

Date of Report: December 5, 2013

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: Table Rock Fire B. Fire Number: NC-NCF-130066
C. State: North Carolina D. County: Burke
E. Region: 08 F. Forest: Pisgah National Forest
G. District: Grandfather Ranger District H. Fire Incident Job Code: P8H0Q5
I. Date Fire Started: November 12, 2013 J. Date Fire Contained: November 29, 2013
K. Suppression Cost: \$1,977,670
L. Fire Suppression Damages Repaired with Suppression Funds
 1. Fireline waterbarred (miles): 1.5 at this time, but additional suppression rehab work is planned.
 2. Fireline seeded (miles): 1 at this time, but additional suppression rehab work is planned.
 3. Other (identify):
M. Watershed Number: 030501010302 - Lower Linville River & 030501010402 - Irish Creek, Catawba River Basin
N. Total Acres Burned: 2,579
 NFS Acres(X) Other Federal () State () Private (X)

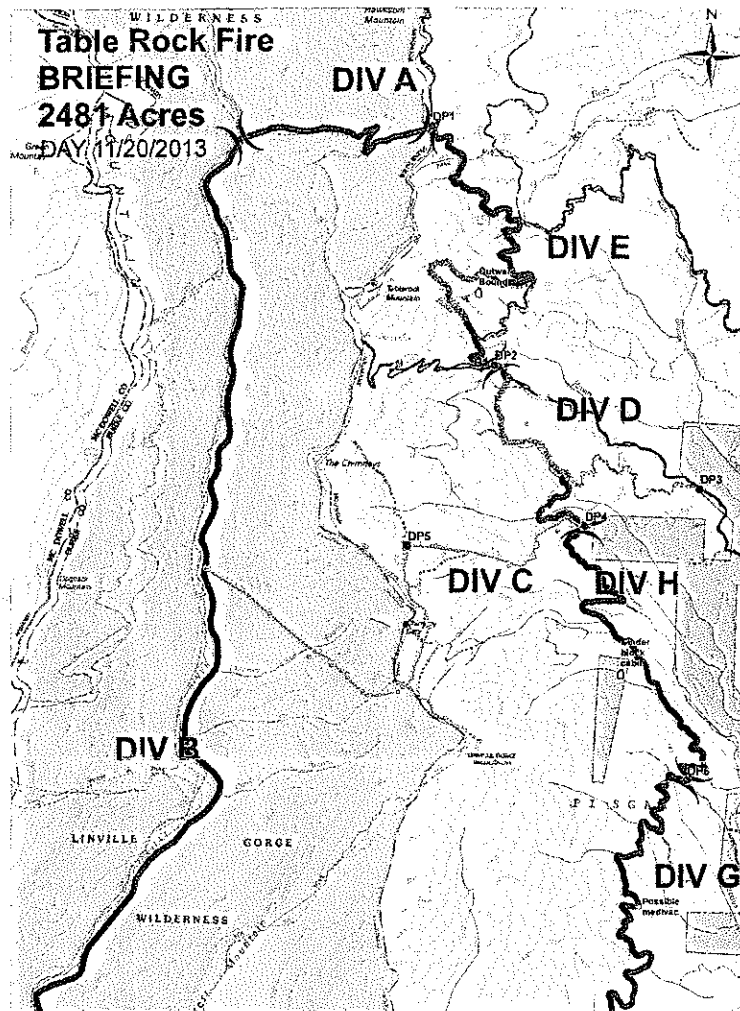


Table Rock Fire briefing map as of November 20, 2013.

