

2012

## DECISION MEMO

George Washington and Jefferson National Forests  
North River Ranger District  
Rockingham County, Virginia and Pendleton County, West Virginia

### I. DECISION

I have decided to implement the Hone Quarry II prescribed burn on approximately 5,700 acres of National Forest System (NFS) land located in Rockingham County, Virginia, and Pendleton County, West Virginia.

The Hone Quarry II prescribed burn includes both the Hone Quarry and Spruce Ridge prescribed burn units and an additional 2,600 acres to the southeast, located between State Highway 924, the Forest boundary and F.D.R. 62.

### II. NEED FOR THE PRECRIBED BURN

#### 1. Background

This burn unit is comprised primarily of the oak forests and woodlands and pine forest and woodlands ecosystems.

Oak forests and woodlands cover approximately 60 percent of this burn unit. The over-story is dominated by red oak, white oak, chestnut oak, black oak and scarlet oak. Heath shrubs such as blueberry, huckleberry and mountain laurel are common in the understory and often form a dense shrub layer.

Pine forest and woodlands cover approximately 30 percent of this burn unit and primarily occupy ridge tops and south and west aspects. The over-story is dominated by table mountain pine and pitch pine along with chestnut oak, scarlet oak, and bear oak. A dense heath shrub layer comprised of mountain laurel, fetterbush, blueberry, and huckleberry is almost always present. Native grasses and sedges are common along with dry site herbs and forbs.

The Hone Quarry developed recreation site and the Hone Quarry community are adjacent to the south eastern boundary of the unit. The Hone Quarry community is a federally designated wildland-urban interface community at risk from wildfire.

Direction set in the Land Resource Management Plan for the Forest is to use prescribed fire to re-establish the historic fire regime and in doing so restore native ecosystems along with the plant and animal species those ecosystems support. This includes appropriate return intervals, seasonality, and intensity.

Recent research on the Forest and elsewhere in the southern Appalachians has studied the historic role of fire in these ecosystems. By examining basal fire scars and microscopic charcoal in bog and pond sediments, it has been shown that fire was widespread and occurred frequently across the landscape. For example, approximately 80% of the Forest's acreage has had frequent fire while only 20% has had infrequent or no fire. Fire scar/tree ring studies at eight sites on or near the Forest show fires occurred at a frequency of approximately every 3-9 years from the earliest chronology dates in the mid- 1600s to mid-1700s continuing until the 1930s when fires began to be effectively and actively suppressed.

Research also indicates that the oak forests may not perpetuate themselves without some level of disturbance, especially on mesic sites (Loftis 1991). Treatments such as prescribed burning (Brose et al. 1999) have been shown to create conditions that promote adequate oak regeneration. Research in the re-generation of Table Mountain and pitch pine (Waldrop, 2009) has shown that both species are shade intolerant, and also require mineral soil for successful germination. For Table Mountain pine regeneration is achieved with seeds dropped from the serotinous cones while for pitch pine the seed is generally blown in from adjacent areas. In the absence of fire both oaks and pines declined and were succeeded by shrubby thickets of mostly mountain laurel.

Though the Forest has had wildfires every month of the year, most human-caused ignitions occur in the spring or fall with peaks in April and November. Lightning caused fires have occurred from March through November with the peak period existing from April through August. The North Zone (Lee and North River Districts) averages approximately 14 human caused fires and 4 lightning caused fires per year.

While fires may be relatively frequent on the landscape they do vary greatly in their intensity and effects. The drier ridge tops and south to west aspects have the most frequent and intense fires while the cove and riparian areas have less frequent and very low intensity fires. Typically fires on the upper drier slopes would be naturally extinguished as they burned into the cool moist habitats in coves and along streams.

To determine the condition of a fire dependent or fire maintained ecosystem, the U. S. Forest Service along with agencies of the Department of Interior use the Fire Regime Condition Class system. This system measures the amount of departure from the natural regime (Hann and Bunnell 2001) for a given area. This departure results in changes to one (or more) of the following ecological components: vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern. There are three condition classes based on low, moderate, and high departure from the central tendency of the natural (historical) regime (Hann and Bunnell 2001, Hardy et al. 2001, Schmidt et al. 2002). Low departure (Condition Class1) is considered to be within the natural (historical) range of variability, while moderate (Condition Class2) and high (Condition Class 3) departures are outside the natural range of variability.

