BIOLOGICAL EVALUATION

FOR THE

ENVIRONMENTAL ASSESSMENT

OF THE

NORTHSIDE PROJECT

PISGAH NATIONAL FOREST

YANCEY COUNTY

APPALACHIAN RANGER DISTRICT

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ABSTRACT: Based on the findings contained within the AQUA, BOTA and WILDA, this biological evaluation documents the effects of the preferred alternative, Alternative 4, for the proposed Northside Timber Sale. Alternative 4 will not affect Threatened, Endangered or Proposed wildlife, botanical, or aquatic species, nor will suitable habitat be affected nor will implementation result in a trend toward listing for any species. Consultation with U.S.D.I. Fish and Wildlife Service is not required.

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I. Proposed Action

The Appalachian Ranger District is proposing to carry out forest management practices within Compartment's 53, 55 & 56 in Yancey County, North Carolina. The project proposal is fully described within the Northside Environmental Assessment (EA) and summarized on the following chart.

Unit #	Compartment	Proposed Harvests	Additional Proposed Treatments	Acres*
1	56	None	Site Preparation with herbicides and Prescribed Burning ---------- Supplemental Planting of northern red oaks as needed to reach desired stocking levels of hard mast species	4 -------- 4
2	55	Two-aged harvest 15-25 sqft/acre residual BA	Site Preparation with herbicides and Prescribed Burning ---------- Supplemental Planting of northern red oaks as needed to reach desired stocking levels of hard mast species	15 -------- 15
3a	53	Two-aged harvest 15-20 sqft/acre residual BA	Site Preparation with herbicides	13**
3b	53	Two-aged harvest 15-20 sqft/acre residual BA ----------	Site Preparation with herbicides and Prescribed Burning ---------- Supplemental Planting of northern red oaks as needed to reach desired stocking levels of hard mast species ---------- Clip Individual grape stems leaving grape arbors where designated	7** -------- 7 -------- 6***
5	53	Two-aged harvest 15-20 sqft/acre residual BA ----------	Site Preparation with herbicides and Prescribed Burning ---------- Supplemental Planting of northern red oaks as needed to reach desired stocking levels of hard mast species ---------- Prescribed Burn for Advanced Oak Release	14** -------- 14 -------- 35

*Acreage figures are approximate.

+ Currently there is a Southern Pine Beetle (SPB) epidemic on the Appalachian Ranger District. Unit 2 is considered high risk for SPB attack. In the event of SPB infestation, SPB would be controlled by cutting and removing all infested pine trees and all pine trees within 100 feet of any infested tree within the existing boundaries of this unit.
** Unit 3a: excluding two acres of occupied velvet covert snail habitat from the proposed treatment area for harvest and site preparation.
Unit 3b: excluding six acres of occupied velvet covert snail habitat from the proposed treatment area for harvest and site preparation.
Unit 5: excluding two acres of suitable snail and amphibian habitat from the proposed treatment area for harvest and site preparation.

*** Unit 3b: treating the grape stems on 7 acres harvested as part of the site preparation with herbicides and manually treat the remaining 6 acres

In addition, we propose manual release of any know butternut trees (*Juglans cinerea*) in Unit 3a by clipping the competing vegetation and providing them free room to grow.

II. Evaluation

This evaluation summarizes the analysis and findings of the aquatic (AQUA), botanical (BOTA), and terrestrial wildlife (WILDA) resources within the proposed project area. The attached analysis documents describe in detail the existing conditions, potential direct, indirect and cumulative effects of the proposed site-specific project on these three biological resources for all alternatives considered in the Northside Environmental Assessment.

The Land and Resource Management Plan for the Nantahala and Pisgah National Forest includes standards and guidelines for the Forest and specifically includes evaluating potential effects to management indicator species (MIS) and their habitat by management activities. The analysis of potential effects to MIS species can be found within the AQUA, BOTA, and WILDA.

Each analysis evaluated effects relating to Endangered, Threatened (06/01) and Regional Forester's Sensitive (01/02) species listed on the National Forests in North Carolina (T. & E. and S.). Table 2 summarizes the Threatened, Endangered and Regional Forester's Sensitive species and their habitat considered and evaluated for the proposed Northside project area, Preferred Alternative 4.

