



United States
Department of
Agriculture

Forest Service
Southern Region

Appendices

Draft Environmental Impact Statement for the Revised Land and Resource Management Plan

Jefferson National Forest



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Jefferson National Forest Draft Environmental Impact Statement

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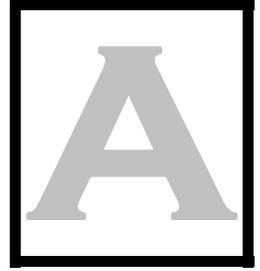
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Note that each Chapter and Appendix is numbered separately beginning with the Chapter number or Appendix Letter. Sections within each Chapter are listed in the sidebar providing a handy index to search the document. This document is also available on CD-Rom and the internet at <www.southernregion.fs.fed.us/gwj/forestplan> where it can easily be searched electronically.

PUBLIC INVOLVEMENT



INTRODUCTION

The Jefferson National Forest began involving citizens in the revision of the 1985 Land and Resource Management Plan in early 1993 by asking them what needed to change in the Plan. This marked the start of an extraordinary process that none of us imagined would take over 10 years. During this time, 63 citizen workshops, open houses, conferences, seminars, field trips, and a picnic were held directly involving approximately 500 people.

Beginning in 1996, regularly scheduled Interdisciplinary Team meetings, coordination meetings of the Planning Team Leaders across the Southern Appalachians, and Southern Appalachian-wide resource team meetings were opened to the public. This gave citizens unprecedented access to the planning process, affording people the opportunity to share and understand the trials and tribulations of balancing the multiple resources of the Jefferson National Forest along with the diverse and frequently conflicting values of citizens interested in this Forest's management.

Our goals of citizen participation throughout the process were rooted in 36 CFR 219.6. These goals included:

- ▶ A dynamic, continuous participation process of actively listening, feedback, and dialog results in a broadened information base for collaborative decision-making.
- ▶ Long-term relationships based upon trust, respect, and credibility are fostered and maintained.
- ▶ The needs, values, attitudes, and beliefs of our diverse constituency are recognized and considered in all management decisions. In turn, people fully understand the management of the Forest and its effect on their livelihoods, values, and qualities of life.
- ▶ Citizens understand the Mission of the Forest Service and the purpose and legitimacy of Land Management Planning as described in the National Forest Management Act, and the process as described in the National Environmental Policy Act.
- ▶ Citizens understand what problems exist in the current Forest Plan and what problems will be addressed through Revision.
- ▶ Citizens understand the key issues used to choose one alternative solution over another and they understand the trade-offs in choosing one alternative over another.

SUMMARY OF PUBLIC INVOLVEMENT ACTIVITIES

April 23, 1993. Letter to key contacts. Identify major areas of the Plan that need adjustment and should be addressed in the Revision. These comments were used to help establish the "Need For Change" described in the Notice Of Intent. Sent to 40 individuals, groups, state agencies, federal agencies and Congressional representatives.

INTRODUCTION

SUMMARY OF PUBLIC INVOLVEMENT ACTIVITIES

**SUMMARY OF
PUBLIC
INVOLVEMENT
ACTIVITIES**

March-April 1993 Need For Change discussions held with District employees.

March 22, 1993. Mount Rogers NRA and Wythe Ranger District.

March 26, 1993. Glenwood Ranger District.

April 13, 1993. New Castle Ranger District.

April 23, 1993. Clinch Ranger District.

April 27, 1993. Blacksburg Ranger District.

June 28, 1993 Notice Of Intent published in Federal Register. News Release in local papers.

July-August 1993 Scoping Meetings.

July 13, 1993. Natural Bridge. 4 attendees.

July 15, 1993. Blacksburg. 4 attendees.

July 19, 1993. Wise. 17 attendees.

July 20, 1993. Marion. 28 attendees.

July 27, 1993. New Castle. 11 attendees.

July 28, 1993. Roanoke. 16 attendees.

August 2, 1993. Wytheville. 8 attendees.

September 7, 1993. Formal scoping period ends. 84 letters received.

October 12, 1993. Ecosystem Management Seminar. Marion

October 13, 1993. Ecosystem Management Seminar. Roanoke

October-November 1993. Field trips to look at potential Wild and Scenic River candidates.

November 9, 1993. Meeting to discuss Management Indicator Species with State agencies and Virginia Tech.

Dec 11, 1993 Jefferson Annual Conference. Talk by Nancy Ross: *Revision Process and Timeline*. Talk by Ken Landgraf: *Forest Plan Inventories*. Talk by Dave Olson: *Forest Plan Issues*. Break-out discussions on Issues. Inventories available for review: Roadless, Recreation Opportunity Spectrum, Landtype Associations, Scenery Management System.

Jan 10, 1994 Recreation Opportunity Spectrum/Roadless Seminar. Marion. Discussed criteria for inventory and answered questions on current inventories.

Jan 11, 1994 Recreation Opportunity Spectrum/Roadless Seminar. Roanoke. Discussed criteria for inventory and answered questions on current inventories.

Jan 13, 1994. N.Ross/D.Olson met with New River Valley Planning District Commission; Mount Rogers Planning District Commission; and Soil Conservation Service in Wytheville.

**SUMMARY OF
PUBLIC
INVOLVEMENT
ACTIVITIES**

Jan 24, 1994. N.Ross/D.Olson met with 5th Planning District Commission in Roanoke.

Jan 24, 1994. Wildlife Management Seminar. Marion.

Jan 25, 1994. Wildlife Management Seminar. Roanoke.

Feb 7, 1994. Scenery Management System Seminar. Marion.

Feb 8, 1994. Scenery Management System Seminar. Roanoke.

Feb 22, 1994. Recreation Management Seminar. Marion

Feb 23, 1994. Recreation Management Seminar. Roanoke

March 7, 1994. Old Growth Seminar. Marion

March 8, 1994. Old Growth Seminar. Roanoke

June 6-9, 1994. Virginia Natural Heritage met with each district to discuss special interest areas inventory.

August 25, 1994. Southern Appalachian Assessment Public Meeting. Roanoke.

Nov 5, 1994. Jefferson Annual Conference. Roadless, Recreation Opportunity Spectrum, Landtype Association inventories available for review. Answered questions in open format. Most questions about timeline, Southern Appalachian Assessment and Regional Inventory Guidance letter.

Dec 7, 1994. Virginia Dept of Conservation & Recreation in office to look at Roadless and Recreation Opportunity Spectrum inventory with N.Ross/H.Fisher/K.Landgraf. Accompanied by Citizen's Task Force representative and Appalachian Trail Conference representative.

March 1995. Open Houses to view draft inventory maps for Southern Appalachian Assessment. Old Growth, Roadless, and Stage I timber suitability.

March 6, 1995. Abingdon, VA. 21 attendees.

March 9, 1995. New Castle, VA. 26 attendees.

May 25, 1995. Tom Collins arranged a meeting with the U.S. Geologic Service to come visit with interested IDT members on what USGS could input and resources they could provide for Revision.

June 5, 1995. Open Houses to view draft inventory maps for Southern Appalachian Assessment. Old Growth, Roadless, and Stage I timber suitability. Roanoke, VA. 24 attendees

October 23-27, 1995. Citizens were invited to stop by the office any day this week to look at draft inventory maps. No one took advantage of this opportunity.

1996. Open IDT meetings scheduled 2nd Monday of each month.

February 15, 1996. Annual Conference. Nancy Ross discussed status of Forest Plan Revision. Estimated Notice Of Intent would be released in April.

**SUMMARY OF
PUBLIC
INVOLVEMENT
ACTIVITIES**

February-March 1996. Management Area Workshops. Citizens invited to delineate management areas.

Feb 26 Clinch RD

Feb 27 Mt Rogers NRA

Mar 5 Glenwood RD

Mar 6 New Castle RD

Mar 12 Wythe RD

Mar 14 Blacksburg RD

Mar 27 Union WVA

August 1, 1996. Notice Of Intent released for Forest Plan Revision.

August 17, 1996. Forest Plan Revision Kick-off Picnic. "Working Together." People worked together to identify issues through discussion of possible alternative themes.

October 26, 1996. Blacksburg Field Trip. Citizens discussed issues as they looked at various activities on the Blacksburg RD.

Nov. 2, 1996. Clinch Field Trip. Citizens discussed issues as they looked at various activities on the Clinch RD.

Nov, 12 and 14, 1996. Inventory Open Houses in Roanoke and Abingdon. An opportunity to look at the latest Revision inventories prior to the end of scoping and to talk to individual IDT members about issues, inventories.

Dec 16, 1996. Partners in Flight evening IDT meeting.

June 23, 1998. Citizen Workshop, Roanoke. Workshop to sketch preliminary land allocations for 4 Southern Appalachian alternative themes.

June 24, 1998. Citizen Workshop, Abingdon. Workshop to sketch preliminary land allocations for 4 Southern Appalachian alternative themes.

October 7, 1998. Open House and Forum about the alternatives, Wytheville Community College

February-June 1999. Citizen Workshops focused on various Issues. Subject matter experts such as Forest Service, State agencies, Virginia Tech, Wildlife Management Institute, and Partners in Flight provided a brief presentation and discussion at the beginning of each workshop. Each workshop included a catered dinner.

February 18 Roadless Issue in Abingdon. 59 participants.

March 30 Wildlife Issue in Roanoke. 53 participants.

April 27 Water Issue in Radford. 18 participants.

May 20 Transportation Issue in Marion. 37 participants.

**SUMMARY OF
PUBLIC
INVOLVEMENT
ACTIVITIES**

June 24 Timber/Recreation Issue in Roanoke. 56 participants.

October-December 1999. Rolling Alternative Citizen Workshops. Citizens worked together to develop and make changes to the Rolling Alternative (an alternative designed to “roll” or change as we worked together on it).

October 7 Radford. 30 participants.

October 16 Roanoke. 40 participants.

October 26 Radford. Focused on land allocations of roadless areas. 53 participants.

November 6 Bear Creek/Crawfish Valley Field Trip. Talked specifically about land allocations in the Bear Creek roadless area. 49 participants.

November 18 Hungry Mother State Park. 46 participants.

December 1 Blacksburg. Focused on New River Valley Ranger District land allocations. 46 participants.

December 2 Lexington. Focused on Glenwood Ranger District land allocations. 69 participants.

December 6 Marion. Focused on Mount Rogers National Recreation Area land allocations. 52 participants.

December 7 Wise. Focused on Clinch Ranger District land allocations. 45 participants.

December 8 New Castle. Focused on New Castle Ranger District land allocations. 37 participants.

August 13, 2002. Information comparing the environmental effects of the alternatives is available for review at FS offices.

August 23, 2002. Open House to review updated information and maps for the alternatives. Roanoke.

August 24, 2002. Citizen Workshop in Roanoke to discuss potential changes to the Rolling Alternative.

The *Jefferson Plan Monitor* is the newsletter used to update the public on the progress of the planning process and to announce public meetings. The following issues were published.

Jefferson Plan Monitor, Volume 1, June 1993

Jefferson Plan Monitor, Volume 2, August, 1993

Jefferson Plan Monitor, Volume 3, January, 1994

Jefferson Plan Monitor, Volume 4, March, 1994

Jefferson Plan Monitor, Volume 5, September, 1994

**SUMMARY OF
PUBLIC
INVOLVEMENT
ACTIVITIES**

Jefferson Plan Monitor, Volume 6, February, 1995

Jefferson Plan Monitor, Volume 7, May, 1995

Jefferson Plan Monitor, Volume 8, October, 1995

Jefferson Plan Monitor, Volume 9, February, 1996

Jefferson Plan Monitor, Volume 10, July, 1996

Jefferson Plan Monitor, Volume 11, October, 1996

Jefferson Plan Monitor, Volume 12, November, 1996

Jefferson Plan Monitor, Volume 13, August, 1997

Jefferson Plan Monitor, Volume 14, May, 1998

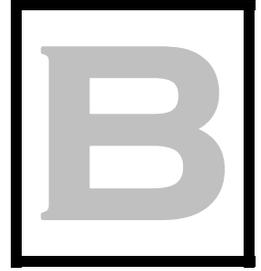
Jefferson Plan Monitor, Volume 15, September, 1998

Jefferson Plan Monitor, Volume 16, January, 1999

Jefferson Plan Monitor, Volume 17, August, 1999

Jefferson Plan Monitor, Volume 18, May, 2002

THE ANALYSIS PROCESS



INTRODUCTION

Land and resource management planning requires that processes formerly used to make individual resource decisions be combined into integrated management decisions. It also requires that mathematical modeling techniques be used to identify the most economically efficient solution to meet the goals and objectives of any alternative. Appendix B presents a technical discussion of the analysis process and computer models used in the Revision planning effort. The appendix focuses on the quantitative methods used to perform the analysis and documents how the analysis was done. The results from the modeling processes are estimates of what can be expected if alternatives are implemented and facilitate comparison of alternatives.

The Forest's major analysis goal is to provide enough information to help decision-makers and the public determine which combination of goods, services, and land allocations will maximize Net Public Benefits (NPB). The regulations (36 CFR 219) developed under the National Forest Management Act (NFMA) provide the analytical framework within which these decisions are made.

The NFMA and its regulations also state that the requirements of the National Environmental Policy Act (NEPA) and its regulations (40 CFR 1500-1508) must be applied in this analytic process. The NEPA regulations require that the environmental effects of a proposed action and alternatives to that proposed action must be disclosed in an Environmental Impact Statement (EIS).

Information presented in this chapter supplements the broader and less technical descriptions included in the body of the EIS. This discussion includes basic assumptions, modeling components and inputs, rules, methods, and constraints. Additional information and documents used in the analysis process are contained in the planning process records. The planning record in its entirety is incorporated here by reference.

FRAMEWORK OF THE PLANNING PROCESS

The general planning process described in 36 CFR 219.12 was used to guide the revision of the Jefferson National Forest Land and Resource Management Plan. This 10-Step process is described briefly below, followed by a more detailed discussion of the analytical processes used in Steps 3, 4, and 6.

STEP 1, Identification of purpose and need: Issues, Concerns, and Opportunities. The Forest Interdisciplinary Team assessed changes in public issues, management concerns, and resource use and development opportunities since the Plan was initially developed and subsequently amended. Appendix A of this EIS documents this step.

STEP 2, Planning Criteria. Criteria are designed to guide the collection and use of inventory data and information; the analysis of the management situation; and the design, formulation, and evaluation of alternatives. This step establishes guidelines for accomplishing the next five steps. Planning criteria are based on:

- Laws, executive orders, regulations and agency policy as set forth in the Forest Service Manual

INTRODUCTION

FRAMEWORK OF THE PLANNING PROCESS

**FRAMEWORK OF
THE PLANNING
PROCESS**

- ▶ Goals and objectives in the Resource Planning Act (RPA) Program and regional guides.
- ▶ Recommendations and assumptions developed from public issues, management concerns, and resource use and development opportunities.
- ▶ The plans and programs of other federal agencies, state and local governments, and Indian tribes.
- ▶ Ecological, technical and other factors.
- ▶ The resource integration and management requirements in 36 CFR 219.13 through 219.27.
- ▶ Alternatives that are technically possible to implement.
- ▶ Alternatives that meet management requirements or standards.
- ▶ Various levels of multiple-use objectives and outputs achieved.

STEP 3, Inventory Data And Information Collection - The kind of data and information needed is determined in Step 2 based on the issues, concerns, and opportunities identified and the resulting assessment of the management situation and determination of what needs to change. Data collection is part of normal Forest operations. Existing data is used whenever possible and supplemented with new data, when practicable. Data accuracy is continually evaluated. Much of this data and background documentation is on file in the planning records on file in the Supervisor's Office.

STEP 4, Analysis of the Management Situation - This step describes the existing situation on the Forest and determines if there is a need to change current management direction. It examines supply potentials and market assessments for goods and services, assesses demand for goods and services from National Forest lands, and determines suitability and feasibility for meeting needs. This information provides the basis for formulating an appropriate range of reasonable alternatives.

STEP 5, Formulation of Alternatives - A reasonable range of alternatives is formulated according to NEPA procedures. Alternatives are formulated to assist in identifying one that comes nearest to maximizing net public benefits (NPB). They provide for the resolution of significant issues and concerns identified in Step 1. Chapter 2 of the EIS describes the formulation of alternatives for the Jefferson National Forest in more detail.

The alternatives reflect a range of resource management programs. Each identified major public issue and management concern is addressed in different ways in the alternatives. The programs and land allocations in each alternative represent the most cost-efficient way of attaining the goals and objectives for that alternative. Both priced and non-priced goods and services (outputs) are considered in formulating each alternative.

STEP 6, Estimated Effects of Alternatives - The physical, biological, economic and social effects of implementing each alternative are described in Chapter 3 of the EIS in an effort to evaluate how well each alternative responds to issues, concerns and opportunities and what the potential impacts to resources might be.

STEP 7, Evaluation of Alternatives - Significant physical, biological, economic and social effects of implementing alternatives are used to evaluate each alternative and compare them with one another. Typically, each alternative can be judged on how it addresses the significant issues, concerns and opportunities (ICO's) identified in Chapter 1 and Appendix A of the EIS. Also, the alternatives are evaluated on how consistent they are with the recommended 1990 RPA program. Appendix H of the EIS presents the possible outputs and activities associated with each alternative.

STEP 8, Preferred Alternative - The Forest Supervisor reviews the Interdisciplinary Team evaluation of each alternative and the public issues and concerns. The Forest Supervisor then recommends a preferred alternative to the Regional Forester. The Regional Forester either selects the Forest Supervisor's recommendation, another alternative, or modifies the alternative recommended by the Forest Supervisor. This alternative is described as the Preferred Alternative in this EIS and is displayed as the Proposed Revised Forest Plan. Public comments are solicited and will be considered in the finalizing of the draft Revised Forest Plan and EIS.

**FRAMEWORK OF
THE PLANNING
PROCESS**

**INVENTORY DATA
AND
INFORMATION
COLLECTION**

STEP 9, Plan Approval and Implementation - After the Interdisciplinary Team has reviewed public comments and incorporated any necessary changes into the Final EIS and the Revised Forest Plan, the Regional Forester reviews and approves the Revised Forest Plan and Final Environmental Impact Statement. A Record of Decision documents this step.

STEP 10, Monitoring and Evaluation - The Revised Forest Plan establishes a system of measuring, on a sample basis, actual activities and their effects, and compares these results with projections contained in the Revised Forest Plan. Monitoring and evaluation comprises an essential feedback mechanism to ensure the Revised Forest Plan is dynamic and responsive to change. Chapter 5 of the Revised Forest Plan displays the Monitoring and Evaluation program.

INVENTORY DATA AND INFORMATION COLLECTION (STEP 3)

Several Interdisciplinary Team meetings were held to evaluate what data were needed to address the significant issues, concerns and opportunities identified in Chapter 1 and Appendix A of the EIS. Existing inventories were reviewed and updated and new information needs were identified and collected, if available. Most of the information was stored in databases, spreadsheets and a geographic information system (GIS).

GIS Data Layers

A geographic information system (GIS) was used to develop the primary Forest Plan revision database. GIS links natural resource tabular information with spatial (map) information. This linkage enabled complex spatial analyses and rapid display for many different physical, biological or administrative resources. The resulting database was used to preliminarily map the allocation of the management prescriptions, analyze suitable timber lands, build the forest planning model Spectrum analysis areas, and perform other analyses for the revision. To develop the database, the following layers were overlaid in GIS:

- ▶ **The Continuous Inventory of Stand Condition (CISC)** - the Southern Region's primary forest vegetation and stand inventory information that relates to forest cover type, age, site index, and land classification. The mapping of the management prescriptions for each alternative used CISC data from early 1999 and the identification of Spectrum analysis areas used CISC data from the spring of 2002.
- ▶ **Land Status** - This layer contains information on Forest surface ownership and subsurface mineral rights. The lands layer was updated several times throughout the process to incorporate new acquisitions. The latest update for mapping of management prescriptions and Spectrum analyses was the spring of 2002.
- ▶ **Slopes** - This layer used Digital Elevation Models (DEMs) to identify areas suitable for group selection. The criteria for being suitable included 0-25% slopes in concentrated areas in close proximity to an existing road network.

**INVENTORY DATA
AND
INFORMATION
COLLECTION**

**ANALYSIS OF THE
MANAGEMENT
SITUATION**

- ▶ **Watersheds** – This layer included Hydrologic Unit Code (HUC) mapping at both the fifth and sixth levels.
- ▶ **Riparian** – This layer is an approximation of the riparian habitat on the forest. It is impossible to map the true riparian corridor through the use of GIS due to the complexity of slope, vegetation and other factors that help define the corridor. This coverage was generated by buffering perennial streams and lakes by 100 feet for slopes 0-10%, 125 feet for slopes 11-45% and 150 feet for slopes greater than 45%. Intermittent streams were buffered 50 feet for slopes 0-15% and 30 feet + 1.5 (%slope) for slopes greater than 15%.
- ▶ **Inventoried Roadless Areas** - Appendix C of the EIS incorporates all the data used in the roadless area evaluations.
- ▶ **Developed Recreation Sites**
- ▶ **Scenery Management System (SMS)** – This layer addressed the visual resources and included attributes related to scenic integrity, distance zone, scenic attractiveness, and concern level.
- ▶ **Recreation Opportunity Spectrum (ROS)** – This layer represented the recreation experience expected in a particular area and included attributes such as rural, roaded natural, semi-primitive motorized and semi-primitive non-motorized.
- ▶ **Ecological Land Units** – This layer included attributes such as the Ridge and Valley, Blue Ridge and Cumberland Plateau subsections.
- ▶ **Transportation** – This layer included the public and Forest Service roads and trails within the Forest boundary.
- ▶ **Special Biological Areas** – This layer included known areas with special biological or zoological resources or rare communities.
- ▶ **Old Growth** – This layer included areas identified as meeting the old growth definition and were either field-verified or delineated as probable old growth areas from aerial photographs.
- ▶ **Current Plan Management Areas** – This layer included Wilderness and Special Management Areas from the 1985 Jefferson National Forest Plan.
- ▶ **Soils**
- ▶ **Geology**
- ▶ **Cultural Resources** – This layer included areas with special historical or cultural emphases.
- ▶ **Streams and Watercourses** – This layer included intermittent and perennial streams, lakes, rivers and ponds.
- ▶ **Special Uses** – This layer included existing special use permits and utility corridors.

ANALYSIS OF THE MANAGEMENT SITUATION (STEP 4)

In addition to the emerging issues, the need for change was identified through the Analysis of the Management Situation for the Jefferson National Forest (AMS) in August, 1996. This analysis considered the results of monitoring and evaluation, other policy and direction since the previous Plan, the 5-Year Review, the current condition of the resources, and supply and demand factors to determine the need for change in management direction, as well as the ability of the planning area covered by the Forest Plan to supply goods and services. It provided a basis for formulating a broad range of

reasonable alternatives. Because the AMS was done in 1996, quantitative estimates were updated with new information as available. The processes and results for the supply and demand analyses are briefly discussed below. The process records contain the full supply and demand analyses.

**ANALYSIS OF THE
MANAGEMENT
SITUATION**

Determination of Demand Estimates

**DETERMINATION
OF DEMAND
ESTIMATES**

RECREATION

RECREATION

This section provides additional details related to recreation supply and demand that were not covered in Chapter 3 of the EIS. Recreation demands were based on several sources: 1) the findings of the Southern Appalachian Assessment, Outdoor Recreation Demand and Supply in the Region and Roadless Areas and Designated Wilderness; 2) Regional Demand and Supply Projections for Outdoor Recreation (1993 update to the 1989 RPA Assessment) by Donald B.K. English et al.; 3) Draft Virginia Outdoor Plan, SCORP; and 4) Outdoor Recreation in American Life, A National Assessment of Demand and Supply Trends, H. Ken Cordell, 1999.

National Forest recreation visits were estimated based upon data collected through the National Visitor Use Monitoring (NVUM) project. This project was implemented throughout the National Forest System in response to the need to better understand use of and satisfaction with recreation settings and to provide a standard means of quantifying recreation use across the system within a reasonable confidence level. The project was completed for the Jefferson in 2000 and the report was completed in 2001. Basically, it utilized randomly selected stratified sites across the forest in four categories: Day Use Developed (DUD), Overnight Use Developed (OUD), General Forest Area (GFA), and Wilderness (Wild). Both proxy and non-proxy site data was collected. Factors based upon national data were used as multipliers to estimate total visits by category. The spreadsheets used to calculate visits are available in the process records for this plan.

Assumptions by alternative about recreation programs use were based on the overall theme and emphasis of each alternative as stated in its description. These assumptions, in turn, influenced changes in supply and capacity for developed recreation, dispersed recreation, general forest/trails and wilderness across the alternatives. Projected effects by alternative on each recreation category were made. Refer to the paper, "Developed and Dispersed Recreation Assumptions for Forest Plan Alternatives", in the process records for this discussion. In Table B-1, Alternative F represents the 2000 NVUM national forest visits by category. Expected changes by alternative by percent and total visits from Alternative F are shown.

The Jefferson National Forest NVUM data was further refined to RPA activity groups for use in the Present Net Value (PNV) and Jobs/Income calculations for the EIS. The percent breakdown by RPA activity group was done using NVUM survey results from the Jefferson NVUM data, nearby forests, and local experience. Table B-2 shows a summary of the conversion of visits by the NVUM categories to the RPA activity groups for the forest under Alternative F (Current Direction). This summary is based on the spreadsheet, "JNF NVUM Activities by RPA Category", showing calculations for each activity within the RPA activity groups for each alternative, based on the changes from current direction in Table B-2. Visits were converted to trips and shown by RPA activity for each alternative in Table B-3.

Projections of future use are based upon data from Outdoor Recreation in American life, A National Assessment of Demand and Supply Trends, H. Ken Cordell, Principal Investigator, 1999. Estimates were made for each activity within each group by decade through 2050. The estimates were calculated using projection factors reflecting projected increases or decreases. A spreadsheet calculating projected visits in each activity and groups through 2050 for each alternative is available in the process records for this EIS.

Table B-1. Recreation Use Estimates by NVUM Category by Alternative

Use Category	Alt A	Alt B	Alt D	Alt E	Alt F (current)	Alt G	Alt I
Wilderness (WILD)	High (+25%) 53,538	Moderate (+15%) 49,255	Moderate (+20%) 51,396	High (+120%) 94,226	No Increase 42,830	High (+300%) 128,490	High (+25%) 53,538
Developed Day Use (DUDS)	Moderate (+15%) 547,101	No Increase 475,740	No Increase 475,740	Moderate (+10%) 523,314	No Increase 475,740	No Increase 475,740	Slight (+3%) 490012
Overnight Use (OUDS)	Moderate (+10%) 334,983	No Increase 304,530	No Increase 304,530	Slight (+5%) 319,757	No Increase 304,530	No Increase 304,530	Slight (+3%) 313,666
General Forest Area (GFA)	Moderate (+15%) 595,298	Slight (+2%) 528,003	Moderate (+10%) 569,415	Slight (+5%) 543,533	No Increase 517,650	Decrease (-15%) 440,003	Moderate (+10%) 569,415
Total	1,530,920 (+14.2%)	1,357,528 (+1.3%)	1,401,081 (+4.5%)	1,480,830 (+10.4%)	1,340,750 0%	1,348,760 (+. 6%)	1,426,631 (+6.4%)

Where:

Decrease = __% of total use

No increase = Current use

Slight increase = 1-5% of total use

Moderate increase = 6-20% of total use

High increase = 21% or higher of total use

Table B-2. RPA Activity Group Summary from NVUM Data for Alternative F (Current)

RPA Activity	DUDS		OUDS		GFA		WILD		TOTAL Visits (M)
	Percent	M Visits							
Camping, Picnicking, Swimming	19.3%	91.82	99.7%	303.62	5.9%	30.54	0.0%	0	425.98
Mechanical Travel & Viewing Scenery	0.0%	0	0.0%	0	36.8%	190.5	0.0%	0	190.5
Hiking, Horseback Riding, Water Travel	0.0%	0	0.0%	0	24.5%	126.82	0.0%	0	126.82
Winter Sports	0.1%	0.48	0.0%	0	0.2%	1.04	0.0%	0	1.51
Resorts	0.0%	0	0.3%	0.91	0.0%	0	0.0%	0	0.91
Fish & Wildlife	46.5%	221.22	0.0%	0	27.2%	140.8	0.0%	0	362.02
Wilderness	0.0%	0	0.0%	0	0.0%	0	100.0%	42.83	42.83
Other	34.1%	162.23	0.0%	0	5.4%	27.95	0.0%	0	190.18
Total	100.0%	475.74	100.0%	304.53	100.0%	517.65	100.0%	42.83	1340.75

Table B-3. Recreation Trips by RPA Activity Group Summary by Alternative

Resource	Alt F	Alt A	Alt B	Alt D	Alt E	Alt G	Alt I
Recreation							
Nonresident Day Use	66,813	68,403	67,763	69,925	74,424	68,979	71,234
Nonresident Over-night on NF	49,339	50,513	50,040	51,637	54,959	50,938	52,603
Nonresident Over-night off NF	72,540	74,266	73,571	75,919	80,803	74,891	77,340
Local Resident Day Use	199,225	203,966	202,055	208,504	221,918	205,682	212,406
Local Resident Over-night on NF	20,558	21,047	20,850	21,515	22,900	21,224	21,918
Local Resident Over-night off NF	32,893	33,675	33,360	34,425	36,639	33,959	35,069
Wildlife & Fish							
Nonresident Hunting	10,891	12,523	11,108	11,980	11,434	9,256	11,980
Local Resident Hunting	14,584	16,770	14,874	16,042	15,312	12,395	16,042
Nonresident Wildlife Viewing	16,216	18,648	16,326	16,761	17,565	15,399	17,084
Local Resident Wildlife Viewing	21,715	24,972	21,861	22,445	23,521	20,620	22,878
Nonresident Fishing	39,888	45,870	40,073	40,813	43,413	38,499	41,732
Local Resident Fishing	53,413	61,424	53,662	54,652	58,134	51,553	55,883

RANGE

Projections for range were derived from past history of the range program on the forest, the Mount Rogers Planning District Commission, the 1989 Recommended RPA Program (USDA 1990) and the Forest Service Program for Forest and Rangeland Resources (USDA 1995).

There are currently no vacant allotments on the Forest. On the Mount Rogers National Recreation Area there is a waiting list of individuals desiring to apply for National Forest grazing privileges. The list currently has 40 names of individuals who do not currently hold an NRA grazing permit and 18 names of current permittees who would like additional grazing. Several individuals have been on the list since at least 1989. An individual who wishes to graze 20-25 head of livestock (an average herd for the NRA) would spend a minimum of 4-5 years on the waiting list before a permit might come available. Slightly more than 50% of the NRA's permittees are full-time farmers who are likely dependent on their National Forest grazing permits for a portion of their livelihood. The other Districts report that they also have occasional inquiries as to the availability of grazing, although they do not maintain a list of interested parties.

Review of past range reports shows that there has been a small increase in grazed acres since 1986; from 7,530 acres and 6,421 Animal Unit Months (AUMS) to 7,987 acres and 8,972 AUMS in 1996. The number of allotments has increased since 1986 from 11 on 3 Ranger Districts to a high of 15 on 4 Districts in 1995. The number of allotments has recently decreased to 12 with the consolidation of 4 NRA allotments into 1. The acreage under permit did not change with this consolidation.

ANALYSIS OF THE MANAGEMENT SITUATION

Within the last few years, the National Forests in the southeast have begun a program of issuance of new grazing permits using a competitive bidding system. This system provides a good measure of the demand for the grazing resource on the National Forest. A recent (Dec. 1995) bid opening on the NRA had successful bids ranging from \$3.83 to \$9.05 per head-month (HM). A Head-Month is one month's use of the range by one adult cow (with or without calf), or one bull, steer, heifer or horse. Eleven grazing tracts were offered for bid at this 1995 bid opening. All of the 11 were bid on, with several tracts receiving 7 or 8 bids. It is likely that \$9.05/HM is one of the highest National Forest grazing fees in the nation at this time and is a good indication of the high demand for National Forest grazing privileges in this area. The permittee that holds this lease is from North Carolina and exhausted all possible options for grazing his livestock closer to home before he elected to bring them to the NRA. The NRA currently has permittees from North Carolina and Tennessee as well as from Virginia.

DETERMINATION OF DEMAND ESTIMATES

TIMBER

Land use has also changed over much of this area from grazing to Christmas tree farming. These trends are expected to continue well into the future as demand for housing developments, summer cabins, golf courses and tree farms continue. This may explain the rising demand for additional grazing lands on the Jefferson National Forest as shown by the number of respondents and high bid prices received on advertisements for such grazing opportunities, especially within the Mount Rogers NRA. It is expected then to have a gradually increasing demand for grazing on the Jefferson throughout the planning period.

TIMBER

The demand for timber products was addressed using the 1996 General Technical Report NE-226 "Methodology for Assessing Current Timber Supplies and Product Demands" by Worthington et al. The authors developed the methodology using the Jefferson National Forest market area as a case study. The market area, timber resources, timber demand from the primary wood-processing industry located in the market area, the economic availability of the timber supply under current market conditions and the potential effect of landowner attitudes on available timber supply from nonindustrial private forest lands were described in the report.

The timber market area for the Jefferson National Forest was determined to be generally within an 80-mile radius around the forest's boundary and comprised 121 counties within five states. Within the market area the report stated that there were 634 sawmills and 12 pulp and paper mills that combined consumed 414.4 mmcf (million cubic feet) of roundwood annually. The report estimated that approximately 51 percent of the current sawtimber consumption in the market area is by 79 sawmills that demand high-quality timber resources, 30 to 35 percent is by 134 sawmills that demand average-quality sawtimber and the remaining 13 to 19 percent is by 421 sawmills that process low-quality sawlogs. The estimated economic supply of timber within the market area was between 66-75 percent on nonindustrial private land and around 3 percent on the Jefferson National Forest. The report stated that supply greatly exceeded annual consumption rates (annual demand is 62 percent of net annual growth and 1.4 percent of the total economically available timber supply from all ownerships); however, consumption rates for high-quality sawtimber exceeded growth, suggesting that this demand is under increasing economic pressure.

The Social/Cultural/Economic Report for the Southern Appalachian Assessment, 1996, also addressed questions related to timber supply and demand on a more regional and national level. Composite board material represented an important emerging industry in the Southern Appalachians. The area with the greatest growth in the composite board production is southwestern Virginia, a region with historically low pulpwood production levels. Prices for the highest quality hardwood sawlogs have risen over the last 20 years

while prices for low-quality sawlogs have fallen. While at a regional level, the Forest Service holds 17 percent of timberland, the agency manages 21 percent of all sawtimber, 27 percent of the grade 1 sawtimber and 44 percent of the grade 1 select red oak sawtimber. Pulpwood production has expanded over the last 10 to 15 years with the hardwood market share increasing. Oriented strand board appears to be an important emerging market for timber in the Southern Appalachians. There has been a steady growth in the prices for high-quality hardwood sawlogs; prices for medium-quality sawlogs have been stable and those for low-quality sawlogs have declined.

MINERALS

Congress passed a law in 1987 that updated and enlarged the Forest Service role in administering surface operations for oil and gas development on National Forest System lands (Federal Onshore Oil and Gas Leasing Reform Act of 1987). The reasonably foreseeable development projected for the Revised Forest Plan was developed based on the law and the implementing regulations, including the 36 CFR 228E regulations for Forest Service review and approval of surface use plans of operations and is discussed in detail in Chapter 3 of the EIS. The reasonably foreseeable development included an estimate of the number of wells, miles of access road and pipeline construction, and acres of clearing for well pads, access roads and pipelines. The development of new gas wells, access roads and associated facilities would occur over 15 years, which is the time span for the Revised Forest Plan. Because of the difference in oil and gas potential between the Clinch Ranger District and the other Ranger Districts, the reasonably foreseeable development on federal oil and gas leases was discussed in two sections: first, the Clinch Ranger District, and secondly, the rest of the Forest.

WILDERNESS

Appendix C of the EIS contains the roadless area evaluations. One of the three major factors in these evaluations is the identification of need - a consideration of the amount of wilderness already in the area, regionally and nationally.

WILDLIFE AND FISHERIES

Projections for wildlife and fisheries were developed using data from the Virginia Department of Game and Inland Fisheries and the West Virginia Department of Natural Resources, the 1989 Recommended RPA Program, the Virginia Wildlife-Related Recreation Study (Wright 1989) and the Wildlife-Related Outdoor Recreation and Boating: Their Economic Importance in Virginia (Smith 1993). The Recreation demand projections addressed hunting, fishing and wildlife viewing. Chapter 3 of the EIS discussed trends in certain wildlife demand species, such as deer, turkey, bear, grouse, and others.

Benchmark Analysis

Benchmark analysis is specified in the NFMA regulations in 36 CFR 219.12(e) as part of the Analysis of the Management Situation. Benchmarks approximate maximum economic and biological resource production opportunities and are useful in evaluating the compatibilities and conflicts between individual resource objectives and in defining the range within which integrated alternatives can be developed. Selection of those benchmarks to develop is dependent upon the revision topics. Benchmarks are primarily modeled in Spectrum by changing the objective function and by adjusting constraints. Because the Spectrum model was developed to primarily model vegetation management through the use of timber sales, three timber-related benchmarks were developed in addition to one that reflected our current level of management.

The NFMA regulations in 36 CFR 217.27 list management requirements that must be

**ANALYSIS OF THE
MANAGEMENT
SITUATION**

**DETERMINATION
OF DEMAND
ESTIMATES**

**MINERALS,
WILDERNESS,
WILDLIFE AND
FISHERIES**

**BENCHMARK
ANALYSIS**

BENCHMARK ANALYSIS

considered in benchmarks. The following basic management requirements were included in all of the benchmark Spectrum models:

- ▶ Non-declining flow and long-term sustained yield.
- ▶ The Allowable Sale Quantity only generated from tentatively suitable timber lands.
- ▶ Water quality and watershed protection.
- ▶ Riparian protection.
- ▶ Base level of visual resource protection.
- ▶ There would be no harvest before the culmination of mean annual increment.

CUR – Current Level Benchmark

This benchmark provides for management using the current plan as amended, adjusted to incorporate changes necessary to meet current management direction. The benchmark estimates the capability of the planning areas to provide for a wide range of goods, services, and other uses from the present land allocations. This benchmark was the same as Alternative F and meets all requirements specified in the regulations (36 CFR, Part 219).

TIM – Maximum Timber Benchmark

This benchmark was used to identify the timber production potential of the Forest, subject to these specifications:

- ▶ The objective function maximizes timber volume in the first five decades, with a rollover to maximize present net value for 15 decades.
- ▶ All tentatively suitable acres were included, without any management prescription allocations, so every tentatively suitable acre was eligible for harvest.
- ▶ No successional habitat constraints were applied.

PNV – Maximum Present Net Value Benchmark

This benchmark was established to estimate the schedule of outputs and costs that would maximize the present net value of timber production without any constraints, subject to these specifications:

- ▶ The objective function maximizes net present value over the entire planning horizon.
- ▶ All tentatively suitable acres were included, without any management prescription allocations.
- ▶ No successional habitat constraints were applied.

MIN – Minimal Level of Management Benchmark

This benchmark represents “the minimum level of management which would be needed to maintain and protect the unit as part of the National Forest System together with associated costs and benefits” (36 CFR 219.12(e)(1)(i)). In Chapter 2 of the EIS, it is compared to the management emphasis of Alternative C, which was originally considered but eliminated from detailed study. Alternative C essentially embodied all of the elements of a minimum level of management benchmark by only providing for the protection of resources and meeting legal requirements. This benchmark shows no commercial timber

production or harvest; therefore the ASQ is zero. In this benchmark, no early successional habitat conditions are created.

**BENCHMARK
ANALYSIS**

Table B-4 displays some of the distinctive outputs and effects for each benchmark.

**LANDS SUITABLE
FOR TIMBER
PRODUCTION**

Table B-4. Tradeoffs Among Benchmarks

	Current Mgmt (Alt F)	Maximum Timber	Maximum Pre- sent Net Value	Minimum Level of Management
Allowable Sale Quantity (ASQ), MCF/decade	49.5	123.6	107.1	0
Long-term Sustained Yield, MCF/year	4.9	22.7	19.1	0
Suitable Acres	307,964	645,600	645,600	0
Clearcut Acres, decade 1	3,500	39,016	34,960	0
Shelterwood Acres, decade 1	17,000	0	0	0
Group Selection Acres, dec- ade 1	1,500	0	0	0
Present Net Value (M\$)	\$2,293	\$2,385	\$2,632	\$974
% Early Successional Acres, end of decade 1	3%	6%	5%	0%
% Early Successional Acres, end of decade 5	3%	4%	9%	0%
% Mid to Late Successional Acres, end of decade 1	18%	18%	18%	38%
% Mid to Late Successional Acres, end of decade 5	10%	16%	12%	9%
% Late Successional Acres, end of decade 1	60%	61%	62%	43%
% Late Successional Acres, end of decade 5	24%	9%	17%	32%
% Old Successional Acres, end of decade 1	12%	8%	8%	9%
% Old Successional Acres, end of decade 5	55%	16%	26%	58%

Lands Suitable for Timber Production

During forest land and resource management planning, the Forest Service is required to identify lands unsuited for timber production (16 USC 1604(k); 36 CFR 219.14). This identification process involves three stages of analysis. Stage I analysis identifies lands tentatively suitable for timber production. Stage II analysis is designed to explore the financial aspect of varying intensities of timber management on lands identified as tentatively suitable for timber production from Stage I. Stage III analysis identifies lands as unsuited for timber production under the alternative selected in the revised Forest Land and Resource Management Plan.

LANDS SUITABLE FOR TIMBER PRODUCTION

STAGE I— PHYSICAL

STAGE I: PHYSICAL SUITABILITY

The first stage of the timber suitability analysis addresses the administrative and physical suitability of the land to be managed for the production of timber. Stage I lands unsuitable for timber production included:

- ▶ Lands that do not meet the definition of forest land.
- ▶ Lands that have been administratively or congressionally withdrawn from timber production by an act of Congress, the secretary of agriculture, or the chief of the Forest Service.
- ▶ Forest lands incapable of producing industrial wood.
- ▶ Lands where technology is not available to ensure timber production from the land without irreversible soil and water resource damage.
- ▶ Lands where there is no reasonable assurance that they can be adequately restocked.
- ▶ Lands where there is inadequate information, primarily due to recent acquisition.

The following codes in Table B-5 from the Continuous Inventory of Stand Condition database (CISC) were used to define the five categories used to determine the Stage I tentatively suitable lands in Table B-6.

Table B-5. Definitions Used in Stage I Suitability Analysis

Categories of Stage I Unsuitable Lands	CISC Land Class Code
1. Non-Forest Land	110 - Lake 120 - Reservoir 140 - River 210 - Cemetery 220 - Powerline Right-of-way 230 - Road and Railroad Right-of-way 240 - Special Use Area 240 - Wildlife Clearing 260 - Other
2. Withdrawn	350 - Designated Wilderness and GIS
3. Incapable	900 - Lands Incapable Site Index < 40
4. Irreversible Damage	824 - Sensitive Soils 826 - Physical Barriers
5. Can't Restock within 5 Years	Forest type 99 and stand condition class 15

Table B-6. Stage I Acres Tentatively Suitable for Timber Production

Classification	Acres
Total National Forest Land	723,300
Non-forest Land (includes water)	(12,000)
Forest Land	711,300
Forest Land – withdrawn for existing, designated wilderness	(57,800)
Forest Land – incapable of producing industrial wood	(3,400)
Forest Land – irreversible damage likely to occur; not re-stockable	(4,300)
Forest Land – inadequate information	(200)
Tentatively Suitable Forest Lands	645,600

**LANDS SUITABLE
FOR TIMBER
PRODUCTION**

**STAGE I—
PHYSICAL,
STAGE II—
FINANCIAL,
STAGE III— TOTAL**

STAGE II: FINANCIAL ANALYSIS

The second stage analysis is designed to explore the financial efficiency of different timber intensities on the lands identified as tentatively suitable for timber production in Stage I. It does not identify any lands as unsuitable for timber production. Stage III analysis considers the results of these financial efficiencies in making the final determination of lands suited for timber production.

The financial analysis identifies the present net value (PNV) for different Spectrum analysis areas. For the purpose of this analysis, PNV is a measure of the discounted timber benefits less the discounted timber management costs, using a 4 percent discount rate. The actual PNV analysis consisted of a Spectrum run which examined all of the silvicultural prescriptions for all of the Spectrum analysis areas. There are many factors that determine the economic efficiency of a timber sale that cannot possibly be modeled using a landscape level planning model such as Spectrum. However, based on this financial analysis, the following primary conclusions were made:

- ▶ Clearcutting with natural regeneration has the highest PNV for all analysis areas.
- ▶ The analysis areas with the lowest PNV were site index 50 in yellow pine.
- ▶ All site index 40 lands were economically inefficient.

Site index 50 lands that were steep (defined by CISC land classes 540 and 800-899) with the exception of forest types 48, 52, 53 and 81 (northern red oak-hickory-yellow pine, chestnut oak, white oak-northern red oak-hickory, and sugar maple-beech-yellow birch) were economically inefficient.

STAGE III—IDENTIFICATION OF SUITABLE ACRES

The third stage analysis is accomplished during the formulation of alternatives. Several criteria were used during this stage to identify lands as unsuitable for timber production:

- ▶ Based upon consideration of multiple-use objectives for an alternative, the land is proposed for resource uses that preclude timber production. However, in some management prescriptions that are classified as unsuitable for timber production, timber harvest may occur to meet the desired condition of other resources.
- ▶ Other management objectives for an alternative may limit timber production activities to the point where management requirements set forth in 36 CFR 219.27 cannot be met.

LANDS SUITABLE FOR TIMBER PRODUCTION

► The lands are not cost-efficient, over the planning horizon, in meeting forest objectives, which includes timber production.

STAGE III

Table B-7. Determination of Lands Suitable for Timber Production from Stage III Analysis

ALTERNATIVE	UNSUITABLE LANDS	SUITABLE LANDS	PERCENT SUITABLE
A	441,600	281,700	39%
B	471,500	251,800	35%
D	410,900	312,400	43%
E	526,500	196,800	27%
F	415,300	308,000	43%
G	595,900	127,400	18%
I	455,600	267,700	37%

Table B-8. Stage III Suitability for Alternative I

Classification for Stage III Suitability	Acres	
Tentatively Suitable Forest Land – from Stage 1 Analysis	645,600	
Land Withdrawn for Other Resource Purposes:	Custodial Management (0.B)	(3,500)
	Recommended Wilderness Study Areas (1.B)	(26,200)
	Eligible Wild, Scenic and Recreational River (2.C's)	(5,600)
	Appalachian National Scenic Trail Corridor (4.A)	(31,000)
	Geologic and Paleontological Areas (4.C.1)	(1,900)
	Botanical and Zoological Areas (4.D)	(5,000)
	Cultural and Heritage Areas (4.E.1.a)	(200)
	Scenic Areas (4.F)	(1,000)
	Special Areas – Hoop Hole, Mount Rogers Crest Zone, Whitetop Mountain, Whitetop Laurel Creek, and North Fork of Pound (4.K.2, 4.K.3, 4.K.4, 4.K.5, 4.K.6)	(23,900)
	Special Use Areas (5.A, 5.B, 5.C)	(1,600)
	Old Growth Areas (6.A, 6.B, 6.C)	(33,400)
	Scenic Byway Corridors (7.A)	(1,800)
	Concentrated Recreation Zones (7.D)	(7,500)
	Dispersed Recreation Areas (7.E.1)	(19,500)
	Pastoral Landscapes (7.G)	(3,800)
	Peaks of Otter Salamander Primary Habitat Conservation Area (8.E.2.a)	(800)
	Indiana Bat Primary Cave Protection Areas (8.E.4.a)	(400)
	Aquatic Habitat Areas (9.A.4)	(6,200)
	Rare Communities (9.F)	(6,800)
	Maintenance and Restoration of Upland and Bottomland Hardwoods (9.G)	(100)
Remote Backcountry Areas (12.A, 12.B, 12.C)	(108,100)	
Semi-Primitive Lands within Suitable Prescriptions	(5,400)	
Riparian Habitat within Suitable Prescriptions	(40,600)	
Economically inefficient lands ¹	(43,600)	
Total Suitable Land	267,700	

Estimated Effects of Alternatives (Step 6)

Analysis Tools Used

The primary tools used to estimate the effects of alternatives include several established computer models, numerous spreadsheets and GIS.

PRE-SUPPOSE

Pre-Suppose is a program used to query and sort Forest Inventory and Analysis (FIA) data for use in the growth and yield model. The program allows the user to evaluate, select or discard plots that fit desired criteria and create support files to directly be linked into the Suppose interface for the Forest Vegetation Simulator model.

FOREST VEGETATION SIMULATOR MODEL

The primary tool for estimating growth and yield used in the Spectrum model is the Forest Vegetation Simulator (FVS) model. FVS is an individual-tree, distance-independent, growth and yield model. It has its structural roots in the Stand Prognosis Model developed by Albert Stage from the Intermountain Research Station. Staff at the USFS Forest Management Service Center in Fort Collins have now calibrated many variants of the model to specific geographic areas throughout the United States. Each variant used different species-specific growth and yield equations and assumptions. The Southern Variant was used for input into the Spectrum model for the Jefferson National Forest Land and Resource Management Plan Revision. The Southeastern and Northeastern Variants were also evaluated for use but the Southern Variant provided the best fit for tree species on the Jefferson National Forest.

FVS allows the user to calculate estimates of forest stand structure and species composition over time and quantify this information to (1) describe current and future forest stand conditions, (2) simplify complex concepts of forest vegetation into user-defined indices, attributes, etc., and (3) allow the manager to ask better questions about growth and yield of forested stands and complete analyses to answer those questions. For the purposes of the Southern Appalachian Forest Plan Revisions, Forest Inventory and Analysis (FIA) data for the Southern Region was converted into a format that FVS could use. This data is collected by the Forest Inventory and Analysis Unit of the Southern Research Station for each State on a 10 year cycle in order to provide unbiased, accurate, current, and relevant forest resource information that meets the diverse needs of land stewardship.

The FVS model structure contains modules for growing trees, predicting mortality, simulating growth reductions due to stocking, calculating tree volumes, and producing reports. Extensions that simulate the effects of Oak Decline and the Southern Pine Beetle on forested stands are also available for use with the Southern Variant. These Pest Extensions predict the number of events, expected mortality, and residual stand structure and composition. In addition to providing input for the Spectrum model, FVS was used in combination with these pest extensions to disclose impacts to the Forest expected from Oak Decline and the Southern Pine Beetle.

IMPLAN

Economic effects to local counties were estimated using an economic input-output model developed with IMPLAN Professional 2.0 (IMPLAN). IMPLAN (Impact Analysis for Planning)

**ESTIMATED
EFFECTS OF
ALTERNATIVES**

**ANALYSIS TOOLS
USED**

**FVS
IMPLAN**

ESTIMATED EFFECTS OF ALTERNATIVES	is a software package for personal computers that uses the latest national input-output tables from the Bureau of Economic Analysis. The software was originally developed by the Forest Service and is now maintained by the Minnesota IMPLAN Group, Inc (MIG). Data used for the impact analysis was from secondary data for those counties considered to be in the forest's impact areas. The assumption used in this modeling process was that the impact area comprised the counties within the forest's designated county boundaries. The data source used in developing the Southern Appalachian Forest models for impact purposes was the most recent data available from MIG (1998).
ANALYSIS TOOLS USED	
SPECTRUM	

Development of the Forest Planning Model (Spectrum)

Land management planning is the major mechanism for making large-scale and long-term forest land allocations and resource management decisions. Planning consists largely of exploring a national forest's productive potential and experimenting with various allocation choices. Modeling is a primary planning tool because it permits studying the consequences of choices without actually committing valuable resources to experimentation or having to wait many years to observe an outcome. It can also evaluate whether desired future conditions are feasible when taking all resource management goals and objectives into consideration. However, decisions about structuring land allocations, choosing and pursuing trade-offs, and accepting one result instead of another are made by people, not the model. The model is merely a device for organizing elements of the decision problem, discovering possible choices and identifying potential conflicts. The Spectrum model is an evolved version of FORPLAN, a linear programming model that solves for an overall objective, such as maximizing present net worth of benefits and costs or maximizing the amount of certain yields. It is an excellent tool for determining the most cost-efficient way to reach objectives and for analyzing the impacts to vegetative conditions over time from various management activities.

In the past, this model has been used to make land allocation decisions; however, for this Forest Plan, those land allocations were essentially determined through the mapping of the management prescriptions (such as 6.C - Old Growth) that varied for each alternative. Therefore, within Spectrum, the land allocation/management prescription assigned to every acre was 'hard-wired' in the model through the use of analysis areas. Because silvicultural treatments are one of the primary means of managing vegetation and wildlife habitat, and are easily modeled, the Spectrum model was constructed principally to examine how timber management could be used to achieve the goals and objectives for each alternative and for the individual management prescriptions. The Jefferson Spectrum model was then constructed to be a timber harvest allocation model, i.e. it was used to model management constraints and determine the most efficient way of meeting management objectives through the use of silvicultural prescriptions. Only benefits and costs pertaining to the timber program were included in the model. The effects from other type treatments on vegetation and other resources were addressed outside of the model, based on timber-related outputs from the Spectrum model.

SPECTRUM MODEL OVERVIEW

The model was designed and solved in the following steps:

- ▶ Model creation - Designing a Spectrum model was the most intensive of the four steps. In this step the modeler input resource data, specified resource interactions, set goals and objectives, outlined management actions, defined activities and outputs, set the planning horizon, stratified the landscape into similar response areas, and input economic data.
- ▶ Matrix Generation - Generating the matrix was the process of converting the input from step one to a matrix of rows and columns that the optimization software could solve.

- ▶ Optimization of the Solution - The commercial software C-Whiz was used to solve the matrix. The linear programming solver found the best mix of management actions to meet the management objectives.
- ▶ Interpretation of the Solution- The final step in the modeling process was to use the reports created in Spectrum and spreadsheets to interpret the results of the optimization and perform sensitivity analyses.

**ESTIMATED
EFFECTS OF
ALTERNATIVES**

**ANALYSIS TOOLS
USED**

The eight basic components of the Spectrum model include the following and are discussed individually in this section:

SPECTRUM

- ▶ 1) the planning horizon;
- ▶ 2) land stratification;
- ▶ 3) silvicultural prescriptions;
- ▶ 4) activities and outputs and their associated costs and benefits;
- ▶ 5) rotation ages;
- ▶ 6) yield coefficients;
- ▶ 7) constraints;
- ▶ 8) the overall management objectives.

PLANNING HORIZON

Each Spectrum model has a specified time frame called a 'planning horizon' that may be as short or long as desired and is broken into time periods of 10 years each. The Jefferson Spectrum model used a planning horizon of 200 years, with 20 time periods, or decades. Activities and outputs are primarily represented in Spectrum on a decadal basis, occurring at the midpoint of the decade.

LAND STRATIFICATION (ANALYSIS AREAS)

Analysis areas are defined as units of land, not necessarily contiguous, which can be considered to be homogeneous with respect to responses to treatment in terms of yields, costs, and values received for resource outputs. Management objectives or constraints are also expected to be relatively the same throughout an analysis area. In Spectrum, each analysis area is allowed up to six stratification categories to identify its unique responses to treatments, yields, costs, values and constraints. Table B-9 describes the six strata used to determine the analysis areas. The Jefferson used a combination of Geographic Information System (GIS) data layers to construct its analysis areas. Initially, a polygon layer of stand information from the Continuous Inventory of Stand Conditions (CISC) was intersected with layers representing slope, the Recreational Opportunity Spectrum (ROS), the Scenery Management System (SMS), the ecological subsections, and the allocation of the Forest Plan management prescriptions mapped for each alternative. Only the tentatively suitable acres (identified from Stage I Timber Suitability Analysis, Appendix F of the Forest Plan) were modeled for management in Spectrum. A stratum may have two resource layers combined in order to keep the number of strata to six.