To determine which areas on the North Zone are most in need of prescribed fire, a collaborative effort was initiated between the Zone and The Nature Conservancy. This project assessed the vegetative communities and fire dependent, and/or fire enhanced species across the Zone and

developed a ranking system to prioritize those areas. This process determined that the Hone Quarry II unit was one of the areas of the Zone most in need of prescribed fire.

## 2. Existing Condition

Approximately 50 percent of this unit has been previously prescribed burned, in March of 2002 and again in April of 2010. However, with over seventy years of fire suppression prior to these two burns the unit is still highly departed from the natural fire regime, and is classified as a Fire Regime Condition Class 3.

The oak forests and woodlands are gradually being replaced by more shade-tolerant species, such as white pine, red maple, and striped maple. Rhododendron and mountain laurel are also encroaching onto the upper drier slopes. Over 90% of the oak forest and woodlands are in a mid-late successional stage. Currently there is very little oak re-generations taking place in the un-burned portion of the unit. There is an open canopy structure on about 42% of the previously burned portion of the oak forest while approximately 18% of the un-burned portion exhibits an open canopy resulting in virtually no herbaceous layer in the un-burned area. Less than 1% of the unit is currently a grassland.

In the pine forest and woodlands, hardwoods, shrubs, and vines have replaced the open, grassy, herbaceous layer and hardwoods have encroached into the mid-story, further affecting forest structure. There is an open canopy structure in about 33% of the area that was previously burned and in about 15% of the un-burned area. Regenerating forests (0-13 years old) comprise about 10% of the unit.

The fuel loading along the forest boundary has continued to increase thereby magnifying the likelihood of a significant fire threatening both the developed recreation site and the community of Hone Quarry. It is estimated that there are approximately seven tons per acre of live and dead fuel within two chains of the forest boundary adjacent to the Hone Quarry community.

## 3. Desired Future Condition

Through the use of prescribed fire his unit should be in a Fire Regime Condition Class 2 within 10 years of this decision and a Fire Regime Condition Class 1 within 20 years.

An adaptive management strategy will be used to ensure that the desired future condition of this unit can be achieved in a timely and efficient manner. Pre-burn and post burn vegetative monitoring data will be completed to assess the current condition, develop objectives, and then, after a burn is completed, to evaluate the condition of the unit and adjust future objectives.

In the Oak Forest and Woodlands ecosystem, approximately 4% of the unit will be in open grassland, 22% will be in an early successional stage with an open canopy, 50% will be in a mid-late successional stage with an open canopy, and 24% will be in a mid to late successional stage with a closed canopy.

In the Pine Forests and Woodlands ecosystem, approximately 13% of the system will be regenerating forests (0-13 years old), 25% mid-successional open canopy, 54% late successional

open canopy, and 30% mid to late successional closed canopy. Native grasses and sedges should be common along with dry site herbs and forbs.

In order to achieve these desired future conditions, a mosaic of over-story removal will be an objective for each prescribed burn on this unit. This will be accomplished by the careful application of ignition patterns resulting in varying burn patterns and severity.

Adjacent to the wildland-urban interface area there should be two to three tons of live and dead fuel per acre, which will enhance our ability to suppress wildfires before private property is threatened.

### **III. Relationship to Extraordinary Circumstances**

Direction provided in Forest Service Handbook, Environmental Policy and Procedures Handbook 1909.15 (1909.15-2009-1, effective 04/17/2009) requires the Responsible Official to consider whether effects to extraordinary circumstances related to a proposed action warrant analysis in an Environmental Assessment or an Environmental Impact Statement. The Handbook also states that the mere presence of these resources does not preclude use of a categorical exclusion. The project areas were analyzed for the following resource conditions (per FSH 1909.15, Section 30.4) and the results are as follows:

1. Federally listed threatened and endangered (T&E) species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species:

The North River Ranger District's District Biologist analyzed and documented in a Biological Evaluation (BE; Project File) the potential effects of this decision on threatened, endangered or sensitive species. The Biological Evaluation determined that the following TES species are potentially affected by the project; Indiana bat, shale barren rockcress, Cow Knob salamander, sweet pinesap, sword-leaf phlox, mountain least trillium and white alumroot. The effect of the project on each of these species was determined to be as follows:

