotal Channel Treat.</i>				\$0	\$0		\$0		\$0	\$0
<b>C. Road and Trails</b>										
				\$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
<i>Subtotal Road &amp; Trails</i>				\$0	\$0		\$0		\$0	\$0
<b>D. Protection/Safety</b>										
				\$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
<i>Subtotal Structures</i>				\$0	\$0		\$0		\$0	\$0
<b>E. BAER Evaluation</b>										
				\$4,200			\$0		\$0	\$0
<i>Insert new items above this line!</i>				---	\$0		\$0		\$0	\$0
<i>Subtotal Evaluation</i>				\$4,200	\$0		\$0		\$0	\$0
<b>F. Monitoring</b>										
	years	2180	3	\$6,540	\$0		\$0		\$0	\$6,540
<i>Insert new items above this line!</i>				\$0	\$0		\$0		\$0	\$0
<i>Subtotal Monitoring</i>				\$6,540	\$0		\$0		\$0	\$6,540
<b>G. Totals</b>				\$28,160	\$0		\$0		\$0	\$28,160
Previously approved										
Total for this request				\$28,160						

**PART VII - APPROVALS**

- /s/ Michael L. Balboni  
Forest Supervisor (signature)

5-1-12  
Date
- \_\_\_\_\_  
Regional Forester (signature)

\_\_\_\_\_  
Date