The Old Growth Community Type classification was used to define the forest cover types. This allowed tracking of changes in these vegetation groupings over time for input into the wildlife habitat effects analysis. Yield tables were developed for the four aggregate groupings of these community types. Site index was used to differentiate the growth and yield estimates and the appropriate silvicultural prescriptions allowed. Scenic class and the Recreation Opportunity Spectrum (ROS) was incorporated to apply constraints by management prescription. The beginning successional class of an analysis area was used to track the movement of acres, by community type, in the various successional classes over the planning horizon. Most of the management prescriptions that are

ESTIMATED EFFECTS OF ALTERNATIVES

unsuitable for timber production were not included in the model, unless timber harvest could frequently be seen to be used to meet other resource objectives. Therefore, the model did calculate the amount of timber that could be reasonably expected to be harvested on both suitable and unsuitable lands. District and ecological subsections were used as a proxy for watersheds for the watershed effects analysis since the mapping of individual watersheds would have greatly increased the number of analysis

ANALYSIS TOOLS USED

SPECTRUM ANALYSIS AREAS

Table B-9 . Spectrum Analysis Areas.

Stratum of Land	Description	Definition or Code
LEVEL 1 - Vegetation	SAA Old Growth Community Type	CISC Forest Type(s)
NH	Northern Hardwoods	81
CNH	Conifer-Northern Hardwoods	3, 4, 5, 8, 9, 10
MMWM	Mixed Mesophytics and Western Mesophytics	41, 50, 56, 82
ERH	Eastern Riverfront and River Floodplain	58, 63, 69, 72, 73, 74, 75
DMO	Dry Mesic Oaks	51, 53, 54, 55
DXO	Dry Xeric Oaks	52, 57, 59, 60
XPPO	Xeric Pine and Pine-Oaks	11, 12, 15, 16, 20, 21, 33, 35, 38, 39, 88
DDMO	Dry and Dry Mesic Oak-Pines	42, 43, 44, 45, 46, 47, 48
MSF	Montane Spruce-Fir	6, 7, 17
LEVEL 1 *AGGREGATES	Working groups for timber yield tables	Combinations of Community Types
*CVH	Cove Hardwoods	NH, MMWM, ERH
*UPH	Upland Hardwoods	DMO, DXO, DDMO
*YPN	Yellow Pines	XPPO, MSF
*WPN	White Pines	CNH
LEVEL 2 - Site Productivity and Scenery	Site Index and Scenic Class	CISC and Scenery Mgmt System
SI4	Very low productivity	Site Index 40
SI5	Low to moderate productivity	Site Index 50-60
SI7	Moderate to high productivity	Site Index 70-80
SI9	High productivity	Site Index 90 and higher
SC1	Very high scenic class	Scenic Class 1
SC2	High scenic class	Scenic Class 2
SC37	Moderate to low scenic class	Scenic Classes 3 through 7
LEVEL 3 - Recreation Experience and Slope	Recreation Opportunity Spectrum and Slope	Recreation Opportunity Spectrum and Areas <= 25% Slope suitable for Group Selection
SPNM	Most primitive	Semi-primitive Non-motorized
SPM	Somewhat primitive	Semi-primitive Motorized
SP2	One half mile buffer around semi-primitive areas and roadless areas	Semi-Primitive 2
RN	Roaded	Roaded Natural
R	Developed Areas	Rural
G	Gentle slopes and accessible, suitable for group selection	Slope <=25%, near existing roads

Table B-9 Continued. Spectrum Analysis Areas

Stratum of Land	Description	Definition or Code
LEVEL 4 – Management Prescription	Primary Management Emphasis	Management Prescription, Pre-Allocated and Varied by Alternative
4.C.2	Geological/ Paleont.	Landslide area – Suitable
4.J	Urban/Suburban	Urban/Suburban Interface – Suitable
4.K.1	North Crk. Special Area	Special Area – Suitable
7.A	Scenic	Scenic Byway Corridors – Unsuitable
7.B	Scenic	Scenic Corridors and Viewsheds – Suitable
7.C	Recreation	OHV Use Areas – Suitable
7.E.1	Recreation	Dispersed Recreation – Unsuitable
7.E.2	Recreation	Dispersed Recreation – Suitable
7.F	Scenic	Blue Ridge Parkway – Suitable
8.A.1	Wildlife	Mid- to Late-Successional Habitat – Suitable
8.B	Wildlife	Early Successional Habitat – Suitable
8.C	Wildlife	Black Bear Habitat – Suitable
8.E.1	Wildlife	Ruffed Grouse Habitat – Suitable
8.E.2.b	Wildlife	Peaks of Otter Salamander, Secondary Habitat Area – Suitable
8.E.4.b	Wildlife	Indiana Bat Secondary Cave Areas – Suitable
8.E.5	Wildlife	Watchable Wildlife Emphasis – Suitable
8.E.6	Wildlife	Old Field Habitat – Suitable
9.A.1	Watershed	Source Water Protection – Suitable
9.A.3	Watershed	Watershed Restoration Areas – Suitable
9.H	Forest Health	Management, Maintenance and Restoration of Plant Associations – Suitable
10.A	Timber	Sustained Yield – Suitable
10.B	Timber	High Quality Forest Products – Suitable
10.E	Timber	Timber Management with Recreation Emphasis – Suitable
99	Unsuitable for Timber Production	All other Management Prescriptions
LEVEL 5 – Successional Stage	Beginning Age	Terrestrial and Aquatic Issues Team
EARLY	Early Successional	Age 0-10, All community types
SAP1	Sapling/Pole Succ.	Age 11-40, Community types NH, CNH, MMWM, DMO, DXO, DDMO, MSF
SAP2	Sapling/Pole Succ.	Age 11-20, Community types ERH, XPPO
MID1	Mid Successional	Age 41-80, Community types NH, CNH, MMWM, DMO, DXO, DDMO, MSF
MID2	Mid Successional	Age 21-60, Community types ERH, XPPO
LATE1	Late Successional	Age 81-100, Community type NH
LATE2	Late Successional	Age 81-110, Community type DXO
LATE3	Late Successional	Age 81-120, Community types MMWM, DDMO, MSF
LATE4	Late Successional	Age 81-130, Community type DMO
LATE5	Late Successional	Age 81-140, Community type CNH
LATE6	Late Successional	Age 61-100, Community types ERH, XPPO
OLD1	Old Successional	Age 101+, Community types NH, ERH, XPPO
OLD2	Old Successional	Age 110+, Community type DXO
OLD3	Old Successional	Age 120+, Community types MMWM, DDMO, MSF
OLD4	Old Successional	Age 130+, Community type DMO
OLD5	Old Successional	Age 140+, Community type CNH

ESTIMATED EFFECTS OF ALTERNATIVES

ANALYSIS TOOLS USED

SPECTRUM ANALYSIS AREAS

EFFECTS OF ALTERNATIVES
ANALYSIS TOOLS USED
SPECTRUM ANALYSIS AREAS

Table B-9 Continued. Spectrum Analysis Areas

Stratum of Land	Description
LEVEL 6 - Geographic Location	District and Ecological Subsection
BBRV	Blacksburg - Ridge and Valley
CLCP	Clinch - Cumberland Plateau
CLRV	Clinch - Ridge and Valley
GLBR	Glenwood - Blue Ridge
GLRV	Glenwood - Ridge and Valley
MRBR	Mount Rogers NRA - Blue Ridge
MRRV	Mount Rogers NRA - Ridge and Valley
NCRV	New Castle - Ridge and Valley
WYRV	Wythe - Ridge and Valley

SILVICULTURAL PRESCRIPTIONS

The array of potential vegetative treatments applied to an analysis area is represented in the model by sets of actions known as management actions. Generally, a management action in Spectrum refers to a set of treatments or practices designed to develop or protect some combination of resources on a particular land type.

The management actions incorporated in the Jefferson’s Spectrum model were the various silvicultural treatments that could be used to meet vegetation manipulation objectives and are referred to as the *silvicultural prescriptions* in Table B-10. All lands were given the option of being assigned to a minimum level of management where no timber harvest would occur. The abbreviations used in Table B-10 are explained below.

- ▶ Clearcut - Clearcut, Clearcut with pre-commercial thinning, Clearcut with commercial thinning, and Clearcut with pre-commercial thinning and commercial thinning.
- ▶ SW-CWR - Shelterwood Coppice with Reserves where the preparatory cut leaves 20 square feet of basal area of primarily non-commercial species which are later removed at a commercial thinning of the new stand or at the final rotation of the new stand.
- ▶ SW-2ST - Shelterwood 2-Step with a residual basal area of 40-50 square feet left after the preparatory cut. The overstory removal occurs 10-20 years later.
- ▶ SW-2A2 - Shelterwood 2-Aged with a residual basal area of 20 square feet left after the preparatory cut. The overstory removal occurs 30-40 years later.
- ▶ SW-2A4 - Shelterwood 2-Aged with a residual basal area of 40 square feet left leaving 8-14 inch trees after the preparatory cut. The overstory removal occurs 40-60 years later.
- ▶ GS - Group Selection, uneven-aged management.

Table B-10. Silvicultural Prescriptions Modeled in Spectrum by Management Prescription and Scenic Class

Management Prescription	Scenic Class	Minimum Level/No Action	Clear-cut	SW-CWR	SW-2ST	SW-2A2	SW-2A4	GS
4.C.2 Geologic Areas	1-2	X			X	X	X	X
	3-7	X		X	X	X	X	X
4.E.1.b Cultural and Heritage Areas - suitable	1-2	X			X	X	X	X
	3-7	X		X	X	X	X	X
4.J Urban/Suburban Interface	1-2	X			X	X	X	
	3-7	X	X	X	X	X	X	
4.K.1 North Creek Special Area	3-7	X	X	X	X	X	X	X
7.A Scenic Byway Corridors	1-2	X				X	X	X
7.B Scenic Corridors and Sensitive Viewsheds	1-7	X				X	X	X
7.C OHV Use Areas	1	X			X	X	X	X
	2-7	X		X	X	X	X	X
7.E.1 Dispersed Recreation Areas- Unsuitable	1	X					X	X
	2	X				X	X	X
	3-7	X		X	X	X	X	X
7.E.2 Dispersed Recreation Areas - Suitable	1	X					X	X
	2	X				X	X	X
	3-7	X		X	X	X	X	X
7.F Blue Ridge Parkway Visual Corridor	1-2	X					X	X
	3-7	X		X	X	X	X	X
8.A.1 Mid- to Late-Successional Forest Emphasis	1-2	X		X	X	X	X	X
	3-7	X		X	X	X		X
8.B Early-Successional Habitat Emphasis	1-2	X		X	X	X	X	X
	3-7	X	X	X	X	X		X
8.C Black Bear Habitat Mgmt Areas	1-7	X		X	X	X	X	X
8.E.1 Ruffed Grouse Habitat Mgmt Area	1	X	X	X	X	X	X	
	2	X	X		X	X		
	3-7	X	X		X	X		

ESTIMATED EFFECTS OF ALTERNATIVES

ANALYSIS TOOLS USED

SPECTRUM SILVICULTURAL PRESCRIPTIONS

EFFECTS OF ALTERNATIVES Table B-10 Continued. Silvicultural Prescriptions Modeled in Spectrum by Management Prescription and Scenic Class

ANALYSIS TOOLS USED	Management Prescription	Scenic Class	Minimum Level/No Action	Clear-cut	SW-CWR	SW-2ST	SW-2A2	SW-2A4	GS	
SPECTRUM SILVICULTURAL PRESCRIPTIONS	8.E.2.b Peaks of Otter Salamander - Secondary Area	1-7	X					X	X	
	8.E.4.b Indiana Bat Secondary Cave Protection Area	1	X					X	X	
		2-7	X			X	X	X	X	
	8.E.6 Old Field Habitat	1	X					X	X	
		2-7	X			X	X	X	X	
	9.A.1 Source Water Protection Watersheds	1	X					X	X	
		2-7	X			X	X	X	X	
	9.A.3 Watershed Restoration Areas	1	X					X	X	
		2-7	X			X	X	X	X	
	9.H Mgmt, Mtce, and Restoration of Plant Associations	1-7	X	X	X	X	X	X	X	
	10.A Sustained Yield Forest Products	1	X				X	X	X	X
		2	X	X	X	X	X	X	X	X
		3-7	X	X	X	X	X	X	X	X
	10.B High Quality Forest Products	1	X				X	X	X	X
		2	X	X	X	X	X	X	X	X
3-7		X	X	X	X	X	X	X	X	
10.E Timber with Recreation Emphasis	1-2	X				X	X	X	X	
	3-7	X	X	X	X	X	X	X	X	

TIMBER ACTIVITY COSTS AND OUTPUT BENEFITS

Management of a national forest yields a variety of public goods and services, many of which can be assigned cost and benefit values, such as timber and minerals. Environmental settings and maintaining or protecting long-term biological productivity of forested lands are examples of public goods created through forest management that cannot be assigned monetary values. Table B-11 and Table B-12 show activity and output variables used in the Jefferson's Spectrum model, and their assigned activity unit costs and priced output benefits. Since Spectrum was designed to model timber management, other resource activity costs and output values were estimated outside of the model.

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Table B-11. Activities and Their Associated Costs as Modeled in Spectrum (Base Year 2000)

Spectrum Activity	Unit of Measure	Range of Costs per Unit in the Model
Timber Sale Coordination with Other Resources	MCF (million cubic feet)	\$207 - \$253
Harvest Administration	MCF	\$46 - \$66
Pre-commercial Thinning	Acre	\$91
Timber Sale Preparation	MCF	\$265 - \$331
Site Preparation	Acre	\$73 - \$84
Timber Stand Improvement	Acre	\$90-\$104
Planting	Acre	\$115

Table B-12. Outputs and Their Associated Benefit Values as Modeled in Spectrum (Base Year 2000)

Spectrum Output	Unit of Measure	Value per Unit in the Model
High Value Hardwood Sawtimber	MCF (million cubic feet)	\$1,507
Moderate Value Hardwood Sawtimber	MCF	\$1,048
Low Value Hardwood Sawtimber	MCF	\$608
Southern Yellow Pine Sawtimber	MCF	\$482
White Pine Sawtimber	MCF	\$761
Hardwood Roundwood	MCF	\$75
Pine Roundwood	MCF	\$132

**EFFECTS OF
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Costs for timber activities were derived by examining direct costs from the Timber Sale Program Information Reporting System (TSPIRS) TPIR01 reports from 1992 through 1998. Because TSPIRS methodology, as well as the timber program itself, has changed so much over the years, the cost data was also compared to historical budget and expense data. Reforestation and timber stand improvement costs were averaged from individual district data. The range of costs given for a particular activity accounted for the particular silvicultural treatment, such as clearcut versus group selection, used to perform the activity. Cost differentiations between logging systems were not estimated given the numerous factors determining whether an area is tractor-logged, cable-logged or logged by helicopter.

An independent consultant reviewed a sample of the Jefferson National Forest's timber sales and prepared a spreadsheet with volume weighted average high bid values by species from 1990 to 2000. From this data, species were grouped into the following appraisal groups with similar revenues: high value hardwood sawtimber, moderate value hardwood sawtimber, low value hardwood sawtimber, white pine sawtimber, southern yellow pine sawtimber, hardwood pulpwood and softwood pulpwood. Examples of high value hardwood sawtimber included white oak, northern red oak, ash, and yellow poplar. Moderate value included hickory, chestnut oak, and birch.

ROTATION AGES

Another aspect of modeling the silvicultural prescriptions is the timing, or incorporation of rotation ages, which varied by forest community type. As required by NFMA, harvesting was not permitted to begin until the culmination of mean annual increment had been reached. Timing choices were categorized into four rotation categories: early, moderate, long and extended. The early rotation ages were generally applied to the early successional habitat emphasis prescriptions while the longer rotation ages were applied to the scenic and recreational prescriptions. In Alternative G, all of the rotations were lengthened so that for example, the rotation category for Management Prescription 8.A.1 lands would be in the extended category instead of the long category. In all alternatives, it was not feasible to meet the desired percent early successional habitat in Management Prescriptions 8.B, 8.A.1 and 9.H. Therefore, the rotation age for only the Upland Hardwood lands within those management prescriptions was shortened. Because of the early senescence of scarlet oak as compared to the other species in the Upland Hardwood working group, scarlet oak was assigned the rotation ages used for yellow pine. The yields for scarlet oak stands were the ones used for the upland hardwood working group species. Table B-13 shows the rotation ages used in Spectrum where:

- ▶ CVH – the Cove Hardwood working group
- ▶ UPH – the Upland Hardwood working group
- ▶ WPN – the White Pine working group
- ▶ YPN – the Yellow Pine working group
- ▶ SO – Scarlet Oak

Table B-13. Rotation Ages by Management Prescription

Mgmt Prescription	Early Rotation	Moderate Rotation	Late Rotation	Extended Rotation
4.C.2 Geologic Areas		CVH 80-100 UPH 100-120 WPN,SYP,SO 60-80		
4.E.1.b Cultural and Heritage Areas - Suitable		CVH 80-100 UPH 100-120 WPN,SYP,SO 60-80		
4.J Urban and Suburban Interface			CVH 120-180 UPH 80-100 WPN 70-90 SYP, SO 80-100	
4.K.1 North Creek Special Area				CVH 120-180 UPH 120-180 WPN,SYP,SO 80-100
7.A Scenic Byway Corridors				CVH 120-180 UPH 120-180 WPN,SYP,SO 80-100
7.B Scenic Corridors and Sensitive Viewsheds				CVH 120-180 UPH 120-180 WPN,SYP,SO 80-100
7.C OHV Use Areas	CVH 70-90 UPH 80-100 WPN 60-80 SYP, SO 70-90			
7.E.1 Dispersed Rec Areas - Unsuitable				CVH 120-180 UPH 120-180 WPN,SYP,SO 80-100
7.E.2 Dispersed Rec Areas - Suitable			CVH 100-120 UPH 120-140 WPN,SYP,SO 80-100	
7.F Blue Ridge Parkway Visual Corridor				CVH 120-180 UPH 120-180 WPN,SYP,SO 80-100
8.A.1 Mid- to Late-Successional Habitat		UPH 100-120	CVH 100-120 WPN,SYP,SO 80-100	

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SPECTRUM ROTATION AGES

Table B-13 Continued. Rotation Ages by Management Prescription

Mgmt Prescription	Early Rotation	Moderate Rotation	Late Rotation	Extended Rotation
8.B Early-Successional	UPH 80-100	CVH 80-100 WPN,SYP,SO 80-100		
8.C Black Bear Habitat Management			CVH 100-120 UPH 120-140 WPN,SYP,SO 80-100	
8.E.1 Ruffed Grouse Habitat Mgmt Area	CVH 70-90 UPH 80-100 WPN,SYP,SO 60-80			
8.E.2.b Peaks of Otter Salamander - Secondary			CVH 100-120 UPH 120-140 WPN,SYP,SO 80-100	
8.E.4.b Indiana Bat Secondary			CVH 100-120 UPH 120-140 WPN,SYP,SO 80-100	
8.E.6 Old Field Habitat	CVH 70-90 UPH 80-100 WPN,SYP,SO 60-80			
9.A.1 Source Water Protection Watersheds				CVH 120-180 UPH 120-180 WPN,SYP,SO 80-100
9.A.3 Watershed Restoration Areas			CVH 100-120 UPH 120-140 WPN,SYP,SO 80-100	
9.H Mgmt, Mtce, & Restoration		UPH 100-120	CVH 100-120 WPN,SYP,SO 80-100	
10.A Sustained Yield Forest Products	CVH 70-90 UPH 80-100 WPN,SYP,SO 60-80			
10.B High Quality Forest Products	CVH 70-90 UPH 80-100 WPN,SYP,SO 60-80			
10.E Timber with Recreation Emphasis		CVH 80-100 UPH 100-120 WPN,SYP,SO 80-100		

TIMBER YIELDS

There were several steps in building the growth and yield tables. The first step was to select the Forest Inventory and Analysis (FIA) stands to be used in simulations in the Forest Vegetation Simulator (FVS model). Stratification of this data was performed based on geological province, forest type, and site index. The dataset from which FIA data could potentially be selected was limited to the Blue Ridge, Ridge and Valley, and/or Cumberland Plateau provinces of Virginia, Kentucky, North Carolina, Tennessee, South Carolina, and Georgia. Forest Type was used to group the data into one of four working groups: upland oak, cove hardwoods, white pine/hemlock, and southern yellow pine. These working groups correspond to analysis area identifiers used in the Spectrum model. Three categories of site indices were used to further stratify the data within these working groups: 50 to 60, 70 to 80, and 90 to 100.

Whenever possible, data selected for a simulation was limited to FIA plots on National Forest System lands in Virginia to simulate conditions on the Jefferson National Forest as closely as possible. For common working group/site index combinations (e.g. upland oak in the 70-80 site index group) this resulted in an adequate number of stands to provide statistically sound conclusions. However, in some cases (e.g. southern yellow pine on site index 90 to 100) very few FIA plots were found within those constraints. In such cases, selection criteria were broadened to include first, all of Virginia, then to all of the remaining southern states until an adequate number of FIA plots meeting the working group/site index criteria were selected.

The summary statistics for individual plots meeting the selection criteria were then reviewed for any obvious outliers. Stocking (basal area), trees per acre, and average diameter values were compared to published stocking charts (USDA Forest Service Agricultural Handbook 355) to identify selected FIA plots that were understocked. These understocked plots were eliminated from the simulation as needed.

The next step was to calibrate FVS to provide growth rates, volumes yielded, and mortality due to competition based on past and professional experience. Through a number of parameters, FVS can be customized to reflect local conditions. Based on volumes yielded from past harvesting data on the Forest coupled with professional experience with the average stand densities and diameters commonly found on the Forest, FVS was calibrated to simulate the forest stand dynamics that can be expected on the Jefferson National Forest.

The selected sets of FIA plots within these working group/site index combinations were then run through the calibrated FVS Southern Variant to show present volumes and predict growth and yield 150 years into the future. These were termed the “grow only” simulations. While the total volume output by FVS matched historical yield data from past timber harvests quite well, the allocation of that total volume between sawtimber and pulpwood volumes was not acceptable based on past harvest yield data. Therefore, the total volume output by FVS was then imported into a spreadsheet that allocated the division of pulpwood and sawtimber based on past harvest data considering working group and site index. For each of the four working groups, the spreadsheet also summarized the volume into the six appraisal groups that were modeled in Spectrum (high value hardwood sawtimber, moderate value hardwood sawtimber, low value hardwood sawtimber, white pine sawtimber, southern yellow pine sawtimber, hardwood pulpwood and softwood pulpwood). It also converted Cubic Feet, the unit output by FVS, into Thousand Cubic Feet, the unit required by Spectrum. A comma-delimited file was then taken from the spreadsheet and imported into Spectrum.

The impact of some harvesting practices in growth and yield were also simulated using FVS. While the even-aged regeneration harvest methods (shelterwoods) were simulated simply by taking a percentage of the total standing volume from the grow only yield tables,

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partial harvests such as thinnings needed to be simulated in FVS. This is because thinning a stand significantly alters the growth and yield of the residual stems that would then be captured in a final harvest. While the same is true for shelterwood harvests, the length of time elapsing from the first entry to the final harvest is too small for this effect to be meaningful. In the case of the shelterwood with reserves and coppice with reserves treatments, so little standing volume is left and is not harvested in this rotation, that any growth accrued on those stems was deemed inconsequential. For the purposes of the Jefferson National Forest, three thinning regimes were modeled; a pre-commercial thinning at age 15, a commercial thinning at age 55, and a combination of both the pre-commercial and commercial thinning. Separate yield tables were produced following a similar process described above for each of these regimes. The plots selected for these simulations were further stratified by age; only stands less than 15 years old were selected for the pre-commercial and combined simulations and only stands less than 55 years old were used in the commercial thinning simulations. Uneven-aged management was also simulated for a subset of the working group/site index combinations in the form of group selection. When we compared these outputs to the grow only runs, it was apparent that simply taking a percentage (i.e. 10% of the volume for a 10 year entry cycle and 100 year rotation scenario) yielded results very close to those produced by FVS. Based on this comparison and in the interest of simplifying the modeling process, it was decided to simulate uneven-aged management by simply taking a percentage of the grow only yield tables.

CONSTRAINTS

The land allocation mapping of management prescriptions for each alternative essentially applied that alternative's overall goals, objectives and resource constraints to the land base. Therefore the Spectrum models constructed for each alternative were basically identical, with the exception of a new set of analysis areas for each alternative that resulted from a different mix of management prescriptions. The same set of silvicultural prescriptions, costs, benefits, yields, rotation ages and constraints related to successional stages, scenery and recreation opportunity spectrum were used for each alternative. The only exception was for Alternative G where the rotation ages for management prescription 8.A.1 were lengthened.

Constraints identified as "management requirements" (36 CFR 219.27) were applied to all alternatives. Additional constraints common to all alternatives were applied to insure an implementable solution. These common constraints fall into four categories: 1) constraints which assign congressionally and administratively designated areas to specific prescriptions, 2) constraints which ensure that the management requirements are met in each alternative, 3) timber scheduling constraints, and 4) operational constraints which constrain timber harvest to a realistic solution.

The following requirements, or constraints, were applied to all Spectrum model alternatives:

- ▶ Silvicultural prescriptions were not modeled within the riparian habitat within any of the management prescription. They were also not allowed within any semi-primitive motorized or non-motorized areas in any management prescription, whether the management prescription was suitable for timber production or not.
- ▶ Although lands with a site index below 50 were represented in the model for growth and yield estimates, those lands were not allowed to be scheduled for harvest.
- ▶ Group selection was prohibited from occurring in yellow pine stands and old

successional stage stands. Only those lands with a gentle slope near an existing road network were made available for group selection.

- ▶ The Long-Term Sustained Yield (LTSY) constraint was used to ensure that the harvest of timber in the last decade is not greater than the long-term timber production capacity of the Forest. Long-term sustained yield capacity was computed using the acreage scheduled to each regeneration prescription applied in the model.
- ▶ The perpetual timber harvest constraint was used to ensure that the remaining timber inventory would allow achievement of nondeclining harvest levels beyond the modeling horizon. To achieve this condition the constraint required that the Forest contain as much timber inventory volume at the end of the last period as the Forest would have, on the average, under the management intensities selected in the analysis. Without this constraint the Spectrum model would have no reason to leave enough inventory at the end of the planning period to sustain timber harvest levels into perpetuity.
- ▶ The nondeclining yield constraint was used to ensure that the harvest of timber in a decade was greater than or equal to the harvest of timber in the previous period. This constraint indirectly limited the model to a lower present net value and reduced flow of timber in the early decades but also provided community economic and social stability through the controlled flow of timber.
- ▶ Timber harvests on lands classified as suitable for timber production were not scheduled for regeneration before the *culmination of mean annual increment (CMAI)*. This constraint, indirectly applied through the harvest timing options allowed, ensured that relatively large sawtimber would be produced and ensured that smaller trees were not harvested before the site was completely utilized.
- ▶ The Allowable Sale Quantity (ASQ) was constrained to be no greater or less than 10 percent of that in the previous decade in order to provide a more even flow.
- ▶ No timber was modeled to be harvested in Spectrum in semi-primitive non-motorized or semi-primitive motorized areas.
- ▶ Each alternative was modeled with the same objective function: to solve for the maximization of present net value. The mapping of management prescriptions for each alternative reflected the overall goals, objectives and constraints of that alternative so a different objective function was not needed.
- ▶ The ranges of desired early successional habitat for each management prescription identified by the FWBRE Team were evaluated as constraints in the model for each alternative. Not all alternatives were able to meet those constraints. As discussed earlier under rotation ages, the early successional habitat objectives for management prescriptions 8.A.1, 8.B and 9.H were not achievable at all unless the rotation age for upland hardwoods in those management prescriptions was reduced. In addition, several constraints were modeled for late successional habitat. Management prescription 8.A.1 needed at least 20 percent of acres greater than 100 years old and a minimum of 50 percent of acres greater than 40 years old. Management prescription 8.B needed a minimum of 5 percent of acres greater than 100 years old. Management prescription 8.C needed a minimum of 50 percent of acres greater than 40 years old and a minimum of 25 percent of acres greater than 100 years old. Table B-14 illustrates all of the desired successional ranges modeled as constraints for all

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alternatives.

- ▶ The Spectrum model's selection of uneven-age management was constrained to be between 200 and 300 acres per decade for management prescription 8.A.1, between 100 and 300 acres per decade for 7.E.2 and between 100 and 200 acres per decade for 7.B.

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Table B-14. Percent of Early Succession for Each Alternative in Spectrum

Management Prescription	Early Successional Habitat Range	Mid Successional and Older Habitat Range	Old Successional Habitat Range
4.C.2 Geologic - Landslides	0-4%		
4.E.1.b Cultural and Heritage Areas - suitable	0-4%		
4.J Urban/Suburban Interface	4-10%		
4.K.1 North Creek Special Area	0-4%		
7.A Scenic Byway Corridors	0-4%		
7.B Scenic Corridors & Sensitive Viewsheds	0-4%		
7.C OHV Use Areas	4-10%		
7.E.1 Dispersed Recreation Areas - Unsuitable	0-4%		
7.E.2 Dispersed Recreation Areas - Suitable	4-10%		
7.F Blue Ridge Parkway Corridor	0-4%		
8.A.1 Mid- to Late-Successional Forest Emphasis	4-10%	>= 50%	>= 20%
8.B Early-Successional Habitat	10-16%		>= 5%
8.C Black Bear Habitat Mgmt	4-10%	>= 50%	>= 25%
8.E.1 Ruffed Grouse Habitat Mgmt	10-16%		
8.E.2.b Peaks of Otter Salamander	0-4%		
8.E.4.b Indiana Bat Secondary Cave	4-10%		
8.E.6 Old Field Habitat	4-10%		
9.A.1 Source Water Protection Watersheds	0-4%		
9.A.3 Watershed Restoration Areas	0-4%		
9.H Management, Maintenance, and Restoration of Plant Associations to Their Ecological Potential	4-10%		
10.A Sustained Yield Forest Products	10-16%		
10.B High Quality Forest Products	10-16%		
10.E Timber w/ Recreation Emphasis	4-10%		

OBJECTIVE FUNCTIONS

The objective function allows specification of an overall objective to be met in a given run of the model while all constraints otherwise specified are met. Since the alternative-dependent mapping of the management prescriptions and the application of the constraints essentially established the overall objective for each alternative, the Spectrum models for all of the Jefferson's alternatives were designed to solve for the most economical manner in which to accomplish those inherent objectives. Therefore, all of the alternatives had an objective function to solve for maximum present net value for all activities and outputs.

Sediment Yield and Cumulative Effects for Watershed Analysis

A sediment yield/cumulative effects model was developed (Clingenpeel, 2002) to estimate sediment yields and analyze the cumulative effects of proposed management actions on water quality. More technical assumptions associated with the model can be found in the process paper (Clingenpeel, 2002) with a citation found in the list of references. The process provided a means to systematically evaluate water quality conditions for 5th level watersheds covered in whole or in part by the Forest Plan. The process also provided results that aided in aquatic viability analysis at the community scale.

The model first determined the current condition of each 5th level watershed (all lands). This was accomplished by ranking on a relative scale (1 -5) the condition of each watershed in terms of sediment, point source pollution, stream temperature and altered stream flow. Sedimentation was assessed based on current land uses represented in each watershed. Estimates of current sediment were expressed as a percent increase above a baseline condition (forested, with no roads). Point source pollutants were expressed as a density (points per square mile). Temperature was assessed based on the road density in the riparian area and the percent of the riparian area forested in the 1970's and 1990's. Altered stream flow was evaluated based on the number of dams, road density in the riparian area and average density of strip mines (1970's and 1990's) within each 5th level watershed.

Major assumptions associated with the model included:

- ▶ Sediment yield is an appropriate surrogate for determining cumulative impacts to water quality.
- ▶ Fifth level watersheds are the appropriate scale of analysis for cumulative effects to water resource.
- ▶ Appropriate erosion coefficients from Dissmeyer and Stump (1978) approximate erosion rates from land use activities on CNF lands.

The model provided the following information:

- ▶ Estimates of the current sediment yield within 5th level watersheds covered in total or partially by the Forest Plan.
- ▶ Estimates of sediment yield attributable to Forest Service activities by alternative and planning period.
- ▶ Estimates of cumulative sediment yields for entire 5th level watersheds (all ownerships) by alternative and planning period.
- ▶ An index of watershed health for 5th level watersheds based on the percent increase in sediment yield above a baseline condition. The initial watershed index is determined by using the relative abundance of locally adapted species with respect to sediment increases. The score is modified based on physiographic province, percent of national forest ownership within the watershed, percent of the riparian that is forested, and road density within riparian.

Prescribed Fire Analysis

The community types in order of importance with regard to fire dependency are: Xeric Pine and Pine-Oak; Dry Xeric Oak; Dry and Dry Mesic Oak-Pine; and Dry-Mesic Oak. The Xeric Pine and Pine-Oak and Dry Xeric Oak community types have a mean fire return interval of 5 - 15 years and for this analysis 10 years was used for the calculations. The Dry and Dry-Mesic Oak-Pine and Dry-Mesic Oak community types have a mean fire return interval of 10 - 20 years and for this analysis 20 years was used for the calculations. Mean Fire

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**WATERSHED
ANALYSIS**

**PRESCRIBED
FIRE ANALYSIS**

EFFECTS OF ALTERNATIVES Return Intervals were determined by identifying all tree species that occur on the Jefferson National Forest and reviewing their fire ecology within the Fire Effects Information System (FEIS), consulting with the Forest Ecologist and reviewing a paper written by the Assistant Forest Fire Management Officer that included fire return intervals for several tree species that he had gathered from various research papers. Each species was then consolidated into one of the nine appropriate Old Growth Community Types.

ANALYSIS TOOLS USED

PRESCRIBED FIRE ANALYSIS Based on the range of fire return interval data, an average was calculated for each community type and expressed as a percentage.

PRESENT NET VALUE ANALYSIS The maximum prescribed burn acres by alternative were calculated for the following four fire dependent Old Growth Community Types (OGCT): Dry-Mesic Oak; Dry Xeric Oak; Xeric Pine and Pine-Oak; and Dry and Dry Mesic Oak-Pine. Within each alternative, the acres for each fire dependent OGCT were stratified into three categories (high, medium and low) that represented the relative likelihood of how much prescribed burning will be done within them, depending on the management prescription. It was estimated five percent of the acres would come from the low, twenty percent from the medium and the remaining seventy-five percent from the high category. Each acreage figure was then multiplied by the Mean Fire Return Interval, expressed as a percentage, and the high, medium and low acres were then totaled for each alternative.

The minimum prescribed burn acres by alternative were calculated using a method termed as the gap analysis process. For this process, all acres of the planning unit were utilized in the calculation regardless of fire dependency of individual species. On page 94 of the Terrestrial Technical Report, Report 5 of 5 of the Southern Appalachian Assessment, Southern Appalachian Man and the Biosphere (SAMAB), the effects of natural disturbance dynamics in the Appalachians were discussed. "Studies in the Southern Appalachians have found canopy gaps forming at an average of 0.4 to 2.0 percent of the land area annually (Runkle 1985) ..." As fire is one natural disturbance occurring on the landscape, his percentages were assigned to the management prescriptions based on the prescribed fire level that would be applied to each. Originally, the management prescriptions were broken into four categories of prescribed fire use: little to no; low; medium; and high and assigned the following corresponding values: .004; .01; .015; and .02. Each prescription acreage figure was multiplied by the corresponding gap analysis value based on the prescribed fire level commensurate for that particular management prescription and then all prescription acres were totaled for an alternative total. The prescribed fire level modifier remained constant for all alternatives. All alternatives were calculated the same with the exception of Alternative E, the recreation based alternative. Alternative E acres were reduced by approximately twenty percent to account for a reduced prescribed burning program due to an increased number of recreationists, smoke/air quality/visual concerns due to more recreationists enjoying the national forest, and the fact that typically a greater percentage of individuals are recreating in the fall (for the leaf color change) and spring when prescribed burning would be conducted. The twenty percent reduction equated to approximately 1,500 acres.

The prescribed fire program was broken out into the four burn types: pine woodland; balds and grasslands; woodland understory; and silvicultural treatment for oak regeneration so that particulate matter (PM2.5) emissions could be calculated. The tons per acre of fuel consumed for each category of burn were calculated for each burn type and for a minimum and a maximum prescribed burn program by alternative.

Present Net Value Analysis

The 1982 National Forest Management Act (NFMA) implementing regulations (36 CFR 219.1) state that forest plans must "...provide for multiple-use and sustained yield of goods and services from the National Forest System in a way that maximizes long-term net public benefits in an environmentally sound manner." Net public benefits is defined as the overall value to the Nation of all outputs and positive effects (benefits) less all

associated inputs and negative effects (costs) whether they can be quantitatively valued or not. Present net value (PNV) is one of the criteria used to determine net public benefits (NPB) in benchmarks and alternatives. It is the difference between the discounted value of all outputs which were assigned a price in the revision and all Forest Service management and investment costs over the analysis period. The PNV converts all costs and benefits over a 50 year planning period to a common point in time. Other benefits of public land management cannot be measured using dollar values. These non-priced benefits are another criteria used to determine NPB. Each alternative was determined and analyzed to achieve its goals and objectives in a manner that produced the greatest PNV while meeting all specified costs and objectives for non-priced benefits. Thus, the PNV of each alternative estimated the highest value of priced benefits while accounting for the costs of producing priced benefits, non-priced benefits, and meeting management requirements. The PNV of each alternative can then be compared directly, even though the actual costs and benefits occur at different times. Two parameters were used in PNV analysis: **Base year dollars** – All monetary values entered into Spectrum and the PNV analysis were in 2000 dollars. **Discount rate** – A four percent discount rate was used. It approximates the return on long-range investments above the rate of inflation. All costs and benefits were discounted from the midpoint of each decade.

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Financial efficiency is defined as how well the dollars invested in each alternative produce revenues to the agency. Economic efficiency is defined as how well the dollars invested in each alternative produce benefits to society. Present Net Value (PNV) is used as an indicator of financial and economic efficiency.

The financial values for range came from RPA estimates and updated to 2000 dollars; for timber from average 2000 stumpage prices; for minerals from market prices for minerals from the Minerals Management Agency; and for recreation and wildlife from RPA updated to 2000 dollars.

For the recreation and wildlife values, a conversion factor of 1.629 was used to convert from Recreation Visitor Days (RVDs) to "Visits". This factor was determined by taking the weighted average of hours for a site visit on the Jefferson and NF in NC (from which we had specific NVUM data). The weighted average turned out to be 19.5 hours per site visit. 19.5 was divided by 12 (number of hours in an RVD) to get the value of 1.629 visits = to 1 RVD. This factor was multiplied by the 1989 price of an RVD. For example, Hunting had a 1989 price of \$33.27. It was increased by a factor of 1.629 to equal \$54.18. This price was then inflated by the Gross National Price Deflator for the year 2000 (a factor of 1.2887) to yield \$71.22. Other values used are shown in Table B-15.

Socio-Economic Analysis

Economic effects to local counties were estimated using an economic input-output model developed with IMPLAN Professional 2.0 (IMPLAN) and are disclosed in Chapter 3 of the EIS. The IMPLAN model was used to determine total consequences of dollar, employment, and income changes in selected sectors. Because input-output models are linear, multipliers or response coefficients need only be calculated once per model and then applied to the direct change in final demand. A Forest Service-developed spreadsheet known as "FEAST" (Forest Economic Analysis Spreadsheet Tool) was used to apply the IMPLAN impact results to each alternative, expressed in units of output. FEAST transformed the dollar impact for a given industry from IMPLAN to the resource output by alternative into a specific employment and dollar output.

An impact analysis describes what happens when a change in final sales (e.g. exports and residents) occurs for goods and services in the model region. Changes in final sales are the result of multiplying production data (e.g., head months of grazing or recreation visitor trips) by sales. Economic impacts were estimated for 2010, using the expenditure data for recreation, wildlife and hunting (U.S. Forest Service's National Visitor Use and

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Table B-15. Economic Benefits and Financial Revenue Values Used in the PNV Analysis

Output	Value
Range (\$/AUM)	
Cattle/Horses	\$5.50
Timber (\$/MCF)	
Sawtimber-Softwood	\$688
Sawtimber-Hardwood	\$1,558
Roundwood-Softwood	\$143
Roundwd-Hardwood	\$81
Minerals	
Dimenstion Stone (\$/Metric Ton)	\$4.65
Crushed Stone (\$/Metric Ton)	\$3.37
Limestone (\$/Metric Ton)	\$7.89
Natural Gas (\$/cubic meter)	\$0.09
Recreation (\$/Visit)	
Camping, Picnicking, Swimming	\$21.47
MechanizedTravel, Viewing Scenery	\$16.57
Winter Sports	\$90.24
Resorts	\$37.27
Wilderness (backpacking)	\$45.67
Other Recreation	\$132.67
Wildlife (\$/Visit)	
Hunting	\$71.22
Fishing	\$141.43
Wildlife Watching	\$84.88

Monitoring data, (NVUM), and the Fish & Wildlife Service’s wildlife use data, respectively); stumpage estimates for timber, market prices for minerals, and estimated animal allotment prices for Range. NVUM data were used by Daniel J. Stynes and EricWhite, Michigan State University, July 2002 to estimate spending profiles of recreation users. The USDA Forest Service Inventory and Monitoring Institute, Fort Collins, CO estimated spending profiles from the 1996 U.S. Fish & Wildlife Services wildlife data.

Impacts to local economies are measured in two ways: employment and total income. Employment is expressed in jobs. A job can be seasonal or year-round, full-time or part-time. The income measure used was total income expressed in 2000 dollars. Total income includes both employee compensation (pay plus benefits) and proprietors income (e.g. self-employed). Impacts to local employment and income were estimated from outputs from the timber, range, recreation and wildlife/fisheries programs, total forest service expenditures and employment, and estimated 25% payments to local counties.

TIMBER PROGRAM

Sales data was determined by using timber values multiplied by estimated production levels for each alternative. Hardwood and softwood sawtimber were processed through the sawmill industry. Hardwood and softwood roundwood were assumed to processed at the pulp mill, paper mill and the paperboard mill. If a pulp mill existed, the output was impacted at that level. Impacts represent the economic activity occurring in all backward linking sectors associated with the final demand output of the timber industries described above.

RANGE PROGRAM

The best available data for agriculture was found in the *1997 Census of Agriculture*. From this census, data for farm livestock inventory, Table 14, was used. Animal months of grazing on forest land were provided from the USDA Forest Service "Annual Grazing Report". This unit of use information was placed in FEAST to link with IMPLAN impact data in dollars to yield an impact for the range resource per unit of grazing (AUM).

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RECREATION and WILDLIFE/FISH PROGRAMS

Recreation and Wildlife and Hunting trips were derived from the National Visitor Use and Monitoring survey, 2001 (NVUM). The resulting calculations yielded trips for Resident and Non-resident Day Use, On National Forest Overnight Use, and Off National Forest Overnight Use. These use metrics were entered into FEAST to link with IMPLAN impact response coefficients to yield an impact for recreation and wildlife resources.

While some analysts may not include resident participation in local economy impacts because there may be substitution opportunities for local residents to spend their discretionary dollar, it was decided to include resident expenditures in the local economy with the caveat that these expenditures were "associated" with the impacts not "responsible" for causing the impacts.

FEDERAL EXPENDITURES AND EMPLOYMENT

A Forest budget was estimated for each alternative, and these estimates were used for forest expenditures, some of which had local economic effects. Total forest obligations by budget object code for FY 2000 were obtained from the National Finance Center and used to identify total forest expenditures. The proportion of funds spent by program varied by alternative according to the theme for that alternative. Forest Service employment was estimated by the forest staff based on examination of historical Forest Service obligations.

To obtain an estimate of total impacts from Forest Service spending, salary and non-salary portions of the impact were handled separately. Non-salary expenditures were determined by using the budget object code information noted above. This profile was run through the model for non-salary expenditures per one million dollars, and the results multiplied by total forest non-salary expenditures. FEAST was again used to make the calculations. Local sales to the federal government are treated in the same manner as exports. Salary impacts result from forest employees spending a portion of their salaries locally. IMPLAN includes a profile of personal consumption expenditures for several income categories; the average compensation for an employee on the Southern Appalachian National Forests fell in the category of \$30,000-\$39,999.

25% FUND PAYMENTS

Until September 30, 2001, Federal law required that 25% Fund Payments be used for only schools or roads or both. A split of 50 percent for schools and 50 percent for roads was used. One profile of expenditures was developed from within the county forest boundary model for 1) the highway construction sector and 2) local educational institutions. Because counties can choose to continue payments under this formula, traditional payments were analyzed (it was assumed 50 percent of payments went to roads and 50 percent to education). Should counties choose fixed payments under the new law, the impacts would not vary by alternative. The impact of the fixed payment was not calculated. The national expenditure profile for state/local government education (schools) and local model estimates for road construction (roads) are provided within IMPLAN. One million dollars of each profile was used to obtain a response coefficient for these Forest Service payments to impact area counties. Sales to local government are treated in the same manner as exports.

Table B-16. Population Changes by County

Location	1980	1990	2000	% change 80-90	% change 90-00
Virginia Counties					
Bedford	34,927	45,656	60,371	31	32
Bland	6,349	6,514	6,871	3	5
Botetourt	23,270	24,992	30,496	7	22
Carroll	27,270	26,594	29,245	-2	10
Craig	3,948	4,372	5,091	11	16
Dickenson	19,806	17,620	16,395	-11	-7
Giles	17,810	16,366	16,657	-8	2
Grayson	16,579	16,278	17,917	-2	10
Lee	25,956	24,496	23,589	-6	-4
Montgomery	63,516	73,913	83,629	16	13
Pulaski	35,229	34,496	35,127	-2	2
Roanoke	72,945	79,294	85,778	9	8
Rockbridge	17,911	18,350	20,808	2	13
Scott	25,068	23,204	23,403	-7	1
Smyth	33,366	32,370	33,081	-3	2
Tazewell	50,511	45,960	44,598	-9	-3
Washington	46,487	45,887	51,103	-1	11
Wise	43,863	39,573	40,123	-10	1
Wythe	25,522	25,471	27,599	0	8
Virginia Independent Cities					
Bedford	5,991	6,073	6,299	1	4
Bristol	19,042	18,426	17,367	-3	-6
Buena Vista	6,904	6,406	6,349	-7	-1
Galax	6,524	6,670	6,837	2	3
Lexington	7,292	6,959	6,867	-5	-1
Norton	4,757	4,247	3,904	-11	-8
Radford	13,456	15,940	15,859	18	-1
Roanoke	100,220	96,509	94,911	-4	-2
Salem	23,958	23,797	24,747	-1	4
West Virginia Counties					
Monroe	12,873	12,406	14,583	-4	17
Kentucky Counties					
Letcher	30,687	27,000	25,277	-12	-6
Pike	81,123	72,583	68,736	-11	-5
State of Virginia	5,346,818	6,187,358	7,078,515	16	14

Source: U.S. Census Bureau

Table B-17. Minority Trends by County

Location	% White in 2000	% Black in 2000	% American Indian in 2000	% Asian and Pacific Islander in 2000	% Other Race in 2000	% Minority in 1990	% Minority in 2000
Virginia Counties							
Bedford	93%	6%	<1%	<1%	<1%	8%	7%
Bland	95%	4%	<1%	<1%	<1%	4%	5%
Botetourt	96%	4%	<1%	<1%	1%	5%	4%
Carroll	98%	<1%	<1%	<1%	2%	1%	2%
Craig	99%	<1%	<1%	<1%	<1%	0%	1%
Dickenson	99%	<1%	<1%	<1%	<1%	1%	1%
Giles	98%	2%	<1%	<1%	<1%	2%	2%
Grayson	92%	7%	<1%	<1%	<1%	3%	8%
Lee	99%	<1%	<1%	<1%	1%	1%	1%
Montgomery	91%	4%	<1%	4%	1%	8%	9%
Pulaski	93%	6%	<1%	<1%	1%	6%	7%
Roanoke	94%	3%	<1%	2%	1%	4%	6%
Rockbridge	96%	3%	<1%	<1%	1%	4%	4%
Scott	99%	1%	<1%	<1%	<1%	1%	1%
Smyth	97%	2%	<1%	<1%	1%	2%	3%
Tazewell	97%	2%	<1%	1%	<1%	3%	3%
Washington	98%	1%	<1%	<1%	1%	2%	2%
Wise	97%	2%	<1%	<1%	1%	2%	3%
Wythe	96%	3%	<1%	<1%	1%	4%	4%
Virginia Independent Cities							
Bedford	76%	23%	<1%	1%	<1%	23%	24%
Bristol	94%	6%	<1%	<1%	<1%	6%	6%
Buena Vista	94%	5%	<1%	<1%	1%	5%	6%
Galax	87%	6%	<1%	1%	6%	7%	13%
Lexington	87%	10%	<1%	2%	1%	13%	13%
Norton	92%	6%	<1%	1%	<1%	8%	8%
Radford	90%	8%	<1%	1%	1%	8%	10%
Roanoke	71%	27%	<1%	1%	1%	25%	29%
Salem	93%	6%	<1%	1%	<1%	5%	7%
West Virginia Counties							
Monroe	93%	6%	<1%	<1%	<1%	1%	7%
Kentucky Counties							
Letcher	99%	<1%	<1%	<1%	<1%	1%	1%
Pike	99%	<1%	<1%	<1%	<1%	1%	1%
State of Virginia	74%	20%	<1%	4%	2%	23%	26%

Source: U.S. Census Bureau

Table B-18. Population Density by County

Location	Land Area in Square Miles	1980 Person/Sq Mile	1990 Person/Sq Mile	2000 Person/Sq Mile
Virginia Counties				
Bedford	754	46	61	80
Bland	359	18	18	19
Botetourt	543	43	46	56
Carroll	476	57	56	61
Craig	331	12	13	15
Dickenson	332	60	53	49
Giles	357	50	46	47
Grayson	443	37	37	38
Lee	437	59	56	54
Montgomery	388	164	190	215
Pulaski	321	110	107	110
Roanoke	251	291	316	342
Rockbridge	600	30	31	35
Scott	537	47	43	44
Smyth	452	74	72	73
Tazewell	520	97	88	86
Washington	563	83	82	91
Wise	404	109	98	104
Wythe	463	55	55	60
Virginia Independent Cities				
Bedford	7	856	868	914
Bristol	13	1,465	1,417	1,346
Buena Vista	7	986	915	930
Galax	8	816	834	831
Lexington	3	2,431	2,320	2,758
Norton	8	595	531	519
Radford	10	1,346	1,594	1,615
Roanoke	43	2,331	2,244	2,213
Salem	15	1,597	1,586	1,696
West Virginia Counties				
Monroe	473	27	26	31
Kentucky Counties				
Letcher	339	91	80	75
Pike	788	103	92	87
State of Virginia	39,598	135	156	179

Source: U.S. Census Bureau

Table B-19. Per Capita and Median Income by County

Location	1990 Per Capita Income	1990 Median Income	2000 Per Capita Income	2000 Median Income	Real Avg Annual % Change '80-'90 Per Capita Income	Real Avg Annual % Change '90-'00 Per Capita Income
Virginia Counties						
Bedford	\$14,305	\$30,712	\$21,582	\$43,136	3.80%	-0.50%
Bland	\$9,765	\$23,587	\$17,744	\$30,397	2.30%	1.30%
Botetourt	\$13,810	\$33,079	\$22,218	\$48,731	2.50%	0.10%
Carroll	\$9,693	\$21,564	\$16,475	\$30,597	2.00%	0.70%
Craig	\$11,186	\$25,106	\$17,322	\$37,314	2.50%	-0.30%
Dickenson	\$8,067	\$16,292	\$12,822	\$23,431	-0.20%	0.00%
Giles	\$11,462	\$24,125	\$18,396	\$34,927	2.50%	0.10%
Grayson	\$8,966	\$19,324	\$16,768	\$28,676	0.70%	1.60%
Lee	\$7,837	\$14,618	\$13,625	\$22,972	0.80%	0.90%
Montgomery	\$10,979	\$22,949	\$17,077	\$32,330	2.00%	-0.20%
Pulaski	\$11,074	\$23,319	\$18,973	\$33,873	1.80%	0.70%
Roanoke	\$16,627	\$36,886	\$24,637	\$47,689	2.70%	-0.70%
Rockbridge	\$11,287	\$24,955	\$18,356	\$36,035	2.50%	0.20%
Scott	\$9,100	\$18,346	\$15,073	\$27,339	2.10%	0.40%
Smyth	\$9,613	\$20,912	\$16,105	\$30,083	1.40%	0.50%
Tazewell	\$9,995	\$19,670	\$15,282	\$27,304	0.80%	-0.40%
Washington	\$11,057	\$22,179	\$18,350	\$32,742	1.90%	0.40%
Wise	\$9,392	\$19,594	\$14,271	\$26,149	0.30%	-0.50%
Wythe	\$10,404	\$20,964	\$17,639	\$32,235	1.60%	0.60%
Virginia Independent Cities						
Bedford	\$11,070	\$22,787	\$15,423	\$28,792	1.30%	-1.30%
Bristol	\$10,290	\$19,226	\$17,311	\$27,389	0.40%	0.60%
Buena Vista	\$10,241	\$23,929	\$16,377	\$32,410	1.90%	0.10%
Galax	\$10,490	\$20,263	\$17,447	\$28,236	0.00%	0.50%
Lexington	\$10,077	\$21,361	\$16,497	\$28,982	1.30%	0.30%
Norton	\$9,214	\$15,460	\$16,024	\$22,788	1.80%	0.90%
Radford	\$9,704	\$19,487	\$14,289	\$24,654	0.40%	-0.80%
Roanoke	\$12,513	\$22,591	\$18,468	\$30,719	1.40%	-0.70%
Salem	\$14,467	\$29,041	\$20,091	\$38,997	1.50%	-1.30%
West Virginia Counties						
Monroe	\$8,959	\$18,217	\$17,435	\$25,643	1.70%	2.00%
Kentucky Counties						
Letcher	\$7,340	\$18,229	\$11,984	\$24,889	0.20%	0.30%
Pike	\$8,674	\$20,656	\$14,005	\$29,302	0.00%	0.20%
State of Virginia	\$15,713	\$33,328	\$23,975	\$46,677	2.80%	0.1

Source: U.S. Census Bureau

Table B-20. Unemployment Rate and Poverty Rate by County

Virginia Counties	Unemployment Rate (%) 1990	Unemployment Rate (%) 1997	1989 Percent of All Ages in Poverty	1999 Percent of All Ages in Poverty
Bedford	4.3	3.5	7	7.1
Bland	5.8	6.7	10	12.4
Botetourt	3.5	3.2	6.2	5.2
Carroll	7.4	4.3	14.1	12.5
Craig	6	4.3	9.8	10.3
Dickenson	16.5	16.8	25.9	21.3
Giles	8.6	6.8	12.2	9.5
Grayson	9.2	5.4	15.3	13.6
Lee	9.3	9.4	28.7	23.9
Montgomery	7.4	2.6	22.1	23.2
Pulaski	13.3	5.4	13.4	13.1
Roanoke	2.9	2.4	4.1	4.5
Rockbridge	5.7	3.3	13.6	9.6
Scott	7.8	6.8	20.9	16.8
Smyth	9.7	8.4	16.7	13.3
Tazewell	9.2	9	19	15.3
Washington	8	6.1	15.2	10.9
Wise	10.7	12.3	21.6	20
Wythe	9.4	6.7	17.5	11
Virginia Independent Cities				
Bedford	3.7	3.2	16.4	19.7
Bristol	7.8	5	20.6	16.2
Buena Vista	8.9	4.3	14.4	10.4
Galax	8.2	3.3	18.8	18.6
Lexington	7.9	2	18.2	21.6
Norton	9.4	6.8	26.7	22.8
Radford	11.5	3.2	32.2	31.4
Roanoke	4.5	4.2	16.1	15.9
Salem	3.1	3.1	5.2	6.7
West Virginia Counties				
Monroe	9.2	5.8	21	16.2
Kentucky Counties				
Letcher	9.3	8.9	31.8	27.1
Pike	7.7	8	25.4	23.4
State of Virginia Total	4.3	4	10.2	9.6