O. Vegetation Types:

The vegetation types were determined based on aerial reconnaissance, previous field review, and modeled natural vegetation. Pine-Oak/Heath Forest dominates within the lowermost slopes of the burn line perimeter. Pine-Oak/Heath Forest and Dry Oak Forest dominate the burn area across the convex ridges and steep slopes, consisting from 50-55% of the landscape. This habitat is dominated by pitch pine (*Pinus rigida*), with table mountain pine (*Pinus pungens*), or a mix with shortleaf pine (*Pinus echinata*) at low elevations. Varying amounts of chestnut oak (*Quercus prinus*), scarlet oak (*Quercus coccinea*), black oak (*Quercus velutina*), white oak (*Quercus alba*), red maple (*Acer rubrum*), black gum (*Nyssa sylvatica*), and sourwood (*Oxydendrum arboreum*). Ericaceous shrubs dominate this xeric community, particularly those sites without periodic wildfires. Mountain laurel (*Kalmia latifolia*) is the dominant shrub with lesser amounts of flame azalea (*Rhododendron calendulaceum*), lowbush blueberry (*Vaccinium pallidum*) and huckleberry (*Gaylussacia baccata*). In the absence of fire, the shrub thickets can be quite dense. Herbaceous diversity is sparse within the denser shrub thickets but more diverse within open understories. For those more open examples yellow stargrass, trailing arbutus, spotted wintergreen, and Carolina lily are characteristic as with a mix of grasses and herbs. Dry oak forest is very similar except dominated in the overstory by chestnut oak and scarlet oak. This portion of the landscape received the highest intensity fire although it varied from high to low intensity. Where the fire intensity was high, all the shrubs were top-killed. In comparison, the low intensity fire locations did not always completely burn through the shrub component.

Dry-mesic oak forest occurs across about 15% of the burn area. It is dominated by chestnut oak, red oak (*Quercus rubra*), white pine (*Pinus strobus*) and various hardwoods. Numerous heath shrubs occur in the understory, in particular huckleberry. A low intensity burn occurred across this habitat and had variable impacts across its shrub. The remaining primary forest community occurring across the burn unit was an acidic cove

forest, which covered about 30% of the area. This community is dominated by hardwood species in the understory with a dense shrub layer of white rosebay (*Rhododendron maximum*). This community was primarily unaffected by the wildfire given the high humidities present under the dense evergreen shrub layer. Much of the area was unburned.

Rock outcrops, consisting of a quartzite subtype of low elevation rocky summits, occur at Table Rock and along the ridge in the Chimneys. Shrubs and herbs dominate the thin acidic soils within this community. They include sand-myrtle (*Kalmia buxifolia*), Carolina Rhododendron (*Rhododendron carolinianum*), little bluestem (*Schizachyrium scoparium*), death-camas (*Stenanthium leimanthoides*), rock alumroot (*Heuchera villosa*), cliff saxifrage (*Hydaticea petiolaris*), Heller's blazing-star (*Liatris helleri*), mountain golden-heather (*Hudsonia montana*), and Greenland sandwort (*Minuartia groenlandica*). The intensity of the burns varied dramatically across this community given bare rock and some non-continuous fine fuels.

P. Dominant Soils: The following soils occur in the burned area:

- Ashe-Chestnut-Buladean complex, 30 to 50 percent slopes, very stoney;
- Ashe-Chestnut-Buladean complex, 50 to 95 percent slopes, extremely stoney;
- Ashe-Cleveland-Rock outcrop complex, 30 to 95 percent slopes, extremely bouldery;
- Chestnut-Buladean complex, 30 to 50 percent slopes, stoney;
- Ditney-Unicoi-Rock outcrop complex, 25 to 95 percent slopes;
- Soco-Ditney complex, 30 to 50 percent slopes, very stoney

All soils are "well drained" to "somewhat excessively drained" with a "severe" to "very severe" water erosion hazard. The potential for damage by fire for all soils is rated "low" to "moderate" by the NRCS. The BAER survey flight determined very little disturbance to the forest duff layer due to the low residence time of the fire except in one given area. Exceptions were observed only where logs burned and retained heat for a longer time resulting in a localized loss of the litter layer, but in most cases the deeper organic layer remained intact.