For the Indiana bat, this project will be in compliance with the BO issued by the USFWS on September 16, 1997 and therefore constitutes compliance with ESA Section 7 requirements. Since implementation of this project will be in compliance with, and tiers to, the BO that was issued as a result of formal consultation and it provides both specific Plan and project level direction, plus no new information has been identified as of this date, a finding of the effect to the Indiana bat for this proposed project is: "no effect, beyond that which is already disclosed in the Biological Assessment on Indiana bats dated April 30, 1997 and by the USFWS in the BO of September 16, 1997." Therefore, given the project level analysis for the Indiana bat and the authorized level of incidental take, further Section 7 consultation is not necessary for the Indiana bat.

For shale barren rockcress, there is no known shale barren habitat where rockcress would be found on project areas. Also, shale barrens do not typically contain the fuel required to sustain a fire. Therefore, there will be no effect on this endangered plant.

For the Cow Knob salamander, the "Conservation Agreement for the Cow Knob Salamander" recognizes the importance of fire as a natural ecological process to maintain healthy ecosystems, and allows the use of prescribed burning within the SMC-SIA. Cow Knob salamander populations have not been affected by the many previous prescribed burns conducted within the SMC-SIA regardless of time of year. Salamanders take refuge underground and are not harmed by the heat of the fire. Previous prescribed burns have also not negatively affected habitat for the Cow Knob salamander. Therefore, burning of the Hone Quarry II area will not affect the Cow Knob salamander.

For sweet pinesap, burning may top-kill this plant, especially if burned during the period February-April. This would negatively affect the plant for one year, but would have no long term negative impacts that would cause loss of species viability on the Forest or cause a trend toward Federal listing under the Endangered Species Act.

For sword-leaf phlox, if this plant occurs within burn areas, it would likely be top-killed if burned during the time of year when the plant is above ground. However, burning would ultimately create more open woodland conditions that this plant requires. Thus, prescribed burning would be beneficial for sword-leaf phlox.

For mountain least trillium, burning may top-kill this plant, especially if burned during the vegetative period April-July. Negative effects would probably last one year, but there would be no long term negative impacts that would cause loss of species viability on the Forest or cause a trend toward Federal listing under the Endangered Species Act.

For white alumroot, because of its propensity to grow in crevices of rock cliffs where fire cannot spread, most plants would not be harmed by prescribed burning. Prescribed burning would have no significant negative impacts to this species.

Primarily because there are no other T&E species or likely habitat present, the proposed project will have no effect on any other federally listed or proposed species or their designated or proposed critical habitat. Likewise, because there are no other sensitive species or likely habitat present, the project will have no impact to any other Southern Region sensitive species.

2. Floodplains, wetlands or municipal watersheds:

Floodplains: The decision to implement this project will have no negative effect on floodplain function by adversely disturbing floodplain flow. Wetlands: The presence of wetlands within the actual burn units has not been identified, nor in adjacent areas.

Municipal Watershed: The areas in which the proposed actions are to be implemented are not in a recognized or designated municipal watershed or water supply.

3. Congressionally designated areas:  
The project area is not within any congressionally designated area so there will be no effects on any congressionally designated areas.
4. Inventoried Roadless areas or potential wilderness areas:  
A majority of this project area is within the Oak Knob-Hone Quarry Ridge Potential Wilderness Area. However, the scope of this project would not adversely affect or impact the area. The implementation of this project would be beneficial to the characteristics and desired future conditions of the Oak Knob-Hone Quarry Ridge Potential Wilderness Area. It should be noted that the Oak Knob Inventoried Roadless Area is adjacent to the project area but does overlap; therefore there will be no effects on the Oak Knob Inventoried Roadless Area.
5. Research Natural Areas:  
The project areas are not within any research natural areas, therefore there will be no effect.
6. American Indian and Alaska Native religious or cultural sites:  
These project areas were reviewed utilizing the cultural resource atlas and previous heritage survey information. American Indian religious or cultural sites exist in the project area; sites will be protected or excluded so there would be no effect on any American Indian religious or cultural sites.
7. Archaeological sites, or historic properties or area:  
The Forest Archaeologist reviewed the project area and did not find any sites of concern. Since no archaeological sites or historic properties are known to exist in the project areas, there will be no effect on these resource conditions.