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates Program

Table B-21. Housing Unit and Median Housing Value by County

	Total Housing Units 1990	Total Housing Units 2000	Percent Change of Total Housing Units 1990- 2000	Median Value Housing Units 1990	Median Value Housing Units 2000	Percent Change in Median Value Housing Units 1990-2000
Virginia Counties						
Bedford	19,641	26,841	37%	\$75,800	\$127,000	68%
Bland	2,706	3,161	17%	\$43,800	\$71,500	63%
Botetourt	9,785	12,571	28%	\$73,400	\$130,500	78%
Carroll	12,209	14,680	20%	\$44,000	\$68,900	57%
Craig	1,993	2,554	28%	\$49,500	\$85,400	73%
Dickenson	7,112	7,684	8%	\$39,300	\$55,900	42%
Giles	7,098	7,732	9%	\$46,300	\$69,200	49%
Grayson	7,529	9,123	21%	\$39,700	\$65,800	66%
Lee	10,263	11,086	8%	\$34,400	\$56,900	65%
Montgomery	27,770	32,527	17%	\$71,700	\$114,600	60%
Pulaski	14,740	16,325	11%	\$51,400	\$80,000	56%
Roanoke	31,689	36,121	14%	\$80,500	\$118,100	47%
Rockbridge	7,975	9,550	20%	\$54,700	\$92,400	69%
Scott	10,003	11,355	14%	\$41,400	\$69,100	67%
Smyth	13,132	15,111	15%	\$42,600	\$67,900	59%
Tazewell	18,901	20,390	8%	\$48,600	\$67,900	40%
Washington	19,183	22,985	20%	\$52,500	\$90,400	72%
Wise	15,927	17,792	12%	\$43,500	\$65,700	51%
Wythe	10,659	12,744	20%	\$48,900	\$77,300	58%
Virginia Independent Cities						
Bedford	2,625	2,702	3%	\$55,700	\$90,400	62%
Bristol City	8,174	8,469	4%	\$48,400	\$71,400	48%
Buena Vista	2,494	2,716	9%	\$43,300	\$72,900	68%
Galax	2,943	3,217	9%	\$45,200	\$70,300	56%
Lexington	2,311	2,376	3%	\$74,500	\$131,900	77%
Norton	1,845	1,946	5%	\$48,000	\$62,800	31%
Radford	5,496	6,137	12%	\$64,500	\$95,100	47%
Roanoke	31,689	45,257	43%	\$80,500	\$80,300	0%
Salem	9,609	10,403	8%	\$69,100	\$104,200	51%
West Virginia Counties						
Monroe	5,994	7,267	21%	\$42,500	\$64,700	52%
Kentucky Counties						
Letcher	10,808	11,405	6%	\$41,300	\$39,500	-4%
Pike	28,760	30,923	8%	\$27,300	\$65,900	141%
State of Virginia	2,496,334	2,904,192	16%	\$91,000	\$125,400	38%

Source: U.S. Census Bureau

Table B-22. Shannon-Weaver Entropy Diversity Index by County

	1977 Four Digit SIC	1993 Four Digit SIC	% Change from 1977 to 1993
Virginia Counties			
Bedford	0.47242	0.6239	32%
Bland	0.41471	0.51455	24%
Botetourt	0.50313	0.62243	24%
Carroll	0.47804	0.56646	18%
Craig	0.36164	0.55282	53%
Dickenson	0.31303	0.53687	72%
Giles	0.38932	0.53464	37%
Grayson	0.3686	0.56477	53%
Lee	0.47842	0.57205	20%
Montgomery	0.52119	0.545	5%
Pulaski	0.52628	0.59957	14%
Roanoke	0.55452	0.6314	14%
Rockbridge	0.33322	0.54857	65%
Scott	0.50918	0.5758	13%
Smyth	0.50693	0.61831	22%
Tazewell	0.50158	0.62534	25%
Washington	0.58178	0.65566	13%
Wise	0.40968	0.54689	33%
Wythe	0.50637	0.60564	20%
Virginia Independent Cities			
Bedford	0.49934	0.61006	22%
Bristol	0.55414	0.63326	14%
Buena Vista	0.50315	0.57637	15%
Galax	0.48913	0.51143	5%
Lexington	0.45083	0.54074	20%
Norton	0.44581	0.55084	24%
Radford	0.46144	0.55448	20%
Roanoke	0.56207	0.65905	17%
Salem	0.48206	0.59207	23%
West Virginia Counties			
Monroe	0.31121	0.57755	86%
Kentucky Counties			
Letcher	0.3788	0.54754	45%
Pike	0.39852	0.57321	44%
State of Virginia	0.48121	0.70084	46%
United States	0.66483	0.73973	11%

Table B-23. Payments in Lieu of Taxes by County

SIDEBAR

	1990 Payments	2000 Payments	% Change 1900-2000
Virginia Counties			
Bedford	\$14,809	\$17,509	18
Bland	\$34,498	\$49,271	43
Botetourt	\$42,374	\$54,336	28
Carroll	\$4,296	\$8,212	91
Craig	\$55,905	\$76,761	37
Dickenson	\$10,133	\$11,890	17
Giles	\$31,996	\$43,501	36
Grayson	\$15,927	\$22,304	40
Lee	\$11,000	\$13,271	21
Montgomery	\$9,214	\$12,700	38
Pulaski	\$9,006	\$12,378	37
Roanoke	\$5,682	\$5,846	3
Rockbridge	\$34,561	\$39,552	14
Scott	\$16,277	\$22,559	39
Smyth	\$35,401	\$49,189	39
Tazewell	\$5,081	\$6,696	32
Washington	\$10,602	\$14,641	38
Wise	\$17,017	\$23,663	39
Wythe	\$27,159	\$38,034	40
West Virginia Counties			
Monroe	\$14,971	\$15,043	0
Kentucky Counties			
Letcher	\$520	\$475	-9
Pike	\$11,665	\$12,446	7

Source: U.S. Bureau of Land Management

Table B-24. Payments to States by County

	1988	1991	1994	1997	2000	% Change 1988-2000
Virginia Counties						
Bedford	\$5,119	\$8,175	\$7,321	\$8,216	\$5,453	7
Bland	\$19,555	\$31,410	\$28,149	\$31,720	\$21,648	11
Botetourt	\$17,799	\$28,507	\$25,468	\$29,683	\$19,740	11
Carroll	\$1,560	\$2,493	\$2,834	\$3,183	\$2,112	35
Craig	\$31,254	\$49,964	\$44,891	\$50,714	\$33,732	8
Dickenson	\$2,248	\$3,588	\$3,205	\$3,597	\$2,387	6
Giles	\$17,067	\$27,440	\$24,658	\$27,680	\$18,379	8
Grayson	\$8,930	\$14,312	\$12,863	\$14,449	\$9,590	7
Lee	\$3,086	\$4,925	\$4,400	\$4,951	\$3,286	6
Montgomery	\$5,252	\$8,310	\$7,417	\$8,498	\$5,640	7
Pulaski	\$5,266	\$8,405	\$7,507	\$8,425	\$5,592	6
Roanoke	\$835	\$1,342	\$1,198	\$1,345	\$910	9
Rockbridge	\$5,785	\$9,234	\$8,261	\$9,294	\$6,168	7
Scott	\$9,315	\$14,868	\$13,306	\$15,105	\$10,025	8
Smyth	\$19,708	\$31,698	\$28,855	\$32,470	\$21,593	10
Tazewell	\$2,422	\$4,108	\$3,816	\$4,282	\$2,842	17
Washington	\$6,012	\$9,622	\$8,650	\$9,740	\$6,465	8
Wise	\$9,740	\$15,598	\$13,993	\$15,844	\$10,516	8
Wythe	\$15,513	\$24,846	\$22,199	\$25,465	\$16,926	9
West Virginia Counties						
Monroe	\$5,018	\$8,018	\$7,211	\$8,092	\$5,372	7
Kentucky Counties						
Letcher	\$231	\$368	\$329	\$369	\$245	6
Pike	\$32	\$51	\$45	\$51	\$34	6
FOREST COUNTY TOTAL	\$191,747	\$307,282	\$276,576	\$313,173	\$208,655	9

Source: USDA Forest Service, Rocky Mountain Research Station

Table B-25. Land Use in 1992 by County

Virginia Counties	Percent Forested	Percent Agricultural	Percent Residential	Percent Water	Percent Quarries, Strip Mine, Gravel Pits	Percent Transitional
Bedford	69	28	1	2	0	0
Bland	81	19	0	0	0	0
Botetourt	79	19	1	1	0	0
Carroll	64	35	1	0	0	0
Craig	88	12	0	0	0	0
Dickenson	94	3	0	1	1	1
Giles	82	15	1	1	0	1
Grayson	70	28	1	1	0	0
Lee	79	20	1	0	0	0
Montgomery	67	28	4	1	0	0
Pulaski	60	34	3	3	0	0
Roanoke	69	14	16	0	0	0
Rockbridge	71	27	2	0	0	0
Scott	88	12	0	0	0	0
Smyth	74	24	2	0	0	0
Tazewell	72	26	2	0	0	0
Washington	71	26	3	0	0	0
Wise	88	4	2	0	4	2
Wythe	54	44	2	0	0	0
West Virginia Counties						
Monroe	N/A	N/A	N/A	N/A	N/A	N/A
Kentucky Counties						
Letcher	N/A	N/A	N/A	N/A	N/A	N/A
Pike	N/A	N/A	N/A	N/A	N/A	N/A

Source: Virginia National Land Cover Data Set, U.S. Geological Survey and U.S. Environmental Protection Agency, 1992

Table B-26. Heads of Household by County

	Persons per Household 2000	Age 65 and over Households Per- cent Change 1990-2000	Percent of Households, Female Only with Children 2000
Virginia Counties			
Bedford	2.52	23%	4%
Bland	2.43	28%	4%
Botetourt	2.56	24%	3%
Carroll	2.36	29%	4%
Craig	2.45	25%	3%
Dickenson	2.42	26%	5%
Giles	2.37	29%	5%
Grayson	2.31	30%	4%
Lee	2.41	28%	5%
Montgomery	2.4	16%	5%
Pulaski	2.32	26%	5%
Roanoke	2.41	26%	5%
Rockbridge	2.43	28%	5%
Scott	2.35	30%	4%
Smyth	2.37	28%	6%
Tazewell	2.4	28%	5%
Washington	2.36	26%	4%
Wise	2.44	26%	6%
Wythe	2.36	27%	5%
Virginia Independent Cities			
Bedford	2.26	33%	11%
Bristol City	2.18	35%	7%
Buena Vista	2.38	29%	8%
Galax	2.27	30%	8%
Lexington	2.06	34%	4%
Norton	2.23	26%	9%
Radford	2.25	19%	5%
Roanoke	2.2	27%	10%
Salem	2.32	28%	6%
West Virginia Counties			
Monroe	2.41	30%	4%
Kentucky Counties			
Letcher	2.48	24%	5%
Pike	2.46	23%	6%
State of Virginia	2.54	21%	7%

Source: U.S. Census Bureau

Table B-27. Economic Sectors in Jefferson National Forest's Local Economy

Sector	1985 Industry Output	1985 % of Total Output	1985 Em- ployment	1985 % of Total	1986 Industry Output	1986 % of Total Output	1986 Em- ployment	1986 % of Total	1985 Total Income	1985 % of Total In- come	1986 Total Income	1986 % of Total In- come
Agriculture	525	2.40%	17566	4.80%	380	1.20%	11233	2.10%	179	1.60%	181	2.10%
Mining	2209	9.90%	18138	5.00%	1552	4.70%	7974	1.50%	907	8.20%	566	1.50%
Construction	1283	5.80%	19932	5.50%	3203	9.70%	40644	7.70%	513	4.60%	1,174	7.70%
Other Manufacturing	6342	28.50%	67894	18.70%	5994	18.20%	42679	8.10%	2050	18.50%	1,928	8.10%
Wood Products Manufacturing												
Mfg.--SIC 24 Lumber & Wood Prods.	159	0.70%	3446	0.90%	1063	3.20%	7790	1.50%	46	0.40%	323	1.50%
Mfg.--SIC 25 Wood Furniture & Fixtures	337	1.50%	7014	1.90%	413	1.30%	5357	1.00%	132	1.20%	145	1.00%
Mfg.--SIC 26 Paper & Pulp Products	163	0.70%	1477	0.40%	68	0.20%	185	0.00%	60	0.50%	19	0.00%
Total Manufacturing	7001	31.50%	79831	21.90%	7538	22.90%	56011	10.60%	2288	20.60%	2,415	10.60%
Recreation Related Services												
Recreational Related Wholesale	6	0.00%	85	0.00%	0	0.00%	0	0.00%	3	0.00%	0	0.00%
Recreational Related Retail Trade	24	0.10%	772	0.20%	0	0.00%	0	0.00%	13	0.10%	0	0.00%
Local, Interurban Passenger Transit	6	0.00%	0	0.00%	0	0.00%	311	0.00%	4	0.00%	6	0.10%

Table B-27 Continued. Economic Sectors in Jefferson National Forest's Local Economy

Sector	1985 Indus- try Output	1985 % of Output Total	1996 Indus- try Output	1996 % of Output Total	1985 Em- ployment	1985 % of Employment Total	1996 Em- ployment	1996 % of Employment Total	1985 Total Income	1985 % of Total In- come	1996 Total Income	1996 % of Total In- come
Other Recreation Re-												
Air Transportation	21	0.10%	5	0.00%	1	0.00%	55	0.00%	10	0.10%	0	0.00%
Wholesale & Retail Trade	119	0.50%	144	0.40%	294	0.10%	2524	0.50%	67	0.60%	7	0.50%
General Merchandise Stores	0	0.00%	9	0.00%	0	0.00%	324	0.10%	0	0.00%	0	0.10%
Food Stores	0	0.00%	22	0.10%	0	0.00%	873	0.20%	0	0.00%	0	0.20%
Eating & Drinking	72	0.30%	173	0.50%	44	0.00%	5380	1.00%	24	0.20%	3	1.00%
Miscellaneous Re- tail	0	0.00%	18	0.10%	0	0.00%	637	0.10%	0	0.00%	0	0.10%
Hotels and Lodging Places	51	0.20%	342	1.00%	10	0.00%	7197	0.00%	29	0.30%	5	1.40%
Laundry, Cleaning and Shoe Repair	6	0.00%	6	0.00%	1	0.00%	248	1.40%	4	0.00%	0	0.00%
Automobile Rental and Leasing	2	0.00%	1	0.00%	0	0.00%	248	0.00%	1	0.00%	0	0.00%
Automobile Repair and Services	16	0.10%	43	0.10%	2	0.00%	586	0.10%	7	0.10%	0	0.10%
Amusement and Recreation Ser- vices, N.E.C.	5	0.00%	58	0.20%	0	0.00%	1707	0.30%	3	0.00%	0	0.30%
Total Tourism Estimate	328	1.50%	827	2.50%	1207	0.30%	19853	3.70%	165	1.50%	21	3.70%
Transportation & Utili-	2129	9.60%	3278	10.00%	23152	6.40%	21932	4.10%	1148	10.40%	1,597	4.10%
Finance, Insurance,	1371	6.20%	4125	12.50%	16760	4.60%	25672	4.80%	758	6.80%	2,509	4.80%
Services--Non-Tourism	2160	9.70%	5631	17.10%	60084	16.50%	119277	22.50%	1308	11.80%	3,134	22.50%
Wholesale & Retail	2654	11.90%	4618	14.00%	68258	18.80%	113212	21.40%	1408	12.70%	2,748	21.40%
Government	2521	11.30%	1718	5.20%	54939	15.10%	111739	21.10%	2357	21.30%	1,575	21.10%
Other--Misc.	49	0.20%	56	0.20%	4048	1.10%	2478	0.50%	49	0.40%	56	0.50%
TOTAL	22231	100.00%	32926	100.00%	363915	100.00%	530025	100.00%	11081	100.00%	15,976	100.00%

Table B-28. Net Exports for Entire Local Economy

Commodity	1985 Net Exports - Ex- ports Less Imports	1996 Net Exports - Ex- ports Less Imports	1985 Net Ex- porting Indus- tries as a Per- centage Export- ing Industries	1996 Net Ex- porting Indus- tries as a Per- centage Export- ing Industries
Agriculture	(\$5.20)	(\$171.50)	0.00%	0.00%
Mining	\$1,232.20	\$765.50	55.90%	17.70%
Construction	(\$246.70)	\$232.50	0.00%	5.40%
Other Manufacturing	(\$877.00)	(\$2,436.60)	0.00%	0.00%
Mfg.--SIC 24 Lumber & Wood Prods.	(\$34.60)	\$446.70	0.00%	10.30%
Mfg.--SIC 25 Wood Furniture & Fixtures	\$242.20	\$269.50	11.00%	6.20%
Mfg.--SIC 26 Paper & Pulp Products	(\$105.30)	(\$212.60)	0.00%	0.00%
Total Manufacturing	(\$774.60)	(\$1,933.00)	0.00%	0.00%
Existing in Tourism Estimate:				
Transportation & Utilities	\$1.20	\$637.90	0.10%	14.70%
Local, Interurban Passenger Transit	(\$130.10)	(\$48.30)	0.00%	0.00%
Air Transportation	(\$130.10)	(\$163.70)	0.00%	0.00%
Wholesale & Retail Trade--Non-Tourism	(\$33.90)	\$470.90	0.00%	10.90%
Recreation Related Wholesale Trade	(\$6.40)	\$0.00	0.00%	0.00%
Recreation Related Retail Trade	(\$10.50)	\$0.00	0.00%	0.00%
General Merchandise Stores	\$0.00	\$27.30	0.00%	0.60%
Food Stores	\$0.00	\$6.80	0.00%	0.20%
Eating & Drinking	(\$66.20)	\$547.20	0.00%	12.60%
Miscellaneous Retail	\$0.00	\$28.60	0.00%	0.70%
Finance, Insurance, Real Estate	(\$1,694.70)	(\$591.40)	0.00%	0.00%
Hotels and Lodging Places	\$7.80	\$705.20	0.40%	16.30%
Laundry, Cleaning and Shoe Repair	\$15.90	(\$13.10)	0.70%	0.00%
Services--Non-Tourism	(\$934.10)	(\$667.30)	0.00%	0.00%
Automobile Rental and Leasing	(\$63.00)	(\$84.70)	0.00%	0.00%
Automobile Repair and Services	(\$61.00)	\$133.50	0.00%	3.10%
Amusement and Recreation Services, N.E.C.	(\$63.20)	\$58.60	0.00%	1.40%
Total for Commodities in Tourism Estimate (ex, 433, 447, 456, 465)	(\$506.80)	\$1,197.40	0.00%	27.70%
Commodities for 433, 447, 456, 465	(\$2,661.60)	(\$149.80)	0.00%	0.00%
Estimate of Trade in Tourism Estimate	(\$49.70)	\$150.90	0.00%	3.50%
Government	\$705.70	(\$139.80)	32.00%	0.00%
Other--Misc.	(\$202.80)	(\$100.60)	0.00%	51.10%
Total Net Trade (exports)	(\$2,459.70)	(\$299.50)	100.00%	100.00%
Total Positive Trade Industries (exports)	\$2,205.10	\$4,330.30		

Source: USDA IMPLAN data 1985 and 1996

Table B-29. National Survey on Recreation Local Demographics

Personal and Household Characteristics	Jefferson NF (N=1403)	George Washington NF (N=584)	Southern Appalachian Region
Year-round resident	97.80%	96.90%	97.20%
Part-time resident	2.20%	3.10%	28.00%
Percentage of residents in market area by state	TN 35.3% NC 30.5% VA 17.6%	VA 54.3% WV 22.8% MD 13.4%	GA 24.2% AL 21.4% TN 14.3%
Lived in SA entire life	44.60%	39.60%	38.10%
Lived in SA 20+ years	59.70%	54.70%	51.70%
Lived in SA 10-19 years	16.90%	17.50%	19.00%
Lived in SA <10 years	23.40%	27.70%	29.20%

Source: National Survey on Recreation and the Environment, Version 12, November, 2001 to April, 2002

Table B-30. National Survey on Recreation Household Characteristics

Personal and Household Characteristics	Jefferson NF (N=1403)	George Washington NF (N=584)	Southern Appalachian Region
Remain for job	7.5	12.7	7.4
Remain for family	52.3	55.9	54.8
Remain for area	16.8	15.9	14.6
Remain for other reasons	23.5	15.5	23.2
Own 5+ acres of land	19.8	14.7	13.1
Age under 30	24	24.7	27.2
Age over 55	29.2	27.1	27.3
Anglo, non-Hispanic	90.4	75.7	74.5
Black	6.2	14.7	19.7
Hispanic	2.5	4.6	3.6
Foreign born	0.9	3.4	1.8
Education - 8 th grade or less	9	4.6	7.3
Education - Bachelor's degree/more	17.3	25.1	21
Work a job	56.8	64	59.9
Retired	43.8	45	39.5

Source: National Survey on Recreation and the Environment, Version 12, November, 2001 to April, 2002

Table B-31. Values of Local Residents from the National Survey on Recreation

Personal and Household Characteristics	Jefferson NF (N=1403)	George Washington NF (N=584)	Southern Appalachian Region
Protect streams, lakes, and watershed areas	94.7/79.8	88.6/74.7	91.9/79.2
Protect wildlife habitats	91.8/75.0	87.1/67.3	89.9/72.7
Protect old growth forests	85.5/65.3	82.5/59.2	85.3/66.2
Habitat for wildlife and bird viewing	85.5/64.1	79.6/59.6	84.0/61.4
Open areas for wildlife	77.8/50.8	69.9/49.4	73.9/48.4
Allow cultural uses of forests	74.7/55.4	70.4/51.7	72.5/51.3
Use controlled fires	74.4/55.8	65.0/44.0	74.5/53.2
Trail systems for non-motorized recreation	71.2/39.7	71.7/40.0	68.7/39.5
Increase law enforcement	70.3/48.9	67.8/44.0	67.8/48.2
Restrict mineral removals	65.6/52.5	65.3/47.1	64.1/48.6
Designate more areas as wilderness	65.7/41.7	64.5/42.7	67.1/41.4
Allow diversity of uses such as grazing, recreation, and wildlife habitat	66.8/39.1	59.2/29.8	65.0/36.6
Increase acres in the National Forest	65.7/43.5	56.7/36.8	65.2/44.1
Make management decisions at the local level	65.3/40.6	60.8/39.0	63.8/37.1
Allow management activities near streams	60.2/35.2	57.3/37.3	60.9/35.5
Allow recreation fees that go back to management	58.0/34.1	54.9/30.9	58.6/32.9
Increase wildlife for hunting	52.2/31.5	53.5/32.8	46.6/27.8
Limit people who visit wilderness	47.4/25.7	50.9/31.0	48.0/26.2
Limit people on a river at one time	45.3/25.7	50.3/30.4	47.2/28.8
Trade public for private lands to eliminate in holdings or acquire natural areas	41.8/21.7	36.4/19.6	44.8/22.9
Expand commercial recreation services	37.3/20.3	35.6/21.3	36.3/20.2
Allow harvesting and mining to support communities	35.8/23.2	36.8/20.1	36.2/20.1
New paved roads for cars	31.2/19.7	27.5/12.5	34.5/20.0
Allow recreational gold prospecting and dredging	24.1/12.5	19.7/8.9	24.2/11.7
Expand access for motorized off-highway vehicles	23.7/13.5	20.0/12.1	22.8/13.1
Allow commercial leasing of oil and gas rights	21.5/14.8	17.8/11.9	19.7/11.6

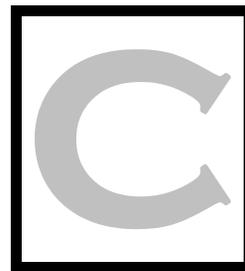
Source: National Survey on Recreation and the Environment, Version 12, November, 2001 to April, 2002

Table B-32. Management Objectives Rated as Important and Extremely Important

Personal and Household Characteristics	Jefferson NF (N=1403)	George Wash- ington NF (N=584)	Southern Appalachian Region
Critical homes for plant and animal species should be protected	93.9/71.4	91.2/66.4	93.3/69.3 (72.5%)
More controls on tourism and second home development	74.6/43.1	76.1/43.6	75.8/43.4 (40.0%)
Endangered Species Act has not gone far enough	75.2/40.8	70.7/39.0	73.5/42.4 (57.5%)
More important to protect streams for trout than for other species	51.1/25.3	44.3/19.3	49.6/23.1 (29.3)
More timber production, mining, and other commercial uses	26.2/9.5	27.1/14.0	28.2/10.1 (26.6%)

Source: National Survey on Recreation and the Environment, Version 12, November, 2001 to April, 2002

ROADLESS AREA EVALUATIONS



INTRODUCTION

This appendix contains evaluations of the 37 inventoried roadless areas on the Jefferson National Forest. These areas, totaling approximately 153,100 acres, could be recommended to Congress for designation as wilderness. The roadless areas included in the inventory meet the criteria as potential wilderness as set forth in Chapter 7 of FSH 1909.12. An updated Roadless Area Inventory was done as part of the Southern Appalachian Assessment and was finalized on December 17, 1999.

The evaluation reports consider wilderness potential in three main categories:

- ▶ **Capability.** The qualities that make a roadless area suitable or not suitable for wilderness;
- ▶ **Availability.** An assessment of the non-wilderness resources and demand of the area; and
- ▶ **Need.** A consideration of the amount of wilderness already in the area, region and nation.

Existing wildernesses on the Forest amount to 57,760 acres in 11 units, comprising about 8 percent of the total forest area. On a more regional scale, the State of Virginia contains almost 183,000 acres of wilderness within the George Washington and Jefferson National Forests and the Shenandoah National Park. Neighboring Cherokee National Forest contains about 66,390 acres of designated wilderness.

In terms of ecological classification, all of the 37 roadless areas are within the Central Appalachian Broadleaf-Coniferous Forest Meadow Province. Within this province, the Blue Ridge, Northern Ridge and Valley and Cumberland Mountains Sections are represented by at least one roadless area.

Other qualities in common in the 37 areas include: no airstrips, no heliports, and no electronic installations. No more than 20 percent of any area has been harvested within the past 10 years. No area contains more than ½ mile of improved system road for each 1,000 acres of land involved.

**BARBOURS
CREEK
WILDERNESS
ADDITION**

BARBOURS CREEK WILDERNESS ADDITION

ID NUMBER: 14503

Overview

LOCATION, VICINITY, AND ACCESS

Barbours Creek Wilderness Addition roadless area is located on the Jefferson National Forest, New Castle Ranger District, Craig County, Virginia. The area is generally bounded by lands of the James River Ranger District of the George Washington National Forest to the north and east, Forest Development Road (FDR) 5036 to the west, Barbours Creek to the south, and private land and VA 617 to the southeast. The existing Barbours Creek Wilderness is located on the west side of FDR 5036. The area is found within a portion of U.S.G.S. Virginia Quadrangle Jordan Mines. Major vehicular access is provided by VA 617 along the eastern and southern ends of the area.

Surface Ownership	Acres
Forest Service	732
Private	0
Park Service	0
TOTAL	732

There are no improved roads in the area.

There is one unimproved road within the area. A 1.1- mile section of FDR 5036, the Potts Jeep Road, traverses the area. This road is actually on the western edge of this area, but it borders Barbours Creek Wilderness and would likely be within wilderness if this area is designated. Total unimproved road mileage is 1.1 miles.

There are no developed trails within the area.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, this area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone or shale with parallel drainages with broad limestone valleys. Included in this area is Potts Mountain with a series of small, steep sideslope drainages. Elevation ranges from approximately 2260 feet along Barbours Creek to 3335 feet at a point along the crest of Potts Mountain.

Approximately 75 percent of the area is underlain by Silurian-aged sandstone, and 25 percent is underlain by Brallier and Martinsburg shale. Ridgetop and sideslope soils consist primarily of moderately deep, loamy-skeletal Typic Dystrochrepts (Dekalband Berks series). Footslopes and benches are often Typic Fragludults (Laidig series) or other more productive colluvial Hapludults. Drainages contain deep loamy-skeletal Typic-Hapludults and Dystrochrepts formed in colluvium from sandstone (Oriskany and Sherando series) or shale (Sheloceta series).

Vegetation is mainly broadleaf deciduous species with some yellow pine. Approximately six percent of the area has a site index of 70 or greater indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages, toeslopes, or along floodplains of small to medium sized streams. Here, yellow poplar, northern red oak, white oak, basswood, cucumber tree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 94 percent of the areas has a site index of 60 or lower, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and east midslope aspects with yellow pine occurring on the driest sites.

CURRENT USE

The area is primarily used for dispersed recreation activities such hunting, fishing and illegal ATV use. Approximately 27 percent, or 194 acres, are classified suitable for timber production within the area. Mineral rights are all owned by the U.S.A. There are no federal oil or gas leases.

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Barbours Creek is regularly stocked with trout by the Virginia Department of Game and Inland Fisheries.

A trailhead parking lot is located at the intersection off VA 617 and FDR 5036.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 1.1 miles of unimproved road in the roadless area is visually evident and influences ecological processes, as a minimum, in the vicinity of the road. Many old access roads and logging roads still exist and are evident; however, lack of maintenance and use is allowing some of them to become overgrown and regain a more natural appearance. Other old roads are being kept open by frequent illegal ATV traffic.

Most of the area was logged and frequently burned in the late 1800's and early 1900's. Approximately 86 percent of the timber in this area is in the 21-100 year old age class, two percent in the 101 plus years age class, and 12 percent is in the 0-10 year age class. The area has no possible inventoried old growth.

KEY ATTRACTIONS

The area is popular with hunters and anglers. There are no known federally listed threatened, endangered, or sensitive species in this area.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area and the area is minimally affected by outside forces. Barbours Creek Wilderness Addition roadless area appears to be natural but there are signs of recent disturbance. There are 88 acres of 0-10 year old age class timber within area. Unimproved FDR 5036 is on the western edge of this roadless area. If this roadless area becomes an addition to Barbours Creek Wilderness, the road will be within the wilderness and use of the road by vehicular traffic will likely be terminated. Approximately 1.1 miles of this jeep road parallels the roadless area boundary. The road is in poor condition.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Barbour Creek Wilderness Addition Roadless Area is 732 acres in size and is located entirely on National Forest land. The area is a proposed addition to the 5,700 acre Barbours Creek Wilderness. Landform consists of the south side of Potts Mountain down to Barbours Creek. Elevations range from 2,260 feet along Barbours Creek to 3,335 feet along the crest of Potts Mountain. A solitude core area of 120 acres exists adjacent to the boundary with Barbours Creek Wilderness. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The ratio of core acres of solitude to the roadless area is approximately 16 percent. This number is small due to the small size of the area and its proximity to VA 617. If this roadless area were added to the adjoining Barbours Creek Wilderness, the wilderness would increase in size to 6,110 acres. There is one unimproved road and it is on the boundary of the area. The Potts Jeep Road follows the boundary between the

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WILDERNESS
ADDITION**

roadless area and wilderness for 1.1 miles. Visitor use to this area is light with only a few jeeps attempting to go up the old road. When combined with the wilderness, visitors feel like they are in an unconfined, natural area. Noise from the surrounding lands can be heard along the southern boundary (state highways, jeep road, private land). Stream improvement work has occurred in Barbours Creek along the edge of the roadless area. This work involved using heavy equipment to place trees in the stream, at strategic locations, to improve the large woody debris component of the stream.

It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost, but unlikely in such a small area. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Barbours Creek Wilderness Addition roadless area does present a range of dispersed recreational activities of which are typically found on the Jefferson National Forest. Activities such as hunting, fishing, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Barbours Creek Wilderness Addition roadless area is in the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section. This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Shawvers Run, Barbours Creek, Peters Mountain, Mountain Lake, Kimberling Creek, and Beartown. Within the Southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Two existing wildernesses are in the vicinity. Barbours Creek Wilderness adjoins the western boundary of the roadless area while Shawvers Run Wilderness is located approximately 7.0 air miles to the west.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridge tops. Shale and limestone are the bedrock on the lower slopes.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. Barbours Creek, along the southern boundary, has had stream improvement work. This work involved utilizing heavy equipment to place 50-200 trees in the stream as large woody debris. The U.S. Forest Service Cold Water Fisheries Research Unit has studied the stream to document large woody debris relationships to fish and macroinvertebrates.

Approximately 48 percent of the area is in the Dry Mesic Oak ecological community type. Another 29 percent is in the Dry/Dry-Mesic Oak-Pine type, 17 percent is in the Xeric Pine/Pine-Oak type, and six percent is in the Mixed/Western Mesophytic ecological community type. There is no possible inventoried old growth in this area.

No federally listed threatened, endangered, or sensitive species are known to occur within this area.

Barbours Creek was studied and found not eligible for wild and scenic river status. It does contain some wild trout and brook trout, but the Virginia Department of Game and Inland Fisheries lists this stream as a Class VI stream, not containing a significant number of trout or a significant population of warmwater game fish. The stream is stocked and adequate water quality and water temperature allows for a summer carryover of some stocked trout.

Approximately 90 percent of this area is classified as having High Scenic Integrity. There are no acres classified as "A" Scenic Attractiveness.

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CREEK
WILDERNESS
ADDITION**

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of this roadless area, when combined with the existing Barbours Creek Wilderness, makes its preservation as potential wilderness practical. Most of the boundary follows topographic features, property boundary lines, and human improvements such as roads. Surrounding lands are mostly National Forest, except for a private inholding to the north and one to the south. Any activities within the private land just south of the roadless area would be visible from most locations in this area. All minerals are owned by the U.S.A.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Most of the boundary follows features such as roads and property line boundaries, as well as natural features, such as ridges and streams. The eastern boundary; however, follows the Alleghany/Craig County line which is also the boundary between the George Washington and Jefferson National Forests. This boundary may be difficult to locate since it follows no topographic features. An offset from boundary road VA 617 would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, road alignment, etc.). An offset of approximately 300 feet from the centerline of the road is recommended.

Availability for Wilderness

RECREATION, INCLUDING TOURISM

There are no developed recreation sites within this roadless area. Hunting and fishing are the largest recreation attraction to the area. The Potts Jeep Road receives some four-wheel drive jeep use. A parking lot is located near the intersection of FDR 5036 and VA 617. The Potts Jeep Road would be closed to motorized vehicles if this area is designated wilderness.

WILDLIFE

The Barbours Creek Wilderness Addition roadless area provides habitat for diverse wildlife species. The featured species are 72 percent bear and 28 percent deer. Barbours Creek is a stocked trout stream. No threatened, endangered, or sensitive wildlife species are known to occur within this roadless area.

WATER AVAILABILITY AND USE

Most of this roadless area drains into Barbours Creek. There are no known water storage needs or any existing special use water permit authorizations. Water quality should remain at its current level whether or not the area is designated wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 27 percent, or 194 acres, of the area is classified as suitable for timber production. In the last 10 years, approximately 88 acres of timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 194 acres of suitable lands in this roadless area represents 06 percent of all lands suitable for timber production on the Jefferson National Forest. All minerals are owned by U.S.A. There are no federal oil or gas leases.

**BARBOURS
CREEK
WILDERNESS
ADDITION****CULTURAL RESOURCES**

As of March 1998, 153 acres of this roadless area have been surveyed for cultural resources. There are no known historical or archaeological sites within this area. This area exhibits a low potential for prehistoric and historic resources.

LAND USES

No special use permit authorizations have been issued for lands in this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Fire suppression would be primarily by hand tools. Use of motorized and mechanized transport and equipment such as ATV's, bulldozers, and chainsaws would be allowed only upon specific approval by the appropriate line officer. Thus, wildfires would likely attain larger sizes than under current management. Wilderness designation may limit options for containing fires. Gypsy moth infestations are in the vicinity of this roadless area right now. Mortality can be severe (up to 25-30%) and oaks are the preferred hosts. Approximately 77 percent of the area is composed of the Dry Mesic Oak and Dry/Dry Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chances that they may spread to other National Forest or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

BEAR CREEK ROADLESS AREA

ID NUMBER: 14607

BEAR CREEK

Overview

LOCATION, VICINITY, AND ACCESS

The Bear Creek roadless area is located on the Jefferson National Forest, Wythe Ranger District, Bland, Smyth, and Wythe Counties, Virginia. The area is located west and north of Interstate 81 and approximately five air miles due north of Rural Retreat on the south side of Walker Mountain. Other nearby communities are Marion, to the southwest, and Wytheville, to the southeast. The area is approximately 15.5 miles in length and averages two miles in width and is found within portions of U.S.G.S. Virginia Quadrangles Big Bend, Garden Mountain, Nebo, and Rural Retreat. Major vehicle access is provided by VA 622 and 694 along the western boundary and VA 52 and 621 along the extreme north and east boundary. Forest Development Road (FDR 221) accesses the area from the northeast and VA 625 and FDR 727 provide access from the southcentral portion of the area. There is no vehicular access from the north.

Surface Ownership	Acres
Forest Service	18,211
Private	0
Park Service	0
TOTAL	18,211

There are five improved roads within the area. FDR 6261 enters the roadless area from VA 694 in Newman Hollow and traverses 4.1 miles into the interior of the area. FDR 6251 also enters from VA 694 and parallels Bear Creek for 0.25 miles to where the road is gated. FDR 727 enters the area in Crawfish Valley, parallel to Reed Creek, and runs for 2.0 miles. About 1.92 miles of this road, within the roadless area, are gated and managed as closed. However, the road receives a considerable amount of administrative use by Forest Service personnel and trail maintaining volunteers. FDR 6361B and 6361C access the northeast end of the area off of FDR 221 for a combined mileage of 1.9 miles. FDR 6361B is the Wythe Ranger District's disabled hunter access road. Both FDR 6361B and 6361C are gated and managed as closed except for disabled hunter access during hunting season. Total improved road mileage is 8.25 miles.

There is one unimproved road. FDR 804.1 (Ceres Turnpike) is located north of Crawfish Valley and climbs 2.5 miles to the crest of Walker Mountain before continuing onto private land on the north side of the mountain. This road is gated at approximately mile marker 0.5 and is managed as closed. Total unimproved road mileage is 2.5 miles.

Five Forest Development Trails (FDT) are located in the area. The Appalachian National Scenic Trail (FDT 1) traverses the area in a north-south direction from near Davis Valley to the north side of Tilson Gap, a distance of approximately 8.0 miles. The Bear Creek Trail (FDT 159) enters the area from where FDR 6251 is gated and parallels Bear Creek for 3.5 miles. The Ranger District is currently considering proposals to relocate a portion of this trail at some point in the near future. The Crawfish Trail (FDT 6506) is a 10 mile loop trail and is coincident with improved FDR 727 for approximately 1.92 miles before continuing southwest paralleling Reed Creek. The trail then intersects with the Bear Creek Trail before climbing onto Brushy Mountain and down Channel Rock Hollow. The Walker Mountain Trail (FDT 6501) follows an old Appalachian National Scenic Trail location. The trail is 12.3 miles in length and runs from the upper end of Reed Creek up onto Walker Mountain at Redding Gap. The trail then heads west to Tilson Gap and east along the crest of Walker Mountain to VA 621. FDT 804.1, the Ceres Trail, runs coincident with FDR 804.1. This road/trail is 2.5 miles in length and runs from FDR 727 to the south up to the crest of Walker Mountain. The Appalachian National Scenic Trail is designated for foot travel only while all other trails are designated for foot, horse, and mountain bike use. Total maintained trail mileage is 36.3 miles.

Old access and logging roads still exist within the area, some of which have become overgrown and impassable to anything but foot traffic.

BEAR CREEK**GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)**

According to ecological mapping, the Bear Creek roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. Bear Creek roadless area is characterized by northeast/southwest trending ridges of sandstone and shale with parallel drainages interspersed with shale valleys. Included in this area are Walker, Brushy, and Little Brushy Mountains. Slopes vary from very steep on sideslopes to nearly flat in the large drainages. Drainage density is high on the slopes of Brushy and Little Brushy Mountains and on the lower slopes of Walker Mountain. Drainages are narrow and deep with steep sideslopes in these locations. The area contains the headwaters of three major streams that flow through the area; Bear Creek, Reed Creek, and Gullion Fork. Elevation ranges from approximately 2360 feet in Six Valley adjacent to FDR 221 to 3955 feet at a point along the crest of Walker Mountain.

The roadless area is forested by eastern deciduous and coniferous species. Approximately 26 percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, white pine, and red maple dominate the overstory. The remaining 74 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites. The area also contains several of Virginia's few remaining pure stands of table mountain pine. This species requires fire to reproduce and is becoming increasingly uncommon within its natural range due to fire exclusion.

CURRENT USE

The area is primarily used for dispersed recreation activities such as hunting, fishing, hiking, horseback riding, mountain biking, and dispersed camping associated with hunting. The Appalachian National Scenic Trail receives a high amount of use. The popularity of the Channel Rock/Crawfish Trail as a horseback riding and mountain biking trail has been steadily increasing in recent years. Approximately 34 percent, or 6,184 acres, of the area are classified as suitable for timber production. A portion of the 'Beast of East', a 300-mile endurance race involving canoeing, hiking, and mountain biking, was run through a portion of the roadless area in June 1998 and again in May 1999. Hiking and mountain biking were featured through this area. Dispersed recreation uses, primarily mountain biking and horseback riding, have increased substantially within the Crawfish Valley and Bear Creek areas of this roadless area in the past several years. The Forest Service periodically acquires shale, for road maintenance purposes, from an existing shale pit off of a non-system road 0.35 miles north of FDR 221 within the roadless area. There are 243 acres of privately owned (outstanding or reserved) mineral rights underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 8.25 miles of improved roads, 2.5 miles of unimproved road, and 36.3 miles of maintained trail within the roadless area are visually evident and influence ecological processes, as a minimum, in the vicinity of the roads and trails. Old access and logging roads still exist and are evident. Some are becoming overgrown and are regaining a more natural appearance. Some illegal ATV traffic is evident in several areas along the southern boundary of the area and along FDR/FDT 804.1.

Most of the area was cut over and frequently burned in the late 1800's and early 1900's.

Approximately 74 percent of the timber is in the 21-100 year old class, 11 percent is in the 101 plus years class, two percent in the 0-10 year old class, and three percent in the 11-20 year old class. The area contains 1262 acres of possible inventoried old growth.

BEAR CREEK

Featured species for the area is 87 percent turkey and 13 percent deer. Wildlife openings and old fields, totaling approximately 70 acres, are located primarily along and above Reed Creek. The openings and fields are maintained through the regular use of prescribed fire and mowing. Two artificial waterholes have been created for wildlife use within the area. While these waterholes may disturb the natural ecological processes of the area, they also enhance wildlife populations and are gaining an increasingly natural appearance over time.

White pine and shortleaf pine progeny test sites are located on the western end of the area. The planted trees in these test areas are planted in rows, much like in a plantation, and may influence ecological processes to some degree. The Davis Path Trail Shelter, and associated privy, are maintained facilities located on the Appalachian National Scenic Trail on the southwestern end of the area. Maintenance of the shelter is expected to continue regardless of the future designation of the Bear Creek roadless area.

Foglesong Cemetery is located on the south side of Reed Creek in Crawfish Valley and contains a dozen gravesites on a 0.04 acre private tract of land. There is also a single unmaintained gravesite in Davis Hollow. No roads currently lead to either cemetery site.

Trout stocking of Reed Creek occurs within the roadless area off of FDR 727.

The area is essentially bounded on three sides by private land. This land is comprised of fairly large tracts of forestland, small woodlots, residences, and structures and activities related to farming. A large tract of National Forest land adjoins the northeastern section of the roadless area boundary.

KEY ATTRACTIONS

The varied types of trails within the area are a key attraction, particularly the Crawfish Trail and Appalachian National Scenic Trail. The area is also highly popular with hunters, especially in the Bear Creek and Crawfish Valley areas. Reed Creek is a stocked trout stream and very popular with local anglers. Fish release occurs within the roadless area boundary. The golden-winged warbler is known to exist just outside the roadless area boundary in Crawfish Valley. It may also occur within the roadless area boundary. This species is listed on the Department of Interior's "Birds in Jeopardy" list and the Forest's locally rare species list. The warbler requires open, brushy areas. Tennessee dace is known to exist in Bear Creek and Reed Creek and is listed by the Forest Service as a federally sensitive species. No federally listed threatened, endangered, or sensitive species are known to occur within the area.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area and the area is minimally affected by outside forces. Much of the Bear Creek roadless area appears to be natural but there are signs of disturbance. There are 10.75 miles of improved and unimproved roads and 36.3 miles of maintained trail within the area. If this roadless area becomes wilderness, the improved and unimproved roads would be in wilderness and removed from the forest's transportation system. Some old access and logging roads in this roadless area have become overgrown and impassable, causing minimal impact on the area's natural ecological processes. Some illegal ATV traffic occurs in several areas along the southern boundary and along FDR/FDT 804.1, north of Crawfish Valley.

BEAR CREEK

While the maintenance of the approximately 70 acres of wildlife openings and old fields along Reed Creek has affected natural ecological processes, the range of influence is limited in extent and with the cessation of maintenance activities, natural processes will quickly resume. The Davis Path Trail Shelter is a developed recreational facility located on the Appalachian National Scenic Trail. Maintenance of this facility is expected to continue regardless of the future designation of the Bear Creek roadless area.

The Foglesong Cemetery is periodically maintained by descendants of the family. The single gravesite in Davis Hollow is unmaintained. There are 308 acres of 0-10 year old age class and 518 acres of 11-20 year age class within this roadless area as of March 1998.

Trout stocking occurs within the roadless area and this practice would be discontinued should the area be designated wilderness.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Bear Creek roadless area is 18,259 acres in size and is located entirely on National Forest land. The area is generally bounded to the north by Walker Mountain and Brushy and Little Brushy Mountains to the south. Elevations range from approximately 2360 feet in Six Valley adjacent to FDR 221 to 3955 feet at a point along the crest of Walker Mountain. A solitude core area of 9,539 acres exists in the central, northern, and southern portions of the roadless area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The ratio of core acres of solitude to the roadless area is approximate 52 percent. Visitor use of the area can be described as moderate to high during the various hunting seasons and moderate the rest of the year. The Channel Rock/Crawfish Trail and Appalachian National Scenic Trail are popular yearlong. The visitor can expect to encounter other visitors along the vast trail system in the area and at the Davis Path Trail Shelter. The further one gets away from improved roads, maintained trails, and facilities, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance. However, some areas may be impacted around the periphery of the area by noises associated with traffic on Interstate 81 and VA Routes 622, 694, 625, 621, 52 and FDR 727 or from activities on adjoining private land, which may reduce the feeling of solitude and isolation. Noises associated with aircraft flying to and from a nearby airport may impact areas along the southern and western boundaries of the area.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads and trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Bear Creek roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hunting, hiking, fishing, mountain biking, horseback riding, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE AND ENDANGERED PLANTS AND ANIMALS)

Bear Creek roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (18,259 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbours Creek, and Shawvers Run. Within the southern Appalachians, 11 wildernesses and 43

roadless areas are classified within this subsection.

BEAR CREEK

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridgetops while shale is found in the valleys and lower slopes. Minor amounts of carbonate rocks (limestone or dolomite) may also be present. Monster Rock, a massive outcrop jutting from the ridgetop, is an interesting geologic feature located along the eastern end of the Walker Mountain Trail.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The Appalachian National Scenic Trail traverses the west-central portion of the roadless area and presents vistas of the surrounding area from several high points within the area. There are several stands of table mountain pine within the area, which offer opportunities for scientific and educational purposes.

An old homesite, the Mozer Place, is located adjacent to the Crawfish Trail in Crawfish Valley.

Much of the area is comprised of ridgetop and midslope ecological community types. The Dry Mesic Oak type comprises approximately 55 percent of the area. The Dry and Dry-Mesic Oak-Pine type occupies 31 percent and the Xeric Pine and Pine-Oak type occupies 11 percent of the area. The remainder of the area is composed of the Mixed and Western Mesophytic, Conifer-Northern Hardwood, and other minor ecological community types.

There are 1262 acres of inventoried possible old growth. The ecological community types represented are: 254 acres Dry and Dry-Mesic Oak-Pine (0 acres suitable) which represents five percent of the Forest's total, 856 acres Dry Mesic Oak (108 acres suitable) which represents three percent of the Forest's total, 49 acres Mixed and Western Mesophytic (19 acres suitable) which represents one percent of the Forest's total, and 24 acres Xeric Pine and Pine-Oak (0 acres suitable) which represents 2.6 percent of the Forest's total.

The Tennessee dace (sensitive) is known to occur in Reed Creek and Bear Creek. The golden-winged warbler (locally rare) is known to occur just outside the roadless boundary; however, it may also occur within the boundary.

The entire roadless area is classified as having high existing scenic integrity.

The Beartown Wilderness is located approximately 6.25 air miles north of the roadless area.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Bear Creek roadless area makes its preservation as potential wilderness reasonably practical. Most of the boundary follows property lines or improved roads. Boundaries would need to be established on the ground where the boundary joins other National Forest lands, particularly where the boundary falls along sideslopes above and below Reed Creek and the floodplain along Gullion Fork. At 28.5 square miles in size, the Bear Creek roadless area is the largest such area on the Jefferson National Forest. The remote setting is protected by Walker Mountain to the north and Brushy and Little Brushy Mountains to the south. Although surrounding private lands contrast with the area, the effects are generally limited to the periphery along the boundary of the roadless area. There are 243 acres of privately owned mineral rights within the roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Forest Service boundary lines and improved roads delineate most of the roadless area boundary. An offset from Virginia Route's 622, 694, 625, 621, and 52 and FDR's 221 and

BEAR CREEK

723 would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, etc.). An offset of 300 feet from the centerline of State Roads and 100 feet from FDR's is recommended. Defining the on-the-ground boundary where the roadless area adjoins other National Forest land would be difficult, time consuming and expensive, particularly in areas north and south of Reed Creek and along the floodplain of Gullion Fork.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

The Davis Path Trail Shelter is the only developed recreation site within this roadless area. The Appalachian National Scenic Trail and the 28.3 miles of multi-purpose trails attract a moderate to high level of use. Hiking, hunting, fishing, mountain biking, horseback riding, and dispersed camping are the largest recreation attractions to the area. Interstate 81 provides relatively easy access from several exits. The communities of Rural Retreat, Marion, and Wytheville are all within a 30- minute drive of the area. Established recreation uses that would be discontinued should this area be designated a wilderness include: (1) FDR 6361B would be blocked from motorized use and the road would no longer serve as access for disabled hunters, (2) no further trout stocking would occur in that portion on Reed Creek within the roadless area boundary, and (3) mountain biking would be discontinued.

WILDLIFE

The Bear Creek roadless area provides habitat for a diversity of wildlife species. Featured species of the area is 87 percent turkey and 13 percent deer. The golden-winged warbler (locally rare) inhabits old fields and openings and the Tennessee dace (sensitive) occurs in Reed Creek and Bear Creek. There are 70 acres of maintained wildlife clearings and old fields in the area, all located above and along Reed Creek. Sample densities indicate that these 70 acres could support 10 pairs of golden-winged warblers. Active maintenance of this habitat would discontinue should this area be designated a wilderness. The result would be a loss of suitable habitat for the warblers and the warblers would be expected to move out of the area. Maintenance of the two artificial wildlife waterholes would also cease.

WATER AVAILABILITY AND USE

The roadless area encompasses the headwaters of three major cool water streams that flow through the area: Bear Creek, Reed Creek, and Gullion Fork. There are no known water storage needs or any existing special use water permit authorizations. Reed Creek has good water chemistry and a good macroinvertebrate monitoring score. Gullion Fork has good water chemistry and a poor/fair macroinvertebrate monitoring score. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 34 percent of the area, or 6,184 acres, is classified as suitable for timber production. In the past 20 years, approximately 954 acres of timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 6,184 acres of suitable lands within this roadless area represents approximately two percent of all lands suitable for timber production on the Jefferson National Forest. Private subsurface minerals ownership is held on 243 acres within this area. No Federal oil and gas leases or other Federal mineral leases are in effect in this area as of 1999. The potential for energy minerals, primarily natural gas, is

estimated to be low to moderate. The area was leased for Federal oil and gas in the 1980's; however, no oil or gas wells were drilled and the Federal leases have since expired. The potential for other Federal leasable minerals, including metallic minerals, is estimated to be low. Use of the shale borrow pit adjacent to a non-system road north of FDR 221 would no longer be used if this area is designated a wilderness.

BEAR CREEK**CULTURAL RESOURCES**

Approximately 1,085 acres have been surveyed for cultural resources, as of March 1998, within the roadless area. Nine prehistoric transient camps have been identified and recorded. The potential for historic farmsteads-homesteads is also extremely high within the area.

LAND USES

One special use authorization has been issued within this roadless area. The 300-mile endurance race, the 'Beast of the East', occurred in June 1998 and May 1999. One family cemetery occupies 0.04 acres on the south side of Reed Creek in Crawfish Valley. Another individual gravesite is located near Davis Hollow. If this roadless area is designated a wilderness, no further special uses would be authorized; however, cemetery maintenance would be expected to continue.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is essentially bounded by private lands except for a small section in the northeastern section of the area. Wilderness designation may limit options for containing fires on private and/or federal lands. The Bear Creek roadless area is expected to be in the generally infested area for gypsy moth in the next ten to twenty years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 86 percent of the area is composed of the Dry Mesic Oak and Dry and Dry-Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

**BEARTOWN
WILDERNESS
ADDITION A**

BEARTOWN WILDERNESS ADDITION A

ID NUMBER: 14606

Overview

LOCATION, VICINITY, AND ACCESS

Beartown Wilderness Addition A roadless area is located on the Jefferson National Forest, Wythe Ranger District, Tazewell County, Virginia. The area is located east of VA 16 and north of Forest Development Road (FDR) 222 and is found within portions of the U.S.G.S. Virginia Quadrangles Tazewell South and Hutchinson Rock. The area is generally bounded on the east by the Beartown Wilderness, private land to the north and west, and a combination of FDR 222 and private land to the south. Major vehicle access is provided by VA 16 to FDR 222 from the west and VA 42 to VA 625 to FDR 222 from the south and east.

Surface Ownership	Acres
Forest Service	1,369
Private	0
Park Service	0
TOTAL	1,369

There are no improved or unimproved roads within the area.

There are an estimated three to five miles of old logging roads and informal trails in this roadless area. Many are passable and kept open by illegal ATV traffic. These old roads and trails also receive a great deal of foot traffic, primarily during hunting season.

There are no developed, maintained trails within the area.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the Beartown Wilderness Addition A roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone and shale with parallel drainages interspersed with shale valleys. Minor amounts of limestone are interbedded with the sandstone on the upper slopes. Included in this area are Clinch Mountain and Chestnut Ridge. Slopes vary from very steep on sideslopes to gentle near the larger drainages. Drainage density is generally high in this area. The headwaters of several drainages are located within the roadless area that flow into Roaring Fork and Laurel Creek, both major streams. Elevations range from approximately 2320 feet at a point along the southern boundary to 3800 feet at a point along the crest of Clinch Mountain in the extreme northeast corner of the roadless area.

Vegetation is mainly broadleaf deciduous species with some yellow pine. Approximately 25 percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 75 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

CURRENT USE

Hunting is the primary recreational activity within the area. Dispersed camping, associated with hunting, is popular adjacent to FDR 222 and the periphery of the roadless area. Approximately 41 percent, or 557 acres, of the area are classified as suitable for timber production. There are 1246 acres of privately owned (outstanding or reserved) mineral rights underlying Federal surface ownership.

Illegal ATV use is widespread within the roadless area.

**BEARTOWN
WILDERNESS
ADDITION A**

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

Old logging roads and informal trails in the roadless area are visually evident and influence ecological processes, as a minimum, in the vicinity of the roads and trails. While many were seeded years ago, or are naturally regenerating and regaining a more natural appearance, some remain open through frequent illegal ATV traffic. Most of the area was cut over and frequently burned in the late 1800's and early 1900's. The predominant age range for timber in the area is 21 to 100 years, which represents approximately 98 percent of the area. The area has 285 acres of possible inventoried old growth.

The southeastern portion of the area is bounded by private land, which contains numerous hunting and seasonal cabins. The northern boundary follows the crest of Clinch Mountain and a private land boundary. Private land on the north side of Clinch Mountain is steep and rugged and several roads lead up to the crest of the mountain and wind their way along the ridgetop. The roadless area also adjoins the western boundary of Beartown Wilderness.