Q. Geologic Types: The burned area is in the Tablerock Trust Sheet; composed of quartzite, arkosic quartzite, and phyllite. These rocks are correlative with the Chilhowee Group of the Unaka belt.

R. Miles of Stream Channels by Order or Class: Approximately 2.5 miles of mapped blue line streams exist in the assessment area, as well as many miles of unmapped first order and ephemeral streams.

S. Transportation System

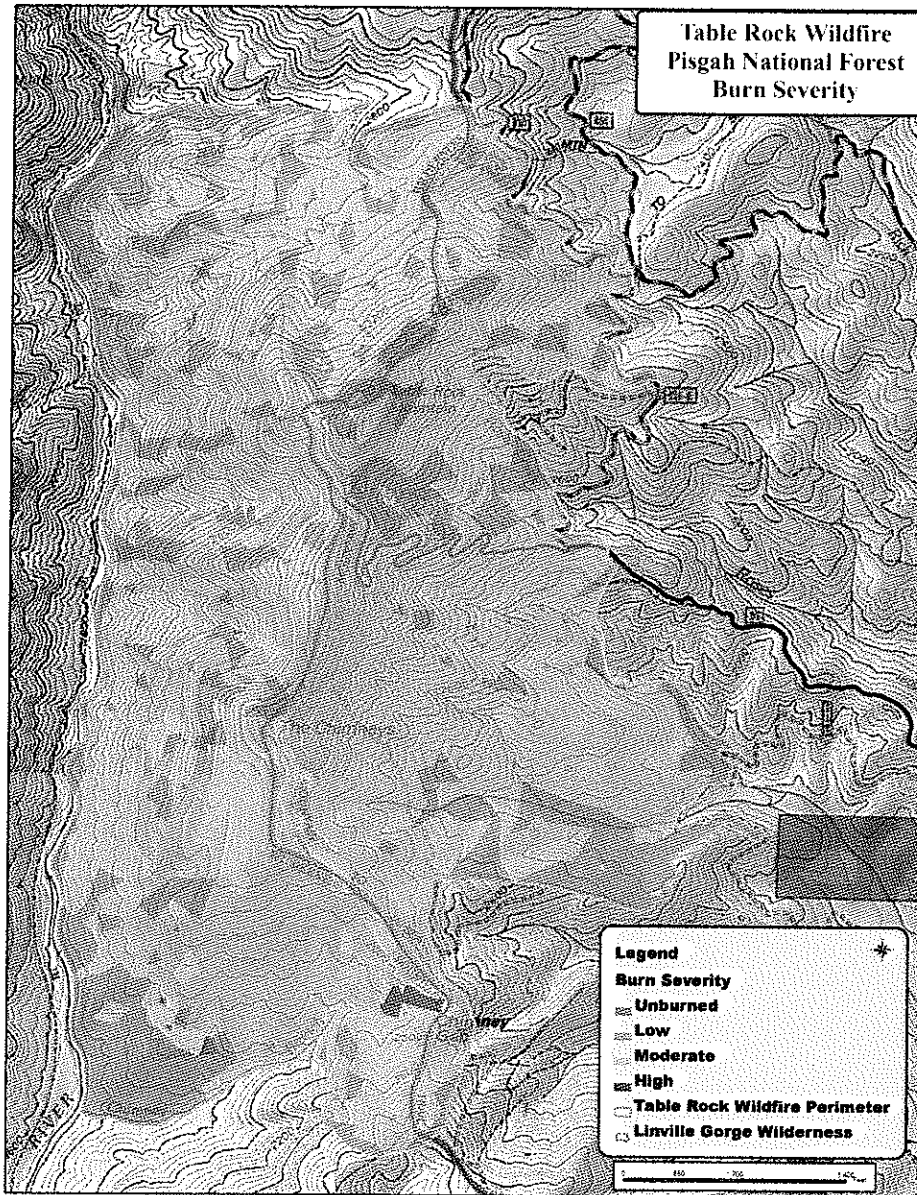
Trails: ~3.75 miles

Roads: ~2.5 miles (including State and FS roads, system and non-system)