#### **IV. FINDINGS REQUIRED BY AND/OR RELATED TO OTHER LAWS AND REGULATIONS**

This decision will comply with all applicable laws and regulations. Some of which have been summarized below:

1. Forest Plan Consistency (National Forest Management Act) – This Act requires the development of long-range land and resource management plans. The George Washington National Forest Land and Resource Management Plan was approved in January 1993, as required by this Act. The plan provides for guidance for all natural resource management activities on the Forest. The Act requires that all projects and activities be consistent with the Forest Plan. The GWNF Forest Plan has been reviewed

in consideration of this particular project. This decision would be consistent with the standards and guidelines in the Forest Plan.

2. Endangered Species Act - As required by this Act, potential effects of this decision on listed species have been analyzed and documented in a Biological Evaluation. The BE determined that two listed species may be affected, Indiana bat (endangered) and shale barren rockcress (endangered). Formal consultation with the USFWS led to the Biological Opinion of September 16, 1997 which said that any take of Indiana bats as a result of prescribed burning would be within authorized levels of take. This project is in compliance with the BO, and therefore constitutes compliance with ESA Section 7 requirements. Regarding shale barren rockcress, the BE determined there will be no effect on this species.
3. Clean Water Act - This Act is to restore and maintain the integrity of waters. The Forest Service complies with this Act by use of Best Management Practices. This decision incorporates Best Management Practices to ensure protection of soil and water resources, in compliance with this Act.
4. National Environmental Policy Act - This Act requires public involvement and consideration of potential environmental effects. The entirety of this documentation found in the Project File for this decision supports compliance with the Act.

## VI. IMPLEMENTATION

Implementation of this burn will be in compliance of this decision, and all agency parameters, standards, and policies.

In general, the desired future conditions of this unit can be achieved with a low severity fire regime. However, moderate to high severity fire will be necessary to accomplish the desired canopy structure and for the release of Table Mountain pine seeds. While this unit is in a restoration mode (Fire Regime Condition Class of 2 or 3) prescribed fire frequency can range from two to five years. When this unit is in a maintenance mode (Fire Regime Condition Class 1) frequency can range from two to nine years. Implementation of this project may occur during any month of the year, however the period of March through November will be the preferred period.

Prior to implementation, a one-tenth mile long hand line will be constructed from FDR 85 to the head of Hone Quarry Run. Adjacent to the forest boundary from State Highway 924 to FDR 62 four tenths of a mile of dozer line and one-half mile of hand line will be constructed. Though these lines will need to remain in place for future burns they will be rehabilitated to prevent

erosion and illegal entry into the Forest.

## V. PUBLIC INVOLVEMENT

On September 17, 2010 a scoping notice pertaining to this project was sent to individuals, organizations, and agencies. Comments were received from one special interest organization and two state agencies.

After careful review and consideration of the responses I have determined that scoping did not result in the identification of any significant issues pertinent to this project. Documentation of the scoping effort and comments received are located in the project file.

This decision is subject to appeal pursuant to 36 CFR 215.11. A written appeal, including attachments, must be postmarked or received within 45 days after the date this notice is published in the Daily News Leader. The appeal shall be sent to George Washington and Jefferson National Forests, Attention Appeals Deciding Officer, 5162 Valleypointe Parkway, Roanoke, VA 24019-3050. Appeals may also be faxed to 540-265-5145. Hand delivered appeals must be received during normal business hours of 8:00a.m. to 4:30 p.m. Appeals may also be mailed electronically in a common digital format to:  
[appeals-southern-georgewashington-jefferson@fs.fed.us](mailto:appeals-southern-georgewashington-jefferson@fs.fed.us)

Appeals must meet the content requirements of 36CFR 215.14.

For more information on this project contact:

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or  
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401 Oakwood Drive  
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**VI. IMPLEMENTATION DATE**

If no appeals are received, implementation of this decision may occur on, but not before five business days after the close of the appeal filing period. If an appeal is received, implementation may not occur for 15 business days following the date of appeal disposition.

*Elwood Burge*

Elwood Burge  
District Ranger

8/14/12  
Date

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