Featured species for the area is bear. No wildlife openings or recently seeded roads exist.

KEY ATTRACTIONS

The area is popular with hunters, particularly during the bear, deer, and turkey seasons. Trout fishing is also popular in the general area. Local streams offer anglers the opportunity to fish for stocked and/or wild trout. No Federally threatened, endangered, or sensitive species are known to exist within the area.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is minimally affected by outside forces. Most of the Beartown Wilderness Addition A roadless area appears to be natural but there are signs of disturbance, including the estimated three to five miles of old logging roads and informal trails in the area. Illegal ATV use is a recurrent concern in and around the roadless area, which influences ecological processes, as a minimum, in the vicinity of the illegal use. There is evidence of past manganese mining in the area; however, these areas are being reclaimed naturally and not easily recognizable by the casual observer.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Beartown Wilderness Addition A roadless area is 1,369 acres in size and is located entirely on National Forest land. The area is a proposed addition to the 5,609 acre Beartown Wilderness. Elevations range from approximately 2,320 feet at a point along the southern boundary to 3,800 feet at a point along the crest of Clinch Mountain in the extreme northeast corner of the roadless area. A solitude core area of 704 acres exists in the north and central portion of the roadless area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The ratio of core acres of solitude to the roadless area is approximately 51 percent. If this roadless area were added to the adjacent Beartown Wilderness, the core area size would represent a much higher percentage. Visitor use to this area is moderate to high during the hunting seasons and low during the remainder of the year. When combined with the existing wilderness, visitors feel like they are in an unconfined, natural area. Areas along the western and southern boundaries of the roadless area may be

**BEARTOWN
WILDERNESS
ADDITION A**

impacted from noises associated with VA 16, FDR 222, FDR 886, and illegal ATV traffic, which may reduce the feeling of solitude and isolation. The entire roadless area is on the south side of Clinch Mountain with no significant intervening ridge or mountain along the southern boundary to shield the visitor from noises or sights associated with roads or private land. Opportunities for solitude may be limited to the central and northeastern portions of the roadless area.

Much of the terrain in this roadless area is steep and rugged, offering the off-trail hiker/hunter good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Beartown Wilderness Addition A Roadless Area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hunting, fishing, hiking, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE AND ENDANGERED PLANTS AND ANIMALS)

Beartown Wilderness Addition A Roadless Area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (1,369 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbours Creek, and Shavers Run. Within the southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridgetops while shale is found in the valleys and lower slopes. This roadless area lies on the south flank of Clinch Mountain, just west of the Beartown Wilderness where Clinch Mountain terminates and makes a transition into an unusual geologic feature: Burkes Garden, a breached, dome-shaped geologic structure with a dramatic topographic expression.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The area's large relief and highly dissected topography creates a wide range of ecological types from hot, dry windswept ridgetops to cool, moist, protected coves.

The vast majority of the area, approximately 93 percent, is in the Dry Mesic Oak ecological community type. Four percent is in the Dry and Dry-Mesic Oak-Pine type and the remaining three percent is in the Mixed and Western Mesophytic type.

There are 285 acres of inventoried possible old growth. The ecological community type represented is: 285 acres Dry Mesic Oak (20 acres suitable), which represents one percent of the Forest's total for this community type.

The entire area is classified as having high existing scenic integrity.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Beartown Wilderness Addition A roadless area, when combined with the adjacent Beartown Wilderness, makes its preservation as potential wilderness practical. The eastern boundary of the roadless area adjoins Beartown Wilderness. The remaining boundaries follow property boundary lines and roads. Although surrounding

private lands contrast with the area, the effects are limited to the periphery along the boundary of the roadless area. There are many hunting cabins located on private lands along FDR 222 adjacent to the southern boundary of the area. In several locations along the crest of Clinch Mountain, the visitor would be able to view farming activities and small residential areas north of the roadless area in Thompson Valley. The private land along the southern boundary does have the potential to impact wilderness attributes. There are 1246 acres of privately owned mineral rights within the roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Most of the boundary follows human made features such as roads and property line boundaries. The eastern boundary adjoins the existing Beartown Wilderness. The southern, and a portion of the western, boundary follows FDR 222 and VA 16. An offset from these roads would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the roads (brush clearing, grading, paving, culvert installation and cleaning, gravel placement, etc.). An offset of 300 feet from the centerline of the roads is recommended.

Availability for Wilderness

RECREATION, INCLUDING TOURISM

There are no developed recreation sites within this roadless area. Hunting, dispersed camping, and illegal ATV use are the largest recreation attractions to the area. The Appalachian National Scenic Trail is located several miles to the east of the roadless area. No significant impact to current legal recreation use would be expected to occur should this area be designated a wilderness.

WILDLIFE

The Beartown Wilderness Addition A roadless area provides habitat for a diversity of wildlife species, including the featured species, bear. There are no wildlife habitat improvement projects within the area.

WATER AVAILABILITY AND USE

The roadless area encompasses the headwater tributaries of two major drainages: Roaring Fork and Laurel Creek. There are no known water storage needs or any existing special use water permit authorizations. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 41 percent of the area, or 557 acres, is classified as suitable for timber production. In the past 20 years, no timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 557 acres of suitable lands within this roadless area represents approximately 0.17 percent of all lands suitable for timber production on the Jefferson National Forest. Private subsurface minerals ownership is held on 1246 acres within this area. Private oil and gas leases were issued on some private mineral rights in the 1980's, including at least some private land, which the Federal government subsequently acquired (tracts J-1482 and J-1417). No oil or gas wells were drilled in this area and the lease expired. No Federal oil and gas leases or other Federal mineral leases are in effect within this area as of 1999. The potential for energy minerals, primarily natural gas, is estimated to be low to moderate. The potential for other Federal leasable minerals, including metallic minerals, is estimated to be low.

**BEARTOWN
WILDERNESS
ADDITION A****CULTURAL RESOURCES**

No known archaeological or historical sites have been identified within this roadless area. As of March 1998, no cultural resource surveys have been performed; however, the topography of the area indicates there is potential for encountering historic and prehistoric sites.

LAND USES

No special use permit authorizations have been issued in this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands on the north, south, and west perimeters. Wilderness designation may limit options for containing fires on private and/or federal lands. The Beartown Wilderness Addition A roadless area is expected to be in the generally infested area for Gypsy moth in the next ten to twenty years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 97 percent of the area is composed of the Dry Mesic Oak type and Dry and Dry-Mesic Oak-Pine forest types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

BEARTOWN WILDERNESS ADDITION B

ID NUMBER: 14699

**BEARTOWN
WILDERNESS
ADDITION B**

Overview

* These acres were purchased by the National Park Service for the benefit of the Appalachian National Scenic Trail and are managed by the Forest Service under a Memorandum of Understanding.

Surface Ownership	Acres
Forest Service	3,325
Private	33
Park Service*	38
TOTAL	3,396

LOCATION, VICINITY, AND ACCESS

Beartown Wilderness Addition B roadless area is located on the Jefferson National Forest, Wythe Ranger District, Bland and Tazewell Counties, Virginia. The area is located east of VA 16 and north of Forest Development Road (FDR) 222 and is found within a portion of the U.S.G.S. Virginia Quadrangle Hutchinson Rock. The area is generally bounded on the east by private land and a portion of the Garden Mountain roadless area, Beartown Wilderness to the north, and private land to the west. FDR 222 and VA 625 generally make up the southern boundary. Major vehicle access is provided by VA 16 to FDR 222 from the west and VA 42 to VA 625 to FDR 222 from the south and east.

There is one improved road within the area. An access road (FDT P4), with permanent right-of-way, enters the roadless area from FDR 222 in the southcentral portion of the area. The road is approximately 0.17 miles in length and accesses a 49 acre private inholding. FDR 886, an improved road that traversed the extreme western end of the area for 1.0 mile, was recently closed to all vehicular traffic and has been dropped from the Forest's transportation system. Total improved road mileage is 0.17 miles.

One unimproved road is located within the roadless area. Unimproved FDR 631, the Bear Hole Hollow Road, enters the area from FDR 222 and runs northwest for one mile, where it is blocked from vehicle use. This 1.0 mile road is heavily used during hunting season. The remaining 1.1 miles of the old roadbed, beyond the closure point, leads to the Roaring Fork Trail at the Beartown Wilderness boundary on the Tazewell/Bland County line. Total unimproved road mileage is 1.0 mile.

There are an estimated 10 to 16 miles of old logging roads and informal trails in this roadless area. Many are passable and kept open by illegal ATV traffic. These old roads and trails also receive a great deal of foot and ATV traffic, primarily during hunting season.

The Appalachian National Scenic Trail is the only Forest Development Trail (FDT 1) found within the roadless area. The trail winds its way in a northerly direction from FDR 222 where it connects with Chestnut Ridge, then follows Chestnut Ridge in a northeasterly direction, a distance of approximately 4.7 miles. Total maintained trail mileage is 4.7 miles.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the Beartown Wilderness Addition B roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone and shale with parallel drainages interspersed with shale valleys. Minor amounts of limestone are interbedded with the sandstone on the upper slopes. Included in this area are Chestnut Ridge and Clinch Mountain. Slopes vary from very steep on sideslopes to gentle near the larger drainages. Drainage density is generally high in this area. The headwaters of several tributary drainages are located within the roadless area that flow into Lick Creek and Laurel Creek, both major streams. Elevations range from approximately 2320 feet at a point along the southern boundary to 4400 feet at a point on Chestnut Knob along the

**BEARTOWN
WILDERNESS
ADDITION B**

Bland and Tazewell County line. The soils at the highest elevations are considered to have a frigid temperature regime. This means soil temperatures are cooler and growing seasons shorter at these higher elevations. Because of these cooler temperatures, the soils typically have thicker organic surface layers than soils at the lower elevations.

Vegetation is mainly broadleaf deciduous species with some yellow pine. Approximately 35 percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 65 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

CURRENT USE

The area is primarily used for dispersed recreation activities such as hunting and hiking. Dispersed camping, associated with hunting, is also popular adjacent to FDR 222 and several spots along Forest Service Road 631. An informal, unimproved trailhead and parking area is located on the west side of the Roaring Fork and FDR 886 intersection. The Appalachian National Scenic Trail receives a high amount of use. Associated with this trail is an over-flow parking lot located within the roadless area approximately 200 feet west of where the Appalachian Trail crosses FDR 222. Approximately 56 percent, or 1,818 acres, of the area is classified as suitable for timber production. There are five special use permit authorizations in the area, including four waterline permits and one road use permit. The waterline permits involve spring boxes and tubes running from Laurel Branch to cabins on private property adjacent to the area. The road permit allows access across National Forest land to private property. The Forest Service and Virginia Department of Transportation periodically acquire shale, for road maintenance purposes, from several existing shale pits adjacent to FDR 222 within the roadless area. There are 671 acres of privately owned (outstanding or reserved) mineral rights underlying Federal surface ownership.

Illegal ATV use is widespread within the roadless area.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 0.17 miles of improved, 1.0 miles of unimproved road, 4.7 miles of maintained trail, and numerous old roads and informal trails in the roadless area are visually evident and influence ecological processes, as a minimum, in the vicinity of the roads and trails. Most of the area was cut over and frequently burned in the late 1800's and early 1900's. The predominant age range for timber in the area is 21 to 100 years, which represents approximately 69 percent of the area. The area has 307 acres of possible inventoried old growth.

While some of the old logging roads and informal trails were seeded years ago, or are naturally regenerating and closing in, some remain open through frequent illegal ATV traffic.

Featured species for the area is approximately 67 percent turkey and 33 percent bear. The roadless area contains wildlife openings, totaling approximately 152 acres, located primarily along Chestnut Ridge. These openings are maintained and kept open by the Forest Service, with support from the Virginia Department of Game and Inland Fisheries, Appalachian Trail Conference and Piedmont Appalachian Trail Hikers, mainly through the

application of prescribed fire. Two artificial waterholes have been created for wildlife use within the area. While these waterholes may disturb the natural ecological processes of the area, they also enhance wildlife populations and are gaining an increasingly natural appearance over time.

The Chestnut Knob trail shelter and associated privy, located adjacent to the Appalachian National Scenic Trail at the northeast end of the roadless area, is a maintained rock constructed shelter with a tin roof. An old homesite is located about midway along Chestnut Ridge, which still has the foundation of an old springhouse intact, along with a small pond. Near this homesite are several old fencerows, which continue to deteriorate over time.

Many hunting cabins are located on private property adjacent to FDR 886 and VA 625.

The shale borrow pits and the over-flow Appalachian Trail trailhead parking lot, situated on the north side of FDR 222, are readily evident.

The roadless area is bounded to the north by Beartown Wilderness, to the west by private land, a combination of private and federal ownership to the south, and a combination of private land and the Garden Mountain roadless area to the east.

KEY ATTRACTIONS

The area is extremely popular with hunters, particularly during bear and deer seasons. Trout fishing is also popular in the general area. Local streams offer anglers the opportunity to fish for stocked and/or wild trout. The Appalachian National Scenic Trail is a key attraction to the area and offers good views all along Chestnut Ridge and the view of Burkes Garden, to the northeast of Chestnut Knob, is impressive. No Federally listed threatened, endangered, or sensitive are known to exist within the area.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is somewhat affected by outside forces. Much of the Beartown Wilderness Addition B roadless area appears to be natural but there are signs of disturbance. There are 0.17 miles of improved road, 1.0 miles of unimproved road, 4.7 miles of maintained trail, and an estimated 10 to 16 miles of old logging roads and informal trails in the area. If this roadless area becomes an addition to the Beartown Wilderness, the unimproved road would be in wilderness and removed from the Forest's transportation system. The improved road, which accesses the 49-acre private inholding, would remain open. The native stone and tin roofed trail shelter, and associated privy, on Chestnut Knob is located in an open, grassed area near the Beartown Wilderness boundary. Maintenance of these facilities is expected to continue regardless of the future designation of the Beartown Wilderness Addition B roadless area. There is a 33 acre private inholding, and associated access road off of FDR 222, in the south central portion of the roadless area. The inholding contains two cabins.

The extensive system of wildlife openings along Chestnut Ridge affects natural ecological processes by breaking up what would otherwise be continuous forest canopy. This favors some wildlife species and offers excellent views for recreationists.

There are five authorized special use permits in the area. These involve four spring boxes and tubes diverting water from Laurel Branch to cabins on private property just beyond the boundary of the roadless area, and one road use permit. The degree to which the water diversion is affecting ecological processes and conditions of Laurel Branch and the surrounding area is unknown.

**BEARTOWN
WILDERNESS
ADDITION B**

Illegal ATV use is a recurrent concern in and around the roadless area, which influences ecological processes, as a minimum, in the vicinity of the illegal use. No timber has been harvested from the area in the past twenty years. There is evidence of past manganese mining in the area; however, these areas are being reclaimed naturally and are not easily recognized by the casual observer.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Beartown Wilderness Addition B roadless area is 3,396 acres in size of which 3,358 acres are within the proclaimed boundary of the Jefferson National Forest. The remaining 38 acres are outside the proclamation boundary. These acres were purchased by the National Park Service for the benefit of the Appalachian National Scenic Trail and are managed by the Forest Service under a Memorandum of Understanding. There is a 33 acre private inholding located within the proclamation boundary. The roadless area is a proposed addition to the 5,609 acre Beartown Wilderness. Elevations range from approximately 2,320 feet at a point along the southern boundary to 4,400 feet at a point on Chestnut Knob along the Bland and Tazewell County line. A solitude core area of 1,574 acres exists in the north, central, and eastern portions of the roadless area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The ratio of core acres of solitude to the roadless area is approximately 49 percent, of which 217 acres are Semi-Primitive Motorized and 1,357 acres are Semi-Primitive Non-Motorized. If this roadless area were added to the existing wilderness, the core area size would represent a much higher percentage. Visitor use to this area is high during the spring and fall hunting seasons and light during the rest of the year, except that use of the Appalachian National Scenic Trail is moderate to high year-round. When combined with the existing wilderness, visitors feel like they are in an unconfined, natural area, particularly when away from roads and informal trails. Areas along the western, southern, and eastern boundaries of the roadless area may be impacted from noises associated with VA 625, FDR's 222, and P4 and unimproved FDR 631, activities on adjoining private land, and illegal ATV traffic which may reduce the feeling of solitude and isolation. The area is heavily influenced by the activities on the patchwork of private land along the lower reaches of the area. The entire roadless area is on the south side of Chestnut Ridge with no significant ridge or mountain along the southern boundary to shield the visitor from noises and sights associated with roads or private land. Opportunities for solitude may be limited to the central portion of the roadless area.

Much of the terrain in this roadless area is steep and rugged, offering the off-trail hiker/hunter good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads and trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Beartown Wilderness Addition B roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hunting, off-trail hiking, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Beartown Wilderness Addition B roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (3,396 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbour's Creek, and Shawvers Run. Within the southern Appalachians,

11 wildernesses and 43 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridgetops while shale is found in the valleys and lower slopes. This roadless area lies on the outer flank of an unusual geologic feature: Burkes Garden, a dome shaped geologic structure. Over geologic time, the top of the dome has been breached (eroded) such that only the steep sides of the original arch of rocks are present today. The valley floor within Burkes Garden is composed of older limestone rocks, which were once deep within the core of the dome but are now exposed at the surface. Along the northeast edge of this roadless area, the Appalachian National Scenic Trail follows the rim on the southern part of Burkes Garden and offers a view across the great bowl of Burkes Garden. Burkes Garden is a classic, textbook geologic feature.

Examples of Arthropycus, the remains of ancient worm burrows or feeding trails, may be observed on some of the gray sandstones along the Appalachian Trail. They look like long, finger shaped branches that occur on the flat bedding surfaces of the rock.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The area's relief and moderately dissected topography creates a wide range of ecological types from hot, dry windswept ridgetops to cool, moist, protected coves.

The vast majority of the area, approximately 76 percent, is in the Dry Mesic Oak ecological community type. Fifteen percent is in the Mixed and Western Mesophytic type, four percent Northern Hardwood type, and the remainder is a mix of the Conifer-Northern Hardwood, Dry and Dry-Mesic Oak-Pine, and Other Minor types.

The area contains 307 acres of possible inventoried old growth. The ecological community types represented are: 4 acres Dry and Dry-Mesic Oak-Pine (4 acres suitable) which represents less than one percent of the Forest's total, 266 acres Dry Mesic Oak (73 acres suitable) which represents one percent of the Forest's total, and 37 acres Mixed and Western Mesophytic (37 acres suitable) which represents one percent of the Forest's total.

Remnants of an old homesite are still evident adjacent to the Appalachian National Scenic Trail along Chestnut Ridge. The maintained wildlife openings along the crest of Chestnut Ridge give the appearance of a high elevation western setting.

Approximately 82 percent of the area is classified as having high existing scenic integrity.

The Beartown Wilderness Addition B roadless area is bounded on the east by the Garden Mountain roadless area, Beartown Wilderness to the north, and Beartown Wilderness Addition A roadless area is nearby to the west.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Beartown Wilderness Addition B roadless area, when combined with the existing Beartown Wilderness, makes its preservation as potential wilderness practical. The northern boundary of the roadless area adjoins Beartown Wilderness. The remaining boundaries follow property boundary lines and roads. Although surrounding private lands contrast dramatically with the area, the effects are limited to the periphery along the boundary of the roadless area. There are many hunting cabins located on private lands along FDR 222 and in the vicinity of FDR P4. In several locations along Chestnut Ridge, the visitor would be able to view rural landscapes at a distance. Private land along the southern and eastern boundaries does have the potential to impact wilderness attributes. The extreme western portion of the roadless area would be more difficult to manage as wilderness due to the proximity of cabins and activities on the

**BEARTOWN
WILDERNESS
ADDITION B**

surrounding private land. There are 671 acres of privately owned mineral rights within the roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Most of the boundary follows features such as roads and property line boundaries. The northern boundary adjoins the existing Beartown Wilderness. The eastern boundary adjoins a portion of the Garden Mountain roadless area and large tracts of private land. The southern boundary generally follows FDR 222 and VA 625. An offset from these roads would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the roads (brush clearing, grading, culvert installation and cleaning, gravel placement, etc.). An offset of 300 feet from the centerline of the roads is recommended. The eastern, northwestern, and portions of the southern boundary, would be more difficult to manage as wilderness due to the proximity of activities on surrounding private land.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There is one developed recreation site within this roadless area. The Chestnut Mountain Trail Shelter is a maintained facility that receives a high level of use nearly year-round. The Appalachian National Scenic Trail attracts a high level of use from hikers. Hunting, dispersed camping, fishing, and illegal ATV use are the largest recreation attractions to the area. Burkes Garden, a popular tourist attraction, is located northeast of the roadless area. If this roadless area is designated a wilderness, FDR 631, a primary access point for hunters into the area, would be decommissioned.

WILDLIFE

The Beartown Wilderness Addition B roadless area provides habitat for a diversity of wildlife species. The featured species is 67 percent turkey and 33 percent bear. If this roadless area becomes a designated wilderness, active maintenance of the wildlife openings on Chestnut Ridge would be discontinued. The result would be a substantial reduction in habitat for early successional species, in addition to a loss in the scenic views of Burkes Garden as seen from the ridge. Maintenance of the two artificial wildlife waterholes would also cease.

WATER AVAILABILITY AND USE

The headwaters of several tributary drainages are located within the roadless area that flow into Lick Creek and Laurel Creek, both major streams. Several of these unnamed tributaries support wild trout. There are four special use permit authorizations for spring boxes and waterlines from Laurel Branch to cabins on private property just beyond the boundary of the roadless area. The effects of these special uses on Laurel Branch are not known; however, there appears to be no water storage needs in the area. It could be expected that these special use authorizations would continue if this area becomes designated wilderness. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

d-f. Livestock, Timber, and Minerals: There are no livestock operations or potential for such operations. Approximately 56 percent of the area, or 1,818 acres, is classified as suitable for timber production. In the past 20 years, no timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 1,818 acres of suitable lands within this roadless area represents approximately 0.6 percent of all lands suitable for timber production on the Jefferson National Forest. Private subsurface minerals ownership is

held on 671 acres within this area. No Federal oil and gas leases or other Federal mineral leases are in effect in this area as of October 1999. The potential for energy minerals, primarily natural gas, is estimated to be low to moderate. This area was leased under a Federal oil and gas lease in the 1980's. No oil or gas wells were drilled and the Federal lease expired. The potential for other Federal leasable minerals, including metallic minerals, is estimated to be low. Use of the shale borrow pits adjacent to FDR 222 would no longer be used if this area is designated a wilderness, unless a boundary adjustment is made as recommended in Section 2.f.

CULTURAL RESOURCES

No project specific cultural resource surveys have occurred within the roadless area as of March 1998. However, one historic and one prehistoric site are known to exist. No documentation is currently available for these sites.

LAND USES

There are five authorized special uses within the area, which include four waterline/springbox authorizations and one road use authorization to access a private inholding. All current authorizations would be expected to continue as long as the permittees comply with the terms of the authorizations. No new authorizations would likely be approved.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands over portions of the northern, eastern, and southern perimeters. Wilderness designation may limit options for containing fires on private and/or federal lands. The Beartown Wilderness Addition B roadless area is expected to be in the generally infested area for Gypsy moth in the next ten to twenty years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 77 percent of the area is composed of the Dry Mesic Oak type and Dry and Dry-Mesic Oak-Pine forest types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

BEAVERDAM CREEK

BEAVERDAM CREEK

ID NUMBER: 04014

Overview

* Cherokee National Forest - 5,130 acres,
Jefferson National Forest - 1,133 acres

Surface Ownership	Acres
Forest Service*	6,263
Private	0
Park Service	0
TOTAL	6,263

LOCATION AND VICINITY

Beaverdam Creek roadless area is located on the Cherokee National Forest, Watauga Ranger District, Sullivan and Johnson Counties, Tennessee and the Jefferson National Forest, Mount Rogers National Recreation Area, Washington County, Virginia. The area is generally bounded by private land to the west, Forest Development Road (FDR) 32 to the north, private land, utility lines, and Beaverdam Creek to the east, and drains (Dark Hollow) and (Rockhouse Run) to the west and south. The area is found within U.S.G.S. Tennessee - Virginia Quadrangles Shady Valley, Laurel Bloomery, and Damascus. FDR 32 provides major vehicle access to the north and Virginia Highway 716 and Tennessee Highway 133 to the east. There are three improved roads (FDR 60833 - .15 mile, FDR 60851 - 2.69 mile, and FDR 60852 - .09 mile) within the roadless area. There are also three trails found within the area, the Appalachian National Scenic Trail (FDT 1) for 5.8 miles, Backbone Rock Trail (FDT 53) for 2.4 miles, and Tennessee Trail (FDT 4561) for .9 mile.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

This area lies in the Central Appalachian Forest-Meadow province of the Southern Appalachian Mountains. Landform consists of mountain peaks and ranges separated by intermountain basins. Beaverdam Creek is a mountain ridge (Holston Mountain) divided by a series of small, steep sideslope drains. Elevation ranges approximately from 2000' at Beaverdam Creek to 3808' at Haunted, a ridgetop benchmark along the Appalachian Trail. Soils are Dystrochrepts, Kanhapludults, and Hapludults with mixed kaolinitic and micaeous mineralogy with mesic temperature and udic moisture regimes. Vegetation is composed of mainly broadleaf deciduous species (white and scarlet oaks) with mixed mesophytic species and yellow poplar at low elevations, with pitch pine on drier and disturbed sites, and chestnut oak and northern red oak at moderate elevations. This area has been further classified as being in the Southern Blue Ridge Mountains subsection of the Blue Ridge Mountains section ecological unit classification.

CURRENT USE

The area is primarily used for dispersed recreation activities such as hunting and hiking the Appalachian National Scenic Trail. A timber sale was recently completed with 366 acres in the 0-10 year age class. There are also two wildlife openings being maintained, one near Haunted Hollow at approximately 3 acres in size and a quarter acre opening near Dark Hollow.

APPEARANCE OF THE AREA AND SURROUNDING CHARACTERISTICS OF CONTIGUOUS AREAS

With the exception of the recent timber sale (366 acres), the two wildlife openings (3.25 acres), and 2.93 miles of improved road, the majority of the area has a natural appearance. Although most of the area was timbered in the past, few obvious signs remain and those are disappearing into forest growth. The surrounding land to the north and east contrasts dramatically with the area as roads are paved state highways; utility corridors adjoin the roadless boundary, and development is beginning to occur on private land. Backbone Rock, a Forest Service developed recreation area, adjoins the roadless area to the east, on Tennessee Highway 133.

KEY ATTRACTIONS**BEAVERDAM
CREEK**

Those acres identified on the Jefferson National Forest are part of the Mount Rogers National Recreation Area. The Appalachian National Scenic Trail bisects the roadless area literally in half as it traverses the crest of Holston Mountain.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area and the area is minimally affected by outside forces. Beaverdam Creek roadless area appears to be natural but there are signs of recent disturbance. There are 366 acres of 0-10 age classes (less than 6%) within this roadless area. There are two maintained wildlife opening present (3.25 acres). There are 2.93 miles of maintained improved road within the area and 9.1 miles of maintained trail.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

Beaverdam Creek Roadless area is 6,202 acres in size and is located entirely on National Forest land. Beaverdam Creek is a mountain ridge (Holston Mountain) divided by a series of steep sideslope drains. Elevation ranges from 2200' at the drains to 3800' along the ridge crest. A solitude core area of 3,036 acres exists in a center block that generally follows the roadless area boundary. The relationship of core acres of solitude to the roadless area is approximately 49 percent. There are three improved roads (2.93 total miles) located within the roadless area. There are three trails within the roadless area (9.1 miles). Visitor use for the most part is light with small group sizes. Visitors feel like that they are in an unconfined, natural area. Noise from the surrounding lands can be heard along the periphery (state highways, private land, Backbone Rock recreation area, etc.) of the roadless area. Noise impacts and the reduced feeling of solitude and isolation are also felt when the improved roads within the area are being used for Forest Service activities.

It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one will become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from the improved road and trails. Within the area, there are some vestiges of isolated, scattered pockets of forest primeval but there is a degree of evidence of human impact. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Beaverdam Creek roadless area does present a range of dispersed recreational activities of which are typically found on the Cherokee National Forest as a whole. Activities such as hiking, hunting, fishing, Appalachian Trail thru hiking, and primitive camping, are present in the area. d. Beaverdam Creek is in the Southern Blue Ridge Mountain subsection of the Blue Ridge Mountain ecosystem section (6,202 acres). This ecosystem subsection and section is represented by the following wildernesses on the Cherokee National Forest: Big Laurel Branch, Pond Mountain, and Unaka Mountain (17,757 acres).

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Beaverdam Creek roadless area contains a diversity of geologic features that are typical of the Southern Appalachian Mountains that draw people to the area to experience the scenic views.

Geologic rock types of this area consist of the Erwin Formation (White, vitreous quartzite, massive, with interbeds of dark-green silty and sandy shale, minor siltstones and very fine sandstone); Hampton Formation (Dark greenish-gray, silty and sandy shale, micaceous

**BEAVERDAM
CREEK**

shale; numerous layers of medium-grained, feldspathic, thinly bedded sandstone); Unicoi Formation (Sequence of gray feldspathic sandstone, arkose, conglomerate, graywacke, siltstone and shale; greenish amygdaloidal basalt flows) and Shady Dolomite (Light-gray, well-bedded dolomite with thin-to medium-bedded gray limestone; yellowish-brown residual clays with "jasperoid" diagnostic).

There are no designated Research Natural Areas or Experimental Forests with the roadless area. There are 76 acres of Table Mountain Pine, a unique vegetation community that may have the potential to contribute to scientific or educational value in the future. In addition, Fritzs Breathing (Lowes) Cave is on the periphery of its protection area (approximately one acre) within this roadless area. Carolina saxifrage (*Saxifraga caroliniana*), a sensitive plant species has been identified as occurring in the roadless area.

Approximately 35% of the area is in the Mixed Mesophytic ecological community type. Another 28% is estimated in the Dry-Mesic Oak type, 18% in the Dry and Xeric Oak type and the remaining in miscellaneous community types.

No possible old growth has been identified in this roadless area. Approximately 4,723 acres (92%) are in the late forest successional type. Another 208 acres have been identified in the mid-successional forest type.

Beaverdam Creek roadless area has approximately 35 acres classified as Scenic Attractiveness Class A - Distinctive. These acres were identified as foreground along major streams in the area.

SIZE, SHAPE, AND MANAGEABILITY

As described previously, the size and shape of Beaverdam Creek roadless area makes its preservation as potential wilderness practical. The boundary follows topographic features, property boundary lines, and human improvements such as roads and utility lines. Although surrounding lands contrast dramatically with the area, the effects are limited to the periphery along the boundary of the roadless area and as such, any activity that does occur would not dominate the user's wilderness experience. High ridges and distance are more likely to limit the sights and sounds of civilization than the actual boundaries. The private land near the western boundary does have the potential to impact wilderness attributes but the surrounding steep ridges and side drains will buffer the magnitude of the potential impacts.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

The boundary follows obvious human made features such as roads and property line boundaries as well as natural features such as ridges and creeks. An offset from the boundary roads such as FDR 32 would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, gravel placement, road alignment, etc.). An offset of approximately 300 feet from the centerline of existing roads is recommended. Along the east side of the roadless area, the boundary meanders back and forth between Highway 133, Beaverdam Creek and the private property line. An offset of 300 feet is recommended for Highway 133. The mean high water mark on the west bank of Beaverdam Creek is recommended for use as the roadless area boundary. Just north of the Backbone Rock recreation area, the boundary follows the property line and not Beaverdam Creek. Areas to be excluded in the roadless area include the Backbone Rock recreation area and the Backbone Rock trailhead parking lot.

Wilderness Availability**BEAVERDAM
CREEK****RECREATION, INCLUDING TOURISM**

There are no developed recreation sites within this roadless area. There is one National Forest Recreation Survey Site (NFRS site 139.0 - 21 acres) that is located within the roadless area. This is a general occupancy site but there are no immediate plans to develop this site. Wilderness designation would prohibit development of this site. The Appalachian National Scenic Trail traverses through the area as do two other trails (see Overview).

Acres on the Jefferson National Forest are within the Mount Rogers National Recreation Area.

WATER AVAILABILITY AND USE

Holston Mountain divides this roadless area into a northern portion with small, headwater streams draining northerly to the South Fork Holston River and a southern portion with small, headwater streams draining southerly to Beaverdam Creek. Beaverdam Creek is a tributary stream of the South Fork Holston River. There are no known water storage needs or any existing special use water permits. Water quality should remain at its current level whether or not the area is designated wilderness. Mitigation measures for ground-disturbing activities in non-wilderness areas should minimize adverse impacts on water quality. Ground disturbing activities in wilderness are held to a minimum.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations.

Approximately 40 percent or 2,499 acres of the Beaverdam Creek roadless area is classified as suitable for timber production. In the last 10 years, approximately 366 acres of timber have been harvested. Timber harvest and the associated production of wood products from this area would be precluded by wilderness designation. This amounts to less than 1 percent of the lands suitable for timber production on the Cherokee National Forest.

Hard rock mineral production is low and unlikely at the present time. All mineral rights are in federal ownership. No oil and gas leases have been issued within the roadless area as discovery for these natural resources are low and unlikely.

CULTURAL RESOURCES

The Beaverdam Creek roadless area has been partially surveyed and contains seven identified cultural resource sites. These have been classified as Class II sites, which require additional evaluation to determine if they are eligible for listing in the National Register of Historic Places (pursuant to 36 CFR 60). It also contains an additional three sites that have been classified as Class III sites. All Class III sites are not eligible for listing in the National Register of Historic Places.

LAND USES

No special use permits have been issued for lands in the area.

No private lands would be affected if the area were designated as wilderness.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

**BEAVERDAM
CREEK**

Present fire control techniques are not expected to be impacted substantially if the area became designated wilderness. Since 1985, only one wildfire totaling 60 acres has occurred within the area.

There are 1,522 acres of oak decline damaged stands and 1,002 acres of oak host type ranked as vulnerable. Without active management, the trend would be to see more vulnerable stands affected by oak decline and mortality rates to increase with time. However, the acres within the suitable land base (which relates to active management) are 375 acres of oak declined damaged stands and 278 acres of oak host type ranked as vulnerable.

The north end of the Cherokee National Forest is expected to be in the generally infested area for Gypsy moth in the next ten years. Mortality in already stressed stands can be severe (up to 25-30%) following a first defoliation. Oaks are preferred hosts and it can be expected that those acres analyzed for oak decline would be at increased risk of mortality following defoliation.

There are a total of 130 acres of southern yellow pine types greater than 70 years of age at a moderate to high risk of southern pine beetle attack. No additional acres will be at a moderate to high risk within the next ten years. However, the acres within the suitable land base are currently 54 acres at a moderate to high risk.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

BROAD RUN

ID NUMBER: 14508

BROAD RUN

Overview

LOCATION, VICINITY, AND ACCESS

Broad Run roadless area is located on the Jefferson national Forest, New Castle Ranger District, Botetourt and Craig Counties, Virginia. The area is bounded by private land to the northwest and southeast, a powerline and Forest Development Road (FDR) 183 to the southwest, and VA 606 to the northeast. The area is found within portions of the U.S.G.S. Virginia Quadrangles New Castle, Oriskany, Daleville, and Catawba. Major vehicular access is provided by VA 606 in the northeast corner, FDR 183 in the southwest corner, and FDR 5026 and 5027 along the western end of the area.

Surface Ownership	Acres
Forest Service	10,965
Private	0
Park Service	0
TOTAL	10,965

There are four improved roads within the area. FDR 5012 enters the area from the northeast off of VA 606 and is open to a gate at 0.3 miles before it continues westward for an additional 2.34 miles. FDR 5012A is a 0.2 mile spur road off of FDR 5012. FDR 5027A enters the area from the west off of FDR 5027 and is 0.04 miles in length. This road has 0.11 miles of right-of-way across private land to access the roadless area. FDR 5061 enters the area from the east off of VA 666. FDR 5061 is open to a gate and parking lot at 0.9 miles. After the gate, the road becomes unimproved FDR 5061 and Forest Development Trail (FDT) 5011. Total improved road mileage is 3.78 miles.

There are two unimproved roads within the area: FDR 5061 - 1.40 miles, and FDR 50971 - 0.6 miles. FDR 50971 enters the area from the southeast off of FDR 183. This road is gated but is occasionally opened to allow group camping. Total unimproved road mileage is 2.0 miles.

Four Forest Development Trails (FDT) access the area, several of which provide loop trail opportunities. The Ferrier Trail (FDT 189) is 2.5 miles in length and runs from FDR 182 and ties into the Lick Branch Trail (FDT 262). Lick Branch is 4.9 miles in length and begins at the terminus of FDR 5026 and ties into the Price-Broad Mountain Trail (FDT 334). Price-Broad Mountain Trail follows the mountain crest through the area for 4.4 miles. All three trails are designated for foot and horseback riding traffic and receive a low amount of use. The Lees Creek Trail (FDT 5011) is designated for horseback riding and traverses between FDR 5061 and 50971, a distance of 2.8 miles. This trail also receives a low amount of use.

There are several “old woods” roads in the area that being kept open by illegal ATV traffic, particularly along the northern end of the area near several private hunting camps.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, this area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone or shale with parallel drainages with broad limestone valleys. Included in this area are Lick, Broad Run, and Caldwell Mountains with a series of small, steep sideslope drainages. Elevation ranges from approximately 1240 feet at Rolands Run Branch in the northwest portion of the area to 2964 feet at a point along the crest of Broad Run Mountain.

Vegetation is mainly broadleaf deciduous species. Approximately 12 percent of the area has a site index of 70 or above indicating moderate to high productivity for tree growth.

BROAD RUN

These areas occur in colluvial drainages, toeslopes, or along alluvial floodplains of small to medium sized streams. Here yellow poplar, northern red oak, white oak, basswood, cucumber tree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 88 percent of the area has a site index of 60 or below, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak and yellow pine occur on ridgetops and exposed south and east midslope aspects, with yellow pine occurring on the driest sites.

Approximately 75 percent of the area is underlain by Silurian-aged sandstone, and 25 percent is underlain by Braillier and Martinsburg shale. Ridgetop and sideslope soils consist primarily of moderately deep, loamy-skeletal Typic Dystrochrepts (Dekalb and Berks series). Footslopes and benches are often Typic Fragiudults (Laidig series) or other more productive colluvial Hapludults. Drainages contain deep loamy-skeletal Typic-Hapludults and Dystrochrepts formed in colluvium from sandstone (Oriskany and Sherando series) or shale (Shelocta series).

CURRENT USE

The area is primarily used for dispersed recreation activities along the four developed trails, as well as hunting and illegal ATV use. Approximately 18 percent, or 1,931 acres, is classified suitable for timber production

within the area. There are approximately four acres of maintained wildlife clearings. The area receives training flyovers from US military aircraft. All minerals are owned by the U.S. A.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 3.78 miles of improved road, 2.0 miles of unimproved road, and 14.6 miles of maintained trail in the roadless area are visually evident and influence ecological processes, as a minimum, in the vicinity of the roads and trails. Many old access roads and logging roads still exist and are evident; however, lack of maintenance and use is allowing some of them to become overgrown and regain a more natural appearance. Other old roads are being kept open by frequent illegal ATV traffic, particularly in the northern end of the area.

Most of the area was cut over and frequently burned in the late 1800's and early 1900's. Approximately 84 percent of the area is in the 21-100 year old age class, 9 percent is in the 101 plus years age class, two percent is in the 11-20 year class, and one percent is in the 0-10 year age class.

There is an abandoned powerline running northwest to southeast in the middle of the area for a distance of 3.3 miles. A buried telephone line and gas line exist parallel to FDR 183 along the southwestern edge of the area. These utility lines access nearby private land that has several year-round homes on it.

KEY ATTRACTIONS

The area is very popular with hunters. There are several private hunting camps adjacent the northern boundary. No federally listed endangered, threatened or sensitive species are known to occur in the area.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within

BROAD RUN

the area and the area has somewhat been affected by outside forces in the recent past. Broad Run roadless area appears to be natural but there are signs of recent disturbance. There are 90 acres of 0-10 year age class and 262 acres of 11-20 year age class timber, and approximately four acres of maintained wildlife openings within the area. There are also 3.78 miles of improved road, 2.0 miles of unimproved road, and four maintained trails totaling 14.6 miles within the area.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Broad Run roadless area is 10,964 acres in size and is located entirely on National Forest land. Landform consists of the ridgetops of Lick Mountain, Broad Run Mountain, and Caldwell Mountain divided by a series of sideslope drainages. A number of larger drainages separate these ridges. These are Lick Branch, Rolands Run Branch, Stone Coal Creek and Lees Creek. Elevations range from 1,240 feet at Rolands Run Branch in the northwest section of the area to 2,964 feet at a point along the crest of Broad Run Mountain. A solitude core area of 4,088 acres exists in a center block area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The proportion of core acres of solitude to the roadless area is approximately 37 percent. There are four improved roads (3.78 miles) and two unimproved roads (2.0 miles), and four maintained trails (14.6 miles) located within the area. Visitor use, for the most part, is light with small group sizes. Visitors feel like they are in an unconfined, natural area. Noise from the surrounding lands can be heard around the periphery (state highways, private land, Camp Easter Seal, Town of New Castle, etc.) of the roadless area. Noise impacts and the reduced feeling of solitude and isolation are also felt when traffic occurs along the improved roads within the area and from noises associated from routine US military training flight flyovers.

It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from improved trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

The Broad Run roadless area does present a range of dispersed recreational activities of which are typically found on the Jefferson National Forest. Activities such as hunting, hiking, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Broad Run is in the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section. This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Shawvers Run, Barbours Creek, Peters Mountain, Mountain Lake, Kimberling Creek, and Beartown. Within the Southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Barbours Creek Wilderness is the closest existing wilderness to this roadless area and is located approximately 7.0 air miles to the west.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridge tops. Shale and limestone are the bedrock on the lower slopes.

There are no designated Research Natural Areas or Experimental Forests within the

BROAD RUN

roadless area.

Approximately 46 percent of the area is in the Dry/Dry-Mesic Oak-Pine ecological community type, 35 percent is in the Dry Mesic Oak, and 16 percent is in the Xeric Pine/Pine-Oak type. The Mixed and Western Mesophytic type comprises three percent of the area and the Conifer-Northern Hardwood type represents less than one percent of the area.

There are 277 acres of inventoried possible old growth in this roadless area. The ecological community types represented are: 121 acres Dry/Dry-Mesic Oak-Pine which represents 2.5 percent of the Forest's total, 71 acres Dry Mesic Oak, representing 25 percent of the forest's total, 64 acres Xeric Pine/Pine-Oak which represents 7 percent of the Forest's total, and 21 acres of Conifer/Northern Hardwood, representing 4.2 percent of the forest's total. There are no suitable acres of possible old growth.

There are no known federally listed threatened, endangered, or sensitive species within this roadless area.

Approximately 82 percent of this area is classified as having High Scenic Integrity while nine percent is classified as having Unacceptably Low Scenic Integrity. There are 35 acres within this area classified as "A" Scenic Attractiveness.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of this roadless area makes its preservation as potential wilderness practical. Most of the boundary follows topographic features such as property boundary lines and human improvements such as roads. Surrounding lands are mostly National Forest, except for private land to the north and southeast. Directly northeast of this roadless area is the Price Mountain roadless area. Only VA 606 separates the two areas. There is also a private inholding with houses located just south of this roadless area adjacent to FDR 183.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Most of the boundary follows human made features such as roads, powerlines, and property line boundaries, as well as natural features such as ridges and streams. An offset from boundary roads, such as VA 606, would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, gravel placement, paving, road alignment, etc.). An offset of approximately 300 feet from the centerline of existing roads would be recommended.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There are no developed recreation sites within this roadless area. Hunting is the largest recreation attraction for this area followed by hiking and horseback riding on the trails. The northern end of the area receives illegal ATV and 4WD activity from nearby private hunting camps.

WILDLIFE

The Broad Run roadless area provides habitat for diverse wildlife species. The featured species are 51 percent turkey, 48 percent deer, one percent bear, and less than one percent grouse. No threatened, endangered, or sensitive wildlife species are known to occur within this roadless area.

WATER AVAILABILITY AND USE**BROAD RUN**

Most of this roadless area drains into Craig Creek. The southeast quadrant drains into Catawba Creek. There are no known water storage needs or any existing special use water permit authorizations. Water quality should remain at its current level whether or not the area is designated wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 18 percent, or 1,931 acres, is classified as suitable for timber production. In the last 10 years, approximately 90 acres of timber has been harvested. Timber harvest and the associated production of wood products from this area would be precluded by wilderness designation. The 1,931 acres of suitable lands in this roadless area represent 18 percent of all lands suitable for timber production on the Jefferson National Forest. All minerals are owned by U.S.A. There are no federal oil or natural gas leases in the area.

CULTURAL RESOURCES

As of March, 1998, 617 acres of this roadless area have been surveyed for cultural resources. There are three inventoried transient camps and a hunting station within this roadless area. These camps are believed to have been in use prior to 1,000 B.C. There are also two historic sites involving a 19th century mining complex and colliers pit, and one multi-component historic and prehistoric site featuring a prehistoric transient camp and historic colliers pit.

This area exhibits a moderate to high potential for additional prehistoric and historic resources.

LAND USES

No special use permit authorizations have been issued for lands in this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Fire suppression would be primarily by hand tools. Use of motorized and mechanized transport and equipment such as ATV's, bulldozers, and chainsaws would be allowed only upon specific approval by the appropriate line officer. Thus, wildfires would likely attain larger sizes than under current management. Wilderness designation may limit options for containing fires. Gypsy moth infestations are in the vicinity of this roadless area right now. Mortality can be severe (up to 25-30 percent) and oaks are the preferred hosts. Approximately 81 percent of the area is composed of the Dry Mesic Oak and Dry/Dry Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chances that they may spread to other National Forest or private land.

Portions of this roadless area are occupied by near pure stands of table mountain pine and/or pitch pine forest types. These pine-dominated stands occur primarily on southeast to southwest facing ridges and slopes with dry, well-drained soils. Table mountain pine has serotinous cones that usually require significant heat in the tree canopy from fire to open the cones, thus allowing for seed dispersal and regeneration. Other oak dominated forest types that contain a component of these pine species also occupy a large portion of this roadless area. If this area was designated wilderness, the use of management ignited prescribed fire to manipulate these fire dependent ecosystems for restoration and maintenance would likely not be allowed. This will result in further declines in acreage and the open structure of these forest types along with the flora and fauna these

BROAD RUN ecosystems support.

BRUSH MOUNTAIN **Need**

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

BRUSH MOUNTAIN ROADLESS AREA

ID NUMBER: 14108

Overview

LOCATION, VICINITY, AND ACCESS

The Brush Mountain roadless area is located on the Jefferson National Forest, Blacksburg Ranger District, Montgomery and Craig Counties, Virginia. The area is situated on the northside of Brush Mountain, approximately 3.2 air miles north-northeast of Blacksburg, and is found within portions of U.S.G.S. Virginia Quadrangles Newport and McDonalds Mill. The area is approximately 10.6 miles in length and is generally bounded by Brush Mountain to the south, Craig Creek or private property to the north, and electric utility corridors to the west and east. Major vehicle access is provided by US 460 to VA 621 from the west and north and VA 778 and VA 806 to Forest Development Road (FDR) 188.1 from the west and south. FDR 188.1, an improved road, traverses the entire area and serves as the southern boundary of the area.

Surface Ownership	Acres
Forest Service	5,998
Private	0
Park Service	0
TOTAL	5,998

There are two improved roads within the area. FDR 10800 enters the area from VA 621 and runs 0.64 miles south into the area on the west side of Hazelnut Hollow. FDR 10800A, 0.1 miles in length, branches off of FDR 10800 and crosses over to the east side of Hazelnut Hollow. Total improved road mileage is 0.74 miles.

There are no unimproved roads or maintained forest development trails within the area. However, there are numerous old access and logging roads and informal trails throughout the area. Some have become overgrown and impassable to anything but foot traffic. Others are kept open by hikers and hunters.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the Brush Mountain roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone and shale with parallel drainages interspersed with broad limestone and shale valleys. Included in this area are Brush Mountain and, outside the area to the north, Sinking Creek Mountain. Slopes vary from very steep on sideslopes to nearly flat along Craig Creek. Drainage density is high. The area contains the headwaters of many tributaries that feed into Craig Creek. Elevation ranges from approximately 1660 feet adjacent to Craig Creek, near Sugar Bottom Hollow, to 3011 feet at a point along the crest of Brush Mountain adjacent to FDR 188.1 and the headwaters of Betsy Boating Hollow.

The roadless area is forested by eastern deciduous and coniferous species. Approximately 2 percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams, such as Craig Creek, where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, white pine, and red maple dominate the overstory. The remaining 98 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects.

Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites. The area also contains several of Virginia's few remaining pure stands of table mountain pine. This species requires fire to reproduce and is becoming increasingly uncommon within its natural range due to fire exclusion.

**BRUSH
MOUNTAIN**

CURRENT USE

The area is primarily used for dispersed recreation activities such as hunting and primitive camping associated with hunting. FDR 188.1 is a popular access point to the area for hunters and other recreationists. Management of this road has historically been controversial among the Forest Service, residents of the Preston Forest subdivision located adjacent to VA 806, and hunter groups. An agreement was reached in January 1998 to leave the road open. In return, a local hunter group will regularly collect and dispose of trash that accumulates along the road. Approximately 12 percent, or 748 acres, of the area are classified as suitable for timber production. Inventory data indicate no privately owned, outstanding or reserved, mineral rights underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 0.74 miles of improved road and some of the old access and logging roads and informal trails are visually evident and influence ecological processes, as a minimum, in the vicinity of the roads and trails. Some roads and trails are becoming overgrown and regaining a more natural appearance.

Most of the area was logged and frequently burned in the late 1800's and early 1900's. Approximately 59 percent of the timber is in the 21-100 year old age class, 20 percent is in the 101 plus years class, and less than one percent is in the 0-20 year old class. The area has 324 acres of possible inventoried old growth.

Featured species for the area is 97 percent turkey and three percent gray squirrel. There are no wildlife openings, recently seeded roads, or other wildlife habitat improvements within this roadless area.

The northern portion of the area is bounded by a mix of National Forest and private land along Craig Creek valley on the southside of VA 621. Private land in this valley is a combination of forest land, woodlots, farms, and residences. Electric power transmission lines form the western and eastern boundaries of the area. The eastern electric power transmission line is the boundary between the Brush Mountain roadless area and Brush Mountain East roadless area. Land adjacent to the southern boundary is dominated by private ownership with several inclusions of National Forest land. The Preston Forest subdivision, a residential area, is located adjacent to the southwestern corner of the area off of VA 806.

VA 621 has recently been widened and paved by the Virginia Department of Transportation in order to accommodate increased traffic and development on private lands adjacent to this road.

FDR 188.1, on the edge of the roadless area, has consistently been an area littered with trash, as well as a popular party spot. However, a local hunter group agreed in January 1998 to regularly clean up the trash and monitor the situation.

Mountain Lake Wilderness is located approximately 5.25 air miles north of the roadless area.

**BRUSH
MOUNTAIN****KEY ATTRACTIONS**

Activities associated with hunting and 4-wheel driving along FDR 188.1 are key attractions to the area. Caldwell Fields is a popular primitive camping area located adjacent to Craig Creek, just outside the roadless area boundary to the north. Sweet pinesap occurs within the area. This plant is listed as having a very rare occurrence globally and its occurrence in Virginia is listed as rare to very rare. No other federally listed threatened, endangered, or sensitive species are known to occur within the area.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area and the area is minimally affected by outside forces. Much of the Brush Mountain roadless area appears to be natural but there are signs of disturbance. The improved roads and some old access roads and informal trails are visually evident within the area. If this roadless area becomes wilderness, the improved roads would be in wilderness and removed from the Forest's transportation system. FDR 188.1 and the electric transmission lines, though outside the roadless area boundary, influence ecological processes around the periphery of the area. There are 13 acres of 0-10 year old age class timber within the area. The overall influence of human activities within the area is minimal, primarily due to the area's challenging topography. The influence of the wildland-urban interface continues to expand around the perimeter of the area. Traffic and development are increasing on adjacent private land.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Brush Mountain roadless area is 5,997 acres in size and is located entirely on National Forest land. The area is generally located on the northern sideslopes of Brush Mountain, between the crest of Brush Mountain and Craig Creek or private land to the north. The roadless area is approximately 10.6 miles in length from southwest to northeast and averages approximately 1.0 mile in width. Elevations range from approximately 1660 feet adjacent to Craig Creek to 3011 feet at a point along the crest of Brush Mountain. The area contains no solitude core area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. Visitor use of the area can be described as low to moderate in the northern portion of the area south of Craig Creek. This area receives most of its use during hunting season. Visitor use along the crest of Brush Mountain can be described as moderate to high, primarily during hunting season. The further one gets away from roads and the periphery of the area, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance. However, some areas may be impacted by noises and sights associated with traffic on US 460 at the western end of the area, other improved roads along the area's periphery, noises from the electric transmission lines, or activities from adjoining private land, which may reduce the feeling of solitude and isolation. Additionally, noises from a nearby Forest Service shooting range can be heard within the area on calm days and a portion of the area is within a flight path involving US military jets on low altitude flight training missions.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads and trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Brush Mountain roadless area does present a range of dispersed recreational activities,

which are typically found on the Jefferson National Forest. Activities such as hunting, primitive camping, and hiking are present in the area.

**BRUSH
MOUNTAIN**

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Brush Mountain roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (5,997 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbours Creek, and Shawvers Run. Within the southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by shale and sandstone. Sandstone is found on the upper slopes and ridgetops while shale is found on the lower slopes and in the valley.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The area's large relief and highly dissected topography creates a wide range of ecological types from hot, dry windswept ridgetops to moist, protected coves near Craig Creek. There are several stands of table mountain pine within the area, which offer opportunities for scientific and educational purposes. This pine requires fire in its ecosystem to stimulate reproduction and perpetuate the species. The sensitive plant, sweet pinesap also requires fire disturbance to maintain and enhance its population.

The majority of the area, approximately 44 percent, is in the Dry/Dry-Mesic Oak-Pine ecological community type. The Dry Mesic Oak type represents about 32 percent of the area while the Xeric Pine/Pine-Oak type represents 23 percent of the area. The Conifer/Northern Hardwood, and other minor ecological community types, represent less than one percent of the area.

There are 324 acres of inventoried possible old growth. The ecological community types represented are: 1 acre Conifer/Northern Hardwood (1 acre suitable) which represents 0.2 percent of the Forest's total, 235 acres Dry/Dry-Mesic Oak-Pine (0 acres suitable) which represents 4.9 percent of the Forest's total, 87 acres Dry Mesic Oak (33 acres suitable) which represents 0.3 percent of the Forest's total, and 1 acre Xeric Pine and Pine-Oak (0 acres suitable) which represents 0.1 percent of the Forest's total.

Approximately 88 percent of the area is classified as having high to very high existing scenic integrity.

The Mountain Lake Wilderness is located approximately 5.25 air miles north of the roadless area.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Brush Mountain roadless area makes its preservation as potential wilderness practical. Most of the boundary follows property lines, FDR 188.1, the south bank of Craig Creek, or electric utility corridors. The narrow, linear shape of the area would make administration of the area as wilderness somewhat of a challenge due to access. Although surrounding private lands contrast somewhat with the area, the effects are generally limited to the periphery along the boundary of the roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Forest Service boundary lines, FDR 188.1, the south bank of Craig Creek, and electric

**BRUSH
MOUNTAIN**

utility corridors delineate the entire area. An offset from FDR 188.1 and the utility corridors would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, etc.) or utility corridor maintenance. An offset of 100 feet from the centerline of FDR 188.1 and the edge of electric utility corridors is recommended.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There are no developed recreation sites within this roadless area. Hunting, dispersed camping, hiking, and 4-wheel driving along FDR 188.1 are the largest recreation attractions to the area. Fishing in Craig Creek is also popular with anglers. The population centers of Blacksburg and Christiansburg are located approximately 20-25 minutes away from the southwest corner of the area. There would be no impacts to current legal recreation uses within this roadless area if the area is designated a wilderness.