PART III - WATERSHED CONDITION

A. Burn Severity (acres): 1,895 (low) 89 (moderate) 8 (high)

Burn severity was initially determined with a Burned Area Reflectance Classification (BARC) map generated by satellite captured near and mid infrared light bands analyzed by the USFS Remote Sensing Application Center (RSAC – Carl Albury). The initial map was examined based on aerial reconnaissance completed on November 25. Since no significant differences were observed, the BARC generated map was utilized for the overall fire severity. It should be stated that the four separate fire intensity or severity classes almost exclusively reflects varying impacts to above-ground vegetation and probably does not reflect impacts to the soil. The vast majority, approximately 74%, of the burned area was a low intensity fire. Burn intensity was greatest around Chimney Gap. Only 8 acres, or less than ½ percent of the area burned at high severity. Almost ¼ of the area was unburned.



Burned Area Reflectance Classification (BARC) map representing severity of burn on 11/20/2013.

B. Water-Repellent Soil (acres): no water-repellent soils were located.

C. Soil Erosion Hazard Rating (acres):
1,984 (low) 8 (moderate) 0 (high)

D. Erosion Potential: 0.16 tons/acre (From Disturbed WEPP Results)

E. Sediment Potential: 0.13 cubic yards/square mile (From Disturbed WEPP Results, occurring in 2nd year, soil weight of 1.0 ton/cubic yard)

PART IV - HYDROLOGIC DESIGN FACTORS

Potential hydrologic treatments were not determined to be a critical need since the burned area experienced a low burn severity, leaving much of the forest litter layer and forest intact. Over much of the burned area, a mosaic of burned and unburned conditions exist. The predominant change noted was a loss of the surface leaf layer and in places a loss of low to mid-story vegetation. Based on monitoring data from the Pinnacle Wildfire

of 2007, it is assumed that the burned understory will recover within the year as plants emerge and resprout where they were top-killed.

Notable increases in water yield and peak flows are not expected since overland flow is not expected to increase, due to the remaining forest duff layer. Erosion and sediment hazards are expected to be minimal due to the limited amount of mineral soil exposed. The potential affects of a 1-2 inch rainfall event, that occurred on November 27, was reviewed on December 4, 2013. The duff layer remained intact and no soil movement was observed from several surveyed locations. Therefore, soil and slope treatments are not recommended, and modifying road/stream crossings is not necessary. Although no hydrologic impacts are expected, annual or major storm checks of the culverts are recommended for a couple of years to check for accumulation of fire debris in the channels at the road crossings. Unused design sections IV.A - H omitted from this form.

PART V - SUMMARY OF ANALYSIS

A. Describe Critical Values/Resources and Threats:

Rare Species

The Table Rock fire occurred within the Linville Gorge Wilderness (1484 acres, 58% of burn unit), as well as the area east of the wilderness extending from 1500 feet on adjacent to Linville River to greater than 3900 feet on Table Rock. The area is known for exemplary diversity and has been recognized by the North Carolina Natural Heritage Program as a significant natural heritage area of exceptional significance (NC Biotics 2010).

A critical value across the fire area was the occurrence of two federally listed plant species, Heller's blazing-star and mountain golden-heather. Both of these species occur within the low elevation rocky summit communities on Table Rock and scattered across Chimney Ridge. About 662 acres of critical habitat for mountain golden heather also occurs within the wildfire burn perimeter. The wildfire occurred across six Heller's blazing star subpopulations and 15 subpopulations of mountain golden heather.