Table 2. Species and Habitat Evaluated for the Northside Project, Alternative 4.

Aquatic Resources

SPECIES	TYPE	HABITAT	OCCURRENCE
Federally Threatened and Endangered aquatic Species			
NONE			
2002 Region 8 Regional Forester's Sensitive aquatic Species List			
Gomphus consanguis (Cherokee clubtail)	Dragonfly	Lotic – Depositional Lentic - Littoral	May occur in both project and analysis areas.
Serratella spicilosa (spicilose serratellan mayfly)	Mayfly	Lotic – Erosional and Depositional	May occur in both project and analysis areas.

Botanical Resources

SPECIES	TYPE	NATURAL COMMUNITY OR HABITAT	OCCURRENCE
Federally Threatened or Endangered plant species (T &E)			
None known	N/A	N/A	N/A
2002 Region 8 Regional Forester's Sensitive plant species (S)			
Aconitum reclinatum	Vascular Plant	Rich Cove Forest and Northern Hardwood Forest	Occurs in botanical analysis area but not activity area
Carex manhartii	Vascular Plant	Rich Cove and Slope Forests	Could occur in analysis area, not known to occur in analysis or activity area.
Carex ruthii	Vascular Plant	seeps and roadsides	Could occur in analysis area, not known to occur in analysis or activity area.
Helianthus glaucophyllus	Vascular Plant	Rich Cove and Slope Forests	Could occur in analysis area, not known to occur in analysis or activity area.
Coreopsis latifolia	Vascular Plant	Rich Cove and Slope Forests	Could occur in analysis area, not known to occur in analysis or activity area.
Plagiochila caduciloba	Liverwort	Acidic Cove Forest	Could occur in analysis area, not known to occur in analysis or activity area.

2002 Region 8 Regional Forester's Sensitive plant species (S) cont'd			
Silene ovata	Vascular Plant	Montane Oak-Hickory Slope Forest.	Could occur in analysis area, not known to occur in analysis or activity area.
Tsuga caroliniana	Vascular Plant	Pine- Oak Heath	Could occur in analysis area, not known to occur in analysis or activity area.

Wildlife Resources

SPECIES	TYPE	NATURAL COMMUNITY OR HABITAT	OCCURRENCE
Federally Threatened or Endangered wildlife species (T &E)			
None known	N/A	N/A	N/A
2002 Region 8 Regional Forester's Sensitive wildlife species (S)			
Plethodon welleri	Salamander	Spruce/fir, hemlock & yellow birch high elevation communities	not likely to occur

II. Existing Condition

The Northside activity area is contained within the upper Little Spivey Creek drainage. Most of the ridges and valleys have a northwest to southeast trend. The highest points of the project area are about 4700 ft. (Flat Mountain to High Rocks Mountain), which are located between the activity areas. The general elevation of the project area descends to the northwest to Little Spivey Creek (3200 ft.). The topography is typically sloped with some conspicuous flat areas along Little Spivey Creek. There are occasional flatter areas along ridges and in some coves. It is only in these relatively flat cove areas where a few small Swamp Forest Bog Complex communities, and *Carex projecta*, are found. Three main natural communities dominate most of the area within this project area. These communities are: Chestnut Oak Forest, Montane Oak-Hickory Forest and Acidic Cove Forest (See Schafale and Weakley for a detailed description and discussion of these communities). These three communities often grade into each other so that a continuum exists between these typic communities. Rich Cove Forest and Swamp Forest Bog Complex occur in the project area as smaller "inclusions" within three main community types.