WILDLIFE

The Brush Mountain roadless area provides habitat for a diversity of wildlife species. Featured species of the area is 97 percent turkey and three percent gray squirrel. There are no wildlife habitat improvement projects within the area.

WATER AVAILABILITY AND USE

The roadless area contains the headwaters of many tributaries that feed into Craig Creek, a popular fishery. Craig Creek is a cool water stream with a poor to fair macroinvertebrate monitoring score. There are no known water shortage needs or any existing special use water permits. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 12 percent of the area, or 748 acres, is classified as suitable for timber production. In the past 20 years, 26 acres of timber have been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 748 acres of suitable lands within this roadless area represents approximately 0.2 percent of all lands suitable for timber production on the Jefferson National Forest. Private subsurface minerals ownership is held on 144 acres within this area. No Federal oil and gas leases are in effect in this area as of October 1999. The potential for energy minerals, primarily natural gas, is estimated to be low to moderate. The area was leased under a Federal oil and gas lease in the 1980's. No oil or gas wells were drilled and the Federal lease expired. The potential for other leasable minerals, including metallic minerals, is estimated to be low.

CULTURAL RESOURCES

Approximately 59 acres have been surveyed for cultural resources, as of March 1998, within the roadless area. No cultural resources have been identified. The remaining area exhibits a low to moderate potential for prehistoric and historic resources.

LAND USES

No special use permit authorizations have been issued within this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)**BRUSH
MOUNTAIN**

Present fire control techniques could be altered if this roadless area was designated wilderness. Fire suppression would be primarily by hand tools. Use of motorized and/or mechanized equipment and transport such as ATV's, bulldozers, and chainsaws would be allowed only upon specific approval by the appropriate line officer. Thus, wildfires would likely attain larger sizes than under current management. The roadless area is bounded by a combination of National Forest and private lands to the north and south. A large housing subdivision, Preston Forest, adjoins the southwestern portion of the area. Wilderness designation may limit options for containing fires on private and/or federal lands. The Brush Mountain roadless area is expected to be in the generally infested area for gypsy moth in the next five to ten years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 76 percent of the area is composed of the Dry Mesic Oak and Dry/Dry-Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

Portions of this roadless area are occupied by near pure stands of table mountain pine and/or pitch pine forest types. These pine-dominated stands occur primarily on southeast to southwest facing ridges and slopes with dry, well-drained soils. Table mountain pine has serotinous cones that usually require significant heat in the tree canopy from fire to open the cones, thus allowing for seed dispersal and regeneration. Other oak dominated forest types that contain a component of these pine species also occupy a large portion of this roadless area. If this area was designated wilderness, the use of management ignited prescribed fire to manipulate these fire dependent ecosystems for restoration and maintenance would likely not be allowed. This will result in further declines in acreage and the open structure of these forest types along with the flora and fauna these ecosystems support.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

BRUSH MOUNTAIN EAST

BRUSH MOUNTAIN EAST ROADLESS AREA

ID NUMBER: 14109

(AUDIE MURPHY MONUMENT)

Overview

LOCATION, VICINITY, AND ACCESS

The Brush Mountain East roadless area is located on the Jefferson National Forest, Blacksburg Ranger District, Craig, Roanoke, and Montgomery Counties, Virginia. The area is situated on the north and south slopes of Brush Mountain and is found within portions of U.S.G.S. Virginia Quadrangles McDonalds Mill, Glenvar, and Looney. The area is generally bounded by private land to the north, east and south. An electric utility line corridor, to the west, separates this roadless area from the Brush Mountain roadless area. A short segment of another utility line corridor delineates a portion of the eastern boundary of the area near VA 620. Major vehicle access is provided by VA 621 from the west and north, VA 624 to Forest Development Road (FDR) 188.1 from the west and south and VA 620 from the east. FDR 188.1, an improved road, serves as a portion of the southwestern boundary of the area.

Surface Ownership	Acres
Forest Service	4,912
Private	30
Park Service	0
TOTAL	4,942

There is one improved road within the area. FDR 188.3 intersects with FDR 188.1 on the crest of Brush Mountain and runs east for 0.91 miles to where the road is gated just beyond the end of a private 32 acre inholding. A small parking lot is located on the west side of the gate. Total improved road mileage is 0.91 miles.

FDR 188.3 becomes an unimproved road, east of the gated area, and runs 0.77 miles further along the crest of Brush Mountain before it terminates. Total unimproved road mileage is 0.77 miles.

There is one Forest Development Trail (FDT) within the area. The Appalachian National Scenic Trail (FDT 1) traverses the area for approximately 7.5 miles. The trail enters the area from VA 621, climbs to the crest of Brush Mountain, and runs eastward before exiting the area at VA 620. A short, 300- foot long, side trail off the Appalachian National Scenic Trail, leads to the Audie Murphy Monument on Brush Mountain. There are numerous old access and logging roads throughout the area. Some have become overgrown and impassable to anything but foot traffic. Others are kept open by hikers and hunters. Total maintained trail mileage is 7.5 miles.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the Brush Mountain East roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone and shale with parallel drainages interspersed with broad limestone and shale valleys. Included in this area are Brush Mountain and, outside the area to the north, Sinking Creek Mountain. Slopes vary from very steep on sideslopes to gentle along some of the drainages. Drainage density is high. The area contains the headwaters of many tributaries that feed into Craig Creek to the north and Trout Creek to the east and south. Elevation ranges from approximately 1520 feet adjacent to where the Appalachian National Scenic Trail crosses over Craig Creek to 3070 feet at a point along the crest of Brush Mountain.

The roadless area is forested by eastern deciduous and coniferous species. Approximately three percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red

oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, white pine, and red maple dominate the overstory. The remaining 97 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites. The area also contains several of Virginia's few remaining pure stands of table mountain pine. This species requires fire to reproduce and is becoming increasingly uncommon within its natural range due to fire exclusion. A population of box huckleberry is located within the area. This species also requires fire to ensure its long term survival and vigor.

CURRENT USE

The area is primarily used for dispersed recreation activities such as hiking, hunting, and primitive camping. FDR 188.1 to FDR 188.3 is a popular access point to the area for hikers, hunters, and persons interested in visiting the Audie Murphy Monument. Approximately nine percent, or 439 acres, of the area are classified as suitable for timber production. Inventory data indicate that this area has 144 acres of outstanding privately owned mineral rights underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 0.91 miles of improved road, 0.77 miles of unimproved road, 7.5 miles of the Appalachian National Scenic Trail, the Audie Murphy Monument, and some of the old access and logging roads are visually evident and influence ecological processes, as a minimum, in the vicinity of these facilities. Some old roads are becoming overgrown and regaining a more natural appearance.

Most of the area was cut over and frequently burned in the late 1800's and early 1900's. Approximately 86 percent of the timber is in the 21-100 year old age class, three percent is in the 101 plus years class, and less than one percent in the 11-20 year old class. The area has 15 acres of possible inventoried old growth.

Featured species for the area is turkey. There are two maintained wildlife openings, totaling approximately five acres, within the roadless area boundary.

The northern, eastern, and southern portions of the area are bounded primarily by private property boundaries, with inclusions of National Forest land or VA 621 and 620. Private land is generally a combination of forest land, woodlots, farms, and residences. An electric utility line corridor forms the western boundary of the area. This corridor also separates this roadless area from the Brush Mountain roadless area, to the west. A short section of another electric utility line corridor forms a portion of the eastern boundary of the area.

VA 621 was recently widened and paved by the Virginia Department of Transportation in order to accommodate increased traffic and development on private lands adjacent to this road.

Mountain Lake Wilderness is the nearest existing wilderness to the area and is located approximately 10.5 air miles northwest of the roadless area.

KEY ATTRACTIONS

Activities associated with hiking the Appalachian National Scenic Trail, hunting, and the Audie Murphy Monument are key attractions to the area. The 20 acre Brush Mountain Special Biological Area is located along the crest of Brush Mountain. A population of

**BRUSH
MOUNTAIN EAST**

piratebush is located in this area. The occurrence of piratebush, in Virginia, is listed as rare by the Virginia Division of Natural Heritage and is a Forest Service sensitive species. The area also contains a population of the locally rare species, box huckleberry, which is also listed by the Virginia Division of Natural Heritage as a very rare species in the state. There are no other known federally listed threatened, endangered, or sensitive species within the area.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area and the area is somewhat affected by outside forces. Much of the Brush Mountain East roadless area appears to be natural but there are signs of disturbance. The improved and unimproved roads, maintained trail, and numerous old access and logging roads within the area are readily evident. If this roadless area becomes wilderness, improved road FDR 188.3 would be in wilderness and closed to all motorized traffic except for that traffic needed by the private landowner to access his inholding. The unimproved portion of FDR 188.3 would be closed and removed from the Forest's transportation system. Some of the old access and logging roads have become overgrown and impassable, causing minimal impact on the area's natural ecological processes. Other old roads are kept open by hikers and hunters and are evident. FDR 188.1 and the electric utility corridors, though outside the roadless area boundary, influence ecological processes around the periphery of the area. A small granite monument that commemorates the location of where Audie Murphy died in an airplane crash is located several hundred feet off the Appalachian National Scenic Trail near the crest of Brush Mountain. There are no acres of 0-10 year old age class timber within the area. The overall influence of human activities to the area is minimal, primarily due to the area's challenging topography. The influence of the wildland-urban interface continues to expand around the perimeter of the area. Traffic and development are increasing on adjacent private land.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Brush Mountain East roadless area is 4,944 acres in size, of which 4,912 acres are located on National Forest land and 32 acres are under private ownership. The area is generally located on the northern and southern sideslopes of Brush Mountain west of the New Castle and Blacksburg Ranger District boundary line along VA 620. Electric utility line corridors form the western and a portion of the eastern boundaries of the area. Private land, with small inclusions of National Forest land, borders the northern, eastern, and southern boundaries. Elevations range from approximately 1520 feet adjacent to Craig Creek to 3070 feet at a point along the crest of Brush Mountain. A solitude core area of 3,388 acres exists in the central and southern portions of the roadless area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The ratio of core acres of solitude to the roadless area is approximately 69 percent. Visitor use of the area can be described as moderate to high in the spring and fall and low during summer and winter. Visitor use is concentrated along the Appalachian National Scenic Trail and FDR 188.3. The further one gets away from roads, trails, and the periphery of the area, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance. However, some areas may be impacted around the periphery of the area by noises associated with traffic on improved roads, noises from the electric utility corridors, or activities from adjoining private land, which may reduce the feeling of solitude and isolation.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does

not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads and trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Brush Mountain East roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hiking, hunting, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Brush Mountain East roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (4,912 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbours Creek, and Shawvers Run. Within the southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by shale and sandstone. Sandstone is found on the upper slopes and ridgetops while shale is found on the lower slopes and in the valley.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The area's large relief and highly dissected topography creates a wide range of ecological types from hot, dry windswept ridgetops to moist, protected coves near Craig Creek.

The Brush Mountain Special Biological Area provides opportunities for scientific study and educational purposes related to piratebush (sensitive), box huckleberry (locally rare), and table mountain pine. Both box huckleberry and table mountain pine require fire in their ecosystem to perpetuate the species.

The majority of the area, approximately 88 percent, is in the Dry/Dry-Mesic Oak-Pine ecological community type. The Dry Mesic Oak type represents about nine percent of the area while the Xeric Pine/Pine-Oak type represents three percent of the area. The Conifer/Northern Hardwood, and other minor ecological community types, represent less than one percent of the area.

There are 15 acres of inventoried possible old growth. The ecological community type represented is: 15 acres Dry/Dry-Mesic Oak-Pine (0 acres suitable), which represents 0.3 percent of the Forest's total.

Approximately 89 percent of the area is classified as having high existing scenic integrity.

Mountain Lake Wilderness is the nearest existing wilderness to the area and is located approximately 10.5 air miles northwest of the roadless area.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Brush Mountain East roadless area makes its preservation as potential wilderness practical. Most of the boundary follows property lines, FDR 188.1, VA 621 and 620, or electric utility corridors. FDR 188.3 accesses the private inholding on the south side of Brush Mountain, and is also a popular access point for hikers, hunters, and those wishing to visit the Audie Murphy Monument. Closing this road to all traffic, except to the owners of the inholding, would likely be controversial. Although surrounding private

**BRUSH
MOUNTAIN EAST**

lands contrast somewhat with the area, the effects are generally limited to the periphery along the boundary and in the vicinity of FDR 188.3 of the roadless area. There are 144 acres of privately owned outstanding mineral rights underlying Federal surface ownership within the roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Forest Service boundary lines, FDR 188.1, VA 621 and 620, and electric utility corridors delineate the entire area. An offset from FDR 188.1, VA 621 and 620, and the utility corridors would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the roads (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, etc.) or utility line corridor maintenance. An offset of 100 feet from the centerline of FDR 188.1 and the edge of utility corridors is recommended while a 300-foot offset from the centerline of State roads is recommended. A possible management solution concerning established access to the area via FDR 188.3 would be to eliminate the area south of this road up to the gate just beyond the private inholding, then running an area boundary line south along the eastern end of the inholding to the National Forest boundary. This would reduce the roadless area size from 4,912 acres to approximately 4,772 acres.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There are no developed recreation sites within this roadless area. Hiking, hunting, and primitive camping are key recreation activities within the area. The Appalachian National Scenic Trail traverses about 7.5 miles of the area. The Audie Murphy Monument attracts a number of visitors each year to the site where Murphy died in an airplane crash. Murphy was a well known decorated soldier from World War II that went on to become a popular movie star. The population center of Blacksburg is approximately 30 minutes away from the area. No impacts to current recreation uses would be expected to occur should this area be designated as wilderness.

WILDLIFE

The Brush Mountain roadless area provides habitat for a diversity of wildlife species. Featured species of the area is turkey. If this roadless area is designated as wilderness, maintenance of the wildlife openings would be discontinued.

WATER AVAILABILITY AND USE

The roadless area contains the headwaters of many tributaries that feed into Craig Creek to the north and Trout Creek to the east and south. There are no known water storage needs or any existing special use water permit authorizations. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately nine percent of the area, or 439 acres, is classified as suitable for timber production. In the past 20 years, 11 acres of timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 439 acres of suitable lands within this roadless area represents approximately 0.1 percent of all lands suitable for timber production on the Jefferson National Forest. No Federal oil and gas leases are in effect in this area as of October 1999. The potential for energy minerals, primarily natural gas, is estimated to be low to moderate. The area was leased under a Federal oil and gas lease in the 1980's. No oil or

gas wells were drilled and the Federal lease expired. The potential for other leasable minerals, including metallic minerals, is estimated to be low.

**BRUSH
MOUNTAIN EAST**

CULTURAL RESOURCES

Approximately 74 acres have been surveyed for cultural resources, as of March 1998, within the roadless area. No cultural resources have been identified. The remaining area exhibits a moderate to high potential for prehistoric and historic resources.

LAND USES

No special use permit authorizations have been issued within this roadless area. A 32-acre private inholding is located on the south side of FDR 188.3 in the southwestern portion of the area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded primarily by private lands to the north, east, and south. Wilderness designation may limit options for containing fires on private and/or federal lands. The Brush Mountain East roadless area is expected to be in the generally infested area for gypsy moth in the next five to ten years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 97 percent of the area is composed of the Dry Mesic Oak and Dry/Dry-Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

Portions of this roadless area are occupied by near pure stands of table mountain pine and/or pitch pine forest types. These pine-dominated stands occur primarily on southeast to southwest facing ridges and slopes with dry, well-drained soils. Table mountain pine has serotinous cones that usually require significant heat in the tree canopy from fire to open the cones, thus allowing for seed dispersal and regeneration. Other oak dominated forest types that contain a component of these pine species also occupy a large portion of this roadless area. If this area was designated wilderness, the use of management ignited prescribed fire to manipulate these fire dependent ecosystems for restoration and maintenance would likely not be allowed. This will result in further declines in acreage and the open structure of these forest types along with the flora and fauna these ecosystems support.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

BRUSHY MOUNTAIN

BRUSHY MOUNTAIN ROADLESS AREA

ID NUMBER: 14603

Overview

LOCATION, VICINITY, AND ACCESS

The Brushy Mountain roadless area is located on the Jefferson National Forest, Wythe Ranger District, Bland County, Virginia. The area is located east of Interstate 77 and north of VA 42, approximately 2.5 miles northeast of the Town of Bland. The area is found within portions of the U.S.G.S. Virginia Quadrangles Rocky Gap and Bland. The area is bounded by VA 612, private and National Forest land to the north, and mostly private land, with inclusions of National Forest, to the east, south, and west. Major vehicle access is provided by VA 612 along the northern boundary. VA 42 comes no closer than approximately 0.3 miles away from the southern end of the area.

Surface Ownership	Acres
Forest Service	4,165
Private	0
Park Service	0
TOTAL	4,165

There are no improved or unimproved roads within the area.

The Appalachian National Scenic Trail is the only Forest Development Trail (FDT 1) found within the roadless area. Approximately 6.5 miles of this trail traverse the area in an east-west direction, generally following the crest of Brushy Mountain. Direct access to the trail is provided by a small graveled parking lot adjacent to VA 612 just beyond the northwest boundary of the roadless area. A short trail spur, approximately 0.4 miles in length, leads from the Appalachian National Scenic Trail to the Helvey's Mill Trail Shelter on the western end of the area. Total maintained trail mileage is 6.9 miles.

Approximately 2.59 miles of uninventoried roads, primarily old access and logging roads, still exist within the area. Most have become overgrown and impassable to anything but foot traffic.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the Brushy Mountain roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone and shale with parallel drainages interspersed with siltstone and shale valleys. Included in this area is Brushy Mountain. Slopes vary from very steep on sideslopes to gentle along Kimberling Creek along the northern boundary. Drainage density is high on the slopes of Brushy Mountain and the drainages are narrow and deep with steep sideslopes. The area contains the headwaters for a multitude of tributaries that feed Kimberling Creek to the north and Helvey's Mill Creek to the south. Elevation ranges from approximately 2280 feet along Kimberling Creek to 3250 feet at a point along the crest of Brushy Mountain.

Vegetation is mainly broadleaf deciduous species with some white and yellow pine. Approximately 20 percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, white pine, and red maple dominate the overstory. The remaining 80 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

CURRENT USE**BRUSHY
MOUNTAIN**

The area is primarily used for dispersed recreation activities such as hunting and hiking. Dispersed camping is popular adjacent to VA 612, primarily during the fall hunting seasons. Hiking use is concentrated along the Appalachian National Scenic Trail, which receives a high amount of use. Approximately 10 percent, or 410 acres, of the area is classified as suitable for timber production. Inventory data indicate no privately owned, outstanding or reserved, mineral rights underlying Federal ownership within this roadless area.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 6.9 miles of maintained trails and a trail shelter/privy complex are visually evident and influence ecological processes, as a minimum, in the vicinity of these developments. The Helvey's Mill Trail Shelter, and associated privy, are located on the western end of the roadless area, about 0.4 miles off the Appalachian National Scenic Trail. The 2.59 miles of uninventoried old access and logging roads still exist and are evident; however, lack of maintenance is allowing most of them to become overgrown and regain a more natural appearance. As a result, illegal ATV traffic is relatively low in this area.

Most of the area was cut over and frequently burned in the late 1800's and early 1900's. Approximately 71 percent of the timber is in the 21-100 year old class. There are no acres of timber in the 0-10 year age class. The area has 430 acres of possible inventoried old growth.

Featured species for the area is 99 percent turkey and one percent deer. No wildlife openings, recently seeded roads, or other wildlife habitat improvements exist within the area.

The area is essentially bounded on three sides by private land. This land is comprised of fairly large tracts of forest land, small woodlots, residences, and structures and activities related to farming. A series of private hunting cabins are located just outside the northwestern boundary of the area. A large tract of National Forest land is located north of VA 612. The extreme northwestern corner of the roadless area boundary comes within 200 feet of the Interstate 77 corridor.

Unightly conditions occur sometimes along VA 612 due to illegal trash dumping.

KEY ATTRACTIONS

The Appalachian National Scenic Trail is a key attraction of the area. The area is also popular with hunters, particularly along the northern and western perimeters of the area. There are no known Federally threatened, endangered, or sensitive species in the area.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Much of the Brushy Mountain roadless area appears to be natural but there are signs of disturbance. The central, southern, and eastern sections of the area exhibit little disturbance to the casual observer. The 6.9 miles of maintained trail, and associated trail shelter and privy, are visually evident. The Interstate 77 corridor comes within approximately 200 feet of the northwest boundary of the area. Most of the old, abandoned roads in this roadless area have become overgrown and impassable by

**BRUSHY
MOUNTAIN**

motorized means, causing minimal effect on the area's natural ecological processes. The northern slopes of Brushy Mountain offer some challenging topography due to steep slopes and highly dissected drainages. Illegal trash dumping is evident along VA 612, which makes up a portion of the northern boundary of the roadless area.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Brushy Mountain roadless area is 4,183 acres in size and is located entirely on National Forest land. Brushy Mountain generally bisects the area from east to west with the Appalachian National Scenic Trail traversing its crest. A solitude core area of 2,783 acres exists in the central and southern portions of the roadless area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless area. The ratio of core acres of solitude to the roadless area is approximately 66 percent. Visitor use along the Appalachian National Scenic Trail is generally high in the spring and fall seasons. Areas adjacent to VA 612 and the northwest section of the area receive moderate use during hunting season. Visitors to the central and southern portions of the area feel that they are in an unconfined, natural area since the area appears to be relatively free from disturbance. However, some areas are impacted around the periphery of the area by noises associated with traffic on Interstate 77, VA 612, VA 42, or from activities on adjacent private land, which may reduce the feeling of solitude and isolation.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads and trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Brushy Mountain roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hunting, hiking, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Brushy Mountain roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (4,184 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbours Creek, and Shawvers Run. Within the southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Geologic rock types of this are dominated by sandstone, siltstone, and shale. Sandstone is found on the upper slopes and ridgetops. Siltstone and shale are found on the lower slopes.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The Appalachian National Scenic Trail traverses the central portion of the roadless area and presents vistas of the surrounding area from several high points along Brushy Mountain.

Much of the area is comprised of ridgetop and midslope ecological community types. The Dry Mesic Oak type comprises approximately 45 percent of the area. The Dry and Dry-Mesic Oak-Pine type and Xeric Pine and Pine-Oak community types represent 43 and 10 percent of the area, respectively. The remainder of the area is comprised of the Mixed and Western Mesophytic and Conifer-Northern Hardwood community types.

There are 430 acres of possible inventoried old growth. The ecological community types represented are: 77 acres Dry and Dry-Mesic Oak-Pine (7 acres suitable) which represents 1.5 percent of the Forest's total; 302 acres Dry Mesic Oak (49 acres suitable) which represents 1.1 percent of the Forest's total, 19 acres Mixed and Western Mesophytic (19 acres suitable) which represents 0.5 percent of the Forest's total, and 32 acres Xeric Pine and Pine-Oak (0 acres suitable) which represents 3.5 percent of the Forest's total.

Approximately 98 percent of the area is classified as having high existing scenic integrity.

The Kimberling Creek Wilderness lies approximately 500 feet, at its closest point, just north of the Brushy Mountain roadless area.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Brushy Mountain roadless area makes its preservation as potential wilderness practical, with one adjustment. It is recommended that the extreme northwestern boundary of the roadless area be pulled back from the Interstate 77 corridor a minimum of one-half mile in order to reduce impacts of the sights and sounds associated with an interstate highway. Most of the boundary follows property lines or VA 612. Boundaries would need to be established on the ground where the boundary joins other National Forest lands. Although surrounding private lands contrast somewhat with the area, the effects are generally limited to the periphery along the boundary of the roadless area. There are no privately owned mineral rights within the area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Forest Service boundary lines and VA 612 delineate most of the roadless area boundary. An offset from VA 612 would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, etc.) and the adjacent dispersed camping areas that are used during hunting season. An offset of 100 feet from the centerline of the road is recommended. This recommendation is the same as that established for the existing Kimberling Creek Wilderness that also shares VA 612 as a boundary. A boundary adjustment along the Interstate 77 corridor, as noted in 2.e., is recommended if this area is recommended for wilderness designation.

Availability for Wilderness

RECREATION, INCLUDING TOURISM

There is one developed recreation site within the roadless area, the Helvey's Mill Trail Shelter facility. Maintenance of this facility is expected to continue regardless of the future designation of the Brushy Mountain roadless area. The Appalachian National Scenic Trail attracts a high level of use from hikers. Hiking, hunting, and dispersed camping are the largest recreation attractions to the area. Interstate 77 provides relatively easy access to the trailhead parking lot located adjacent to VA 612, just beyond the northwest corner of the roadless area. No impacts to current recreation uses would be expected should this area be designated a wilderness.

WILDLIFE

The Brushy Mountain roadless area provides habitat for a diversity of wildlife species. Featured species of the area are 99 percent turkey and one percent deer. There are no known Federally threatened, endangered, or sensitive species within this roadless area. Kimberling Creek has insufficient flow to support a sport fishery.

**BRUSHY
MOUNTAIN****WATER AVAILABILITY AND USE**

The roadless area encompasses the headwaters for a multitude of tributaries that feed Kimberling Creek and Helvey's Mill. There are no known water storage needs or any existing special use water permits. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 10 percent of the area, or 410 acres, is classified as suitable for timber production. In the past 20 years, 27 acres of timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 410 acres of suitable lands within this roadless area represents 0.13 percent of all lands suitable for timber production on the Jefferson National Forest. Private subsurface minerals ownership is held on 40 acres within this area. No Federal oil and gas leases or other Federal mineral leases are in effect in this area as of October 1999. The potential for energy minerals, primarily natural gas and coal, is estimated to be low to moderate. This area was leased under a Federal oil and gas lease in the 1980's. No oil or gas wells were drilled and the Federal lease expired. The potential for other Federal leasable minerals, including metallic minerals, is estimated to be low.

CULTURAL RESOURCES

Approximately 167 acres have been surveyed for cultural resources within the roadless area, as of March 1998, and no historical or prehistoric sites have been identified. However, the area exhibits moderate potential for prehistoric and historic resources.

LAND USES

No special use permit authorizations have been issued in this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands on the east, south, and west perimeters. Wilderness designation may limit options for containing fires on private and/or federal lands. The Brushy Mountain roadless area is expected to be in the generally infested area for gypsy moth in the next ten to twenty years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 88 percent of the area is composed of the Dry Mesic Oak and Dry and Dry-Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

Portions of this roadless area are occupied by near pure stands of table mountain pine and/or pitch pine forest types. These pine-dominated stands occur primarily on southeast to southwest facing ridges and slopes with dry, well-drained soils. Table mountain pine has serotinous cones that usually require significant heat in the tree canopy from fire to open the cones, thus allowing for seed dispersal and regeneration. Other oak dominated forest types that contain a component of these pine species also occupy a large portion of this roadless area. If this area was designated wilderness, the use of management ignited prescribed fire to manipulate these fire dependent ecosystems for restoration and

maintenance would likely not be allowed. This will result in further declines in acreage and the open structure of these forest types along with the flora and fauna these ecosystems support.

**BRUSHY
MOUNTAIN**

**GARDEN
MOUNTAIN**

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

GARDEN MOUNTAIN ROADLESS AREA

ID NUMBER: 14605

Overview

* These acres were purchased by the National Park Service for the benefit of the Appalachian National Scenic Trail and are managed by the Forest Service under a Memorandum of Understanding.

Surface Ownership	Acres
Forest Service	3,545
Private	84
Park Service*	326
TOTAL	3,956

LOCATION, VICINITY, AND ACCESS

The Garden Mountain roadless area is located on the Jefferson National Forest, Wythe Ranger District, Bland and Tazewell Counties, Virginia. The area is located west of Interstate 77 and north of VA 42 and is found within portions of the U.S.G.S. Virginia Quadrangles Garden Mountain and Hutchinson Rock. The area is generally bounded by private land to the north and south, Beartown Wilderness Addition B roadless area and private land to the west, and VA 623 and Hunting Camp/Little Wolf Creek roadless area to the east. Major vehicle access is provided by VA 623 from the east, VA 727 from the north, and VA 625 from the south and west.

There is one improved Forest Development Road (FDR) within the roadless area. FDR 61191, a gated road, enters the area from State Route 623 on the eastern border of the roadless area and runs 0.5 miles to the west. Another improved road, without a Forest Service identifier, leads from Walker Gap to access a portion of private property located between the Garden Mountain roadless area and Beartown Wilderness Addition B roadless area west of Walker Gap. This private land access road is a reserved right-of-way easement and is 0.33 miles in length. The road is tank trapped and gated as it heads west toward Chestnut Knob away from the private property. Total improved road mileage is 0.83 miles.

There are a few old access and logging roads left within the area that remain passable. Additionally, there is a short road segment leading south-southeast from Walker Gap that accesses a dwelling and 80 acre tract that were federally acquired in 1997. The access road is gated and, as of March 1998, no decision has been made on management of the road.

There are no unimproved roads within the area.

There are two Forest Development Trails (FDT) found within the roadless area; the Appalachian National Scenic Trail (FDT 1) for approximately 5.5 miles and the Lick Creek Trail (FDT 6522) for 2.5 miles. The Lick Creek Trail breaks off from FDR 61191 and follows an old railroad logging grade. This trail is becoming overgrown and is designated for foot travel only. Total maintained trail mileage is 8.0 miles.

**GARDEN
MOUNTAIN****GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)**

According to ecological mapping, the Garden Mountain roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone and shale with parallel drainages interspersed with shale valleys. Included in this area are Garden and Brushy Mountains. Slopes vary from very steep on sideslopes to nearly flat in the larger drainages. Drainage density is high on the slopes of Brushy Mountain and on the lower slopes of Garden Mountain. Drainages are narrow and deep with steep sideslopes in these locations. Drainage density is far lower on the upper slopes of Garden Mountain with broader, shallower drainages. Lick Creek is the only major drainage within the area. Elevation ranges from approximately 2500 feet along Lick Creek to 4080 feet at a point along the Appalachian National Scenic Trail on the crest of Garden Mountain.

Vegetation is mainly broadleaf deciduous species with some yellow pine. Approximately 33 percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 67 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

CURRENT USE

The area is primarily used for dispersed recreation activities such as hunting and hiking. Dispersed camping is popular adjacent to VA 623, primarily during the fall hunting seasons. The Appalachian National Scenic Trail receives a high amount of use while the Lick Creek Trail receives low use. Associated with the Appalachian National Scenic Trail are two trailhead parking lots located within the roadless area boundary. One lot is located on the west side of VA 623 at the Bland/Tazewell County line and the other is located in Walker Gap off of VA 727. Approximately 36 percent, or 1,407 acres, of the area are classified as suitable for timber production. There are 40 acres of privately owned (outstanding or reserved) mineral rights underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 0.83 miles of improved roads, the recently acquired access road, and 8.0 miles of maintained trail are visually evident and influence ecological processes, as a minimum, in the vicinity of the roads and trails. Old access and logging roads still exist and are evident; however, lack of maintenance is allowing some of them to become overgrown and regain a more natural appearance. Other old roads are kept open by illegal ATV traffic, primarily along the western end of the area.

Most of the area was cut over and frequently burned in the late 1800's and early 1900's. Approximately 66 percent of the timber in the area is in the 21-100 year old class. The area has 839 acres of possible inventoried old growth.

Featured species for the area is turkey. No wildlife openings, recently seeded roads, or other habitat improvements exist in the area.

There is an old homesite to the west of Walker Gap with the remnants of a house foundation and springbox. This homesite is becoming overgrown and is blending in with the surrounding landscape. The springbox is advertised in Appalachian Trail Conference

publications as a water source for hikers. An old road leading from the homesite to the Chestnut Knob Trail Shelter in the Beartown Wilderness Addition B roadless area is tank trapped and gated, but remains passable and evident due to illegal ATV traffic.

**GARDEN
MOUNTAIN**

An 80 acre tract of land was Federally acquired in the fall of 1997 within the roadless area boundary on the south side of Walker Gap. Several pastures, an improved cabin with outbuildings, and access road are located within the acquisition area. All improvements are evident.

Unightly conditions periodically occur along VA 623 and at the associated trailhead parking lot due to illegal trash dumping.

The area is essentially bounded by private lands to the north and south. To the north, Burkes Garden offers a pastoral landscape made up of farms, pastures, woodlots, and residential and outbuilding structures. Private land to the south is rugged woodland interspersed with farms and pastures. VA 623, a gravelled road, and the Hunting Camp/Little Wolf Creek roadless area bound the area to the east. A tract of private land and the Beartown Wilderness Addition B roadless area adjoin the west boundary.

KEY ATTRACTIONS

The Appalachian National Scenic Trail is a key attraction of the area and offers good views of Burkes Garden located on the north side of Garden Mountain. The area is also popular with big and small game hunters. Lick Creek is a wild trout stream that attracts some anglers. Beaver activity along the creek has created numerous ponds and marshes providing a diversity of habitat. A population of the Forest Service sensitive fish species, Tennessee dace, is located in Lick Creek. No other Federally threatened, endangered, or sensitive species are known to exist in the area.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area and the area is minimally affected by outside forces. Most of the Garden Mountain roadless area appears to be natural but there are signs of disturbance. There are 0.83 miles of improved road, 8.0 miles of maintained trail, and a recently acquired access road. The improvements located on the recently acquired tract of land on the south side of Walker Gap are evident. Improvements include a cabin with outbuildings, access road, and several small pastures. Illegal trash dumping is evident along VA 623, which makes up the eastern boundary of this roadless area. Some illegal ATV traffic occurs along the western boundary.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Garden Mountain roadless area is 3,956 acres in size of which 3,630 acres are within the proclaimed boundary of the Jefferson National Forest. The remaining 326 acres are outside the proclamation boundary and were purchased by the National Park Service for the benefit of the Appalachian National Scenic Trail. Elevations range from approximately 2500 feet along Lick Creek to 4080 feet at a point along the Appalachian National Scenic Trail on the crest of Garden Mountain. A solitude core area of 2,284 acres exists in the central portion of the roadless area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The ratio of core acres of solitude to the roadless area is approximately 67 percent, of which 233 acres are Semi-Primitive Motorized and 2,051 acres are Semi-Primitive Non-Motorized. There are two improved roads, two maintained trails, two trailhead parking lots, and a recently acquired access road within the area. Visitor use is high along the northern boundary of the roadless area due to the presence and

**GARDEN
MOUNTAIN**

accessibility of the Appalachian National Scenic Trail. Visitor use away from the Appalachian National Scenic Trail is low except during hunting season when use is moderate to high. Visitors feel that they are in an unconfined, natural area. Areas along the southern and eastern boundaries of the roadless area, as well as near Walker Gap, may be impacted by noises from improved roads and adjacent private land, which may reduce the feeling of solitude and isolation.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from improved roads and trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Garden Mountain roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hunting, hiking, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Garden Mountain roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (3,956 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbours Creek, and Shawvers Run. Within the southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridgetops while shale is found in the valleys and lower slopes. This roadless area lies on the outer flank of an unusual geologic feature: Burkes Garden, a dome shaped geologic structure. Over geologic time, the top of the dome has been breached (eroded) such that only the steep sides of the original arch of rocks are present today. The valley floor within Burkes Garden is composed of older limestone rocks, which were once deep within the core of the dome but are now exposed at the surface. The Appalachian National Scenic Trail follows the rim on the southern part of Burkes Garden along the north edge of this roadless area, and offers a view across the great bowl of Burkes Garden. Burkes Garden is a classic, textbook geologic feature.

Examples of Arthropycus, the remains of ancient worm burrows or feeding trails, can be observed on some of the surfaces of the gray sandstones along the Appalachian Trail. They look like long, finger shaped branches that occur on the flat bedding surfaces of the rock.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The area contains a pure stand of table mountain pine, a unique vegetation community that has the potential to contribute to scientific or educational value in the future. This community type requires fire to reproduce. The Appalachian National Scenic Trail traverses the northern boundary of the roadless area and the pastoral valley of Burkes Garden is located to the north of the area.

Approximately 68 percent of the area is in the Dry Mesic Oak ecological community type. Another 16 percent is in the Mixed and Western Mesophytic type, nine percent in the Dry and Dry-Mesic Oak-Pine type, six percent in the Xeric Pine and Pine-Oak, and the remaining in miscellaneous types.

**GARDEN
MOUNTAIN**

There are 839 acres of inventoried possible old growth. The ecological community types represented are: 6 acres Dry and Dry-Mesic Oak-Pine (0 acres suitable) which represents 0.1 percent of the Forest's total, 755 acres Dry Mesic Oak (301 acres suitable) which represents 2.7 percent of the Forest's total, 63 acres Mixed and Western Mesophytic (63 acres suitable) which represents 1.7 percent of the Forest's total, and 15 acres Xeric Pine and Pine-Oak (0 acres suitable) which represents 1.6 percent of the Forest's total.

The Tennessee dace (sensitive) is known to occur in Lick Creek. There are no other known threatened, endangered, or sensitive species in the area.

Approximately 93 percent of the area is classified as having high existing scenic integrity.

The Garden Mountain roadless area is bounded on the west by the Beartown Wilderness Addition B roadless area and VA 623 and the Hunting Camp/Little Wolf Creek roadless area to the east.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Garden Mountain roadless area makes its preservation as potential wilderness practical. Most of the boundary follows property lines or improved roads. Although surrounding private lands contrast dramatically with the area, the effects are limited to the periphery along the boundary of the roadless area, with the exception of the immediate vicinity around Walker Gap and, as such, any activity that does occur would not dominate the user's backcountry experience. The private land access road to the west of Walker Gap and the recently acquired cabin and outbuildings south of Walker Gap may dominate the user's backcountry experience in this portion of the roadless area. The private land along the southern boundary does have the potential to impact wilderness attributes but the surrounding steep ridges and side drainages will buffer the magnitude of the potential impacts. There are 40 acres of privately owned mineral rights within this roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Forest Service boundary lines delineate most of the roadless area boundary. The eastern boundary follows VA 623. An offset from this road would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, gravel placement, etc.). A minimum offset of 300 feet from the centerline of the road is recommended. Due to the impacts of the trailhead parking lot and private access roads in the Walker Gap area, it is recommended that an offset of 300 feet from the Walker Gap road be implemented. This would result in eliminating a small area in the extreme northwestern corner of the area from the Garden Mountain roadless area.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There are no developed recreation sites within this roadless area. The Appalachian National Scenic Trail attracts a high level of use from hikers and hunters. Dispersed camping is popular along the Appalachian National Scenic Trail, in the Walker Gap area, and alongside VA 623, particularly during hunting season. Hunting is very popular within the area, principally in areas adjacent to VA 623 and Walker Gap. There are two trailhead parking lots along the perimeter of this roadless area; one is located on the west side of VA 623 at the Bland/Tazewell County line and the other is located in Walker Gap. Burkes Garden, a popular tourist attraction, is located to the north of the roadless area. No impacts to current recreation uses would be expected should this area be designated a wilderness.

**GARDEN
MOUNTAIN****WILDLIFE**

The Garden Mountain roadless area provides habitat for a diversity of wildlife species. Active beaver activity along Lick Creek has created a diversity of wildlife and habitat due to the creation of ponds and small wetlands. Turkey is the featured species within the roadless area. Lick Creek, a wild trout stream in its headwaters, supports a population of the Federally sensitive Tennessee dace.

WATER AVAILABILITY AND USE

The roadless area encompasses the headwaters of Lick Creek and most of the roadless area drains into the North Fork Holston River. There are no known water storage needs or any existing special use water permit authorizations. Water quality is expected to remain at its current level whether or not the area is designated a wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 36 percent of the area, or 1,407 acres, is classified as suitable for timber production. In the past 20 years, no timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 1,407 acres of suitable lands within this roadless area represents approximately 0.4 percent of all lands suitable for timber production on the Jefferson National Forest. No Federal oil and gas leases or other Federal mineral leases are in effect in this area as of October 1999. The potential for energy minerals, primarily natural gas, is estimated to be low to moderate. This area was leased under a Federal oil and gas lease in the 1980's. No oil or gas wells were drilled and the Federal lease expired. The potential for other Federal leasable minerals, including metallic minerals, is estimated to be low.

CULTURAL RESOURCES

Approximately 43 acres have been surveyed for cultural resources within the roadless area, as of March 1998, and no historical or prehistoric sites have been identified. However, the area exhibits moderate potential for prehistoric and historic resources.

LAND USES

There are currently no special use permit authorizations within this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands on the north, south, and west perimeters. Wilderness designation may limit options for containing fires on private and/or federal lands. The Garden Mountain roadless area is expected to be in the generally infested area for gypsy moth in the next ten to twenty years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 77 percent of the area is composed of the Dry Mesic Oak and Dry and Dry-Mesic Oak-Pine forest types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

GARDEN MOUNTAIN

HOOP HOLE

HOOP HOLE

ID NUMBER: 14505

Overview

* 4,643 Jefferson National Forest, 933 acres
George Washington National Forest

Surface Ownership	Acres
Forest Service*	5,576
Private	0
Park Service	0
TOTAL	5,576

LOCATION, VICINITY, AND ACCESS

Hoop Hole roadless area is located on the New Castle Ranger District, Jefferson National Forest and the James River Ranger District, George Washington National Forest. The northern one third of the area is on the James River Ranger District in Alleghany County, Virginia, while the southern two thirds are on the New Castle Ranger District in Botetourt County, Virginia. The area is bounded by private land to all sides except to the northeast where a powerline is the boundary. The area is found within U.S.G.S. Virginia Quadrangle Strom. Major vehicular access is provided by VA 615 along the southeastern boundary and VA 621 along the northeastern boundary.

There are no improved roads within the area.

There are no unimproved roads within the area. However, there is one old road in the southern tip of the area that begins at VA 615 and follows Hipes Branch for approximately 1.5 miles. This road is blocked at 0.02 miles from VA 615 where a trailhead parking lot is located.

There are two Forest Development Trails (FDR) within the area. FDT 5001, the Hoop Hole Trail, is a nine mile loop trail situated between VA 615 and the crest of Pine Mountain, The trail is open to hiking, receives a moderate amount of use, and enjoys National Recreation Trail status. Approximately 1.3 miles of the Iron Ore Trail, FDT 5004, are within the roadless area boundary. This trail connects the Hoop Hole Trail to the Roaring Run Furnace area. The Iron Ore Trail receives a low amount of use and is an interpretive, as well as hiking, trail. There are several old roads in the area being used for illegal ATV traffic, particularly in the northern end near several private hunting camps.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, this area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone or shale with parallel drainages with broad limestone valleys. Included in this area are Rich Patch, Pine, and Deisher Mountains with a series of small, steep sideslope drains. Elevation ranges from approximately 1000 feet at Crawford Branch in the eastern end of the area to 3728 feet at a point along the crest of Rich Patch Mountain.

Approximately 75 percent of the area is underlain by Silurian-aged sandstone, and 25 percent is underlain by Brallier and Martinsburg shale. Ridgetop and sideslope soils consist primarily of moderately deep, loamy-skeletal Typic Dystrochrepts (Dekalb and Berks series). Footslopes and benches are often Typic Fragiudults (Laidig series) or other more productive colluvial Hapludults. Drainages contain deep loamy-skeletal Typic-

HOOP HOLE

Hapludults and Dystrochrepts formed in colluvium from sandstone (Oriskany and Sherando series) or shale (Shelocta series).

Vegetation is mainly broadleaf deciduous species. Approximately 30 percent of the Jefferson NF section of this roadless area has a site index of 70 or above indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages, toeslopes, or along alluvial floodplains of small to medium sized streams. Here, yellow poplar, northern red oak, white oak, basswood, cucumber tree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 70 percent of the area has a site index of 60 or less, indicating a moderate to poor productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and south and east midslope aspects with yellow pine occurring on the driest sites.

CURRENT USE

The area is primarily used for dispersed recreation activities such as hiking or hunting. The Hoop Hole Trail system was reconstructed in 1994 and now provides a nice loop hike along streams and up to ridgetops. There is a special use permit authorization at the bottom of Crawford Branch for a cattle fence and powerline. The authorization is for an area 20 feet x 204 feet. This area is 100 feet from the edge of the roadless area. Approximately 21 percent, or 979 acres, are classified suitable for timber production within the Jefferson NF section of this area. By including the 933 acres from the George Washington NF, total suitable acres for the Hoop Hope roadless area drops to 18 percent. All minerals are owned by the U.S.A. There are no federal oil or gas leases within the area.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 1.5 mile old road and the 10.3 miles of maintained trails in the roadless area are visually evident and influence ecological processes, as a minimum, in the vicinity of the road and trails. Other old access roads and logging roads still exist and are evident; however, lack of maintenance and use is allowing some of them to become overgrown and regain a more natural appearance. Other old roads are being kept open by frequent illegal ATV traffic, particularly in the northern end of the area.

The varied topography of this area includes steep ravines and high ridges. This allows a visitor to have a sense of solitude that many roadless areas within the Ridge and Valley section do not offer. Except for the eastern end of the area, this roadless area is surrounded by private land.

There is some evidence of three collier pits from the late 1800's when iron ore mining was taking place.

Most of the area was cut over and frequently burned in the late 1800's and early 1900's. Approximately 94 percent of the timber in the area is in the 21-100 year old age class. Another five percent is in the 101 years plus age class and about one percent is in the 11-20 year age class. There is no timber in the 0-10 year age class. There is no inventoried possible old growth.

Approximately 933 acres of this area is located on the James River District of the George Washington National Forest. This land is in Alleghany County along the ridgetop of Rich Patch Mountain. The George Washington NF Forest Plan has allocated this area into Management Area 9 - Remote Highlands. According to the Plan, Remote Highlands are managed to provide older vegetation in remote and isolated areas where recreationists can obtain a degree of solitude and the environment can be maintained in a near-natural state where only light-on-the-land management activities occur.

Featured species for the area is 78 percent bear, 13 percent deer, and nine percent grouse.

HOOP HOLE

A 90- acre wildfire occurred in this area in April 1994.

Adjacent land southwest of the roadless area is owned by Westvaco and Luken Steel.

Luken Steel has been harvesting timber right up to the National Forest boundary in recent years.

KEY ATTRACTIONS

The Roaring Run Furnace environs are a key attraction to the area. The area boasts a scenic waterfall, picnic area, fishing , and the Hoop Hole National Recreation Trail. There are good scenic views along the crest of Pine Mountain as well as an old sawmill site along the lower section of the trail. The rare plant, piratebush (sensitive), occurs in this area.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is minimally affected by outside forces. Hoop Hole roadless area appears to be natural but there are signs of recent disturbance. There are approximately 35 acres of 11-20 year old age class within the roadless area. There are also 10.3 miles of maintained trail and an old road within the area that follows Hipes Branch for approximately 1.5 miles. This road is not included on the Forest Service road inventory.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Hoop Hole roadless area is 5,578 acres in size and is located entirely on National Forest land (4,645 acres on Jefferson NF and 933 acres on George Washington NF). Landform consists of the ridgetops of Rich Patch Mountain, Pine Mountain, Deisher Mountain and several knobs divided by a series of sideslope drainages. A number of larger drainages separate these ridges. These are Hipes Branch, Stony Run, Wolf Branch, Crawford Branch, and Deisher Branch. Elevations range from 1,000 feet at Crawford Branch to 3,728 feet at a point along the crest of Rich Mountain. A solitude core area of 3,285 acres exists for the north and western sections of the Hoop Hole roadless area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The proportion of core acres of solitude to the roadless area is approximately 59 percent. This percentage increases to 76 percent when acreage from the George Washington NF is included. There are no improved roads in the area. There are two developed trails totaling 10.3 miles. Visitors feel like they are in an unconfined, natural area. Noise from the state highways, old jeep roads, and activities on surrounding private lands can be heard along the southern boundary. The eastern end of the area is adjacent to the Roaring Run Furnace and picnic area.

It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads. Within the area there are isolated and remote areas but there is a degree of evidence of human impact. For example, old tram roads and evidence of iron ore mining can be found in the upper reaches of the area. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Hoop Hole roadless area does present a range of dispersed recreational activities of which

HOOP HOLE

are typically found on the Jefferson National Forest. Activities such as hunting, hiking, and primitive camping are present in the area. Fishing and picnicking opportunities are adjacent to the eastern boundary of the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Hoop Hole roadless area is in the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section. This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Shawvers Run, Barbours Creek, Peters Mountain, Mountain Lake, Kimberling Creek, and Beartown. Within the Southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Barbours Creek Wilderness is the closest existing wilderness to this roadless area and is located approximately 7 air miles to the southwest.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridge tops. Shale and limestone are the bedrock on the lower slopes.

There are no designated Research Natural Areas or Experimental Forests within the roadless area.

Approximately 48 percent of the area is in the Dry Mesic Oak ecological community type. Another 32 percent is in the Dry/Dry-Mesic Oak-Pine type, 15 percent is in the Xeric Pine/Pine-Oak type, and four percent is in the Mixed and Western Mesophytic type. The remaining area is comprised of other minor ecological community types. There is no potential inventoried old growth in this area. The Hoop Hole roadless area contains the sensitive plant, piratebush.

Approximately 92 percent of this area is classified as having High Scenic Integrity.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of this roadless area makes its preservation as potential wilderness practical. Most of the boundary follows property boundary lines and human improvements such as roads. Surrounding lands are primarily in private ownership except for National Forest land to the east. The private land adjacent to this area does have the potential to impact wilderness attributes but the steep ridges and side drainages would buffer the magnitude of the potential impacts.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Most of the boundary follows human made features such as roads, powerlines and property line boundaries as well as natural features such as ridges and streams. An offset from boundary roads such as VA 615 would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, gravel placement, paving, road alignment, etc.). An offset of approximately 300 feet from the centerline of existing roads would be recommended. The trailhead parking lot for the Hoop Hole Trail is on the north side of VA 615 near the southern end of the area. This parking lot and associated road (FDR 5079) should be left out of the roadless area.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There are no developed recreation sites within this roadless area. Hiking on the Hoop Hole National Recreation Trail is a key attraction for this area. Use is funneled into the area from the Hoop Hole parking lot on VA 615 and from the Iron Ore Trail entering from the Roaring Run Picnic Area, a developed recreation facility to the east of the area.

HOOP HOLE**WILDLIFE**

The Hoop Hole roadless area provides habitat for diverse wildlife species. The featured species for the area is 78 percent bear, 13 percent deer, and nine percent grouse. No threatened, endangered, or sensitive wildlife species are known to occur within this roadless area.

WATER AVAILABILITY AND USE

Most of this roadless area drains into Craig Creek. There are no known water storage needs or any existing special use water permits authorizations. Water quality should remain at its current level whether or not the area is designated wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 18 percent, or 979 acres, is classified as suitable for timber production. In the last 10 years, no timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 979 acres of suitable lands in this roadless area represent 0.3 percent of all lands suitable for timber production on the Jefferson National Forest. All minerals are owned by the U.S.A. There are no federal oil or gas leases within the area.

CULTURAL RESOURCES

As of March, 1998, five acres of this roadless area have been surveyed for cultural resources. There are three inventoried collier pits dating to the late 1800's in the Hoop Hole roadless area. The area exhibits a low potential for prehistoric resources but a high potential for additional historic resources.

LAND USES

There is a special use permit authorization for a 20 foot x 204 foot fence and powerline along VA 615 near Crawford Branch. The fence is approximately 85 feet off the highway.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Fire suppression would be primarily by hand tools. Use of motorized and mechanized transport and equipment such as ATV's, bulldozers, and chainsaws would be allowed only upon specific approval by the appropriate line officer. Thus, wildfires would likely attain larger sizes than under current management. Wilderness designation may limit options for containing fires. Gypsy moth infestations are in the vicinity of this roadless area right now. Mortality can be severe (up to 25-30 percent) and oaks are the preferred hosts. Approximately 80 percent of the area is composed of the Dry Mesic Oak type and Dry/Dry Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chances that they may spread to other National Forest or private land.

Portions of this roadless area are occupied by near pure stands of table mountain pine and/or pitch pine forest types. These pine-dominated stands occur primarily on southeast to southwest facing ridges and slopes with dry, well-drained soils. Table mountain pine has

HOOP HOLE
**HUNTING CAMP/
LITTLE WOLF
CREEK**

serotinous cones that usually require significant heat in the tree canopy from fire to open the cones, thus allowing for seed dispersal and regeneration. Other oak dominated forest types that contain a component of these pine species also occupy a large portion of this roadless area. If this area was designated wilderness, the use of management ignited prescribed fire to manipulate these fire dependent ecosystems for restoration and maintenance would likely not be allowed. This will result in further declines in acreage and the open structure of these forest types along with the flora and fauna these ecosystems support.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

HUNTING CAMP/LITTLE WOLF CREEK

ID NUMBER: 14604

Overview

* These acres were purchased by the National Park Service for the benefit of the Appalachian National Scenic Trail and are managed by the Forest Service under a Memorandum of Understanding.

Surface Ownership	Acres
Forest Service	8,771
Private	0
Park Service	169
TOTAL	8,940

LOCATION, VICINITY, AND ACCESS

The Hunting Camp/Little Wolf Creek roadless area is located on the Jefferson National Forest, Wythe Ranger District and encompasses portions of Bland and Tazewell Counties, Virginia. The area is located west of Interstate 77, north of VA 42, and south of Burkes Garden and is found within portions of the U.S.G.S. Virginia Quadrangles Bastian, Big Bend, Cove, and Garden Mountain. The area is approached by VA 623 from the west, VA 615 from the east, and Forest Development Roads (FDR) 610 and 688 from the north. No public access is available from the south.

The roadless area is generally bounded by VA 623 to the west, VA 615 to the southeast, FDR 610 to the north, and private land to the south and northwest. VA 623 divides two separate roadless areas, Hunting Camp/Little Wolf Creek and Garden Mountain. The northwestern boundary follows the crest of Garden Mountain. Additionally, there is a private road in the eastern section of the area, which extends to the southwest from VA 618. This road accesses a large section of private land that is bounded on three sides by the roadless area. There are several ATV trails on this private land, and ATV use often spills illegally onto adjacent National Forest land, primarily during hunting season.

There is one improved road within the area. FDR 61252, a gated road, enters the area from VA 623 on the western border of the roadless area and runs 0.26 miles to the west. Total improved road mileage is 0.26 miles.

One unimproved road is also within the boundaries of this roadless area. FDR 61333, 1.91 miles in length, enters the area from FDR 610 and runs in a southwesterly direction. Total unimproved road mileage is 1.91 miles.

Two Forest Development Trails (FDT) access the area. Approximately 8.7 miles of the Appalachian National Scenic Trail (FDT 1) traverse the area in an east-west direction from Garden Mountain, across Hunting Camp Creek, then parallels Little Wolf Creek to its confluence with Laurel Creek at VA 615. The High Water Trail (FDT 6507) is a foot only

trail, 2.7 miles in length, and is a loop trail that intersects with the Appalachian National Scenic Trail on both ends in the eastern section of the roadless area. This trail is primarily used in the spring when portions of the Appalachian National Scenic Trail along Little Wolf Creek become flooded and impassable and during the hunting seasons. Construction of a new trail segment of the High Water Trail was completed in 1999. This segment, approximately 0.5 miles in length, connects the Appalachian Trail near the junction of Laurel Creek and Little Wolf Creek, to the High Water Trail along the ridge of Brushy Mountain. The most eastern portion of the original High Water Trail was abandoned thereby eliminating a 0.6 mile road walk along VA 615. Total net maintained trail mileage is approximately 11.4 miles.

HUNTING
CAMP/ LITTLE
WOLF CREEK

There are old logging roads scattered throughout the area; however, few of them remain passable. One exception is an old railroad grade which runs parallel to Hunting Camp Creek that is popular with hunters.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the Hunting Camp/Little Wolf Creek roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone and shale with parallel drainages interspersed with shale valleys. Included in this area are Garden and Brushy Mountains. Slopes vary from very steep on sideslopes to nearly flat in the larger drainages. Drainage density is high on the slopes of Brushy Mountain and lower slopes of Garden Mountain. Drainage density is far lower on the upper slopes of Garden Mountain with broader, shallower drainages. The area contains the headwaters of Hunting Camp Creek and Little Wolf Creek. Another major stream, Laurel Creek, parallels VA 615 along the eastern boundary of the area. Elevations range from approximately 2380 along Hunting Camp Creek to 4120 feet at a point along the crest of Garden Mountain.