The Chimneys and Table Rock are two of four sites in the world that contains mountain golden-heather. Approximately 25% of all known plants throughout its range occur within the burn unit. Prescribed burns have been documented as beneficial to this tiny shrub reducing competition from other overtopping shrub species (Frost 1990). The research has shown fire decreases competing shrubs and helps to exposes mineral soil to increase seed germination (Frost 1990). Previous prescribed fires, at both low and high intensity and severity, have resulted in population increases although up to 25% mortality of existing mature plants could result (Frost 1990). It is uncertain the impact on existing *Hudsonia montana* individuals from the Table Rock wildfire, which could be characterized as patchy but generally of low severity in the extreme landscape positions where the rare shrub occurs. A 2009 census within this area indicated a decline of these subpopulations. A 2-fold decline occurred from 2003 to 2009 in *Hudsonia montana* clumps across the 15 subpopulations surrounding the Chimneys and Chimney Gap in Linville Gorge Wilderness as shown in the figure below (Frost 1990, Michener 2004, Donaldson 2004).

The increase in the size observed in 2003 or 2004 was thought to be a result of a wildfire occurring in the area in 2000. Less is known regarding the status of the *Liatris helleri* subpopulations or the influence of fire. The Chimney Ridge and Table Rock subpopulations have fluctuated across monitoring periods although in general have matched the general trend with mountain golden heather.

Informal consultation with the Asheville field office of the U.S. Fish and Wildlife Service was initiated at the onset of the wildfire. It was determined to not initiate emergency consultation since both species have demonstrated positive responses from previous burns, since the wildfire was allowed to spread across the two species subpopulations and critical habitat unaided, and since no mechanical treatment was completed in these locations. Monitoring for these two species will be completed across all the affected subpopulations in 2014.

Seven sensitive plant species occur within the wildfire perimeter. Five of these are the following liverwort species, *Chiloscyphus appalachianus*, *Drepanolejeunea appalachiana*, *Plagiochila austinii*, *Plagiochila*

caduciloba, and *Porella wataugensis*. All of the occurrences are on the northwestern perimeter of the burn in the mesic forest adjacent to an unnamed tributary. Fire intensities within this area were either low or non-existence since portions of this area were unburned. Thus it is unlikely any of these species were affected by the wildfire. Both the remaining two plant species, large witch-alder (*Fothergilla major*) and bog oatgrass (*Danthonia epilis*), occur on the pine-oak/heath forest, dry oak forest, or within the rock outcrops. Both are fire adapted, will potentially be top-killed but readily resprout. One sensitive animal, peregrine falcon (*Falco peregrinus*) is known to occur within the low elevation rocky summit community. It is uncertain on the specific effect the wildfire had on this bird species, but it is not unexpected to be detrimental since the species has persisted within this site following previous wildfires.

Periodic burns are a natural disturbance event within the Linville Gorge landscape. The pine dominated slopes as well as dry oak, dry-mesic oak forests, and the low elevation rock summits are fire adapted. Many of the species associated with these communities benefit from the low to high intensity fire areas. Given the relatively low intensity burn from the fire it is uncertain what affect will result to any of these rare species, but it is not believed to be detrimental.

Non-Native Invasive Plants

Five non-native invasive plant species, princess tree (*Paulownia tomentosa*), tree-of-heaven (*Ailanthus altissima*), Japanese Spiraea (*Spiraea japonica*), Chinese silvergrass (*Miscanthus sinensis*), and garlic mustard (*Alliaria petiolata*) have been identified and previously treated within 100 feet of FSR 454 or the fireline area east of Chimney Gap. Some individuals of princess tree and Chinese silvergrass were recently located within the perimeter of the burn unit in these previously treated areas. All five of these species are known within the Linville Gorge area and have been treated across various portions of the landscape for the last 4 years.

The burned areas adjacent to these previously managed infestations could provide suitable habitat for reinvasion of this area either from buried seed or re-sprouting stems of a few individuals still present at these sites. 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 the area on the outskirts of Linville Gorge Wilderness. It is recommended to monitor these previously treated sites, covering up to 25 acres, and control any invasive individuals to keep them from creating a larger infestation. In addition, it is recommended that monitoring be completed across the high intensity portion of the burn for outbreaks of these five species, in particular princess tree and Chinese silvergrass since they are wind dispersed. If these species or other unforeseen non-native invasive plants become established, it is recommended that supplemental funds be requested for immediate control within infestation sites.