The aquatic resource area is defined as the area of potential site-specific impacts on aquatic habitat and populations and contains approximately 0.56 miles of streams within the Northside project area. It is important to note that the aquatic project area includes headwater reaches of unnamed tributaries to Little Spivey and Spivey Creeks. Because of recent weather patterns, it is difficult to determine if these areas are intermittent or perennial channels. There is evidence of high flow and associated stream channel movements (such as downcutting and braiding); however, there is no aquatic habitat suitable for fish populations. There is limited aquatic habitat

suitable for aquatic invertebrate populations within the aquatic project area given the apparent unstable nature of flow regimes and channel form

This watershed is representative of the age class distribution common throughout the district, with a majority of forest within 41 through 100 years of age. Approximately 63 percent of the watershed is at an optimum mast producing age. Private land is found within compartment 412 in Tennessee concentrated along State roads. Analysis done for the Granny Lewis timber proposal on the Unaka Ranger District determined that private residences were likely to increase due to the new interstate being built in the area. This private land use and State Road 19W probably restrict wildlife movement and reduces the quality of habitat within the southwest portion (compartment 412) of this watershed. Riparian areas and seeps are numerous throughout both the watershed and the proposed harvest units. Older forests (100+ years of age) are fully represented comprising of approximately 9 percent of the area. Grass/forb and early successional habitats are under represented, even when considering on-going timber sales in the watershed. The following display of existing forest habitats depicts Forest Service lands within the analysis area including the Unaka Ranger District in Tennessee (suitable and unsuitable acres) .

Private inholdings and surrounding land often assist in providing grass/forb habitat to some degree. Private grass/forb habitat is usually highly disturbed by both humans, livestock, and dogs and therefore, is unavailable to wildlife dependent on grass/forb except that portion within 100' of forest cover. The private land within this analysis area does not provide grass/forb habitat except in the north-east portion, therefore utilization of this grass/forb is limited due to spaciality. The following is a summary of the existing habitat;

Current Condition

Habitat /Forest type	Existing	Change when considering current timber sales
Grass/Forb	<1%	remains <1%
Early Successional	2%	increased to 3%
Mature Forest	59%	reduced to 58%
Mid-successional	19%	no change
101+ Forest	23%	no change
40yr+ hard mast producing	42%	reduced <1%
Open Road Density	1.6 mi/sq mi	no change

IV. Survey's Completed

The proposed units and roads were surveyed by David M. Danley, Forest Botanist on April 22, 28 May 6, 1998. All proposed units were visited at least once during these times.

A summary of the field surveys is provided in BOTA, Table 2. This table lists the habitats, natural communities and plant T.&E. and S. species found in each unit and the associated road reconstruction. Surveys resulted in no T. & E. or S plant populations being found. One hundred and ninety nine common plant species were noted during the field surveys.

Surveys for salamanders in the area immediately below unit 2 and the closed portion of Forest Road 278 were completed by Sandy Florence on April 20, 1998. The survey resulted in no

sensitive salamander species being found, however the area below the road from Unit 2, was determined suitable habitat. Salamander surveys of unit 4 and unit 3b, below the road, were determined to have the highest potential habitat for salmanders. On May 20, 1999, Matthew Eldrige surveyed both sites resulting in 4 common salamander species being found. The larger area of habitat found west of the units in the Spivey Creek drainage was not surveyed as it was determined to be outside of the area of potential effects by this proposed action.

Surveys of the cove forest types found in unit 4 and 3b were completed on May 5, 1999 by Mathew Eldridge and Sandy Florence. Although 14 gastropod species were identified from this survey, no Regional Forester's sensitive species were found. Follow-up surveys were completed in Unit 5, Unit 3a and 3b (above Forest Service road 5508) where an additional 17 species were identified, again, no sensitive species were found.

Bird surveys were completed on May 20, 1999 by Dennis Helton and Sandy Florence and resulted in no T., E. and S. species being found.

Sheryl A. Bryan, Forest Service Fisheries Biologist conducted aquatic habitat surveys of the proposed aquatic project and analysis areas on March 23 1998. Mrs. Bryan revisited these areas in July 1998 while conducting aquatic invertebrate monitoring for the Big Creek Timber Sale. On September 1, 2000, Kelly Howell, Forest Service Fisheries Biologist, went back to the aquatic project areas to survey and see if there had been any change in habitat. The surveys consisted of examining streams within the aquatic project area, noting habitat quality, quantity, and suitability for rare aquatic and management indicator species, as well as existing impacts and their source. Site descriptions were taken in part from Fisheries Biologist, Sheryl Bryan's, field notes dated 3/23/98.