The roadless area is forested by eastern deciduous and coniferous species. Approximately 44 percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, white pine, and red maple dominate the overstory. The remaining 56 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

CURRENT USE

All 500 acres of the Little Wolf Creek Special Management Area are located within the Hunting Camp/Little Wolf Creek roadless area. This management area was established, through the forest planning process in 1985, in order to protect this area's unique ecological features and provide for dispersed recreational activities such as hiking, hunting, camping, fishing, and nature study.

Hunting, hiking, and fishing are popular uses of the area. The section of the Appalachian National Scenic Trail passing through this roadless area receives a high amount of use, primarily due to loop trail opportunities in the area. There are two maintained developed recreation sites associated with the Appalachian National Scenic Trail within the area. The Davis Farm Campsite is a small designated camping area located a short distance away from the trail on the north side of Garden Mountain. The Jenkins Trail Shelter, and associated privy, is located on the north side of Hunting Camp Creek.

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There is a trailhead parking lot located adjacent to Laurel Creek and VA 615 where the Appalachian National Scenic Trail crosses the road.

Approximately 25 percent, or 2,214 acres, of the area are classified as suitable for timber production. Inventory data indicate no privately owned, outstanding or reserved, mineral rights underlying Federal surface ownership within this roadless area.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 0.26 miles of improved road, 1.91 miles of unimproved road, and 11.4 miles of maintained trail in the roadless area are visually evident and influences ecological processes, as a minimum, in the vicinity of the roads and trails. Most of the old access and logging roads are becoming overgrown and regaining a more natural appearance though some are still evident. As a result, illegal ATV traffic is relatively low in this area, except in some areas adjacent to the private property at the southern end of VA 618. The two developed recreation facilities, Davis Farm Campsite and Jenkins Shelter, are also visually evident and influence ecological processes in the vicinity of these sites.

Most of the area was cut over and frequently burned in the late 1800's and early 1900's. Approximately 92 percent of the timber is in the 21-100 year old class, three percent is in the 101 plus years class, and less than one percent is in the 0-20 year age class. The area has 522 acres of possible inventoried old growth.

Featured species for the area is 72 percent bear, 25 percent deer, and three percent turkey. The area contains no wildlife openings or recently seeded roads.

A Virginia pine progeny test site, planted in 1980, is located near the northern boundary along FDR 610. The planted trees in this test area are planted in rows, much like in a plantation and may influence ecological processes to some degree. There are two old settling ponds associated with manganese mining near the progeny test site. The mined area is located outside the roadless area on the north side of FDR 610. Old drums and equipment for extracting the manganese are scattered near the settling pond site. Apart from these mining relics, the ponds are beginning to appear fairly natural.

An inactive borrow pit is located within the roadless area along the eastern fringe of the area adjacent to VA 615. The pit has a vertical cut of approximately 100 feet, which has been sloughing over the years. Parts of the cut have revegetated naturally while some portions have not.

There is a large illegal dumping area within the roadless area adjacent to a switchback on VA 623. Garbage, automobiles, and large appliances can be found here. There are additional spots, within the area, near improved and unimproved roads where illegal trash dumping continues to occur.

The area is bounded to the north by a large block of National Forest land. The northwestern, southern, and a portion of the eastern boundaries adjoin large tracts of private lands. The private lands are a mix of woodlands, pastures, farms, and residences with outbuildings.

KEY ATTRACTIONS

The ecosystems and associated wildlife along Little Wolf Creek are a key attraction of the area. Little Wolf Creek, a cascading stream through a gorge-like valley, is listed as a highlight of the Appalachian National Scenic Trail on the Wythe Ranger District. Beaver activity along the creek has created numerous ponds and marshes providing a diversity of habitat. The creek, and associated section of the Appalachian National Scenic Trail, is

listed in the Virginia Wildlife Viewing Guide where it has been described as "an exceptionally scenic hike" with "excellent viewing of beaver, muskrat, turkey, reptiles and amphibians."

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The Appalachian National Scenic Trail and High Water Trail, along with trails outside the roadless area, provide loop trail opportunities that are popular with hikers. Good views of Burkes Garden can be had from the Appalachian National Scenic Trail and Davis Farm Campsite on Garden Mountain. The area is also popular with hunters and some anglers.

The sensitive species, Tennessee dace, occurs within the area. Historic records indicate that Laurel Creek has supported a population of Tennessee dace, a fish species. A population of fringed gentain, a locally rare plant, is known to occur within the area. The species is listed as globally common but is extremely rare in Virginia.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is minimally affected by outside forces. Much of the Hunting Camp/Little Wolf Creek roadless area appears to be natural but there are signs of disturbance. There are 0.26 miles of improved road, 1.91 miles of unimproved road, and 11.4 miles of maintained trail within the area. If this roadless area becomes wilderness, the improved and unimproved roads would be in wilderness and removed from the forest's transportation system. Some old access and logging roads and trails in this roadless area have become overgrown and impassable, causing minimal impact on the area's natural ecological processes. Some illegal ATV trails are evident on National Forest land in the vicinity of the private land north of Hunting Camp Creek in the northeastern section of the area.

There are no maintained wildlife openings within the area. Evidence of an old manganese mining operation near FDR 610 is present. Two settling ponds and associated mining equipment and machinery are at this location. Apart from these mining relics, the ponds appear fairly natural. Two developed recreational facilities are evident near the Appalachian National Scenic Trail; the Davis Farm Campsite and the Jenkins Trail Shelter. Maintenance of these facilities is expected to continue regardless of the future designation of the Hunting Camp/Little Wolf Creek roadless area. The inactive borrow pit adjacent to SR 615 will continue to influence ecological processes in the surrounding area until the site is stabilized by natural processes. There are 31 acres of 0-10 year old age class within this roadless area.

A large, illegal trash dump is evident along one of the switchbacks of VA 623 along the western boundary of the area.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Hunting Camp/Little Wolf Creek roadless area is 8,940 acres in size of which 8,771 acres are within the proclaimed boundary of the Jefferson National Forest. The remaining 169 acres are outside the proclamation boundary. These acres are located on the north side of Garden Mountain and were purchased by the National Park Service for the benefit of the Appalachian National Scenic Trail. Elevations range from approximately 2380 feet along Hunting Camp Creek to 4120 feet at a point along the crest of Garden Mountain. A solitude core area of 5,220 acres exists in the central portion of the roadless area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The areas near VA 623, VA 615, FDR 610, FDR 61333, and a ridgeline south of Little Wolf Creek receive a higher impact from users and are classified as roaded natural. The ratio of core acres of solitude to the roadless area is approximately 58 percent. Visitor use to the area can be described as moderate to high

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during the various hunting seasons and high the rest of the year. The Appalachian National Scenic Trail and High Water Trail are popular yearlong, particularly in the spring and fall. The visitor can expect to encounter other visitors at the Davis Farm Campsite and Jenkins Trail Shelter. The further away one gets from improved and unimproved roads and developed trails and facilities, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance away from the roads and trails. However, some areas will be impacted by noises associated with traffic on improved roads around the periphery of the roadless area and activities occurring on adjoining private lands. These impacts are expected to be limited to the immediate vicinity of the roads and the adjoining private lands.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads and trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Hunting Camp/Little Wolf Creek roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hunting, fishing, hiking, primitive camping, and wildlife viewing are present in the area. The Little Wolf Creek Special Management Area, within the roadless area, offers excellent opportunities for a diversity of dispersed recreation.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Hunting Camp/Little Wolf Creek roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (8,940 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbours Creek, and Shawvers Run. Within the southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridgetops while shale is found in the valleys and lower slopes. Minor amounts of limestone are interbedded with the sandstone on the upper slopes. This roadless area lies on the outer flank of an unusual geologic feature: Burkes Garden, a dome shaped geologic structure. Over geologic time, the top of the dome has been breached (eroded) such that only the steep sides of the original arch of rocks are present today. The valley floor within Burkes Garden is composed of older limestone rocks, which were once deep within the core of the dome but are now exposed at the surface. The Appalachian National Scenic Trail follows the rim on the southern part of Burkes Garden along several miles of the north edge of this roadless area, and offers a view across the great bowl of Burkes Garden. An excellent overlook into Burkes Garden occurs off the Appalachian Trail about 2000 feet east from its intersection with VA 623. The overlook affords a view into the bowl of Burkes Garden. Across the Garden, The Gap is visible. The Gap is a watergap in Garden Mountain at the headwaters of Wolf Creek.

Examples of Arthropycus, the remains of ancient worm burrows or feeding tubes, can be observed on some of the surfaces of the gray sandstones along the Appalachian Trail. They look like long, finger shaped branches that occur on the flat bedding surfaces of the rock.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The area's large relief and highly dissected topography creates a wide

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range of ecological types from hot, dry windswept ridges to cool, moist protected coves, to rich, wet bottomlands. The Little Wolf Creek Special Management Area is located within the roadless area and provides excellent opportunities for nature study. Little Wolf Creek and Laurel Creek were recently evaluated for inclusion into the National Wild and Scenic Rivers System. Both streams were determined to not be eligible for designation into the system. Portions of Laurel Creek had been channelized where it runs along the edge of VA 615 and is, therefore, ineligible for designation since it is not free-flowing. Little Wolf Creek is not eligible for designation as there are no inventoried outstandingly remarkable values associated with the stream.

The vast majority of the area, approximately 60 percent, is in the Dry Mesic Oak ecological community type. Twenty-three percent is in the Dry/Dry-Mesic Oak-Pine type, 11 percent in the Mixed/Western Mesophytic type, four percent in the Xeric Pine/Pine-Oak type, and the remainder a mixture of Conifer/Northern Hardwood, Northern Hardwood, and other minor types.

There are 522 acres of possible inventoried old growth. The ecological community types represented are: 125 acres Dry and Dry-Mesic Oak-Pine (62 acres suitable) which represents 0.3 percent of the Forest's total, 386 acres Dry Mesic Oak (60 acres suitable) which represents 1.4 percent of the Forest's total, and 11 acres Mixed and Western Mesophytic (9 acres suitable) which represents 0.3 percent of the Forest's total.

Tennessee dace, a sensitive fish species occurs within the area, as well as a population of fringed gentain, a locally rare plant. Approximately 87 percent of the area is classified as having high existing scenic integrity.

The Hunting Camp/Little Wolf Creek roadless area is separated from the Garden Mountain roadless area, to the west, by VA 623. The nearest existing wilderness is the Beartown Wilderness, located approximately five air miles to the west.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Hunting Camp/Little Wolf Creek roadless area makes its preservation as potential wilderness practical. The entire boundary follows property lines or roads. Although adjoining private lands contrast somewhat with the area, the effects are generally limited to the periphery along the boundary of the roadless area. Except for areas along the periphery, the high ridges and deep valleys protect this roadless area from the sights and sounds of civilization. The 2.17 miles of improved and unimproved roads receive a great deal of use, particularly during hunting season, and would be difficult returning them to a natural condition. There are no privately owned mineral rights within the area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Forest Service boundary lines and improved roads delineate all of the roadless area boundary. An offset from improved roads bounding the area would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the roads (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, etc.). The borrow pit located adjacent to VA 615, along the eastern edge of the roadless area, would be difficult to return to a near natural condition. An offset of 100 feet from the centerline of FDR 610 and 300 feet from VA routes is recommended.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There are two developed recreation sites within this roadless area, the Davis Farm

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Campsite and Jenkins Trail Shelter. Both facilities are associated with the Appalachian National Scenic Trail. Dispersed recreation activities such as hiking, hunting, fishing, dispersed camping, and wildlife viewing are the largest recreation attractions to the area. The Appalachian National Scenic Trail and High Water Trail attract a great deal of hiking use, particularly through the Little Wolf Creek Special Management Area. A trailhead parking lot is located within the roadless area between VA 615 and Laurel Creek. Another trailhead parking lot is located on the west side of VA 623 just outside the boundary of the Hunting Camp/Little Wolf Creek. Dispersed camping is popular at the two developed facilities year around. Dispersed camping, associated with hunting, is also popular along VA 623 and VA 615 in the fall and early winter. No impacts to current recreation uses would be expected should this area be designated a wilderness.

WILDLIFE

The Hunting Camp/Little Wolf Creek roadless area provides habitat for a diversity of wildlife species. Featured species of the area are 72 percent bear, 25 percent deer, and three percent turkey. No wildlife openings, recently seeded roads, or other wildlife habitat improvements exist within the area. Beaver activity, in and adjacent to Little Wolf Creek, has created a notable diversity of wildlife and habitat within the area.

WATER AVAILABILITY AND USE

The roadless area encompasses the headwaters of Hunting Camp Creek and Little Wolf Creek. Laurel Creek, another major stream, parallels VA 615 along the eastern boundary of the roadless area. Little Wolf Creek, Laurel Creek, and Hunting Camp Creek are cool water streams with good water chemistry and good macroinvertebrate monitoring scores. Hunting Camp Creek is also a wild trout stream. There are no known water storage needs or any existing special use water permit authorizations. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 25 percent of the area, or 2,214 acres, is classified as suitable for timber production. In the past 20 years, approximately 32 acres of timber have been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 2,214 acres of suitable lands within this roadless area represents approximately 0.7 percent of all lands suitable for timber production on the Jefferson National Forest. No Federal oil and gas leases or other Federal mineral leases are in effect in this area as of October 1999. The potential for energy minerals, primarily natural gas, is estimated to be low to moderate. This area was leased under a Federal oil and gas lease in the 1980's. No oil or gas wells were drilled and the Federal lease expired. The potential for other Federal leasable minerals, including metallic minerals, is estimated to be low.

CULTURAL RESOURCES

Approximately 167 acres have been surveyed for cultural resources within the roadless area, as of March 1998, and no historical or prehistoric sites have been identified. However, the area exhibits moderate to high potential for prehistoric and historic resources.

LAND USES

There are currently no special use permit authorizations within this roadless area. A segment of the Appalachian National Scenic Trail was re-routed atop Garden Mountain in 1997.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

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Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands on the northwestern and southern perimeters. A large tract of private land, surrounded on three sides by the roadless area, is located in the northeastern section of the roadless area. Wilderness designation may limit options for containing fires on private and/or federal lands. The Hunting Camp/Little Wolf Creek roadless area is expected to be in the generally infested area for gypsy moth in the next ten to twenty years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 83 percent of the area is composed of the Dry Mesic Oak or Dry/Dry-Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

JAMES RIVER FACE WILDERNESS ADDITION

ID NUMBER: 14302

Overview

LOCATION, VICINITY, AND ACCESS

James River Face Wilderness Addition roadless area is located on the Jefferson National Forest, Glenwood Ranger District, Bedford County, Virginia. The area is located approximately 3.5 air miles southeast of Glasgow and is found within a portion of the U.S.G.S. Virginia Quadrangle Snowden. The area is generally bounded by the existing James River Face Wilderness to the north and west, Blue Ridge Parkway to the southwest, a mix of other National Forest and private land to the south, and an electric power transmission corridor, paralleling US 501 and the James River, to the east. Major vehicle access is provided by US 501 to Forest Development Road (FDR) 54 from the east and US 501 to VA 600 to VA 772 to an undesignated FDR from the southeast.

Surface Ownership	Acres
Forest Service	1,140
Private	0
Park Service	0
TOTAL	1,140

There are no improved roads are within the area. However, one unimproved road accesses the area's interior. FDR 3001 leaves US 501, then parallels a powerline before crossing the powerline and continuing for a distance of 0.4 miles into the northeastern portion of the area where it terminates in a meadow area. Total unimproved road mileage is 0.61 miles.

There is one Forest Development Trail (FDT) within the area. A 1.9 mile segment of FDT 2, the Piney Ridge Trail, traverses the area from FDR 54, northwestward into the James River Face Wilderness. The trail intersects with the Appalachian National Scenic Trail (FDT 1) in the south central portion of the wilderness and is open to foot and horse use only. Total maintained trail mileage is 1.9 miles.

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The area also contains several old access and logging roads. Most have become overgrown and impassable to anything but foot traffic. One of these old roads, located in the southern part of the area in the Peters Creek and Falling Rock Creek drainages, is mowed as a linear wildlife strip every few years and has been kept open for tractor access for mowing.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the James River Face Wilderness Addition roadless area lies in the Northern Blue Ridge Mountains Subsection of the Blue Ridge Mountains Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by tectonic uplifted mountain ranges composed of igneous and metamorphic rock, forming many high gradient, deeply incised streams. Peters Creek, a portion of the Snow Creek drainage, and the headwaters of an unnamed stream, are located within the area. These drainages are all tributaries to the James River. Elevations within the area range from approximately 670 feet at a point along the southside of Snow Creek in the northeastern corner of the area to 1970 feet at a point along the crest of Piney Ridge adjacent to the roadless area's boundary with the existing wilderness.

Vegetation is mainly broadleaf deciduous species with some yellow pine. Approximately five percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 95 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

CURRENT USE

The area is primarily used for dispersed recreation activities such as hunting, hiking, and primitive camping. Approximately 39 percent, or 439 acres, of the area are classified as suitable for timber production. Inventory data indicate 481 acres of privately owned, outstanding mineral rights underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 0.61 miles of unimproved road and 1.9 miles of maintained trail in the roadless area are visually evident and influence ecological processes, as a minimum, in the vicinity of the road and trail. Some old roads are becoming overgrown and regaining a more natural appearance. Much of the area was cut over and frequently burned in the late 1800's and early 1900's. The predominant age range for timber in the area is 21 to 100 years, which represents approximately 68 percent of the area. The remainder of the area is composed of timber in the 101 plus years age class. There have been no timber harvesting activities in the past 20 years. The area has no possible inventoried old growth. The appearance of the area is similar to the existing James River Face Wilderness, which has many old roads that are becoming revegetated and was also cut over in the late 1800's and early 1900's.

Featured species for the area is bear. There are 13 constructed wildlife waterholes within the area. While these waterholes may disturb the natural ecological processes of the area, they also enhance wildlife populations and are gaining an increasingly natural appearance over time. One of the old access roads, located in the southern part of the area in the Peters Creek and Falling Rock Creek drainages, is mowed as a linear wildlife strip every few years and has been kept open for tractor access for mowing.

Remnants of the Snow Creek Recreation Area are located near the terminus of FDR 3001. This facility was abandoned many years ago and all that remains are two concrete slabs, the ruins of an old fireplace, and an open meadow area. The two concrete slabs and fireplace are located on the south side of the road about 0.1 miles before it enters the opening. These slabs are partially covered with litter and moss and are starting to become vegetated. The open area begins where FDR 3001 ends. This area was mowed for a period of time after the recreation area was abandoned, but it has not been mowed for several years and is beginning to be revegetated with trees and brush.

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The roadless area is bounded to the north and west by the 8,886 acre James River Face Wilderness and a segment of the Blue Ridge Parkway corridor bounds the southwest corner of the area. An electric power transmission line, US 501, and private land bound the area to the east and southeast. The James River and a segment of a Chesapeake and Ohio Railroad track are within 0.1 miles of the roadless area at one point along the eastern boundary.

KEY ATTRACTIONS

Activities associated with hunting are a key attraction to the immediate area. The Piney Ridge Trail receives a low amount of use, except during hunting season, when use can be characterized as moderate. The adjoining James River Face Wilderness provides approximately 27 miles of maintained trail, including a segment of the Appalachian National Scenic Trail. The Blue Ridge Parkway, in the southwest corner of the area, attracts thousands of visitors each year. The roadless area is adjacent to the James River Gorge Special Biological Area, an area that contains several unique ecological community types. The biological area encompasses most of the existing James River Face Wilderness. There are no known threatened, endangered, or sensitive species within the roadless area.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is somewhat affected by outside forces. Much of the James River Face Wilderness Addition roadless area appears to be natural but there are signs of disturbance. The unimproved road and maintained trail are visually evident. If this roadless area becomes wilderness, the road would be removed from the Forest's transportation system. Some old access and logging roads have become overgrown and impassable, causing minimal impact on the area's natural ecological processes. The location of the abandoned Snow Creek Recreation Area is not evident to the casual observer. A few remnants can be seen, but would likely only be noticed by someone looking for them. The electric power transmission line, Chesapeake and Ohio railroad track, and the James River, though outside the roadless area boundary, influence ecological processes around the periphery of the area. There are no acres of 0-10 year old age class timber within this roadless area.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The James River Face Wilderness Addition roadless area is 1,140 acres in size and is located entirely on National Forest land. The roadless area is a proposed addition to the 8,886 James River Face Wilderness. Elevations range from approximately 670 feet at a point along the southside of Snow Creek to 1,970 feet at a point along the crest of Piney Ridge. A solitude core area of 630 acres exists in the western half of the roadless area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The ratio of core acres of solitude to the roadless area is approximately 55 percent. If this roadless area were added to the existing James River Face Wilderness, the core area size would represent a much higher

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percentage. The eastern half of the area has a ROS rating of Roaded Natural due to the strong evidence of the the electric power transmission line, improved roads, and railroad line just outside the roadless area boundary. The area receives most of its use during the various hunting seasons. Visitor use can be described as low during other times of the year. The further one gets away from roads and the periphery of the area, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance. Areas along the eastern boundary are impacted by the sights and noises associated with the railroad line, electric transmission line, improved roads, and activities associated with private land which may reduce the feeling of solitude and isolation. Opportunities for solitude and isolation increase as one travels further westward toward the existing James River Face Wilderness.

Much of the terrain in the western portion of the area is steep and rugged, offering the off-trail hiker/hunter good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. The eastern portion of the area is characterized by gentle to flat slopes and broad, gentle sloping drainages. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from improved and unimproved roads. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

James River Face Wilderness Addition roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hunting, hiking, backpacking, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

James River Face Wilderness Addition roadless area is within the Northern Blue Ridge Mountains Subsection of the Blue Ridge Mountains Ecosystem Section. This ecosystem subsection and section is represented by the following wildernesses, totaling 11,230 acres, on the Jefferson National Forest: James River Face and Thunder Ridge. Within the southern Appalachians, 4 wildernesses and 9 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by sandstone and siltstone. Soils are very droughty.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The area is approximately 1.6 miles long at its widest point and exhibits an elevational difference of 1,300 feet from east to west. The James River Gorge Special Biological Area borders the roadless area to the north and west. The biological area also encompasses the existing James River Face Wilderness.

The majority of the area, approximately 54 percent, is in the Dry Mesic Oak ecological community type. The Dry/Dry-Mesic Oak-Pine community type comprises 34 percent of the area while the Xeric Pine/Pine-Oak type comprises nine percent, and the remaining three percent is comprised of the Mixed/Western Mesophytic type.

There is no possible inventoried old growth and there are no known threatened, endangered, or sensitive species within the area.

Approximately 91 percent of the area is classified as having high existing scenic integrity.

Two existing wildernesses are located in the vicinity. The James River Face Wilderness adjoins the northern and western boundaries of the roadless area. Thunder Ridge Wilderness is located approximately 2.7 air miles to the southwest.

SIZE, SHAPE, AND MANAGEABILITY

The size, shape, and location of James River Face Wilderness Addition roadless area, when combined with the existing James River Face Wilderness, makes its preservation as potential wilderness practical. If the roadless area becomes wilderness, this would increase the size of the existing James River Face Wilderness from 8,886 acres to approximately 10,026 acres. The northern and western boundaries of the roadless area adjoin James River Face Wilderness. The remaining boundaries follow property boundary lines between the Blue Ridge Parkway, private property, roads, and an electric power transmission line corridor. Although adjoining private lands in the southeastern portion of the area contrast somewhat with the area, the effects are limited to the periphery along the boundary of the roadless area. Noises and sights associated with the electric power transmission line, improved roads, railroad line, and boating activity on the James River are generally limited to the eastern portion of the area. There are 481 acres of privately owned mineral rights within the roadless area.

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WILDERNESS
ADDITION****BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS**

All of the roadless area boundary follows features such as the existing wilderness boundary, private property lines, a transmission line corridor, and roads. The northern and western boundaries adjoin the existing James River Face Wilderness. The southwestern boundary adjoins a portion of the Blue Ridge Parkway while the remaining boundary follows roads, private property boundaries, or the electric power transmission line corridor. An offset from the roads and transmission line corridor would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the roads (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, etc.) and maintenance activities associated with the transmission line corridor. An offset of 100 feet from the centerline of the roads and transmission line corridor is recommended and identical to that established for the adjoining James River Face Wilderness.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There are no developed recreation facilities within this roadless area. Hunting, hiking, backpacking, and primitive camping are key recreation attractions to the area. The Piney Ridge Trail provides access to the Appalachian National Scenic Trail located in the central portion of the existing James River Face Wilderness. The Thunder Ridge Wilderness is also located nearby, about 2.7 air miles to the southwest. No impacts to established, legal recreation uses would be expected should this roadless area be designated as wilderness.

WILDLIFE

The James River Face Wilderness Addition roadless area provides habitat for a diversity of wildlife species. These wildlife species have not been inventoried and, therefore, population levels are only estimated. The featured species is bear. Maintenance of the wildlife linear strip would be discontinued should this roadless area be designated as wilderness. There are no known threatened, endangered, or sensitive species in the area.

WATER AVAILABILITY AND USE

The headwaters of an unnamed tributary and portions of the Peters Creek and Snow Creek drainages are within the area and all are tributary to the James River. Peters Creek supports wild trout, has good water chemistry, and its macroinvertebrate monitoring score is very good. Snow Creek is a cool water fishery, has good water chemistry, but has a fair to poor macroinvertebrate monitoring score. There are no known water storage needs and no existing special use water authorizations within the area. Water quality is expected to

**JAMES RIVER
FACE
WILDERNESS
ADDITION**

remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 39 percent of the area, or 439 acres, is classified as suitable for timber production. In the past 20 years, no timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 439 acres of suitable lands within this roadless area represents approximately 0.1 percent of all lands suitable for timber production on the Jefferson National Forest. Private subsurface minerals ownership is held on 481 acres within this area. The potential for shale for lightweight aggregate and structural clay products is estimated to be high. No Federal oil and gas leases or other Federal mineral leases are in effect in this area as of December 1999. The potential for energy minerals, primarily natural gas, is estimated to be low. The potential for other minerals, including metallic minerals, is also estimated to be low.

CULTURAL RESOURCES

Approximately 280 acres have been surveyed for cultural resources, as of April 1998, within, or directly adjacent to the roadless area. Several sites related to the early canal system along the James River have been documented and recorded. Several prehistoric transient camps have also been recorded. The remaining area exhibits a moderate to high potential for additional prehistoric and historic sites.

LAND USES

No special use permit authorizations have been issued for land uses in this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area were designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands in the southeastern portion of the area. Wilderness designation may limit options for containing fires on private and/or federal lands. The James River Face Wilderness Addition roadless area is expected to be in the generally infested area for Gypsy moth in the next five to ten years, dependent upon the success of gypsy moth Slow-the-Spread efforts in Virginia, West Virginia, and North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 88 percent of the area is composed of the Dry Mesic Oak type and Dry/Dry-Mesic Oak-Pine forest types. Several localized infestations of gypsy moth have occurred within, and adjacent, to the area in the past several years. An outbreak of the southern pine beetle in the early 1990's resulted in heavy mortality for yellow and white pines over the northern reaches of the Glenwood Ranger District. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other national forest land and/or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

KIMBERLING CREEK WILDERNESS ADDITION A

ID NUMBER: 14601

**KIMBERLING
CREEK
WILDERNESS
ADDITION A**

Overview

LOCATION, VICINITY, AND ACCESS

Kimberling Creek Wilderness Addition A roadless area is located on the Jefferson National Forest, Wythe Ranger District, Bland County, Virginia. The area is located approximately 3.5 miles northeast of Bastian and east of Interstate 77 and is found within a portion of the U.S.G.S. Virginia Quadrangle Rocky Gap. The area is generally bounded by Kimberling Creek Wilderness to the east, south, and west and a combination of Forest Development Road (FDR) 640 and private land to the north. Major vehicle access is limited in the area but is provided by VA 612 to FDR 640 from the southwest side of the roadless area.

Surface Ownership	Acres
Forest Service	89
Private	0
Park Service	0
TOTAL	89

There are no improved or unimproved roads in the area. An old uninventoried access road, leading to a springbox on the southern edge of the roadless area, is evident. The road is 0.11 miles in length and is quickly being reclaimed by natural processes. Total improved and unimproved road mileage is 0.0 miles.

There are no developed, maintained trails within the area.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the Kimberling Creek Wilderness Addition A roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone or shale with parallel drainages interspersed with broad shale or limestone valleys. Included in this area is Hogback Mountain. Typically, slopes vary from very steep on sideslopes to gentle near the larger drainages and drainage density is generally high. However, this roadless area is small in size and does not exhibit all the characteristics associated with this Section. A more representative example of the topography is associated with Kimberling Creek Wilderness, which adjoins the roadless area on three sides. The spring headwaters of North Fork are located within the roadless area. This stream is one of two major streams that flow through Kimberling Creek Wilderness that eventually flow into Kimberling Creek. Elevations range from approximately 3000 feet at a point along the southern boundary to 3240 feet at a point along the crest of Hogback Mountain in the northeast corner of the roadless area.

Vegetation is mainly oak and rhododendron. The entire roadless area has a site index of 70 or greater, indicating moderate to high productivity for tree growth.

CURRENT USE

Hunting is the major dispersed recreation activity within the area. Dispersed camping, associated with hunting, is also popular in several sites of the roadless area adjacent to FDR 640. Approximately 48 percent, or 43 acres, of the area are classified as suitable for timber production. Inventory data indicate no privately owned, outstanding or reserved, mineral rights underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

FDR 640, though outside the boundary of the roadless area, is visually evident and influence ecological processes, as a minimum, in the vicinity of the road. The old road

**KIMBERLING
CREEK
WILDERNESS
ADDITION A**

leading to the springbox at the head of North Fork is still somewhat evident, but is being reclaimed by natural processes rather rapidly due primarily to storm damaged timber blocking the route. The area was cut over and frequently burned in the late 1800's and early 1900's. The age range for timber in the area is 21 to 100 years, which represents 100 percent of the area. The area has no inventoried old growth. This 89 acre area was not included in the original 1984 designation of the Kimberling Creek Wilderness because the land was not acquired until July 1988.

Featured species for the area is bear. No wildlife openings, recently seeded roads, or other wildlife habitat improvements exist within the area. The roadless area adjoins the northwestern boundary of Kimberling Creek Wilderness. To the north of the roadless area lies a large tract of steep, rugged, highly dissected private land.

KEY ATTRACTIONS

The roadless area abuts the existing Kimberling Creek Wilderness, which is popular with hunters, particularly during big game seasons. No Federally threatened, endangered, or sensitive species are known to exist in the area.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area and the area is minimally affected by outside forces. Most of the Kimberling Creek Wilderness Addition A roadless area appears to be natural but there are signs of disturbance. The old access road leading to the springbox at the head of North Fork is evident but is being reclaimed rapidly by natural processes. No timber harvest has occurred within the area since Forest Service acquisition.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Kimberling Creek Wilderness Addition A roadless area is 89 acres in size and is located entirely on National Forest land. The area is a proposed addition to the 5,542 acre Kimberling Creek Wilderness. Elevations range from approximately 3,000 feet at a point along the southern boundary to 3,240 feet at a point along the crest of Hogback Mountain in the northeast corner of the roadless area. There is no solitude core area for this small roadless area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. However, if this roadless area were added to the existing Kimberling Creek Wilderness, the core area of the wilderness would be afforded additional protection. Visitor use to this area is moderate during hunting season and light during the rest of the year. When combined with the existing wilderness, visitors feel like they are in an unconfined, natural area. The overall influence of human activities to the area is minimal. The area appears to be natural although noises associated with Interstate 77 and FDR 640 may create some disturbances, which may reduce the feeling of solitude and isolation in the vicinity of FDR 640.

The terrain within the roadless area is relatively gentle. However, when added to the existing wilderness, the overall terrain is generally steep and rugged, with pockets of gentle to flat terrain along some ridgetops and streamcourses, offering the off-trail hiker/hunter good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from improved roads. Within the adjoining wilderness area, there are vestiges of isolated, scattered pockets of forest primeval but there is a degree of evidence of human impact. The features of the area require the visitor to use a degree of outdoor skills to traverse the

area.

Kimberling Creek Wilderness Addition A roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hunting and dispersed camping are present in the area.

**KIMBERLING
CREEK
WILDERNESS
ADDITION A**

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Kimberling Creek Wilderness Addition A roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (89 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbours Creek, and Shawvers Run. Within the southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by sandstone and siltstone.

There are no designated Research Natural Areas or Experimental Forests within the roadless area.

The entire roadless area is comprised of the Dry Mesic Oak ecological community type and contains no inventoried old growth.

The area encompasses the spring headwaters of North Fork, the major drainage that flows through the heart of the Kimberling Creek Wilderness.

The entire roadless area is classified as having high existing scenic integrity.

The Kimberling Creek Wilderness Addition A roadless area is bounded on three sides by the Kimberling Creek Wilderness.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Kimberling Creek Wilderness Addition A roadless area, when combined with the existing Kimberling Creek Wilderness, makes its preservation as potential wilderness practical. The roadless area is bounded on three sides by the existing wilderness while the northern boundary follows the southside of FDR 640. The area does not contrast significantly with adjoining private lands to the north but the visitor may be able to observe the sights and sounds, at a distance, associated with Interstate 77 from high points along Hogback Mountain. There are no privately owned mineral rights within the area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

The eastern, southern, and western boundaries adjoin the existing Kimberling Creek Wilderness. The northern boundary follows the southside of FDR 640. An offset from this road would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, gravel placement, etc.). An offset of 300 feet from the centerline of the road is recommended and identical to that established for the adjoining Kimberling Creek Wilderness.

Availability for Wilderness

RECREATION, INCLUDING TOURISM

**KIMBERLING
CREEK
WILDERNESS
ADDITION A**

There are no developed recreation sites within this roadless area. Hunting, in a remote setting, is the largest recreation attraction to the area. There are no developed, maintained trails within the proposed wilderness addition or the existing wilderness area.

WILDLIFE

The Kimberling Creek Wilderness Addition A roadless area provides habitat for a diversity of wildlife species. The featured species is bear.

WATER AVAILABILITY AND USE

The roadless area encompasses the spring headwaters of North Fork, a major drainage that flows through the existing wilderness and empties into Kimberling Creek. The area also contains the headwaters of a main tributary to Sulphur Spring Fork. There are no known water storage needs or any existing special use water permit authorizations. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 48 percent of the area, or 43 acres is classified as suitable for timber production. In the past 20 years, no timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 43 acres of suitable lands within this roadless area represents approximately 0.01 percent of all lands suitable for timber production on the Jefferson National Forest. No Federal oil and gas leases or other Federal mineral leases are in effect in this area as of October 1999. The potential for energy minerals, primarily natural gas, is estimated to be low to moderate. This area was leased under a Federal oil and gas lease in the 1980's. No oil or gas wells were drilled and the Federal lease expired. The potential for other Federal leasable minerals, including metallic minerals, is estimated to be low.

CULTURAL RESOURCES

As of March 1998, no cultural resource surveys have been conducted within the roadless area. However, the area exhibits a moderate potential for prehistoric and historic resources.

LAND USES

There currently are no special use permit authorizations within this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands on the north, south, and west perimeters. Wilderness designation may limit options for containing fires on private and/or federal lands. The Kimberling Creek Wilderness Addition A roadless area is expected to be in the generally infested area for Gypsy moth in the next ten to twenty years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. One hundred percent of the area is composed of the Dry Mesic Oak type. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private

land.

**KIMBERLING
CREEK
WILDERNESS
ADDITION A**

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

**KIMBERLING
CREEK
WILDERNESS
ADDITION B**

KIMBERLING CREEK WILDERNESS ADDITION B

ID NUMBER: 14602

Overview

LOCATION, VICINITY, AND ACCESS

Kimberling Creek Wilderness Addition B roadless area is located on the Jefferson National Forest, Wythe Ranger District, Bland County, Virginia. The area is located approximately four miles east of Bastian and Interstate 77 and is found within a portion of the U.S.G.S. Virginia Quadrangle Rocky Gap. The area is bounded by Kimberling Creek Wilderness to the north and west, private land to the east, and VA 612 to the south. Major vehicle access is provided by VA 612, which borders the area along its southern boundary.

Surface Ownership	Acres
Forest Service	195
Private	0
Park Service	0
TOTAL	195

There are no improved or unimproved roads or developed trails in the area.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the Kimberling Creek Wilderness Addition B roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone or shale with parallel drainages interspersed with broad shale or limestone valleys. Included in this area are Hogback Mountain, north of the area, and Brushy Mountain, south of the area. Typically, slopes vary from very steep on sideslopes to gentle near the larger drainages and drainage density is generally high. However, this roadless area is small in size and does not exhibit all the characteristics associated with this Section. A more representative example of the topography is associated with Kimberling Creek Wilderness, which adjoins the roadless area on two sides. The headwaters of a major tributary to Kimberling Creek is located within the roadless area. Elevations range from approximately 2260 feet at a point along VA 612 to 2400 feet at a point in the northwest corner of the roadless area.

Vegetation is mainly broadleaf deciduous species and pine. The entire area has a site index of 69 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

CURRENT USE

Hunting is the major dispersed recreation activity within the area. All 195 acres of the roadless area are classified as suitable for timber production. Inventory data indicate no privately owned, outstanding or reserved, mineral rights underlying Federal surface ownership.

**KIMBERLING
CREEK
WILDERNESS
ADDITION B****APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS**

There is little evidence of recent human disturbance within the roadless area. Noises associated with vehicle traffic on VA 612 and private land to the east do influence ecological processes, as a minimum, along the periphery of the roadless boundary. Most of the area was cut over and frequently burned in the late 1800's and early 1900's. The age range for timber in the area is 21 to 100 years, which represents 100 percent of the area. The area has no possible inventoried old growth. This 195 acre area was not included in the original 1984 designation of the Kimberling Creek Wilderness because the land was not acquired until December 1991.

Featured species for the area is bear. No wildlife openings, recently seeded roads, or other wildlife habitat improvements exist within the area. The roadless area adjoins the southwestern boundary of Kimberling Creek Wilderness. Private lands to the east and south are a combination of woodlots, farms, residences, and pastures and contrast somewhat with the appearance characteristics of the roadless area.

Unightly conditions do occur sometimes along VA 612 due to illegal trash dumping.

KEY ATTRACTIONS

The roadless area abuts the existing Kimberling Creek Wilderness, which is popular with hunters, particularly during big game seasons. There are no Federally threatened, endangered, or sensitive species known to exist in the area.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area but the area is somewhat influenced by outside forces. The southern boundary of this roadless area adjoins VA 612, a local road that provides western access into the Kimberling Creek valley. Most of the Kimberling Creek Wilderness Addition B roadless area appears to be natural with few signs of disturbance to the casual observer. There is no timber in the 0-10 year age class.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Kimberling Creek Wilderness Addition B roadless area is 195 acres in size and is located entirely on National Forest land. This roadless area is a proposed addition to the 5,542 acre Kimberling Creek Wilderness. Elevations range from approximately 2,260 feet at a point along VA 612 to 2,400 feet at a point in the northwest corner of the roadless area that adjoins the existing wilderness area. There is no solitude core area for this small roadless area. A solitude core area refers to the semi-primitive Recreation Opportunity (ROS) setting identified in the roadless area. However, if this roadless area were added to the existing wilderness, the core area of the wilderness would be afforded additional protection. Visitor use to this area is moderate during hunting season and light during the rest of the year. When combined with the existing wilderness, visitors feel like they are in an unconfined, natural area. The overall influence of human activities to the area is minimal. The area appears to be natural although noises associated with VA 612 and activities on adjoining private lands may create some disturbances, which may reduce the feeling of solitude and isolation, primarily along the periphery of the area.

The terrain within the roadless area is relatively gentle. However, when added to the existing wilderness, the overall terrain is steep and rugged, offering the off-trail hiker/hunter good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk

increases as one gets further away from the edge of the roadless area and away from improved roads and private land. Within the adjoining wilderness, there are vestiges of isolated, scattered pockets of forest primeval but there is a degree of evidence of human impact. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

**KIMBERLING
CREEK
WILDERNESS
ADDITION B**

Kimberling Creek Wilderness Addition B roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hunting and dispersed camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Kimberling Creek Wilderness Addition B roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (195 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbours Creek, and Shawvers Run. Within the southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by siltstone and shale.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The entire roadless area is comprised of the Xeric Pine and Pine-Oak ecological community type and contains no possible inventoried old growth.

The area contains several headwater tributaries of Kimberling Creek.

The entire roadless area is classified as having high existing scenic integrity.

The Kimberling Creek Wilderness Addition B roadless area is bounded on two sides by the Kimberling Creek Wilderness.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Kimberling Creek Wilderness Addition B roadless area, when combined with the existing Kimberling Creek Wilderness, makes its preservation as potential wilderness practical. The roadless area is bounded on two sides by the existing wilderness. The remaining boundaries follow VA 612 or private property lines. Although the surrounding private lands contrast somewhat with the area, the effects are limited to the periphery along the boundary of the roadless area. There are no privately owned mineral rights within the area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

The northern and western boundaries adjoin the existing Kimberling Creek Wilderness. The southern boundary follows VA 612 and the eastern boundary abuts private land. An offset from VA 612 would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, etc.). An offset of 100 feet from the centerline of the road is recommended and identical to that established for the adjoining Kimberling Creek Wilderness.

**KIMBERLING
CREEK
WILDERNESS
ADDITION B****Availability for Wilderness****RECREATION, INCLUDING TOURISM**

There are no developed recreation sites or maintained, developed trails within this roadless area. Hunting and dispersed camping, associated with hunting, are the largest recreation attractions to the area.

WILDLIFE

The Kimberling Creek Wilderness Addition B roadless area provides habitat for a diversity of wildlife species. The featured species is bear. No wildlife habitat improvements exist within the area.

WATER AVAILABILITY AND USE

The roadless area encompasses the headwaters of a tributary to Kimberling Creek. There are no known water storage needs or any existing special use water permit authorizations. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. The entire 195 acres of the roadless area is classified as suitable for timber production. In the past 20 years, no timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 195 acres of suitable lands within this roadless area represents 0.06 percent of all lands suitable for timber production on the Jefferson National Forest. No Federal oil and gas leases or other Federal mineral leases are in effect in this area as of October 1999. The potential for energy minerals, primarily natural gas, is estimated to be low to moderate. This area was leased under a Federal oil and gas lease in the 1980's. No oil or gas wells were drilled and the Federal lease expired. The potential for other leasable minerals, including metallic minerals, is estimated to be low.

CULTURAL RESOURCES

As of March 1998, no cultural resource surveys have been conducted within the roadless area. However, the area exhibits a moderate potential for prehistoric and historic resources.

LAND USES

There currently are no special use permit authorizations within this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands on the east and south perimeters. Wilderness designation may limit options for containing fires on private and/or federal lands. The Kimberling Creek Wilderness Addition B roadless area is expected to be in the generally infested area for gypsy moth in the next ten to twenty years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. One

hundred percent of the area is composed of the Xeric Pine and Pine-Oak ecological community type. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

**KIMBERLING
CREEK
WILDERNESS
ADDITION B**

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

**LEWIS FORK
WILDERNESS
ADDITION**

LEWIS FORK WILDERNESS ADDITION

ID NUMBER: 14403

Overview

LOCATION, VICINITY, AND ACCESS

Lewis Fork Wilderness Addition roadless area is located on the Jefferson National Forest, Mount Rogers National Recreation Area, Grayson County, Virginia. The area is surrounded entirely by National Forest lands. The area is bounded by Lewis Fork Wilderness to the west, the Virginia Highlands Horse Trail (Forest Development Trail (FDT) 337) to the east, Crest Zone grazing allotments to the south, and general forest land to the north. The area is found within a portion of U.S.G.S. Virginia Quadrangles Whitetop and Troutdale. Vehicular access is provided by Forest Development Road (FDR) 613, the Pine Mountain Road, near the eastern end of the area.

Surface Ownership	Acres
Forest Service	748
Private	0
Park Service	0
TOTAL	748

There are no improved or unimproved improved roads in the area.

Two Forest Development Trails (FDT) access the area. Approximately 1.5 miles of the Appalachian National Scenic Trail (FDT 1) traverse the area in an east-west direction in the southern portion of the roadless area. This is one of the most heavily used sections of the Appalachian National Scenic Trail in Virginia as it is used to access the popular Mount Rogers High Country. The Orchard Spur Trail (FDT 4596) is a horse and foot trail that traverses approximately 0.5 miles of the area near the northern end of the roadless area. This trail is primarily used by horseback riders that wish to ride into Lewis Fork Wilderness from the Fox Creek Horse Camp or to utilize it with other trails to form loop rides. Total trail mileage is 2.0 miles.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, this area lies in the Southern Blue Ridge Mountains Subsection of the Blue Ridge Mountains Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by tectonic uplifted mountain ranges composed of igneous and metamorphic rock, forming many high gradient, deeply incised streams. Included in this area is Pine Mountain, the dominant mountain within this roadless area. Opossum Creek runs through the eastern section of this area before flowing into Fox Creek, approximately one mile north of the roadless area. Elevation ranges from approximately 3520 feet near the northern end of the area to 5000 feet along the crest of Pine Mountain in the southwest corner.

Vegetation is mainly deciduous hardwood species with red spruce found at the highest elevations. The entire area has a site index of 70 indicating moderate to high productivity for tree growth. This area has a northern aspect with cool and wet colluvial drainages. Here, yellow poplar, northern red oak, white oak, basswood, cucumber tree, white ash,

**LEWIS FORK
WILDERNESS
ADDITION**

eastern hemlock, and red maple dominate the overstory. Between 4000 and 4800 feet is a significant northern hardwood forest community. Here American beech, yellow birch, sugar maple, mountain maple, and striped maple dominate the forest. Red spruce is scattered throughout this area down to an elevation of about 4200 feet.

CURRENT USE

The area is primarily used for dispersed recreation activities such as horseback riding, hiking and hunting. The section of the Appalachian National Scenic Trail passing through this area receives a high amount of use. The Old Orchard trail shelter, a very popular shelter that is often full to capacity on weekends, is located along the western portion of this roadless area. An open field in front of the shelter is currently maintained through the use of mechanical means. A Forest Service administrative cabin is located near the southern boundary. This cabin is used by Forest Service volunteers as a base of operations for work in the High Country.

The entire area is classified unsuitable for timber production. Inventory data indicate 25 acres of privately owned outstanding mineral rights underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 2.0 miles of maintained trail in the roadless area are visually evident and influence ecological processes, as a minimum, in the vicinity of the trails. The Old Orchard trail shelter, associated privy, and open field is a maintained facility that influence ecological processes in the vicinity of the site.

Most of the area was cut over and frequently burned in the early 1900's. The Pine Mountain Road (FDR 613), near the eastern boundary of the area, was the mainline railroad grade for hauling timber out of the High Country. Most timber in the area is in the 21-100 year old age class. However, there is a 250 acre area at the highest elevations where past logging appears to have been limited due to very steep and rocky conditions. This 250 acre area appears to be a mature northern hardwood community (submesotrophic forest). This northern hardwood community has not been inventoried for definitive old growth characteristics.

Featured species for the area is bear. The area contains no wildlife openings or other wildlife habitat improvements.

The area is surrounded by National Forest land. To the north is a strip of woods, which separates the roadless area from the 164 acre Livery West grazing pasture. To the west is Lewis Fork Wilderness. To the south is the fenceline for the Scales grazing pasture. Beyond this fence are the open lands of the crest zone. To the east are woods and the Pine Mountain Road. Beyond the road is the Little Wilson Creek Wilderness Addition B roadless area.

KEY ATTRACTIONS

The area is very popular with hikers on the Appalachian National Scenic Trail. Activities associated with hunting are also popular in this area. Many hunters camp along FDR 613 near the eastern boundary of the area during big game hunting season.

Over 90 percent of the roadless area is within the Pine Mountain Special Biological Area. This 1427 acre Special Biological Area contains several rare plants and animals as well as remnants of a mature northern hardwood forest. The highest elevations contain a forest of red spruce.

Two rare plants and two rare animals have been documented within this roadless area.. Blue Ridge St. John's-wort and mountain rattlesnake root are sensitive species. The yellow-bellied sapsucker is a locally rare species on the Forest. A subspecies of the northern flying squirrel has been documented within the area. The northern flying squirrel is globally secure; however, the subspecies is extremely rare and is listed as a Federally endangered species. No other threatened, endangered, or sensitive species are known to occur within the area.

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Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is minimally affected by outside forces. Much of the Lewis Fork Wilderness Addition roadless area appears to be natural but there are signs of disturbance. There are 2.0 miles of maintained trail within the roadless area. These trails influence ecological processes, as a minimum, in the vicinity of the trails. Some old access and logging roads and trails in this roadless area have become overgrown and impassable, causing minimal impact on the area's natural ecological processes.

There are no maintained wildlife improvements within the area. There is one developed recreation facility near the Appalachian National Scenic Trail; the Old Orchard trail shelter and associated privy. Maintenance of these facilities is expected to continue regardless of the future designation of the Lewis Fork Wilderness Addition roadless area. Adjacent to the shelter is a field, less than one acre in size, that is kept open through mechanical means.

No timber harvesting has occurred within this roadless area in the last 20 years.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

This roadless area is 748 acres in size and is located entirely on National Forest land. The area is a proposed addition to the 5618 acre Lewis Fork Wilderness. Elevation ranges from approximately 3520 feet near the northern end of the area to 5000 feet at the crest of Pine Mountain in the southwest corner. A solitude core area of 544 acres exists in the central and western portions of the area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The northern and eastern areas near roads are classified as roaded natural. The ratio of core acres of solitude to the roadless area is approximately 73 percent. Visitor use to this area can be described as heavy from spring through fall. The adjacent Lewis Fork Wilderness is the sixth most heavily visited wilderness in the United States, on a per capita basis, with 4.05 visitor-days per acre. After hunting season, use is light to moderate until spring when hikers return to the area. Some hiking, cross-country skiing, and snowshoeing occurs during the winter months. The Old Orchard trail shelter is a popular destination in the winter.

The visitor can expect to encounter other visitors along the Appalachian National Scenic Trail. The further away one gets from developed trails, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance away from trails.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

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This roadless area does present a range of dispersed recreational activities of which are typically found on the Jefferson National Forest. Activities such as horseback riding, hiking, hunting, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Lewis Fork Wilderness Addition roadless area is in the Southern Blue Ridge Subsection of the Blue Ridge Mountains ecosystem Section. This ecosystem subsection and section is represented by the following wildernesses, totaling 12,089 acres, on the Jefferson National Forest: Lewis Fork, Little Wilson Creek, and Little Dry Run. Within the Southern Appalachians, 19 wildernesses and 62 roadless areas are classified within this subsection.

Volcanic rocks, tuff and rhyolite, are the dominate rock types. The roadless area is located in the Mount Rogers volcanic center, where lava flows and ash falls blanketed the landscape hundreds of millions of years ago. The higher elevations within the area exhibit frigid soil temperatures and are associated with shorter growing seasons and northern hardwood/spruce and fir plant communities.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. Approximately 90 percent of this area is within the Pine Mountain Special Biological Area. This 1427 acre Special Biological Area contains several rare plants and animals as well as a mature northern hardwood forest. The highest elevations contain a forest of red spruce.

Approximately 84 percent of the area is in the Northern Hardwood ecological community type. Another 13 percent is in the Conifer/Northern Hardwood type, and three percent is in the Dry Mesic Oak type.

There are no acres of possible inventoried old growth in the area.

A federally listed endangered subspecies of northern flying squirrel, two sensitive plants, Blue Ridge St. John's-wort, mountain rattlesnake root, and a locally rare bird the yellow-bellied sapsucker have been documented within this roadless area.

Approximately 98 percent of the area is classified as having high existing scenic integrity.

The Lewis Fork Wilderness Addition roadless area is adjacent to the Lewis Fork Wilderness. The nearest roadless area is Little Wilson Creek Wilderness Addition B just east of this area across FDR 613.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of this roadless area, when combined with the existing Lewis Fork Wilderness, makes its preservation as potential wilderness practical. If this area becomes designated wilderness, this would increase the size of the existing Lewis Fork Wilderness from 5618 acres to 6366 acres. Most of the boundary follows the Lewis Fork Wilderness boundary or the Virginia Highlands Horse Trail. However, there are two areas where the boundary follows no discernible feature. Surrounding lands are all National Forest. There are 25 acres of privately owned mineral rights within the roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Most of the boundary follows features such as the Lewis Fork Wilderness boundary and the Virginia Highlands Horse Trail. There are two areas, however, where the boundary follows no discernible feature. The northern end of the follows portions of a small

drainage before running west and tying into the northeast corner of the Lewis Fork Wilderness. Utilizing the Orchard Spur Trail (FDT 4596), as the northern boundary, is recommended and would allow the boundary to follow a feature on the ground. This would delete approximately 60 acres from the roadless area. The second area is along the southern boundary. Currently, the roadless area boundary appears to follow no discernible feature as it runs east to west. Extending the boundary further south and following the Scales pasture fence is recommended and would allow the boundary to follow a feature on the ground. This would add approximately 67 acres to the roadless area. A Forest Service administrative cabin is located near the southern boundary of the roadless area. This cabin is north of the Scales pasture fence. Placing the boundary around this cabin is recommended. An offset from FDR 613 and the Virginia Highlands Horse Trail bounding the area would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road and trail (brush clearing, grading, culvert installation and cleaning, gravel placement, alignment, etc.). An offset of 100 feet from the centerline of FDR 613 and the Virginia Highlands Horse Trail is recommended.

Availability for Wilderness

RECREATION, INCLUDING TOURISM

There is one developed recreation facility within this roadless area, the Old Orchard trail shelter. This facility is associated with the Appalachian National Scenic Trail. Dispersed recreation activities such as horseback riding, hiking, hunting, and dispersed camping are the largest recreation attractions to the area. The operator of the Fairwood Livery takes clients on horseback rides and wagon rides on the Virginia Highlands Horse Trail along the eastern boundary of this area. The Appalachian National Scenic Trail attracts a great deal of hiking use and a trailhead parking lot is located approximately 0.5 miles north of the area along VA 603. No impacts to established, legal recreation uses would be expected should this area be designated as wilderness. Maintenance of the one-acre open area adjacent to the Old Orchard trail shelter would be discontinued to allow natural processes to resume.

WILDLIFE

The Lewis Fork Wilderness Addition roadless area provides habitat for a diversity of wildlife species. Featured species of the area is bear. The yellow-bellied sapsucker has been documented in this area. A subspecies of the northern flying squirrel, and listed as Federally endangered, has also been documented. In the past, the Virginia Department of Game and Inland Fisheries maintained nesting boxes for northern flying squirrel in this area. These boxes provided additional nesting sites for the squirrels, as well as a means of monitoring health and viability of the population. This project has been discontinued, and although northern flying squirrels persist in this area, population status is unknown at this time.

WATER AVAILABILITY AND USE

The headwaters of Opossum Creek, a tributary to Fox Creek, are found in the eastern end of this roadless area. Opossum Creek is a wild trout stream with a very good macroinvertebrate monitoring score and good water chemistry. There are no existing special use water permit authorizations or known water storage needs. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations within the roadless area. Two grazing allotments are located just outside the roadless area boundary. The Scales pasture, a part of the Crest Zone Allotment, is just south of the area. The Livery West

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pasture, a part of the Fairwood Allotment, is just north of the roadless area. All lands are classified as unsuitable for timber production. No timber has been harvested in this roadless area in the past 20 years. Timber harvest and the associated production of wood products from this area would be precluded by wilderness designation. Private subsurface minerals ownership is held on 25 acres within this area. No Federal oil and gas leases or other Federal leases are in effect in this area as of December 1999. The area was leased for Federal oil and gas in the 1980's; however, no oil or gas wells were drilled and the Federal leases expired. The potential for energy minerals, primarily natural gas, is estimated to be low. The potential for other leasable minerals, including metallic minerals, is estimated to be low.

CULTURAL RESOURCES

As of March 1998, approximately 138 acres of this roadless area has been surveyed for cultural resources. Two prehistoric sites, a base camp and a transient camp, have been documented. The area exhibits a moderate to high potential for additional prehistoric and historic resources.