B. Emergency Treatment Objectives. In portions of the landscape with previously treated non-native invasive plant infestations affected by the fire monitor for and treat infestations of princess tree, tree-of-heaven, Japanese Spiraea, Chinese silvergrass, and garlic mustard.

C. Probability of Completing Treatment Prior to Damaging Storm or Event. 90 percent

D. Probability of Treatment Success. 75 – 80 percent

E. Cost of No Action (Including Loss). Treatment costs would double in 2 years, and would continue to increase as the infestation increases.

F. Cost of Selected Alternative (Including Loss). *Not Calculated*.

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

Team Leader: Brady Dodd

Email: bdodd@fs.fed.us

Phone: (828) 257-4214

FAX: (828) 257-4874

H. Treatment Narrative.

Nonnative Invasive Plant Control

The activity will consist of monitoring for outbreaks and possible control, if needed, of the five non-native invasive species (princess tree, tree-of-heaven, Japanese Spiraea, garlic mustard, and Chinese silvergrass) previously controlled and located within 100 feet of either roads or burn firelines surrounding the east perimeter or the fire unit. For princess tree, tree-of-heaven, and Japanese Spiraea a foliar application of 5% tricolpyr (Garlon 3A), a 1% surfactant and a 0.5% dye will be utilized while for garlic mustard and Chinese silvergrass glyphosate will be substituted for tricolpyr. The total area of control will be from 7-10 acres. Treatment will be completed in late March, 2014 for garlic mustard and in mid to late summer of 2014 for the other four species when the chemical treatments will be more effective.

Costs

Monitoring	\$ 1,000
Herbicide control contract	\$ 2,500
Herbicide	\$ 400
COR contract initiation/oversight	\$ 1,000
Totals	\$ 4,900

I. Monitoring Narrative. Monitoring will consist of a district Botanist locating outbreaks and validating the need for treatment. Treatments implemented by contract will be monitored by the COR during and after implementation.

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										
Herbicide control contract	each	2500	1	\$2,500	\$0		\$0		\$0	\$2,500
Herbicide	each	400	1	\$400	\$0		\$0		\$0	\$400
COR Contract oversight	each	1000	1	\$1,000	\$0		\$0		\$0	\$1,000
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Land Treatments				\$3,900	\$0		\$0		\$0	\$3,900
B. Channel Treatments										
				\$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
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
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Structures				\$0	\$0		\$0		\$0	\$0
E. BAER Evaluation										
Team Leader/Hydro	hours	54	25	\$1,350	\$0		\$0		\$0	\$1,350
Overtime	hours	81	7	\$567	\$0		\$0		\$0	\$567
Botanist	hours	55	12	\$660	\$0		\$0		\$0	\$660
GIS Analyst	hours	45	1	\$45	\$0		\$0		\$0	\$45
Travel Costs				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!				\$0	\$0		\$0		\$0	\$0
Subtotal Evaluation				\$2,622	\$0		\$0		\$0	\$2,622
F. Monitoring										
Invasive Plant Monitoring	hours	50	20	\$1,000	\$0		\$0		\$0	\$1,000
				\$0	\$0		\$0		\$0	\$0
Insert new items above this line!							\$0		\$0	\$0
Subtotal Monitoring				\$1,000	\$0		\$0		\$0	\$1,000
G. Totals										
Previously approved				\$7,522	\$0		\$0		\$0	\$7,522
Total for this request				\$7,522	\$0					

* estimated costs as of 12/05/2013

PART VII - APPROVALS

 1. Kristin M. Bail
 Forest Supervisor (signature)

12/5/2013
 Date

 2. _____
 Regional Forester (signature)

 Date