V. Determination of Effects: Indirect, Direct, and Cumulative

A. Botanical

The general potential effects to T. & E. and S. plant species that are exposed to logging and construction activities such as moving heavy equipment, skidding logs, and road construction are direct impacts of damaging individual plants and the indirect effects of modifying the habitat. Some of the expected indirect effects of timber removal will initially produce an increase in light, temperature, reduce humidity, and decrease soil surface moisture. These effects may have a positive affect or negative affect depending upon the particular plant species. Some weedy and early successional species such as *Rubus*, are expected to increase in the activity area. T. & E. and S. plant species may be negatively effected by the competition of these species. The long-term effect of rotational logging practices upon the general plant communities is poorly understood. There is some evidence that the repopulation of some herbaceous plant species in mixed mesophyitic communities may take more than a hundred years after logging. Most species are expected to recover faster than that. Clear cutting in relatively large patches is thought to have a greater effect than that of Shelterwood or two-aged treatments type treatments. See the Forest Plan, Standards and Guides for a description of these methods.

There are no known T. & E. and S. plants species within the proposed activity areas that would be directly affected. There are also no known T. & E. and S. species that the proposed activity would indirectly affected. All the known populations sensitive species, *Aconitum reclinatum* , are too far from the proposed activity to have any effect on these known populations or habitat of these populations. Although no plant T. & E. and S. species are known or expected to occur in

the activity areas, it does not imply that they absolutely do not occur in the proposed activity or analysis areas. In very broad definitions of habitat, the species listed on Table 2 (BOTA) could potentially occur in activity areas. There is a small risk that populations of these species have escaped detection and could be affected by the proposal. However, because of negative survey results, it is unlikely that other plant T. & E. and S. species occur in the activity areas. Because there are no known populations of other Sensitive plant species in or near the proposed activity areas, there are no known effects (direct, indirect or cumulative) to these possible species. As there are no known T. & E. and S. plant species there are no known cumulative effects due to previous management or storm events within the analysis area.

B. Aquatic

Implementation of Alternative 4, as proposed for the Northside Environmental Assessment will not have impacts on any T. & E. or S species, nor will project implementation result in a trend toward listing for any species. No new permanent access is required and mitigation measures have been designated to protect sensitive aquatic habitats. Ranger District staff has agreed that these mitigation measures are reasonable and can be implemented. A riparian management plan was developed for the Big Creek EA within this analysis area resulting in a determination of no effect to T. E. or S. aquatic species. With the mitigation and LRMP standards and guidelines, there are no cumulative effects known to T. E. & S. aquatic species by this proposal.

A detailed description of effects to the aquatic habitat in general can be found in the AQUA.

C. Wildlife

Plethodon welleri, Weller's Salamander, a Regional Forester's Sensitive speices, was observed on Flat Top mountain in 1945. The species is thought to persist at this location and all element of occurrence records for this salamander in North Carolina are from mountain tops. The proposed project area will not affect any habitat on Flat Top mountain, therefore, there will be no effect to this salamander by the preferred alternative, Alternative 4.

No T. & E. species are known to occur within this analysis area, therefore there will be no effects, direct, indirect, or cumulative. No other Regional Forester's Sensitive species is known within this analysis area, therefore there will be no effects, indirect, direct, or cumulative to any Regional Forester's Sensitive wildlife species.

The effects to wildlife habitat in general can be found in detail in the WILDA.

VII. List of Preparers

Botanical Resource Analysis (BOTA) prepared by: Dave Danley, Pisgah National Forest Botanist

Aquatic Resource Analysis (AQUA) prepared by: Kelly Howell, Pisgah National Forest Fisheries Biologist

Wildlife Resource Analysis (WILDA) and Biological Evaluation (BE) prepared by: Sandy Florence, Pisgah National Forest Wildlife Biologist

VIII. Contacts or Persons Consulted

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