LAND USES

No special use permit authorizations have been issued for land uses in this roadless area. A Forest Service administrative cabin is located just inside the southern boundary.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. Wilderness designation may limit options for containing fires on federal lands. Lewis Fork Wilderness Addition roadless area is expected to be in the generally infested area for gypsy moth in the next ten to twenty years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed timber stands can be severe (up to 25-30%) following a first defoliation and oaks are the preferred hosts. This area, however, has a small population of oaks with approximately three percent of the area composed of the Dry Mesic Oak ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chances that they may spread to other National Forest or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

LITTLE DRY RUN WILDERNESS ADDITION

ID NUMBER: 14407

**LITTLE DRY
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Overview

Surface Ownership	Acres
Forest Service	2,205
Private	0
Park Service	0
TOTAL	2,205

LOCATION, VICINITY, AND ACCESS

The Little Dry Run Wilderness Addition roadless area is located on the Jefferson National Forest, Mount Rogers National Recreation Area, Wythe, Smyth, and Grayson Counties, Virginia. The area is bounded by the Virginia Highlands Horse Trail (Forest Development Trail (FDT) 337) to the north, VA 798 to the west, VA 612 and Forest Development Road (FDR) 57 to the south, and Little Dry Run Trail (FDT 305) to the east. Two developed recreation facilities, Hale Lake and Comers Rock Campground, are located along the southern boundary but are excluded from the roadless area. The Little Dry Run Wilderness is north of the area across the Virginia Highlands Horse Trail. The area is found within portions of U.S.G.S. Virginia Quadrangles Speedwell and Cedar Springs. Major vehicular access is provided by VA 798 to the west, VA 612 and FDR 57 to the south.

There are no improved roads within the area. However, the Virginia Highlands Horse Trail runs coincident with FDR 728 from US 21 westward to its intersection with the Little Dry Run Trail. This road/trail forms the boundary between the roadless area and Little Dry Run Wilderness for approximately 0.6 miles.

There are no unimproved roads within the area. Approximately 2.5 miles of uninventoried old access and logging roads still exist within the area. These are in various states of passability but some are receiving illegal ATV use.

Portions of three Forest Development Trails traverse the area. Approximately 5.7 miles of the Virginia Highlands Horse Trail (FDT 337) form the northern boundary of the roadless area. Approximately 2.5 of these miles also form the boundary between the roadless area and the existing Little Dry Run Wilderness. The Virginia Highlands Horse Trail is a regionally significant trail that traverses over 80 miles of the NRA, from Elk Garden near Whitetop Mountain, to the New River Trail State Park. The Little Dry Run Trail (FDT 305) enters the area in its northeast corner with approximately 0.5 miles located within the roadless area. The Iron Mountain Trail (FDT 301) runs for approximately 1.5 miles near the southern boundary as it parallels FDR 57. All three trails are shared use trails that are open to horseback riders, mountain bikers, and hikers. This section of the Virginia Highlands Horse Trail is also seasonally open to motorcycles from October through March. Horseback riding is the predominant use of these trails. Total maintained trail mileage is 4.5 miles.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, this area lies in the Southern Blue Ridge Mountains Subsection of the Blue Ridge Mountains Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by tectonic uplifted mountain ranges composed of igneous and metamorphic rock, forming many high gradient, deeply incised streams. Included in this area are Buzzard Rock and Panther Knob, two dominant high points in this heavily dissected area. Kinser Creek drains much of the central portion of the roadless area. Jones Creek drains the northern part of the roadless area as it parallels the Virginia Highlands Horse Trail. These streams flow into Cripple Creek, located approximately three miles north of the roadless area. Elevation ranges from approximately 2540 feet along Jones Creek near the northern boundary to 4000 feet near the summit of Comers Rock.

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Vegetation is mainly broadleaf deciduous species with some yellow pine. Approximately 34 percent of the area has a site index of 70 or greater indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages, toeslopes, or along floodplains of small to medium sized streams. Here yellow poplar, northern red oak, white oak, basswood, cucumber tree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 66 percent of the area has a site index of 60 or lower, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and east midslope aspects with yellow pine occurring in the driest sites. The area also contains several of Virginia's few remaining pure stands of table mountain pine, totaling 77 acres. The roadless area also includes 157 acres of table mountain pine and hardwoods and 433 acre of hardwood pine type, each of which contain a significant component of table mountain and pitch pine. These yellow pine components require fire to reproduce and is becoming increasingly uncommon within its natural range due to fire exclusion.

CURRENT USE

Recreational use within the boundaries of this roadless area is generally light. The area is primarily used by deer hunters during the fall and spring hunting seasons. Only about two miles of maintained trail (portions of Little Dry Run and Iron Mountain trails) actually go through the roadless area. Several recreation facilities are located adjacent to the roadless area boundary, Hale Lake and Comers Rock Campground. Portions of the Virginia Highlands Horse Trail receive moderate to heavy use. Two native trout streams within the area, Kinser Creek and Jones Creek, receive moderate fishing use. Motorcycle use is permitted on a portion of the Virginia Highlands Horse Trail from October 1 through April 1 each year and this use is generally light except during the fall hunting season.

Hale Lake, seasonally stocked with trout, is located just south of the roadless area. This five-acre lake, built in the early 1960's, is very popular with anglers. Facilities include a one-mile loop trail, a parking lot for 20 vehicles, a bulletin board, and sanitary facilities.

Comers Rock recreation area is located just outside the southeastern boundary of the area. This lightly used area includes a 10 site campground, picnic area, picnic shelter, nature trail, and sanitary facility. Approximately 0.5 miles to the west of the campground is the Comers Rock Overlook, also just outside the roadless area boundary. The overlook is accessed via a 0.5 mile spur road and 0.25 mile trail. Dramatic 360 degree views can be seen from the stone and concrete observation platform at the top of Comers Rock. The overlook was built in the 1930's and was used as a fire tower. In the 1960's it was remodeled and became an observation platform.

A portion of the 'Beast of the East', a 300 mile endurance race involving canoeing, hiking, and mountain biking, was run through a portion of the roadless area in June 1998 and again in May 1999. Hiking was featured through this area.

Approximately 62 percent, or 1,357 acres, are classified suitable for timber production within the area. Inventory data indicate no privately owned, outstanding or reserved, mineral rights underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 4.5 miles of maintained trail and improved roads around the periphery of the roadless area are visually evident and influences ecological processes, as a minimum, in the vicinity of the trails and roads. The Virginia Highlands Horse Trail, although a trail, often appears as a low standard road. The trail is maintained with a bulldozer and is often hardened with crushed stone applied by dump truck. About 2.5 miles of old logging roads

still exist; however, lack of maintenance and use is allowing some of them to become overgrown and regain a more natural appearance.

Most of the area was cut over and frequently burned in the early 1900's. Approximately 94 percent of the timber is in the 21-100 year old age class. The area contains 128 acres of possible inventoried old growth.

Featured species for the area is turkey. The area contains seven wildlife openings, totaling approximately seven acres, which are regularly maintained by mowing. There is an old road in the southwest corner of the roadless area that starts at the intersection of VA 798 and VA 612. The road is approximately 0.5 miles in length and was used to access several old cabins. The cabins are gone but the foundations are still evident. There is also an open concrete reservoir in this area. This reservoir is approximately 20 feet by 20 feet and was used to supply water to the cabins.

The roadless area is surrounded on all four sides by National Forest land. Nearly all adjacent lands are forested. Several old fields and grazing allotments are located southwest of the roadless boundary in the Blue Springs Gap area.

KEY ATTRACTIONS

Activities associated with hunting are a key attraction to the area. The Virginia Highlands Horse Trail is popular with horseback riders. Hale Lake, Comers Rock Campground, and Comers Rock Overlook, just outside the roadless boundary, are popular recreation areas. There are no known Federally listed threatened, endangered, or sensitive species in this area.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is minimally affected by outside forces. Much of the roadless area appears to be natural but there are signs of disturbance. The 4.5 miles of maintained trail, numerous improved roads surrounding the area, and old access and logging roads within the roadless area are visually evident. Some of the old access and logging roads and trails in this roadless area have become overgrown and impassable, causing minimal impact on the area's natural ecological processes.

There are seven maintained wildlife openings totaling approximately seven acres within the area. The Virginia Highlands Horse Trail, through this area, is similar in appearance to a low standard road. The moderate use of the Virginia Highlands Horse Trail requires the trail to be wide and often hardened with crushed stone. Maintenance is accomplished with a bulldozer.

Some of the uninventoried old access and logging roads are receiving illegal ATV use with some being cleared for such use. There is an old, uninventoried road, approximately 0.5 miles in length, in the southwest corner of the roadless area that was used to access several old cabins. The cabins are gone but the foundations are still evident. There is also an open concrete reservoir in this area that was used to supply water to the cabins.

There are 49 acres in the 11-20 year old age class within this roadless area.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Little Dry Run Wilderness Addition roadless area is 2,202 acres in size and is located entirely on National Forest land. Elevations range from 2540 feet along Jones Creek near

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the northern tip to 4000 feet near the summit of Comers Rock. A solitude core area of 363 acres exists in the northern portion of the area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. This ROS classification is semi-primitive motorized due to the motorcycle use allowed on the Virginia Highlands Horse Trail. The ratio of core acres of solitude to the roadless area is approximately 16 percent. Visitor use to this area can be described as moderate from spring through fall. After hunting season, use is light until spring when horseback riders return to the area. The visitor can expect to encounter other visitors along the VHHT. The further away one gets from improved and unimproved roads and developed trails, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance away from roads and trails. However, some areas will be impacted by noises associated with traffic on improved roads around the periphery of the roadless area. These impacts would normally be expected to be limited to the immediate vicinity of the roads and trails. However, opportunities for solitude are currently diminished by the significant amount of illegal ATV use occurring within the area.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

This roadless area does present a range of dispersed recreational activities of which are typically found on the Jefferson National Forest. Activities such as horseback riding, hunting, mountain biking, hiking, motorcycling, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Little Dry Run Wilderness Addition roadless area is in the Southern Blue Ridge Subsection of the Blue Ridge Mountains Ecosystem Section (2,202 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 12,089 acres, on the Jefferson National Forest: Lewis Fork, Little Wilson Creek, and Little Dry Run. Within the Southern Appalachians, 19 wildernesses and 62 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by quartzite and shale.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. Kinser Creek, along the northwestern boundary, has had stream improvement work. This work, conducted in the late 1980's, involved blasting of holes within bedrock sections, creating pools to improve fish habitat. Periodic maintenance is needed to replace cover logs within these pools.

Approximately 39 percent of the area is in the Dry Mesic Oak ecological community type. Another 25 percent is in the Dry/Dry-Mesic Oak-Pine type, 20 percent is in the Mixed/Western mesophytic type, and 13 percent is in the Xeric Pine/Pine Oak type.

There are 128 acres of possible inventoried old growth in the area. The ecological community types represented are: 21 acres Dry and Dry-Mesic Oak-Pine (8 acres suitable) which represents 0.4 percent of the Forest's total; 102 acres of Dry Mesic Oak (40 acres suitable) which represents 0.4 percent of the Forest's total; 4 acres of Mixed and Western Mesophytic (4 acres suitable) which represents 0.1 percent of the Forest's total; and 1

acre of Xeric Pine and Pine-Oak (0 acres suitable) which represents 0.1 percent of the Forest's total.

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There are several stands of table mountain pine within the area, which offer opportunities for scientific and educational purposes. This forest type is declining and becoming increasingly rare due to wildfire suppression efforts over the past 50+ years and the lack of prescribed burning. Some animals associated with the yellow pine stands may also be imperiled by this decline.

Approximately 49 percent of the area is classified as having high existing scenic integrity.

The Little Dry Run Wilderness Addition roadless area is separated from the Little Dry Run Wilderness, to the north, by the Virginia Highlands Horse Trail. The closest roadless area to the Little Dry Run Wilderness Addition roadless area is the Little Horse Heaven roadless area located just east of the existing wilderness area and US 21.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of this roadless area, when combined with the existing Little Dry Run Wilderness, makes its preservation as potential wilderness practical. If this area becomes wilderness, this would increase the size of the existing Little Dry Run Wilderness from 2858 acres to about 5060 acres. Most of the boundary follows roads and trails and streams. However, there are two areas where the boundary follows no discernible feature. Surrounding lands are all National Forest. Except for areas along the periphery, the high peaks and deep valleys protect this roadless area from the sights and sounds of civilization. The 2.5 miles of the Virginia Highlands Horse Trail between the roadless area and the wilderness receives moderate use and is maintained with bulldozers. This trail would be difficult to return to a natural condition. There are no privately owned mineral rights underlying Federal surface ownership.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Most of the boundary follows features such as roads and trails and streams. There are two areas; however, where the boundary follows no discernible feature. The Hale Lake and Comers Rock recreation areas are excluded from the roadless area. The boundaries around these two areas follow no features and would be difficult to mark on the ground. To exclude the Comers Rock recreation area, the boundary should follow the Iron Mountain Trail (FDT 301) from the intersection with Little Dry Run Trail west to FDR 57B. This would remove approximately 50 additional acres from the roadless area. To exclude the Hale Lake recreation area, the boundary should follow FDR 57B to the end and then head south to the Hale Lake Trail. The boundary can then follow the Hale Lake Trail around the lake until reaching FDR 57 near the Hale Lake dam. This would add approximately 75 additional acres to the roadless area. An offset from improved roads bounding the area would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, gravel placement, road alignment, etc.). An offset of 300 feet from the centerline of VA 798, VA 612, and FDR 57 is recommended. An offset of 100 feet from the Virginia Highlands Horse Trail along the northwest boundary is recommended and identical to that established for Little Dry Run Wilderness where it is adjacent to this trail.

Availability for Wilderness

RECREATION, INCLUDING TOURISM

There are no developed recreation sites within this roadless area. Dispersed recreation activities such as horseback riding, mountain biking, hiking, motorcycling, hunting, and

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dispersed camping are the largest recreation attractions within the area. The Virginia Highlands Horse Trail attracts a great deal of horseback use. Parking lots with trail access into the roadless area are located at Comers Rock and Hale Lake. There is also a small parking area in the northwest corner approximately 0.5 miles off VA 798. Vehicle access is permitted for 0.5 miles down the Virginia Highlands Horse Trail (coincident with FDR 337) to a locked gate. Hale Lake, Comers Rock, and Comers Rock Campground are developed recreation facilities located just outside the southern boundary of the roadless area. Established recreation uses that would be discontinued should this area be designated a wilderness include: (1) mountain biking, and (2) motorcycle riding on the Virginia Highlands Horse Trail where the trail traverses through the area.

WILDLIFE

The roadless area provides habitat for diverse wildlife species. Featured species of the area is turkey. Seven wildlife clearings totaling seven acres are in the roadless area. There are some stream habitat improvements in Kinser Creek which benefit a number of aquatic fish and wildlife species. If this area is designated wilderness, maintenance of the wildlife openings and stream habitat improvements in Kinser Creek would be discontinued. Turkey, deer, and other wildlife species requiring early successional habitat would be expected to decline. Hunting opportunities would likely diminish over time and this could indirectly affect local economies. No federally listed threatened, endangered, or sensitive wildlife species are known to occur within this roadless area.

WATER AVAILABILITY AND USE

Kinser Creek drains much of the central portion of the area. Jones Creek drains the northern part of the area as it parallels the VHHT. Both streams are cool water streams with good water chemistry and support populations of wild brook trout. Both streams flow into Cripple Creek, located approximately three miles north of the roadless area. There are no known water storage needs or any existing special use water permit authorizations within the area. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 62 percent, or 1357 acres, of the area is classified as suitable for timber production. In the last 20 years, 49 acres of timber has been harvested. Timber harvest and the associated production of wood products from this area would be precluded by wilderness designation. The 1357 acres of suitable lands in this roadless area represent 0.4 percent of all lands suitable for timber production on the Jefferson National Forest. No Federal oil and gas leases or other Federal mineral leases are in effect in this area as of October 1999. The potential for energy minerals, primarily natural gas, is estimated to be low. The area is in the Gossan Lead District (1957, Stose, A.J. and Stose, G.W.). A variety of metallic minerals were prospected and mined in the district. Several abandoned iron prospects are located in the Shady dolomite in the area north and east of the roadless area. This roadless area is estimated to have a high potential for the occurrence of iron, but a low potential for the development of commercial deposits. The potential for commercial deposits of other Federal leasable minerals, including metallic minerals, is estimated to be low.

CULTURAL RESOURCES

As of March 1998, approximately 151 acres of this roadless area has been surveyed for cultural resources. Two prehistoric transient camps and one historic cabin complex have been identified and documented. The area exhibits a moderate potential for additional prehistoric and historic resources.

LAND USES

One special use authorization has been issued within this roadless area. The 300 mile endurance race, the 'Beast of the East', occurred in June 1998 and May 1999. No other special use permit authorizations have been issued within the area.

**LITTLE DRY
RUN
WILDERNESS
ADDITION**

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands on the northern perimeter. Wilderness designation may limit options for containing fires on private and/or federal lands. The gypsy moth is not currently known to occur within this area. However, it is present approximately 8.5 miles to the east and appears to be expanding its range rapidly. The known population is scheduled for treatment in 2003. It is likely the moth will spread into this roadless area within the next five years but the speed is dependent upon the Slow-to-Spread efforts. Mortality in already stressed timber stands can be severe (up to 25-30%) following a first defoliation and oaks are the preferred hosts. Approximately 64 percent of the area is composed of the Dry Mesic Oak type or Dry/Dry Mesic Oak-Pine ecological community types. Evidence of Southern pine beetle expansion is present both within and adjacent to this roadless area. Moving into Southwest Virginia from the south, this species is causing mortality in communities having significant yellow and white pine components. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chances that they may spread to other national forest or private land.

Approximately 11% of this roadless area is occupied by near pure stands of table mountain pine and/or pitch pine types. These pine-dominated stands occur primarily on southeast to southwest facing ridges and slopes with dry, well-drained soils. Table mountain pine has serotinous cones that usually require significant heat in the tree canopy from fire to open the cones, thus allowing for seed dispersal and regeneration. Other forest types that contain a significant component of these pine species occupy about 39% of the roadless area. If this area was designated wilderness, the use of management ignited prescribed fire to manipulate these fire dependent ecosystems for restoration and maintenance would likely not be allowed. This will result in further declines in acreage and the open structure of these forest types along with the flora and fauna these ecosystems support.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

LITTLE HORSE HEAVEN

LITTLE HORSE HEAVEN ROADLESS AREA

ID NUMBER: 14406

Overview

LOCATION, VICINITY, AND ACCESS

Little Horse Heaven roadless area is located on the Jefferson National Forest, Mount Rogers National Recreation Area, Wythe County, Virginia. The area is bounded by private land and Forest Development Road (FDR) 49660 to the north, US 21 to the west, FDR 14 and Virginia Highlands Horse Trail to the south, and Francis Mill Creek to the east. The Little Dry Run Wilderness is located nearby, just west of US 21. The area is found within a portion of U.S.G.S. Virginia Quadrangles Speedwell and Cripple Creek. Major vehicular access is provided by US 21 to the west and FDR 14 to the south and east.

Surface Ownership	Acres
Forest Service	4,722
Private	0
Park Service	0
TOTAL	4,722

There is one improved road in the area. FDR 49650A, a gated road, enters the area from FDR 14 on the southern border of the roadless area and runs 0.62 miles to the northwest. Total improved road mileage is 0.62 miles.

There are two unimproved roads within the area. FDR 4009, a gated road, enters the area from FDR 14 on the southern border of the roadless area and runs 1.44 miles to the north. This road is coincident with a portion of the Virginia Highlands Horse Trail. FDR 49650B, a spur off of FDR 49650A, runs 0.4 miles to the southwest. Total unimproved road mileage is 1.84 miles.

Four Forest Development Trails (FDT) access the area. Approximately 2.7 miles of the Virginia Highlands Horse Trail (FDT 337) traverse the area from the crest of Horse Heaven Ridge, southward to FDR 14 in the southeast corner. An additional 2.7 miles of the Virginia Highlands Horse Trail follow the roadless area boundary up to Horse Heaven Ridge. The section of the Virginia Highlands Horse Trail along the boundary is coincident with FDR 787, a gated road. The Virginia Highlands Horse Trail is a regionally significant horse trail that traverses over 80 miles of the Mount Rogers National Recreation Area from Elk Garden, near Whitetop Mountain, to the New River Trail State Park. The Henley Hollow Trail (FDT 306) enters the area from a trailhead parking lot adjacent to US 21 in the northwest corner of the roadless area and climbs 1.6 miles to an intersection with the Virginia Highlands Horse Trail. The Rocky Hollow Trail (FDT 308) begins on the crest of Horse Heaven Ridge and runs 2.0 miles down the north side of the ridge until reaching private land. There are plans to extend the trail 1.0 mile to connect it to FDR 49660. The Horse Heaven Trail (FDT 307) is 0.35 miles long and connects the Virginia Highlands Horse Trail and Rocky Hollow Trail along the crest of Horse Heaven Ridge. All four trails are shared use trails that are open to horseback riders, mountain bikers, and hikers. Horseback riding is the predominant use of these trails as the heavily used Hussy Mountain Horse Camp is located just outside the southern boundary of this roadless area, on the south side of FDR 14. The Henley Hollow Trail, adopted by a bicycle shop in Galax, is beginning to receive more mountain bike use. Total trail mileage is 6.65 miles.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, this area lies in the Southern Blue Ridge Mountains Subsection of the Blue Ridge Mountains Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by tectonic uplifted mountain ranges composed of igneous and metamorphic rock, forming many high gradient, deeply incised streams. Included in this area is Horse Heaven Ridge that bisects the area running west to east. There are a series of peaks along this ridge including Porter Mountain, Little Horse Heaven, High Point, and Hussy Mountain. There are no major

streams in the area, but several small streams contribute to the headwaters of Francis Mill Creek and Dry Run. Dry Run flows along the western and southwestern boundary. Francis Mill Creek flows along the eastern and southeastern boundary. These streams flow into Cripple Creek, located approximately two miles north of the roadless area. Elevation ranges from approximately 2350 feet near Francis Mill Creek on the eastern end to 3873 feet on the crest of Horse Heaven Ridge.

Vegetation is mainly broadleaf deciduous species with some yellow pine. Approximately 18 percent of the area has a site index of 70 or greater indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages, toeslopes, or along floodplains of small to medium sized streams. Here yellow poplar, northern red oak, white oak, basswood, cucumber tree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 82 percent of the areas has a site index of 60 or lower, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and east midslope aspects with yellow pine occurring in the driest sites.

CURRENT USE

The area is primarily used for dispersed recreation activities such as horseback riding, mountain biking, hiking and hunting. The section of the Virginia Highlands Horse Trail passing through this area receives a high amount of use, primarily due to the nearby Hussy Mountain Horse Camp. A loop ride through the roadless area utilizing the Virginia Highlands Horse Trail is one of the more popular rides out of the horse camp.

Deer and turkey hunting comprises a significant amount of the total use of this area. Populations of these game species are currently considered good. However food sources for deer and other animals that require early successional habitat are declining due to an aging habitat condition.

The Henley Hollow trailhead parking lot is located on the western edge of the roadless area adjacent to US 21. This lot was built in 1992 and provides parking for six to eight vehicles.

The Hussy Mountain Horse Camp is located on the south side of FDR 14, near the southern boundary of the roadless area. This horse camp has two camping loops, bathrooms, and hitching racks. The camp is at, or near, capacity most weekends during the summer.

Approximately 58 percent, or 2752 acres, are classified suitable for timber production within the area. Inventory data indicate that this area has 605 acres of privately owned reserved mineral rights underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 0.62 miles of improved road, 1.84 miles of unimproved road, and 6.65 miles of maintained trail in the roadless area are visually evident and influences ecological processes, as a minimum, in the vicinity of the roads and trails. The Virginia Highlands Horse Trail, although a trail, often appears as a low standard road. The trail is maintained with a bulldozer and is often hardened with crushed stone applied by dump truck. Many old logging roads still exist; however, lack of maintenance and use is allowing many of them to become overgrown and regain a more natural appearance.

Most of the area was cut over and frequently burned in the early 1900's. The predominant age range for timber in the area is 21-100 years, which represents 85 percent of the area.

**LITTLE HORSE
HEAVEN**

Eight percent of the timber is in the 101 plus years class, two percent is in the 0-10 year class, and two percent is in the 11-20 year class. The roadless area has 534 acres of possible inventoried old growth.

Featured species is 83 percent deer and 16 percent gray squirrel. There are eight wildlife openings totaling approximately nine acres, which are regularly maintained by mowing. There are four sprout openings, totaling 5.5 acres, which were created in 1992 to provide food and cover for various wildlife species. One developed waterhole exists within the area. These improvements are designed to enhance wildlife habitat for many species over time. Although these improvements disturb the natural ecological processes of the area, this condition would be expected to diminish and gain an increasingly natural appearance over time. The Virginia Department of Game & Inland Fisheries planted and maintains 80 shrubs that benefit wildlife in the area.

An inactive borrow pit, whose material was used to build Hussy Mountain Horse Camp, is located approximately 0.5 miles north of FDR 14 and the horse camp. The vertical cut is sloughing and beginning to revegetate.

Two old manganese mines are located near the northern boundary of the area. A one-acre mine with vertical cuts of nearly 30 feet is located near the end of FDR 49660 just inside the boundary of the roadless area. This mine was seeded in 1992. A nine-acre mine is located just outside the roadless area boundary near the northeast corner. This old mine is visible from many miles away and has a vertical wall of approximately 100 feet. No reclamation work has been done on this mine. It is sometimes referred to, locally, as the "grand canyon".

The area to the north of the roadless area is mostly private land. The private lands are a mix of woodlands, pastures, farms, and residences with outbuildings. The Speedwell Sanitary Landfill is located on VA 650, one mile north of the roadless area. The eastern, southern, and western boundaries adjoin large blocks of National Forest land.

KEY ATTRACTIONS

The area is very popular with horseback riders. The Hussy Mountain Horse Camp, adjacent to the roadless area, provides a starting point for many loop rides into the area. The Virginia Highlands Horse Trail, in particular, receives heavy use. The other trails in the area receive moderate use. Mountain biking is a growing activity in this area and most of this use occurs on the Henley Hollow Trail and Virginia Highlands Horse Trail. Activities associated with hunting are also a key attraction to this area. Many visitors camp along FDR 14 along the southern boundary of the roadless area during hunting season.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area and the area is somewhat affected by outside forces. Much of the Little Horse Heaven roadless area appears to be natural but there are signs of recent disturbance. The improved and unimproved roads and maintained trails within the roadless area are visually evident. If this roadless area becomes wilderness, the improved and unimproved roads would be in wilderness and removed from the Forest's transportation system. Some old access and logging roads and trails in this roadless area have become overgrown and impassable, causing minimal impact on the area's natural ecological processes.

There are eight maintained wildlife openings totaling approximately nine acres within the area. There are also four sprout clearings totaling four acres. Evidence of an old, one acre, manganese mine just south of FDR 49660 remains; however, it was seeded in 1992. A

larger, nine-acre, manganese mine is located just outside the roadless area boundary in the northeast corner. An old borrow pit is located 0.5 miles north of FDR 14 and the Hussy Mountain Horse Camp. An abandoned powerline runs through about 0.5 miles of the northern tip of the roadless area. A water hole for horses is located north of FDR 14 and west of FDR 4009, along the southern boundary of the area. The Virginia Highlands Horse Trail, through this area, is similar in appearance to a low standard road. The heavy use of the Virginia Highlands Horse Trail requires the trail to be wide and often hardened with crushed stone. Maintenance is accomplished with a bulldozer.

There are 84 acres of timber in the 0-10 year old age class and 97 acres in the 11-20 year old age class within the roadless area.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Little Horse Heaven roadless area is 4744 acres in size and is located entirely on National Forest land. Elevations range from 2350 feet near Francis Mill Creek on the eastern side to 3873 feet along the crest of Horse Heaven Ridge. A solitude core area of 2985 acres exists in the central and northern portions of the area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The areas near US 21, FDR 14, and FDR 787 are classified as roaded natural. The ratio of core acres of solitude to the roadless area is approximately 63 percent. Visitor use to this area can be described as moderate to heavy from spring through fall. After hunting season, use is light, until spring, when horseback riders return to the area. The visitor can expect to encounter other visitors along the Virginia Highlands Horse Trail. The further away one gets from improved and unimproved roads and maintained trails, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance away from roads and trails. However, some areas will be impacted by noises associated with traffic on improved roads around the periphery of the roadless area and activities occurring on adjoining private lands. These impacts are expected to be limited to the immediate vicinity of the roads and trails and adjoining private lands.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Little Horse Heaven roadless area presents a range of dispersed recreational activities of which are typically found on the Jefferson National Forest. Activities such as horseback riding, mountain biking, hiking, hunting, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Little Horse Heaven roadless area is in the Southern Blue Ridge Subsection of the Blue Ridge Mountains ecosystem Section. This ecosystem subsection and section is represented by the following wildernesses, totaling 12,089 acres, on the Jefferson National Forest: Lewis Fork, Little Wilson Creek, and Little Dry Run. Within the Southern Appalachians, 19 wildernesses and 62 roadless areas are classified within this subsection.

Geologic rock types within this roadless area are dominated by quartzite and shale. Some dolomite and limestone may be present along the northern and eastern edge of the area.

There are no designated Research Natural Areas or Experimental Forests within the roadless area.

**LITTLE HORSE
HEAVEN**

Francis Mill Creek, along the eastern boundary, has had stream improvement work. This work involved utilizing heavy equipment for removal of significant debris jams resulting from pine beetle mortality in areas previously disturbed by mining operations, placement of logs and boulders within braided channels and stabilization of eroding banks. Fish habitat was also improved through installation of cover logs and blasting of potholes in selected bedrock sections to create pools. This stream work improved water quality and habitat for trout and other aquatic organisms. Periodic maintenance has been required to protect these improvements. Approximately 39 percent of the area is in the Dry Mesic Oak ecological community type. Another 38 percent is in the Dry/Dry-Mesic Oak-Pine type, 10 percent is in the Xeric Pine/Pine Oak type, eight percent is in the Mixed/Western mesophytic type, and three percent is in the Conifer/Northern Hardwood type.

There are 534 acres of possible inventoried old growth in the area. The ecological community types represented are: 136 acres Dry and Dry-Mesic Oak-Pine (72 acres suitable) which represents 2.8 percent of the Forest's total, 324 acres of Dry Mesic Oak (200 acres suitable) which represents 1.2 percent of the Forest's total, 59 acres of Mixed and Western Mesophytic (0 acres suitable) which represents 1.6 percent of the Forest's total, and 15 acres of Xeric Pine and Pine-Oak (15 acres suitable) which represents 1.7 percent of the Forest's total.

Several populations of the Carolina hemlock, a sensitive species, occur within this area. This species can be damaged or destroyed by the hemlock wooly adelgid which is present within the Francis Mill Creek and East Fork Dry Run drainages. Some crown thinning of the Carolina hemlock has been observed as a result of these infestations.

A 900-acre prescribed fire, of which 350 acres were within the roadless area, was implemented in the spring of 1998. The Virginia Highlands Horse Trail was the boundary for the prescribed fire. This understory burn was conducted for the following reasons: to modify forest composition and structure by decreasing fire intolerant species such as red maple and white pine, to reduce fuel load, to improve oak regeneration to benefit mast production for wildlife, and to enhance table mountain pine regeneration.

No Federally listed threatened or endangered, species are known to occur within this area.

Approximately 63 percent of the area is classified as having high existing scenic integrity.

The Little Horse Heaven roadless area is separated from the Little Dry Run Wilderness, to the west, by US 21. The nearest roadless area is the Little Dry Run Wilderness Addition, just west of the wilderness.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of this roadless area makes its preservation as potential wilderness reasonably practical. Much of the boundary follows property boundary lines and roads. However, there are three areas where the boundary follows no discernible feature. Surrounding lands are mostly Forest Service, except for private land to the north. Although adjoining private lands contrast somewhat with the area, the effects are generally limited to the periphery along the boundary of the roadless area. Except for areas along the periphery, the high peaks and deep valleys protect this roadless area from the sights and sounds of civilization. The 2.7 miles of the Virginia Highlands Horse Trail receives heavy use and is maintained with bulldozers. This trail would be difficult to return to a natural condition. There are 605 acres of privately owned, reserved, mineral rights within the roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Much of the boundary follows features such as roads and property line boundaries. There are three areas; however, where the boundary follows no discernible feature. There is a 0.75 mile section of boundary in the northwest corner that follows no feature. Extending the boundary to follow the National Forest property line is recommended. This would add approximately 90 acres to the area. In the center of the roadless area, the boundary runs south from the Virginia Highlands Horse Trail down to FDR 14 and follows no feature. Extending the boundary to the east and following the Virginia Highlands Horse Trail down to FDR 14 is recommended. This would remove approximately 350 acres from the area and remove all roads and borrow pits from the roadless area. The roadless area boundary also goes around the old nine-acre manganese mine in the northeast corner. This old mine would be difficult to return to a natural condition and the boundary should go around the mine. An offset from improved roads bounding the area would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, gravel placement, road alignment, etc.). An offset of 300 feet from the centerline of US 21 is recommended and identical to that established for the adjacent Little Dry Run Wilderness. This would also place the Henley Hollow parking lot outside the roadless area. An offset of 300 feet along FDR 14 along the eastern boundary of the area is recommended. This would allow wildlife clearings to remain outside the area and allow for future heavy equipment work in Francis Mill Creek. An offset of 100 feet along the remaining portions of FDR 14 and the Virginia Highlands Horse Trail is recommended.

Availability for Wilderness

RECREATION, INCLUDING TOURISM

There are no developed recreation sites within this roadless area. Dispersed recreation activities such as horseback riding, mountain biking, hiking, hunting, and dispersed camping are the largest recreation attractions to the area. The Virginia Highlands Horse Trail attracts a great deal of horseback use. A trailhead parking lot is located adjacent to US 21 at the beginning of the Henley Hollow Trail. The Hussy Mountain Horse Camp is located just outside the southern boundary of the area. Established uses that would be discontinued should this area be designed a wilderness include: (1) mountain biking, and (2) heavy equipment maintenance of the Virginia Highlands Horse Trail where this trail passes through the roadless area.

WILDLIFE

The Little Horse Heaven roadless area provides habitat for a diversity of wildlife species. Featured species of the area is 83 percent deer and 16 percent gray squirrel. There are eight wildlife clearings totaling nine acres and four sprout clearings totaling 5.5 acres are within the roadless area. There are a number of stream habitat improvements in Francis Mill Creek which benefit a number of aquatic fish and wildlife species. If this area is designated a wilderness, maintenance of the wildlife clearings, sprout openings, and stream improvements in Francis Mill Creek would be discontinued. Deer and other wildlife species requiring early successional habitat would be expected to decline. Hunting opportunities would likely diminish over time and this could indirectly affect local economies. No federally listed threatened, endangered, or sensitive wildlife species are known to occur within this roadless area.

WATER AVAILABILITY AND USE

A small pond, less than one acre in size, is located along the Rocky Hollow Trail. Dry Run flows along the western and southwestern boundary. Francis Mill Creek flows along the eastern and southeastern boundary. All water from this roadless area ultimately drains into Cripple Creek. Francis Mill Creek has good water chemistry, a very good macroinvertebrate monitoring score, and supports a wild trout and stocked trout fishery.

**LITTLE HORSE
HEAVEN**

Water quality is expected to remain at its current level whether or not the area is designated as wilderness. A reservoir for Hussy Mountain Horse Camp is located 100 feet north of FDR 14 along the southern boundary of the roadless area. There are no existing special use water permit authorizations or other known water storage needs.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 58 percent, or 2752 acres, of the area is classified as suitable for timber production. In the last 20 years, approximately 181 acres of timber has been harvested. Timber harvest, and the associated production of wood products, from this area would be precluded by wilderness designation. The 2752 acres of suitable lands in this roadless area represents 0.9 percent of all lands suitable for timber production on the Jefferson National Forest. Private subsurface minerals ownership is held on 605 acres within this area. No Federal oil and gas leases or other Federal leases are in effect in this area as of December 1999. The potential for energy minerals, primarily natural gas, is estimated to be low. This area is in the Gossan lead District (1957, Stose, A.J. and Stose, G.W.). A variety of minerals were prospected and mined in the district. Several abandoned iron prospects are located in the Shady dolomite along the northern and eastern border of the roadless area. This roadless area is estimated to have a high potential for the occurrence of iron, but a low potential for development of commercial iron deposits. The potential for commercial deposits of other Federal leasable minerals, including metallic minerals, is estimated to be low.

CULTURAL RESOURCES

As of March 1998, approximately 339 acres of this roadless area has been surveyed for cultural resources. Four transient camps, a quartzite quarry, and a quartzite reduction station have been documented. In addition, a 19th century colliers pit and waterworks are also documented. The area exhibits a moderate to high potential for additional prehistoric and historic resources.

LAND USES

No special use permit authorizations have been issued for land uses in this roadless area. An abandoned borrow pit is located 0.5 miles north of FDR 14 near the southern boundary of the area. A one-acre abandoned manganese mine is located just south of FDR 49660. A horse watering hole is located just west of FDR 4009 and north of FDR 14. A reservoir that provides running water to the Hussy Mountain Horse Camp is located just north of FDR 14. An abandoned powerline runs through the extreme northern tip of the roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands on the northern perimeter. Wilderness designation may limit options for containing fires on private and/or federal lands. A gypsy moth infestation is known to occur approximately 1.2 miles east of this roadless area and is scheduled for Slow-the Spread treatment in 2003. It is likely the moth will spread into this area within the next few years if it has not already done so. The degree of infestation will depend on the treatment success.. Mortality in already stressed timber stands can be severe (up to 25-30%) following a first defoliation and oaks are the preferred hosts. Approximately 77 percent of the area is composed of the Dry Mesic Oak type or Dry/Dry Mesic Oak-Pine ecological community types. The effects of Southern pine beetle have been seen in portions of the area. Moving into Southwest Virginia from the south, this

species is causing some mortality in communities having significant yellow and white pine components. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chances that they may spread to other national forest or private land.

**LITTLE HORSE
HEAVEN**

**LITTLE WALKER
MOUNTAIN**

Approximately 10% of this roadless area is occupied by near pure stands of table mountain pine and/or pitch pine types. These pine-dominated stands occur primarily on southeast to southwest facing ridges and slopes with dry, well-drained soils. Table mountain pine has serotinous cones that usually require significant heat in the tree canopy from fire to open the cones, thus allowing for seed dispersal and regeneration. Other forest types that contain a significant component of these yellow pine types occupy about 39% of the roadless area. If this area was designated wilderness, the use of management ignited prescribed fire to manipulate these fire dependent ecosystems for restoration and maintenance would likely not be allowed. This will result in further declines in acreage and the open structure of these forest types along with the flora and fauna these ecosystems support.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

LITTLE WALKER MOUNTAIN ROADLESS AREA

ID NUMBER: 14609

Overview

LOCATION, VICINITY, AND ACCESS

The Little Walker Mountain roadless area is located on the Jefferson National Forest, Wythe Ranger District and encompasses portions of Bland, Pulaski, and Wythe Counties, Virginia. The area is located north of Interstate 81 and northwest of the Town of Pulaski. In general, the center of the roadless area is at the intersection of the Bland, Pulaski, and Wythe County lines. The area is found within portions of the U.S.G.S. Virginia Quadrangles Long Spur and Pulaski. The area is approached by numerous State maintained roads and Forest Development Roads (FDR). VA 600 and FDR 707 provide access from the east, VA 738 from the north, VA 641 and FDR 692 from the east, and VA 710 and FDR 202 from the south.

Surface Ownership	Acres
Forest Service	9,815
Private	0
Park Service	0
TOTAL	9,815

VA 600 forms the northwestern boundary of the roadless area while VA 738 forms the northeastern boundary. VA 641 approaches the area from the east until it becomes FDR 692 as it enters National Forest land. VA 710 and FDR 202 form a large portion of the south and southeastern boundary and FDR 707 forms the southwestern boundary. A 50 foot-wide natural gas pipeline right-of-way bounds approximately 1.4 miles of the southeastern corner. FDR's 692 and 6791 form part of an interior eastern boundary.

There are four improved roads within the area. FDR 67311 is located south of VA 641 and crosses over private land for approximately 0.1 miles before entering and continuing on National Forest land for 0.5 miles. FDR 6791 forms part of an interior boundary for approximately 0.6 miles to the north of FDR 692 before continuing 1.5 miles west into the interior of the roadless area south of the crest of Little Walker Mountain. FDR 692 enters the area along Tract Fork and runs westward 0.4 miles into the interior to a locked gate. FDR 6801 is gated where it enters the area to the north of FDR 707 along the southwestern boundary and runs north and southeast for 0.67 miles. Total improved road

**LITTLE WALKER
MOUNTAIN**

mileage is 3.07 miles.

There is also one unimproved road within the boundaries of this roadless area. FDR 6903, 1.32 miles in length, enters the area to the south of VA 738 and runs south and west. Total unimproved road mileage is 1.32 miles.

Two Forest Development Trails (FDT) access the area. The Tract Fork Trail (FDT 6516) is 4.0 miles in length and is open to hikers, horseback riders, and mountain bikes. The trail, rated easy, begins at a trailhead parking lot at the end of FDR 692, continues westward paralleling Tract Fork, and climbs to the crest of Little Walker Mountain where it terminates at a trailhead parking lot along VA 600. The Polecat Trail (FDT 6517) is a moderately difficult 1.5 mile trail open to hikers and mountain bikes. The trail begins at a small trailhead parking lot on the north side of FDR 707 and travels northeast to where it intersects with the Tract Fork Trail. Both trails provide good access to the central and western portion of the roadless area and receive a low amount of use during the normal use season. Use increases to a moderate level during hunting season. Total maintained trail mileage is 5.5 miles.

A jeep trail enters the area from the extreme eastern boundary on Tract Mountain and runs for approximately 5.0 miles along the crests of Tract and Chestnut Mountains. The trail receives 4-wheel drive and illegal ATV use, especially during hunting season. There is also a strong presence of illegal jeep and ATV use on the many other old roads that lace the area, particularly along the eastern end of the area, where several private hunting camps are located adjacent to National Forest land. There are many other old logging roads on and around Chestnut and Tract Mountains in the southeast corner of the roadless area. Some of the old roads are in the process of being reclaimed by natural processes while others are being kept open by illegal uses.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the Little Walker Mountain roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone and shale with parallel drainages interspersed with broad limestone or shale valleys. Included in this area are Little Walker, Piney, Tract, and Chestnut Mountains. Slopes vary from very steep on sideslopes to gentle in some drainages. Drainage density is very high to high throughout the area and are generally narrow and deep with steep sideslopes. The area contains the headwaters for a multitude of tributaries that feed major streams, including Little Walker Creek, Panther Lick Hollow, Laurel Hollow, Tract Fork, Pondlick Branch, Eddys Branch, and Peak Creek. Elevation ranges from approximately 2080 feet near Little Walker Creek to 3120 feet at a point along the crest of Little Walker Mountain.

The roadless area is forested by eastern deciduous and coniferous species. Approximately 11 percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, white pine, and red maple dominate the overstory. The remaining 89 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites. The area also contains several of Virginia's few remaining pure stands of table mountain pine. This species requires fire to reproduce and is becoming increasingly uncommon within its natural range due to fire exclusion.

CURRENT USE

LITTLE WALKER
MOUNTAIN

The area is primarily used for dispersed recreation activities such as hunting, fishing, hiking, mountain bike riding, horseback riding, and dispersed camping associated with hunting. Illegal ATV use is also popular along the areas old roads and informal trails. Approximately 36 percent, or 3,498 acres, of the area are classified as suitable for timber production. The lower reaches of Piney Mountain, north of FDR 707 and adjacent to FDR 6801, are being actively managed with prescribed fire to stimulate the natural reproduction of table mountain pine in an effort to maintain the species on the site. A rain gauge, one of a series of such gauges in southwest Virginia, is located north of VA 710 near Eddys Branch. The 15 foot high rain gauge occupies a small cleared area and readings are reported automatically via a radio signal to the Virginia Office of Emergency and Energy Services, which operates the site under a special use authorization. A natural gas pipeline, also operating under an authorized special use permit, forms a portion of the southeastern boundary of the roadless area. The Peak Creek drainage, along the southern boundary of the roadless area, is approximately 37 percent of the public water supply for the Town of Pulaski. The water is impounded in Gatewood Reservoir before delivery to the town. A portion of the area lies directly under a flight path used for low level flight training by the US military on a regular basis. Inventory data indicate 1786 acres of private owned, outstanding or reserved, mineral rights underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 3.07 miles of improved road, 1.32 miles of unimproved road, and 5.5 miles of maintained trail in the roadless area are visually evident and influence ecological processes, as a minimum, in the vicinity of the roads and trails. Many old access roads and logging roads still exist and are evident. Some are becoming overgrown and are regaining a more natural appearance. Others, including the jeep trail along Tract Mountain, are being kept open by frequent 4-wheel drive vehicles and illegal ATV traffic.

Most of the area was cut over and frequently burned in the late 1800's and early 1900's. Approximately 89 percent of the timber is in the 21-100 year old class, five percent is in the 101 plus years class, one percent in the 0-10 year class, and one percent in the 11-20 year class. The area has 81 acres of possible inventoried old growth.

Featured species for the area is 90 percent turkey and 10 percent deer. Wildlife openings are scattered throughout the roadless area and total approximately 10 acres. The openings are currently kept open through regular mowing and prescribed burning. There is an artificial wildlife pond north of FDR 6791 which was blasted into the rock on top of Little Walker Mountain. While this pond may disturb the natural ecological processes of the area, it also enhances wildlife populations and is gaining an increasingly natural appearance over time.

There are two old homesites just south of FDR 692 which may be influencing ecological processes in their immediate vicinity. These homesites are becoming overgrown and beginning to blend with the natural landscape.

The rain gauge located on north of VA 710 may influence ecological processes in the immediate vicinity of the site. The natural gas pipeline corridor along the southeastern boundary is regularly maintained by the permittee and, as such, may be influencing ecological processes for some distance away. Corridor maintenance involves the removal of all woody vegetation within the 50 foot wide right-of-way.

There is a large illegal dumping area within the roadless area at the intersection of VA 738 and FDR Road 6903. A wide variety of trash ranging from garbage and diapers to automobiles and large appliances covers approximately one-half acre.

The area is bounded to the north and east by private land, to the south by National Forest

**LITTLE WALKER
MOUNTAIN**

and private lands, and to the west primarily by National Forest lands. A large block of National Forest land is located to the immediate south and southeast of the roadless area; however, the block is broken up by an existing 50 foot natural gas pipeline right-of-way. The Town of Pulaski is approximately 1.5 air miles from the roadless area's southeastern boundary.

KEY ATTRACTIONS

The Tract Fork and Polecat Trails, which receive a moderate amount of use during hunting season, are key attractions to the area. The area is a very popular hunting area for both small and big game. Tract Fork and Peak Creek support wild trout. Gatewood Reservoir, just south of the roadless area, is a developed recreation facility owned and operated by the Town of Pulaski. Camping, fishing, boating, hiking, and picnicking are popular activities at this facility.

Sword-leaved phlox occurs within a portion of the area. This plant species is on the Regional Forester's sensitive list and is listed very rare globally, as well as very rare within Virginia. There are no other known Federally threatened, endangered, or sensitive species within the area.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area and the area is somewhat affected by outside forces. Much of the Little Walker Mountain roadless area appears to be natural but there are signs of disturbance. There are 4.39 miles of improved and unimproved road, and 5.5 miles of maintained trail within the area, as well as many miles of old logging roads kept open by jeep and illegal ATV use. These roads and trails influence ecological processes, as a minimum, in the vicinity of these roads and trails, which may influence the distribution pattern of certain wildlife species. If this roadless area becomes wilderness, the improved and unimproved roads would be in wilderness and removed from the Forest's transportation system. A steady law enforcement presence in this area would be required to deter the illegal ATV use. Some of the old roads and trails in this roadless area have become overgrown and impassable, causing minimal impact on the area's natural ecological processes.

While the maintenance of wildlife openings and the artificial wildlife pond have affected natural ecological processes in the area, the range of influence is limited in extent. The area occupied by the Virginia Office of Emergency and Energy Services rain gauge is small in size and influences ecological processes in the area immediately surrounding this facility. There are 73 acres of 0-10 year old age class timber within this roadless area.

A large, illegal trash dump is evident at the intersection of VA 738 and FDR 6903. The central portion of the roadless area receives less human impact due its remoteness and rugged terrain.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Little Walker Mountain roadless area is 9,815 acres in size and is located entirely on National Forest land. Three mountain ranges bisect the area in a southwesterly to northeasterly direction: Little Walker, Tract, and Chestnut Mountains. Elevations range from approximately 2080 feet near Little Walker Creek to 3120 feet at a point along the crest of Little Walker Mountain. A solitude core area of 3,505 acres exists in the central and northeastern portions of the roadless area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The ratio of core acres of solitude to the roadless area is approximately 36

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MOUNTAIN

percent. Visitor use to the area can be described as moderate to high during the various hunting seasons and low during the rest of the year. The two Forest Development Trails are popular yearlong, particularly with local residents. The further away one gets from improved and unimproved roads and developed trails, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance away from the roads and trails. However, some areas will be impacted by noises associated with traffic on improved roads around the periphery of the roadless area, activities occurring at Gatewood Reservoir along the southern boundary, activities associated with adjoining private land along the northern and eastern boundaries, noises from military jet training flights, and illegal ATV traffic scattered throughout the roadless area. Additionally, Norfolk-Southern maintains a railway south of the area adjacent to the National Forest. This line is a major corridor for north and southbound freight, and railroad noises can be heard from within the roadless area on calm days.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping, particularly in the central portion of the area. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads and trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Little Walker Mountain roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hunting, fishing, hiking, mountain biking, horseback riding, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Little Walker Mountain roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (4,184 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbours Creek, and Shawvers Run. Within the southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by shale and sandstone. Shale is found in the valleys and lower slopes while sandstone is found on the upper slopes and ridgetops. Minor amounts of carbonate rocks, limestone or dolomite, may also be present.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The area's large relief and highly dissected topography creates a wide range of ecological types from hot, dry windswept ridges to cool, moist protected coves, to rich, wet bottomlands. There are several stands of table mountain pine within the area, which offer opportunities for scientific and educational purposes.

The vast majority of the area, approximately 69 percent, is in the Dry and Dry-Mesic Oak-Pine ecological community type. Fifteen percent is in the Xeric Pine and Pine-Oak type, 14 percent in the Dry Mesic Oak type, and the remainder is a mix of Mixed and Western Mesophytic and Conifer-Northern Hardwood types.

There are 81 acres of inventoried possible old growth. The ecological community types represented are: 2 acres of Conifer-Northern Hardwood (2 acres suitable) which represents 0.4 percent of the Forest's total, 53 acres Dry and Dry-Mesic Oak-Pine (4 acres suitable) which represents 1.1 percent of the Forest's total, and 26 acres Dry Mesic Oak (22 acres suitable) which represents 0.09 percent of the Forest's total.

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MOUNTAIN**

Tributaries to Peak Creek, within the roadless area boundary, are within the designated public water supply for the Town of Pulaski. The population served is approximately 10,000.

The sensitive plant, sword-leaved phlox, occurs within a portion of the area.

The two old homesites south of FDR 692 are becoming overgrown and beginning to blend in with the natural landscape.

Approximately 90 percent of the area is classified as having high existing scenic integrity.

The nearest existing wilderness to this roadless area is Kimberling Creek Wilderness, approximately 9.0 air miles to the northwest.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Little Walker Mountain roadless area makes its preservation as potential wilderness practical. Most of the boundary follows property lines or roads. The boundary north and east of Tract Fork would be difficult to establish because the line is entirely on National Forest lands and would require a survey to formally establish the boundary. Although surrounding private lands contrast with the area, the effects are generally limited to the periphery along the boundary of the roadless area. Except along the eastern, southern, and southeastern boundaries where noises from the Town of Pulaski, Norfolk-Southern railway, and US military jet flyovers may become disturbing, the high peaks and deep valleys protect this roadless area somewhat from the sights and sounds of civilization. The high amount of illegal ATV traffic would likely continue being a law enforcement problem. The 4.39 miles of improved and unimproved roads receive a great deal of use, particularly during hunting season, and would be difficult returning them to a natural condition.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Forest Service boundary lines and improved roads delineate most of the roadless area boundary. An offset from improved roads bounding the area would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the roads (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, etc.) and the adjacent dispersed camping areas that are used during hunting season. An offset of 100 feet from the centerline of Forest Development Roads and 300 feet from VA roads is recommended.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There are no developed recreation sites within this roadless area. Dispersed recreation activities such as hiking, hunting, fishing, mountain biking, horseback riding, and dispersed camping are the largest recreation attractions to the area. Illegal ATV use is also common to the area. Gatewood Reservoir, owned and operated by the Town of Pulaski, provides opportunities for water based recreation near the southern boundary of the roadless area. The Town of Pulaski is approximately 1.5 air miles from the southeastern boundary of the roadless area. Established recreation uses that would be discontinued should this area be designated a wilderness include: (1) mountain biking would be discontinued, and (2) legal 4X4 off-road riding over the jeep trail in the southeastern part of the area would cease.

WILDLIFE

The Little Walker Mountain roadless area provides habitat for a diversity of wildlife species. Featured species of the area are 90 percent turkey and 10 percent deer. If this area is designated a wilderness, maintenance of existing wildlife openings and the wildlife pond would be discontinued. Tract Fork and Peak Creek support wild trout. Tract Fork has a good macroinvertebrate monitoring score.

**LITTLE WALKER
MOUNTAIN**

WATER AVAILABILITY AND USE

The roadless area encompasses the headwaters for a multitude of tributaries that feed Little Walker Creek, Panther Lick Hollow, Laurel Hollow, Tract Fork, Pondlick Branch, Eddys Branch, and Peak Creek. There are no existing special use water permit authorizations in the area. Water quality is expected to remain at its current level whether or not the area is designated as wilderness. A portion of the roadless area is within the Peak Creek drainage, which is a primary component of the public water supply for the Town of Pulaski. Gatewood Reservoir is located approximately 3.5 air miles west of the town. There are no other known water storage needs in the area.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 36 percent of the area, or 3,498 acres, is classified as suitable for timber production. In the past 20 years, approximately 176 acres of timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 3,498 acres of suitable lands within this roadless area represents approximately 1.1 percent of all lands suitable for timber production on the Jefferson National Forest. Private subsurface minerals ownership is held on 1786 acres within this area. No Federal oil and gas leases or other Federal mineral leases are in effect in this area as of October 1999. The potential for energy minerals, primarily natural gas, is estimated to be low to moderate. This area was leased under a Federal oil and gas lease in the 1980's. No oil or gas wells were drilled and the Federal lease expired. The potential for other Federal leasable minerals, including metallic minerals, is estimated to be low.

CULTURAL RESOURCES

Approximately 799 acres have been surveyed for cultural resources within the roadless area, as of March 1998, and one prehistoric hunting-transient camp has been documented. However, the area exhibits a moderate to high potential for additional prehistoric and historic resources.

LAND USES

An authorized special use permit for a rain gauge is located north of VA 710 near Eddys Branch. If this area is designated as a wilderness, it is recommended that the rain gauge be authorized to remain at its current location to maintain the long-term integrity of rain data for the Virginia Office of Emergency and Energy Services. No other special use authorizations exist within the area. However, an existing 50 foot-wide natural gas pipeline right-of-way forms a 1.4 mile long boundary of the roadless area in the southeastern corner. The Forest has received a request for an additional 50 foot-wide right-of-way paralleling the existing line and the proposal is currently under evaluation.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands on the northern and eastern perimeters. Wilderness designation may limit options for containing fires on private and/or federal

LITTLE WALKER MOUNTAIN

lands. The Little Walker Mountain roadless area is expected to be in the generally infested area for gypsy moth in the next ten to twenty years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 83 percent of the area is composed of the Dry and Dry-Mesic Oak-Pine and Dry Mesic Oak ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

LITTLE WILSON CREEK WILDERNESS ADDITION A

Portions of this roadless area are occupied by near pure stands of table mountain pine and/or pitch pine forest types. These pine-dominated stands occur primarily on southeast to southwest facing ridges and slopes with dry, well-drained soils. Table mountain pine has serotinous cones that usually require significant heat in the tree canopy from fire to open the cones, thus allowing for seed dispersal and regeneration. Other oak dominated forest types that contain a component of these pine species also occupy a large portion of this roadless area. If this area was designated wilderness, the use of management ignited prescribed fire to manipulate these fire dependent ecosystems for restoration and maintenance would likely not be allowed. This will result in further declines in acreage and the open structure of these forest types along with the flora and fauna these ecosystems support.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

LITTLE WILSON CREEK WILDERNESS ADDITION A

ID NUMBER: 14401

Overview

LOCATION, VICINITY, AND ACCESS

Little Wilson Creek Wilderness Addition A roadless area is located on the Jefferson National Forest, Mount Rogers National Recreation Area, Grayson County, Virginia. The area is bounded by Little Wilson Creek Wilderness to the north and west, non-wilderness National Forest land to the south, and private land to the east. The area is found within a portion of U.S.G.S. Virginia Quadrangle Troutdale. There is no major vehicular access to the area. A private road accesses the area from the south off of VA 817.

Surface Ownership	Acres
Forest Service	78
Private	0
Park Service	0
TOTAL	78

There are no roads or trails in the area.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, this area lies in the Southern Blue Ridge Mountains Subsection of the Blue Ridge Mountains Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by tectonic uplifted mountain ranges composed of igneous and metamorphic rock, forming many high gradient, deeply incised streams. A tributary to Wilson Creek, Brier Run, flows southward through the roadless area. Elevation ranges from approximately 3180 feet along Brier Run near the southeast corner to 3950 feet near the northwest corner.

The roadless area contains 39 acres of grazing land called the Brier Run Pasture and 39 acres of forested land. The 39 acres of grazing land are found on the lower two-thirds of the area and consists of 23 acres of open pasture and 16 acres of woodland. The 39 acres of forest vegetation is mainly broadleaf deciduous species, intertwined with brushland, with a site index of 60, indicating moderate productivity for tree growth. White oak, northern red oak, hickory, chestnut oak and scarlet oak are the main tree species within the area.

CURRENT USE

The main use of this land is for grazing. Grazing is authorized under an on-off grazing permit within the Fairwood Allotment. This permits cattle to graze back and forth between National Forest land and adjacent private lands. An environmental assessment analyzing the effects of grazing within the Fairwood Allotment was completed in 1998. The Decision Notice authorized the continued use of grazing.

Recreational use within the boundaries of this roadless area is very light. Any use would be dispersed recreation activities such as hunting.

All lands are classified unsuitable for timber production within the area. Inventory data indicate no privately owned, outstanding or reserved, mineral rights underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The open lands within this area provide a pastoral setting. There are wire fences around the grazing lands that are visually evident and influence ecological processes, as a minimum, in the vicinity of the fences.

Most of the area was cut over and frequently burned in the early 1900's. Most timber in the area is in the 21-100 year old class. The roadless area has no acres of possible inventoried old growth.

Featured species for the area is bear.

The roadless area is bounded by the heavily wooded Little Wilson Creek Wilderness to the north and west. Private lands to the east are a mix of woodlands, pastures, farms, and residences.

KEY ATTRACTIONS

Grazing is the primary use and main attraction of this small area. The area receives some hunting use in the fall. There are no known threatened, endangered, or sensitive species in this area.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

The use of cattle in the area is preventing the open lands from returning to a wooded state. The open lands within this area would revert to forest if grazing were discontinued. This has been shown to occur in a nearby pasture, within Little Wilson Creek Wilderness, in which grazing was discontinued in the early 1990's.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

**LITTLE WILSON
CREEK
WILDERNESS
ADDITION A**

This roadless area is 78 acres in size and is located entirely on National Forest land. Elevations range from 3180 feet along Brier Run in the southeastern corner to 3950 feet in the northwest corner. The area is too small to have a solitude core area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The adjacent Little Wilson Creek Wilderness contains a large area of semi-primitive non-motorized ROS setting. This roadless area is classified as roaded natural. Visitor use to this area can be described as very light. Due to the small size, most of this area will be impacted by activities occurring on the adjacent private lands.

Much of the terrain in this roadless area is steep and rugged. The terrain is similar to the adjacent wilderness.

This roadless area does not present a range of dispersed recreational activities of which are typically found on the Jefferson National Forest. Some hunting is present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

This roadless area is in the Southern Blue Ridge Subsection of the Blue Ridge Mountains ecosystem Section. This ecosystem subsection and section is represented by the following wildernesses, totaling 12,089 acres, on the Jefferson National Forest: Lewis Fork, Little Wilson Creek, and Little Dry Run. Within the Southern Appalachians, 19 wildernesses and 62 roadless areas are classified within this subsection.

Volcanic rocks, primarily rhyolite, are the dominant rock types. This area is located in the Mount Rogers volcanic center, where lava flows and ash falls blanketed the landscape hundreds of millions of years ago.

There are no designated Research Natural Areas or Experimental Forests within the roadless area.

All forested lands within this area are in the Dry Mesic Oak ecological community type. There is no inventoried old growth in the area.

There are no known threatened, endangered, or sensitive species in this area.

The entire area is classified as having high existing scenic integrity.

The Little Wilson Creek Wilderness Addition A roadless area is adjacent to the Little Wilson Creek Wilderness. The nearest roadless area is Little Wilson Creek Wilderness Addition B, on the north side of the wilderness.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of this roadless area, when combined with the existing Little Wilson Creek Wilderness, makes its preservation as potential wilderness practical. If this area became wilderness, this would increase the size of the existing Little Wilson Creek Wilderness from 3613 acres to 3670 acres. The northern and western boundaries of the roadless area adjoin Little Wilson Creek Wilderness. The eastern and southern boundaries adjoin private lands. There are no privately owned mineral rights underlying Federal surface ownership.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

The north and west boundary is adjacent to Little Wilson Creek Wilderness and would not need to be marked on the ground. The eastern and southern boundaries follow private

property lines and would easily be located on the ground.

**LITTLE WILSON
CREEK
WILDERNESS
ADDITION A**

Availability for Wilderness

RECREATION, INCLUDING TOURISM

There are no developed recreation facilities or any public roads or trails that access this area. The only way for the general public to access the area is to bushwhack through Little Wilson Creek Wilderness.

WILDLIFE

The featured species of the area is the same as the adjacent Little Wilson Creek Wilderness - bear. There are no known threatened, endangered, or sensitive species in this area.

WATER AVAILABILITY AND USE

Brier Run, a tributary to Big Wilson Creek, is a wild trout stream with a good macroinvertebrate monitoring score. Brier Run is used as a water source for cattle in the area. There are no other known water storage needs in the area. Water quality is expected to remain at its current level. If Brier Run is removed as a water source for cattle, water quality would be expected to improve over time.

LIVESTOCK, TIMBER, AND MINERALS

Livestock grazing is the predominant use of this area. Of the 78 acres in this area, 39 are classified as grazing land. The grazing is authorized under an on-off permit, which allows cattle to graze back and forth between National Forest to adjacent private land. The grazing is seasonal with cattle in the area mid-April to mid-October. Grazing would not be precluded by wilderness designation.

There are no acres of land classified as suitable for timber production. In the last 20 years, no timber has been harvested. Timber harvest and the associated production of wood products from this area would be precluded by wilderness designation. No Federal oil and gas leases or other Federal mineral leases are in effect in this area as of December 1999. The potential for energy minerals, primarily natural gas, is estimated to be low. The potential for other Federal leasable minerals, including metallic minerals, is also estimated to be low.

CULTURAL RESOURCES

As of March 1998, no cultural resource surveys have been conducted within this roadless area. The area exhibits a moderate potential for additional prehistoric and historic resources.

LAND USES

One special use permit authorization for grazing has been issued for 39 acres within this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Managing the grazing lands may become more difficult if the area becomes wilderness. Projects such as fence repair, fertilizing, and stock tank construction would need to be done by non-mechanical means unless specifically approved in a wilderness resource management plan.

**LITTLE WILSON
CREEK
WILDERNESS
ADDITION A**

The small size of this area should not affect other management considerations in a major way. Fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands to the south and east. Wilderness designation may limit options for containing fires on private lands. This roadless area is expected to be in the generally infested area for gypsy moth in the next ten to twenty years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed timber stands can be severe (up to 25-30%) following a first defoliation and oaks are the preferred hosts. The timber in this roadless area is composed of the Dry Mesic Oak ecological community types. Wilderness designation may make control of insect and disease infestations more difficult, thus increasing the chances that they may spread to other national forest or private land.

**LITTLE WILSON
CREEK
WILDERNESS
ADDITION B**

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

LITTLE WILSON CREEK WILDERNESS ADDITION B

ID NUMBER: 14402

Overview

LOCATION, VICINITY, AND ACCESS

Little Wilson Creek Wilderness Addition B roadless area is located on the Jefferson National Forest, Mount Rogers National Recreation Area, Grayson County, Virginia. The area is surrounded by National Forest

Surface Ownership	Acres
Forest Service	1,724
Private	0
Park Service	0
TOTAL	1,724

lands except for a small section in the northeastern corner. The area is bounded by the Crest Zone grazing allotment and Forest Development Road (FDR) 613 (Pine Mountain Road) to the west, Little Wilson Creek Wilderness to the south, grazing lands and general forest land to the east, and grazing lands to the north. The area is found within a portion of U.S.G.S. Virginia Quadrangle Troutdale. Vehicular access is provided by FDR 613 along the northwestern boundary and VA 739 near the northeastern corner of the area. FDR 4104, a rough 4-wheel drive road, also accesses the southeastern corner.

An old, rough access road, not on the Forest's transportation system, is used to access the Solomon Branch grazing pasture. The road is approximately 0.5 miles long and begins on private land at the terminus of VA 739 in the northeastern corner of the area.

There are no improved or unimproved roads in the area.

Five Forest Development Trails (FDT) access the area. Approximately 1.0 mile of the First Peak Trail (FDT 4524) runs through the southern portion of the area and provides access into Little Wilson Creek Wilderness. The Third Peak Trail (FDT 4521) intersects FDT 4524 and runs down the western section of the area for 1.6 miles. The Switchback Trail (FDT 4520) begins and ends on FDR 613 and runs through the northwestern portion of the area for 1.0 miles. The Solomon Branch Trail (FDT 4626) begins on VA 739 near the northeastern corner of the area and goes 1.2 miles through the area before intersecting with FDT 4521. The Shapiro Trail (FDT 4608) goes through approximately 0.8 miles of the area in the southeastern corner and accesses Little Wilson Creek Wilderness. All trails are open to horseback riders and hikers. Total trail mileage is 5.6 miles

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)**LITTLE WILSON
CREEK
WILDERNESS
ADDITION B**

According to ecological mapping, this area lies in the Southern Blue Ridge Mountains Subsection of the Blue Ridge Mountains Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by tectonic uplifted mountain ranges composed of igneous and metamorphic rock, forming many high gradient, deeply incised streams. Included in this area is Third Peak, the dominant peak in this roadless area. Solomon Branch runs through the middle of this area before flowing into Fox Creek, approximately one mile north of the roadless area. Elevation ranges from approximately 3400 feet near the northern end to 4950 feet at the crest of Third Peak near the southern boundary.

Vegetation is mainly hardwood deciduous species with some red spruce at the highest elevations. Approximately 83 percent of the area has a site index of 70 indicating moderate to high productivity for tree growth. This roadless area has mostly a northern and eastern aspect with cool and wet colluvial drainages. Here yellow poplar, northern red oak, white oak, basswood, cucumber tree, white ash, eastern hemlock, and red maple dominate the overstory. Above 4400 feet on Third Peak, is a conifer/northern hardwood forest community. Here American beech, yellow birch, sugar maple, mountain maple, striped maple, and red spruce dominate the forest. The remaining 17 percent of the area has a site index of 60 indicating a moderate to low productivity for tree growth.

CURRENT USE

The area is used primarily for dispersed recreation activities such as horseback riding, hiking and hunting. The operator of the Fairwood Livery uses many of these trails when leading guided horseback trips. Trail access is available on FDR 613 along the western boundary, Shapiro Trail parking lot on VA 739 near the eastern boundary, and FDR 4103 along the southeastern boundary.

Portions of three grazing pastures are within this roadless area. All three pastures are within the Fairwood Grazing Allotment. The Young Tract grazing pasture is partially in the northern portion of this area. This grazing area is 55 acres in size of which 22 acres are open and 33 acres are woodland. The 33 acres of woodland are within the roadless area. These woodlands are not used by the cattle and when the fence is rebuilt in the future, it will be moved to the field/woodland edge and the entire Young Tract will be outside this roadless area. The Solomon Branch grazing pasture is 63 acres in size of which 19 acres are open, 17 acres are brush, and 27 acres are woodland. All 63 acres are within the roadless area in the northeastern corner. A fenceline encircles the grazing area and an old woods road runs through the tract. The Solomon Branch grazing permit is an on-off permit which permits cattle to graze back and forth between National Forest land and adjacent private lands. The Shapiro Tract grazing pasture is 169 acres in size of which 118 are open and 51 acres are woodland. Approximately 20 acres of this grazing area is located in the eastern section of the roadless area. A fenceline also encircles the grazing land within this tract. Adjusting the roadless area boundary from FDR 4103 to the fenceline would remove all of the Shapiro Tract grazing land from this area.

The portion of these grazing lands that are open are mechanically mowed every few years to keep briars and weeds to a minimum. Use of these grazing lands are authorized under a special use permit. An environmental assessment was completed for the Fairwood Grazing Allotment in 1998. The Decision Notice for the environmental assessment authorized the continued use of grazing.

The entire area is classified unsuitable for timber production. Inventory data indicate 267 acres of privately owned, outstanding or reserved, mineral rights underlying Federal surface ownership.

There is a two-plot cemetery along Solomon Branch Trail, approximately 0.5 miles from VA

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739.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 5.6 miles of maintained trail and 0.5 miles of old road in the roadless area are visually evident and influences ecological processes, as a minimum, in the vicinity of the trails and old road. The 63 acre Solomon Branch grazing pasture is entirely within the roadless area and 19 acres are maintained in an open state through grazing and mowing. There are wire fences encircling this grazing pasture that are visually evident.

There are three private land inholdings just outside the eastern boundary of the roadless area. Each private inholding has a structure on it. One is a trailer, one a rustic hunting cabin, and one a house.

Most of the area was cut over and frequently burned in the early 1900's. The Pine Mountain Road (FDR 613) near the western boundary of the area was the mainline railroad grade for hauling timber out of the High Country. All timber in the area is in the 21-100 year old age class. The roadless area has 40 acres of possible inventoried old growth.

Featured species for the area is primarily bear. Approximately 242 acres at the southern end of the area is featured for grouse. The area contains no wildlife openings or other habitat improvements.

The area is surrounded by National Forest land except for a small section of the northeast corner that adjoins private property. There are also three small private land inholdings just outside the eastern boundary. To the north is the Livery East grazing pasture, Young Tract grazing pasture, and private land. To the east is the Shapiro Tract grazing pasture and general forest land. To the south is Little Wilson Creek Wilderness. To the west is FDR 613 and the Scales grazing pasture and the open lands known as the Crest Zone.

KEY ATTRACTIONS

The five trails in the area are very popular with horseback riders and hikers. The Fairwood Livery operator uses many of these trails for guided trail rides. There is a 40 foot waterfall on Solomon Branch. There is no maintained trail to the falls, yet some people do hike up to see it. Activities associated with hunting are also popular in this area. Many hunters camp along FDR 613 near the western boundary of this area. Hunters also drive up FDR 4104 to the southeastern boundary of this area. This road also accesses a small private inholding that has a hunting cabin on it.

Approximately 200 acres of this roadless area are within the Little Wilson Creek Headwaters Special Biological Area. ThisTwo rare plants and one rare animal have been documented within this roadless area.. Blue Ridge St. John's-wort and long-stalked holly are found within the area and are sensitive species. The locally rare hermit thrush is very common and demonstrably secure globally, though it may be rare in parts of its range, especially at the periphery. In Virginia, this bird is listed as extremely rare by the Virginia Division of Natural Heritage.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area and the area is minimally affected by outside forces. Much of the Little Wilson Creek Wilderness Addition B roadless area appears to be natural but there are signs of recent disturbance. Cattle grazing and

mowing are preventing the open lands from returning to a wooded state. There are 5.6 miles of maintained trail and 0.5 miles of an old woods road within the roadless area. These trails and old road influence ecological processes, as a minimum, in the vicinity of the trails and road. Some old access and logging roads and trails in this roadless area have become overgrown and impassable, causing minimal impact on the area's natural ecological processes.

There are no maintained wildlife openings or other habitat improvements within the area.

No timber harvesting has occurred within this roadless area in the last 20 years.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

This roadless area is 1724 acres in size and is located entirely on National Forest land. The area is a proposed addition to the 3613 acre Little Wilson Creek Wilderness. Elevation ranges from approximately 3400 feet near the northern end to 4950 feet at the crest of Third Peak, near the southern boundary. A solitude core area of 764 acres exists in the southern portion of the area adjacent to Little Wilson Creek Wilderness. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The northern area near roads is classified as roaded natural. The ratio of core acres of solitude to the roadless area is approximately 44 percent. Visitor use to this area can be described as moderate to heavy from spring through fall. After hunting season, use is light until spring when visitors return to the area.

The visitor can expect to encounter other visitors along most of these trails during spring, summer, and fall. The further away one gets from developed trails, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance away from trails.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

This roadless area does present a range of dispersed recreational activities of which are typically found on the Jefferson National Forest. Activities such as horseback riding, hiking, hunting, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

This roadless area is in the Southern Blue Ridge Subsection of the Blue Ridge Mountains ecosystem Section. This ecosystem subsection and section is represented by the following wildernesses, totaling 12,089 acres, on the Jefferson National Forest: Lewis Fork, Little Wilson Creek, and Little Dry Run. Within the Southern Appalachians, 19 wildernesses and 62 roadless areas are classified within this subsection.

Volcanic rock, rhyolite, is the dominate rock type. The roadless area is located in the Mount Rogers volcanic center, where lava flows and ash falls blanketed the landscape hundreds of millions of years ago. The higher elevations within the area exhibit frigid soil temperatures and are associated with shorter growing seasons and northern hardwood/spruce and plant communities.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. Approximately 200 acres of this roadless area is in the Little Wilson Creek Headwaters Special Biological Area. This 464 acre biological area includes the

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headwaters of the westernmost fork of Little Wilson Creek. These headwaters include acidic springs, sphagnum seeps, and braided streams. Vegetation in the wetland areas is primarily endemic and includes such unusual species as finely-nerved sedge, three-seed sedge, and Michaux bluet. Long sedge, a species normally associated with the coastal plain, was observed in this area.

Approximately 60 percent of the area is in the Northern Hardwood ecological community type. Another 21 percent is in the Conifer/Northern Hardwood type, and 18 percent is in the Dry Mesic Oak type.

There are no acres of possible inventoried old growth in the area.

Several sensitive plant species, Blue Ridge St. John's-wort, long-stalked holly and a locally rare bird species, the hermit thrush, have been documented as occurring within the roadless area (see 1.i.).

The entire area is classified as having high existing scenic integrity.

The Little Wilson Creek Wilderness Addition B roadless area is adjacent to the Little Wilson Creek Wilderness. The nearest roadless area is Lewis Fork Wilderness Addition, located west of FDR 613.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of this roadless area, when combined with the existing Little Wilson Creek Wilderness, makes its preservation as potential wilderness practical. If this area becomes designated wilderness, this would increase the size of the existing Little Wilson Creek Wilderness from 3613 acres to 5336 acres. Most of the boundary follows the Little Wilson Creek Wilderness boundary, grazing pasture fences, FDR 613, or private land. However, there are two areas where the boundary follows no discernible feature. Surrounding lands are nearly all National Forest. There are 267 acres of privately owned mineral rights within the roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Most of the boundary follows features such as a wilderness boundary, road, or grazing fence. There are two areas; however, where the boundary follows no discernible feature and will be difficult to locate on the ground. There is approximately 2000 feet in the northeast corner that follows no features. This section connects VA 739 and FDR 4103. There is approximately 3000 feet in the southeastern corner that follows no features. This section connects FDR 4103 and FDR 4104.

There is also an area where the boundary needs to be adjusted to remove a portion of the Shapiro Tract grazing pasture from the roadless area. The eastern boundary follows FDR 4103 instead of the fence line, which is approximately 500 feet to the west. Utilizing the fence line instead of FDR 4103 is recommended. Follow the fence to the south until intersecting the Shapiro Trail. This would delete approximately 20 acres from the roadless area.

An offset from VA 739 and FDR 613, bounding the area, would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road and trail (brush clearing, grading, culvert installation and cleaning, gravel placement, alignment, etc.). An offset of 100 feet from the centerline of VA 739 and FDR 613 is recommended.

Availability for Wilderness

RECREATION, INCLUDING TOURISM

Dispersed recreation activities such as horseback riding, hiking, hunting, and dispersed camping are the largest recreation attractions to the area. The operator of the Fairwood Livery takes clients on guided horseback rides on many of the trails within this roadless area. No impacts to established, legal recreation uses would be expected should this area be designated as wilderness.

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ADDITION B****WILDLIFE**

The Little Wilson Creek Wilderness Addition B roadless area provides habitat for a diversity of wildlife species. There are no wildlife habitat improvement projects within the area. Featured species is primarily bear, with a small area also featuring grouse. The hermit thrush, globally common but found extremely rarely in Virginia, has been documented as occurring in this area.

WATER AVAILABILITY AND USE

Solomon Branch, a tributary to Fox Creek, is a wild trout stream with a good macroinvertebrate monitoring score and good water chemistry. Solomon Branch drains most of the roadless area. The area also contains the headwaters of Little Wilsomn Creek. There are no existing special use water permit authorizations in effect as of March 2000. There are no known water storage needs within the area. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

The Solomon Branch grazing pasture is entirely within this roadless area. Four grazing allotments are located just outside the roadless area boundary. The Scales pasture, a part of the Crest Zone Allotment, is just west of the area. The Livery East pasture and Young Tract pasture, parts of the Fairwood Allotment, are just north of the roadless area. The Shapiro Tract pasture, a part of the Fairwood Allotment, is just east of the area. All lands are classified as unsuitable for timber production. No timber has been harvested in this roadless area in the past 20 years. Timber harvest and the associated production of wood products from this area would be precluded by wilderness designation. Private subsurface minerals ownership is held on 267 acres within this area. No Federal oil and gas leases or other Federal leases are in effect in this area as of December 1999. The potential for energy minerals, primarily natural gas, is estimated to be low. The potential for other Federal leasable minerals, including metallic minerals, is also estimated to be low.

CULTURAL RESOURCES

As of March 1998, approximately 22 acres of this roadless area has been surveyed for cultural resources. One known prehistoric base camp/reduction station has been identified. Four additional prehistoric sites have been located but further work is needed to classify the site types. The area exhibits a moderate potential for additional prehistoric and historic resources.

LAND USES

Portions of three grazing areas are found within this roadless area. The Young pasture, Solomon Branch pasture, and Shapiro pasture are authorized under special use permits. All three of these grazing areas are within the Fairwood Allotment. No other special use authorizations have issued for land uses in this roadless area.

The Mount Rogers Final Management Plan of 1980 described a ski area that would be built in this area. The slopes and lifts would be constructed on the north side of Third Peak. A ski area conceptual design was produced but the plan was dropped due to

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intense local public opposition.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

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Managing the grazing lands may become more difficult if the area becomes wilderness. Projects such as fence repair, fertilizing, mowing, and stock tank construction would need to be done by non-mechanical means unless specifically approved in a wilderness resource management plan.

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. Wilderness designation may limit options for containing fires on private and/or federal lands. Little Wilson Creek Wilderness Addition B roadless area is expected to be in the generally infested area for gypsy moth in the next ten to twenty years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed timber stands can be severe (up to 25-30%) following a first defoliation and oaks are the preferred hosts. This area, however, has a small population of oaks with approximately 18 percent of the area composed of the Dry Mesic Oak ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chances that they may spread to other national forest or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

LONDON BRIDGE BRANCH

ID NUMBER: 04015

Overview

* Cherokee National Forest - 3,431 acres,
Jefferson National Forest - 853 acres

Surface Ownership	Acres
Forest Service	4,284
Private	0
Park Service	0
TOTAL	4,284

LOCATION AND VICINITY

London Bridge Branch roadless area is located on the Cherokee National Forest, Watauga Ranger District, Johnson County, Tennessee and the Jefferson National Forest, Mount Rogers National Recreation Area, Washington County, Virginia. The area is generally bounded by private land, Virginia Highway 716 & Tennessee Highway 133 to the west and north, Tennessee Highway 91 and a telephone line to the east and Sutherland Trail Road (FDR 322), ridge and hollows to the south on the Cherokee National Forest. The area is found within U.S.G.S. Tennessee Quadrangle Laurel Bloomery. Major vehicle access is provided by Highway 91 to the east. There are two improved roads within the roadless area (FDR 49030 - .34 mile and FDR 60111 - .88 mile). The Iron Mountain Trail (FDT 54-301) bisects the area in half.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

This area lies in the Central Appalachian Forest-Meadow province of the Southern Appalachian Mountains. Landform consists of mountain peaks and ranges separated by intermountain basins. London Bridge Branch is a mountain ridge (Iron Mountain) divided by a series of small, steep sideslope drains.

Elevation ranges approximately from 2000' at the drains to 3600' on the ridgetop along the Iron Mountain Trail. Soils are Dystrochrepts, Kanhapludults, and Hapluduts with mixed kaolinitic and micaceous mineralogy with mesic temperature and udic moisture regimes. Vegetation is mainly composed of broadleaf deciduous species (white and scarlet oaks) with mixed mesophytic species and yellow poplar at low elevations, with pitch pine on drier and disturbed sites, and chestnut oak and northern red oak at moderate elevations. This area has been further classified as being in the Southern Blue Ridge Mountains subsection of the Blue Ridge Mountains section ecological unit classification.

CURRENT USE

The area is primarily used for dispersed recreation activities such as hunting and hiking. There are three wildlife openings within the area that total 1.5 acres (each approximately 5 acre in size) and FDR 6011 is utilized as a linear wildlife opening (3.5 acres).

APPEARANCE OF THE AREA AND SURROUNDING CHARACTERISTICS OF CONTIGUOUS AREAS

Recent timber sales (61 acres), the three wildlife openings (1.5 acres) and 1.22 miles of improved system road located in the roadless area contrast with their immediate surrounding characteristics, although the majority of the area has a natural appearance. Although most of the area was timbered in the past, few obvious signs remain and those are disappearing into forest growth.

The state highways, telephone line, and private land along the eastern, western and northern boundaries contrast dramatically with the roadless area.

KEY ATTRACTIONS

Those acres identified on the Jefferson National Forest are part of the Mount Rogers National Recreation Area.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is minimally affected by outside forces. London Bridge Branch roadless area appears to be natural but there are signs of recent disturbance. There are 61 acres of 0-10 age classes (less than 2% of the area) and three maintained wildlife openings (1.5 acres) within this roadless area. There are 1.22 miles of maintained improved road within the area and 6.1 miles of maintained trail.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

London Bridge Branch Roadless area is 4,229 acres in size and is located entirely on National Forest land. London Bridge Branch is a mountain ridge divided by series of steep sideslope drains. Elevation ranges from 2000' at the drains to 3600' along the ridge crest. A solitude core area of 2,759 acres exists in a center block that generally follows the roadless area boundary as well as a small disjointed area in the southeast corner of the roadless area.

The relationship of core acres of solitude to the roadless area is approximately 65 percent. There are two improved roads (1.22 total miles) located within the roadless area. There is one trail within the roadless area (6.1 miles). Visitor use for the most part is light with small group sizes. Visitors feel like that they are in a unconfined, natural area. Noise from the surrounding lands can be heard along the periphery of the roadless area. Noise

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impacts and the reduced feeling of solitude and isolation are also felt when the improved road within the area is being used for Forest Service activities. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from the improved road and trails. Within the area, there are some vestiges of isolated, scattered pockets of forest primeval but there is a degree of evidence of human impact. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

London Bridge Branch roadless area does present a range of dispersed recreational activities of which are typically found on the Cherokee National Forest as a whole. Activities such as hiking, hunting, fishing, and primitive camping, are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

London Bridge Branch is in the Southern Blue Ridge Mountain subsection of the Blue Ridge Mountain ecosystem section (4,229 acres). This ecosystem subsection and section is represented by the following wildernesses on the Cherokee National Forest: Big Laurel Branch, Pond Mountain, and Unaka Mountain (17,757 acres).

London Bridge Branch roadless area contains a diversity of geologic features that are typical of the Southern Appalachian Mountains that draw people to the area to experience the scenic views. Geologic rock types of this area consist of the Erwin Formation (White, vitreous quartzite, massive, with interbeds of dark-green silty and sandy shale, minor siltstones and very fine sandstone); Hampton Formation (Dark greenish-gray, silty and sandy shale, micaceous shale; numerous layers of medium-grained, feldspathic, thinly bedded sandstone); Unicoi Formation (Sequence of gray feldspathic sandstone, arkose, conglomerate, graywacke, siltstone and shale; greenish amygdaloidal basalt flows) and Shady Dolomite (Light-gray, well-bedded dolomite with thin-to medium-bedded gray limestone; yellowish-brown residual clays with "jasperoid" diagnostic). There are no designated Research Natural Areas or Experimental Forests with the roadless area. There are no known unique vegetation communities that retain any attributes that have the potential to significantly contribute to any scientific or educational value at this time.

Approximately 34% of the area is in the Mixed Mesophytic ecological community type. Another 30% is in the Dry and Xeric Oak type, 22% in the Dry and Dry-Mesic Oak-pine type, and the remaining in miscellaneous types. Possible old growth is present on approximately 123 acres (17 acres of Mixed Mesophytic forest which represents approximately 1% of this forest community type on the national forest; 71 acres of Xeric Pine and Pine-Oak which represents 4% of this forest community type on the national forest; 21 acres of Dry and Xeric Oak which represents less than 1% of this forest community type on the national forest; and 16 acres of Dry and Dry Mesic Oak-Pine which represents less than 1% of this forest community type on the national forest).

These acres are within the unsuitable land base. Possible old growth makes up approximately three percent of the roadless area. Approximately 3,189 acres (93%) is in the late successional forest type class. The remaining acres are scattered throughout the remaining successional classes.

The following streams contain trout populations in this roadless area (all trout species are considered significant on the Cherokee National Forest with brook trout considered a native species): Laurel Creek (brown trout, rainbow trout) and Lyons Branch (rainbow trout).

SIZE, SHAPE, AND MANAGEABILITY

As described previously, the size and shape of London Bridge Branch roadless area makes its preservation as potential wilderness practical. The boundary follows topographic features, property boundary lines, and human improvements such as roads. Although surrounding lands contrast dramatically with the area, the effects are limited to the periphery along the boundary of the roadless area and as such, any activity that does occur would not dominate the user's wilderness experience. High ridges and distance are more likely to limit the sights and sounds of civilization than the actual boundaries. The private lands near the western, northern, and southeastern boundaries do have the potential to impact wilderness attributes but the surrounding steep ridges and side drains will buffer the magnitude of the potential impacts.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

The boundary follows obvious human made features such as roads and property line boundaries as well as natural features such as ridges and drains. A offset from the boundary roads such as Highway 176 and 133 would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, gravel placement, road alignment, etc.). A offset of approximately 300 feet from the centerline of existing roads is recommended. In addition, the boundary along the east side of the roadless area meanders between Highway 91, phone line right of way, and a utility line.

The boundary needs to be offset 300 feet from these improvements where they form the roadless area boundary. Areas to be excluded from the roadless area include the old CCC house and associated out buildings on the Jefferson National Forest and Camp Ahistadi (organization camp) along Highway 91.

Wilderness Availability

RECREATION, INCLUDING TOURISM

There are no developed recreation sites or potential National Recreation Survey Sites in this roadless area. A hiking trail bisects the area (see Overview). Those acres identified on the Jefferson National Forest are part of the Mount Rogers National Recreation Area.

WILDLIFE

Fishery management activities are related to monitoring the known trout populations (identified in Section 2d), surveying additional streams (Reservoir Branch and London Bridge Branch) for trout populations, and the periodic removal of competing trout and other fish from brook trout streams.

WATER AVAILABILITY AND USE

The western two-thirds of this roadless area contains the headwaters of several small streams, which drain into Beaverdam Creek. The eastern third of this roadless area contains the headwaters of several small streams, which drain into Laurel Creek. Both of these larger streams are tributaries of the South Fork Holston River. There are no known water storage needs or any existing special use water permits. Water quality should remain at its current level whether or not the area is designated wilderness. Mitigation measures for ground-disturbing activities in non-wilderness areas should minimize adverse impacts on water quality. Ground disturbing activities in wilderness are held to a minimum.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations.

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Nearly 28 percent or 1,167 acres of the London Bridge Branch roadless area is classified as suitable for timber production. In the last 10 years, approximately 61 acres of timber have been harvested. Timber harvest and the associated production of wood products from this area would be precluded by wilderness designation. This amounts to less than 1 percent of the lands suitable for timber production on the Cherokee National Forest.

Hard rock mineral production potential is low and unlikely at this time. Except for Tract U-436 (13 acres of outstanding mineral rights), all mineral rights are in federal ownership. No oil and gas leases have been issued within the roadless area. The potential discovery of these natural resources in this roadless area is low and unlikely.

CULTURAL RESOURCES

There are no recorded cultural resource sites potentially eligible for listing in the National Register of Historic Places.

LAND USES

No special use permits have been issued for lands in the area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

No private land would be affected if the area was designated as wilderness. Present fire control techniques are not expected to be impacted substantially if the area became designated wilderness. Since 1985, no recorded wildfires have occurred within the area.

There are 1,387 acres of oak decline damaged stands and 216 acres of oak host type ranked as vulnerable. Without active management, the trend would be to see more vulnerable stands affected by oak decline and mortality rates to increase with time. However, the acres within the suitable land base (which relates to active management) are 181 acres of oak declined damaged stands and 151 acres of oak host type ranked as vulnerable.

There are a total of 126 acres of southern yellow pine types greater than 70 years of age at a moderate to high risk of southern pine beetle attack. No additional acres will be at a moderate to high risk within the next ten years. However, these 126 acres are not within the suitable land base.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

LONG SPUR ROADLESS AREA

ID NUMBER: 14608

LONG SPUR

Overview

LOCATION, VICINITY, AND ACCESS

The Long Spur roadless area is located on the Jefferson National Forest, Wythe Ranger District, Bland County, Virginia. The area is located approximately 0.8 miles east of Interstate 77 and 3.25 miles south of the town of Bland. In general, the majority of the area lies in a narrow band approximately 8 miles long in an east-west direction on the southside of Big Walker Mountain and is found within portions of the U.S.G.S. Virginia Quadrangles Bland and Long Spur. The area is approached by several VA routes and Forest Development Roads (FDR). VA 601 and FDR's 1023 and 6661 provide access from the south. VA 602 provides access from the east.

Surface Ownership	Acres
Forest Service	6,411
Private	0
Park Service	0
TOTAL	6,411

Utility line corridors provide a well defined boundary for the area on the eastern and western ends. Big Walker Mountain, and a mix of private land, define the northern boundary of the area. The southern boundary is a combination of VA 601, FDR 1023, FDR 6661, and National Forest/private property line boundaries.

There are no improved roads within the area.

There are three unimproved roads within the area. FDR 6070 enters the area from VA 602 after crossing the powerline corridor in the northeast corner of the roadless area and runs 2.0 miles north until exiting the area at the extreme northeast corner. Approximately 0.83 miles of this road are within the roadless area boundary. This road has been seeded but receives traffic from a special use permittee to access an earthquake monitoring system just outside the roadless area near High Rock. FDR 205 enters the area from FDR 1023 and winds its way approximately 3.0 miles north to the crest of Big Walker Mountain where it exits the area. This road is part of an old turnpike network connecting Bland with Wytheville. The road is accessible to 4-wheel drive vehicles but receives considerable illegal ATV traffic coming from the northside of Big Walker Mountain. FDR 206 intersects with FDR 205 on the crest of Big Walker Mountain and runs westward along the top of the mountain following an abandoned Appalachian National Scenic Trail location for 1.7 miles before exiting the area. The road continues westward until terminating near the Walker Mountain Lookout along VA 52 in Wythe County. Total unimproved road mileage is 5.53 miles.

There are no maintained forest development trails within the area. However, the abandoned Appalachian National Scenic Trail section along Big Walker Mountain still receives use, primarily by hunters. Another foot path breaks off from the old Appalachian National Scenic Trail on Big Walker Mountain and parallels Spur Branch until it intersects with VA 602. There is evidence of many other old trails, access, and logging roads in this roadless area, but most are being reclaimed by natural processes and are impassable to vehicular traffic.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the Long Spur roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone and shale with parallel drainages interspersed with broad limestone and shale valleys. Included in this area are Big Walker Mountain and Long Spur. Slopes vary from very steep on sideslopes to gentle along Little Walker Creek. Drainage density is generally high throughout the area and drainages are generally narrow

LONG SPUR

and deep with steep sideslopes, especially where elevations are below 3000 feet. The area contains a multitude of tributaries that feed Little Walker Creek, a major stream that parallels VA 601 just outside the southern boundary of the roadless area. Another significant drainage is Spur Branch, located in the northeast section of the area. Elevations range from approximately 2360 feet along Little Walker Creek to 4017 feet at a point along the crest of Big Walker Mountain.

The roadless area is forested by eastern deciduous and coniferous species. Approximately 22 percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, white pine, and red maple dominate the overstory. The remaining 78 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

CURRENT USE

The area is primarily used for recreational activities such as hunting, dispersed camping associated with hunting, 4X4 riding on FDR 205, and some fishing in Spur Branch, a wild trout stream. Use of this fishery is limited due to poor public access. Mountain bike riders have been discovering the area's old roads and informal trails in recent years and involvement in this recreation activity is increasing. Illegal ATV use is also popular along FDR's 1023, 205, and 206. Approximately 38 percent, or 2,407 acres, of the area are classified as suitable for timber production. A portion of the 'Beast of the East', a 300 mile endurance race involving canoeing, hiking, and mountain biking, was run through a portion of the roadless area in June 1998 and again in May 1999. Hiking and mountain biking were featured through this area. Inventory data indicate no privately owned, outstanding or reserved, mineral rights underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 5.53 miles of unimproved road in the roadless area are visually evident and influence ecological processes, as a minimum, in the vicinity of the roads. Old access and logging roads and informal trails still exist and are evident but some are becoming overgrown and regaining a more natural appearance while others are kept open by illegal ATV use and mountain bike riders.

Most of the area was cut over and frequently burned in the late 1800's and early 1900's. Approximately 60 percent of the timber is in the 21-100 year old age class, 32 percent is in the 101 plus years class, one percent in the 0-10 year class, and one percent in the 11-20 year class. The area has 1037 acres of possible inventoried old growth.

The roadless area contains approximately 11 acres of wildlife openings and two miles of recently seeded roads. The openings are currently kept open through regular mowing. Five artificial waterholes have been created for wildlife use by blasting into rock. One waterhole is located at the top of Spur Branch near the roadless area boundary. Another is located along the northeast corner of FDR Road 6661, just inside the boundary. Three others are also located at strategic points within the roadless area boundary. While these waterholes may disturb the natural ecological processes of the area, they enhance wildlife populations and are gaining an increasingly natural appearance over time.

The area is bounded by private land to the north, National Forest land to the west, and a mix of National Forest and private land to the east and south. Private land to the south

and east is generally a mix of farmland, woodland, residences, and outbuildings associated with farming activities. Private land to the north is characterized by steep, rugged, and tree lined terrain. The Interstate 77 corridor is located approximately 0.8 miles from the western boundary of the roadless area.

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KEY ATTRACTIONS

The area is very popular with hunters and is becoming increasingly popular with mountain bikers and 4X4 enthusiasts. Spur Branch is a wild trout stream and receives a low amount of use due to the limited access to this area. High Rock, just outside the northeastern boundary, is a unique area for viewing scenery. There are large rock cliffs, which overlook the Walker Creek valley. The view is primarily of farmland along VA 608 and VA 604.

No Federally threatened, endangered, or sensitive species are known to occur within the roadless area.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is somewhat affected by outside forces. Much of the Little Walker Mountain roadless area appears to be natural but there are signs of disturbance. The unimproved road, several miles of old access and logging roads, and informal trails within the area are visually evident. If this roadless area becomes wilderness, the unimproved road would be in wilderness and removed from the Forest's transportation system. Many of the old roads and trails in this roadless area have become overgrown and impassable, causing minimal impact on the area's natural ecological processes. Others are kept open by illegal ATV traffic and mountain bike riders.

While the maintenance of wildlife openings and artificial wildlife waterholes has affected natural ecological processes in the area, the range of influence is limited in extent. There are 72 acres of 0-10 year old age class within this roadless area.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Long Spur roadless area is 6,413 acres in size and is located entirely on National Forest land. The area is linear in shape, extending approximately eight miles east to west and averages about 1.5 miles north to south. Landform generally consists of the south side of Big Walker Mountain downslope to Little Walker Creek. Elevations range from approximately 2360 feet along Little Walker Creek to 4017 feet at a point along the crest of Big Walker Mountain. A solitude core area of 3,553 acres exists in the northcentral and eastern portions of the roadless area, of which 147 acres are Semi-Primitive Motorized and 3,406 acres are Semi-Primitive Non-Motorized. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The ratio of core acres of solitude to the roadless area is approximately 55 percent. Visitor use to the area can be described as moderate during hunting season and low to moderate the rest of the year. The further away one gets from unimproved roads and informal trails, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance away from the roads and trails. However, some areas will be impacted by noises associated with traffic on improved and unimproved roads around the periphery of the roadless area. Noises associated with Interstate 77 may be disturbing in some locations in the eastern end of the area. Activities associated with private land around the periphery of the area may be observed or heard from various locations within the roadless area.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive

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camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads and trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Long Spur roadless area does present a range of recreational activities, which are typically found on the Jefferson National Forest. Activities such as hunting, fishing, 4X4 riding, mountain biking, hiking, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Long Spur roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (6,413 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbours Creek, and Shawvers Run. Within the southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridgetops while shale is found on the lower slopes.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The area's relief and highly dissected topography creates a wide range of ecological types from hot, dry windswept ridges to cool, moist protected coves, to rich, wet bottomlands. The variety of ecotypes provides a variety of wildlife habitat. Apart from FDR's 1023 and 205 along the southern boundary, access to the area is mostly limited to foot and mountain bike traffic along FDR's 6661, and 6070.

The majority of the area, approximately 62 percent, is in the Dry Mesic Oak ecological community type. Twenty-nine percent is in the Dry and Dry-Mesic Oak-Pine type, four percent is in the Xeric Pine and Pine-Oak type, three percent in the Mixed and Western Mesophytic type, and the remainder is in miscellaneous minor types.

There are 1037 acres of inventoried possible old growth. The ecological community types represented are: 338 acres Dry and Dry-Mesic Oak-Pine (132 acres suitable) which represents seven percent of the Forest's total, 608 acres Dry Mesic Oak (276 acres suitable) which represents 2.2 percent of the Forest's total, 73 acres Mixed and Western Mesophytic (0 acres suitable) which represents two percent of the Forest's total, and 12 acres Xeric Pine and Pine-Oak (6 acres suitable) which represents 1.3 percent of the Forest's total.

Spur Branch supports a wild trout population.

There are no Federally threatened, endangered, or sensitive species known to occur within the area. However, box huckleberry, a locally rare plant species, is known to occur just outside the roadless area boundary. The species requires fire disturbance to reproduce and proliferate.

Approximately 68 percent of the area is classified as having high existing scenic integrity.

The nearest existing wilderness to this roadless area is Kimberling Creek Wilderness, approximately five air miles to the north.

SIZE, SHAPE, AND MANAGEABILITY

LONG SPUR

The size and shape of Long Spur roadless area makes its preservation as potential wilderness practical. Nearly all of the boundary follows property lines, roads, or utility corridors. Although surrounding private lands contrast somewhat with the area, the effects are generally limited to the periphery along the boundary of the roadless area. Except for probable disturbances from Interstate 77 on the western end of the area, the peaks and deep drainages protect this roadless area from the sights and sounds of civilization. Unimproved FDR 205 has a long history of use as a turnpike and closing this road to traffic, should the area be designated wilderness, may be unpopular in the local area. The area adjacent to Turkey Gap, where FDR's 205, 206, and the abandoned Appalachian National Scenic Trail section intersect on Big Walker Mountain, may be difficult to monitor for illegal ATV traffic.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Forest Service boundary lines, improved and unimproved roads, and utility corridors delineate most of the roadless area boundary. An offset from roads and utility corridors bounding the area would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the roads (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, etc.) or maintenance to the utility corridor right-of-ways. An offset of approximately 300 feet from the centerline of roads and utility corridors is recommended. The boundaries adjacent to utility corridors would have to be surveyed and delineated on the ground.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There are no developed recreation sites within this roadless area. Hunting is the most popular dispersed recreation attraction to the area. Some old roads and informal trails within the area are popular with mountain bikers and hikers. FDR 205 is a popular 4X4 wheel drive. Established recreation uses that would be discontinued should this area be designated a wilderness are: (1) mountain biking, and (2) 4X4 wheel driving on FDR 205.

WILDLIFE

The Long Spur roadless area provides habitat for a diversity of wildlife species. Featured species of the area are 71 percent turkey and 29 percent bear. If this area is designated a wilderness, maintenance of existing wildlife openings and artificial waterholes would be discontinued. Spur Branch is a wild trout stream.

WATER AVAILABILITY AND USE

The roadless area contains the headwaters of a multitude of tributaries that feed Little Walker Creek, a major stream that parallels VA 601 just outside the southern boundary of the roadless area. The headwaters of Spur Branch are located in the northeastern section of the area. There are no known water storage needs or any existing special use water permit authorizations. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 38 percent of the area, or 2,407 acres, is classified as suitable for timber production. In the past 20 years, approximately 142 acres of timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 2,407 acres of suitable lands within this roadless area represents approximately 0.8 percent of all lands suitable for timber production on the Jefferson National Forest. No Federal oil and gas leases or other Federal mineral leases

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are in effect in this area as of October 1999. The potential for energy minerals, primarily natural gas, is estimated to be low to moderate. The area was leased under a Federal oil and gas lease in the 1980's. No oil or gas wells were drilled and the Federal lease expired. The potential for other Federal leasable minerals, including metallic minerals, is estimated to be low.

CULTURAL RESOURCES

Approximately 247 acres have been surveyed for cultural resources, as of March 1998, within the roadless area. No sites have been encountered; however, the area exhibits a moderate potential for prehistoric and historic resources.

LAND USES

Three special use permits have been authorized within the area. One permit allows the permittee to use unimproved FDR 6070 to access an earthquake monitoring device located near High Rock. Another permit is for an underground electric line running from a private residence located north of FDR 1023, southward to where it ties in with a utility pole on private land. The third permit is for the 300 mile endurance race, the 'Beast of the East'. If the Long Spur roadless area is designated as wilderness, these special uses would either be discontinued or an exemption made for their continuance.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands on the northern, southern, and a portion of the eastern perimeters. Wilderness designation may limit options for containing fires on private and/or federal lands. The Long Spur roadless area is expected to be in the generally infested area for gypsy moth in the next ten to twenty years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 91 percent of the area is composed of the Dry Mesic Oak (62 percent) and Dry and Dry-Mesic Oak-Pine (29 percent) ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

MOTTESHEARD ROADLESS AREA

ID NUMBER: 14501

MOTTESHEARD

Overview

LOCATION, VICINITY, AND ACCESS

Mottesheard roadless area is located on the Jefferson National Forest, New Castle Ranger District, Monroe County, West Virginia and Craig County, Virginia. The area is bounded by private land to the north, WV 15 and 17, Forest Development Road (FDR) 5031 and private land to the west, WV 20, FDR 5023, and private land to the east, and FDR 279 and 50231 to the south. The area is found within a portion of U.S.G.S. West Virginia - Virginia Quadrangles Craig Springs, Paint Bank, Waiteville, and Gap Mills. Major vehicular access is provided by WV 15 and FDR 5031 in the northwest corner, WV 20 in the northeast corner, FDR 279 in the southwest corner, and FDR 5023 in the southeast corner.

Surface Ownership	Acres
Forest Service	6,553
Private	2
Park Service	0
TOTAL	6,555

There are three improved roads within the roadless area. FDR 5031 enters the area from WV 15 and forms a portion of the northwestern boundary; however, the last 1.4 miles of the road traverse through the roadless area in a northeasterly direction. This road is currently open to a gate located approximately 0.5 miles within the roadless area boundary. FDR 279C, a gated road, enters the area from FDR 279 along the southern boundary and runs northwesterly for approximately 0.8 miles. FDR 279D, 0.95 miles in length, runs in an easterly direction from FDR 279C. Total improved road mileage is 3.15 miles.

Two unimproved roads are also within the roadless area. FDR 5032, approximately 2.55 miles in length, is a gated road that enters the area from WV 17 to the north. FDR 279F, also a gated road, is 0.43 miles in length and enters the area along the southern boundary off of FDR 279. Total unimproved road mileage is 2.98 miles.

There are no developed, maintained trails within the area. However, there are old access and logging roads and informal trails within the area. Some have become overgrown and impassable to anything but foot traffic. Others are kept open by illegal ATV traffic, particularly along the northern section of the area near several private hunting camps.

GEOGRAPHY, TOPOGRAPHY AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, this area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone and shale with parallel drainages with broad limestone valleys. Included in this area are Potts and Mottesheard Mountains with a series of small, steep sideslope drainages. Elevation ranges from approximately 2100 feet at Red Springs Branch along the southern boundary to 3932 feet at Arnolds Knob along the crest of Potts Mountain in the eastern end of the area.

Vegetation is primarily broadleaf deciduous species. Approximately 25 percent of the area has a site index of 70 or greater indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages, toeslopes, or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 75 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest

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sites.

CURRENT USE

The most popular dispersed recreational activity within the area is hunting. Illegal ATV use, primarily along the northern end of the area, generally coincides with the various hunting seasons. Approximately 32 percent, or 2124 acres, of the area are classified suitable for timber production. The U.S. military conducts regular, low level training flights over the area. Inventory data indicate no privately owned mineral rights, outstanding or reserved, underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 3.15 miles of improved and 2.98 miles of unimproved road within the roadless area are visually evident and influence ecological processes, as a minimum, in the vicinity of the roads. Old access and logging roads and informal trails still exist and are evident; however, lack of maintenance and use is allowing some of them to become overgrown and regain a more natural appearance. Other old roads and informal trails are being kept open by frequent illegal ATV traffic, particularly along the northern end of the area.

Much of the area was cut over and frequently burned in the late 1800's and early 1900's. Approximately 83 percent of the timber is in the 21-100 year old age class, 12 percent is in the 101 plus years age class, four percent in the 11-20 year old age class, and less than one percent is in the 0-10 year old age class. There are 1,188 acres of possible inventoried old growth in the area.

Featured species of the area are primarily black bear and turkey. Grouse and gray squirrel are featured along the southern and eastern perimeter of the area. The area contains one large wildlife opening, approximately 15 acres in size, on the north side of Potts Mountain and is accessed from FDR 5032.

There is some evidence of iron ore and manganese prospecting pits in the area from the late 1800's and early 1900's.

Surrounding lands are approximately half National Forest and half private in ownership. Most of these lands are forested; however, some of the private lands are a mix of woodlands, pastures, farms, residences, and cabins.

KEY ATTRACTIONS

The area is very popular with hunters and there are several private hunting camps located just outside the northern boundary. There are no known proposed, endangered, threatened or sensitive (PETS) species within the area.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area and the area is minimally affected by outside forces. Much of the Mottesheard roadless area appears to be natural but there are signs of recent disturbance. The improved and unimproved roads are visually evident, as well as some of the old access roads and informal trails. If this roadless area becomes wilderness, the improved and unimproved roads would be in wilderness and removed from the Forest's transportation system. Some of the old access roads and informal trails in this roadless area have become overgrown and impassable, causing minimal impact on the area's natural ecological processes. Illegal ATV traffic is keeping some old roads and

trails open, primarily in the northern portion of the area. Areas around the perimeter of the roadless area have been most affected by recent multiple use activities. The maintained 15 acre wildlife clearing on the north side of Potts Mountain is also evident. There are seven acres in the 0-10 year old age class and 284 acres in the 11-20 year old age class.

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OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Mottesheard roadless area is 6,555 acres in size and is located entirely on National Forest land. Mottesheard roadless area is basically a northeast-southwest running ridgetop, Potts Mountain, divided by a series of sideslope drainages. The north side of the ridgetop is in West Virginia and the south side is in Virginia. Mottesheard Mountain is a spur ridge that runs west from Potts Mountain. A solitude core area of 3443 acres, of which 2307 acres are Semi-Primitive Non-Motorized and 1136 acres are Semi-Primitive Motorized, exists in the central portion of the area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The ratio of core acres of solitude to the roadless area is approximately 52 percent. Visitors feel like they are in an unconfined natural area, particularly in the central portion of the area. Visitor use to the area can be described as moderate during hunting season and light during the remainder of the year. Noise from activities on the surrounding lands and roads can be heard along the periphery of the area. The U.S. military low level training flights can also be heard from within the area. Noise impacts and the reduced feeling of solitude and isolation are also felt when the roads within the area are being used for Forest Service administrative and management purposes.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads. Within the area, there are isolated and remote areas but there is a degree of evidence of human impact associated with roads, wildlife clearings, and past timber harvests. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

This roadless area does present a range of dispersed recreational activities of which are typically found on the Jefferson National Forest. Activities such as hunting, cross-country hiking, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Mottesheard roadless area is in the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section. This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Shawvers Run, Barbours Creek, Peters Mountain, Mountain Lake, Kimberling Creek, and Beartown. Within the Southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

The closest designated wildernesses to the area are Mountain Lake and Shawvers Run. Mountain Lake is about 10 air miles to the southwest and Shawvers Run is about 10 air miles to the northeast.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridgetops while shale is found on the lower slopes. Some limestone is also present within the area.

There are no designated Research Natural Areas or Experimental Forests within the roadless area.

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Approximately 58 percent of the area is in the Dry Mesic Oak ecological community type. Another 31 percent is in the Dry/Dry-Mesic Oak-Pine type, five percent is in the Xeric Pine/Pine-Oak type, and five percent is in the Mixed/Western Mesophytic type. Less than one percent is in the Conifer/Northern Hardwood ecological community type.

There are 1,184 acres of possible inventoried old growth. The ecological community types represented are: 970 acres Dry Mesic Oak (38 acres suitable) which represents 3.5 percent of the Forest's total for this type; 165 acres Dry and Dry-Mesic Oak-Pine (2 acres suitable) which represents 3.4 percent of the Forest's total; 38 acres Xeric Pine/Pine-Oak (0 acres suitable) which represents 4.2 percent of the Forest's total; and, 11 acres Mixed/Western Mesophytic (0 acres suitable) which represents 0.3 percent of the Forest's total for this type.

There are no known endangered, threatened, or sensitive species within the area.

Approximately 60 percent of this area is classified as having high existing scenic integrity.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of this roadless area makes its preservation as potential wilderness practical. Most of the boundary follows property boundary lines and human improvements such as roads. Surrounding lands are approximately half National Forest and half private in ownership. The private land near this area does have the potential to impact wilderness attributes but the steep ridges and side drainages buffer the magnitude of potential impacts.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Most of the boundary follows features such as roads and property line boundaries, as well as natural features, such as ridges and streams. An offset from boundary roads such as WV 15 would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, road alignment, etc.). An offset of 300 feet from the centerline of existing roads is recommended. It is recommended that the original roadless area boundary be modified to utilize existing FDR's as boundaries to ease area identification on the ground. FDR 5031, along the western boundary, as well as FDR 279 and FDR 50231 along the southern boundary, should be designated the boundaries of the roadless area with an appropriate offset. Currently, a large portion of the southern boundary utilizes FDR 279; however, there are slight deviations.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There are no developed recreation facilities or maintained trails within this roadless area. Most use occurs from hunting and illegal ATV use. No impacts to current legal recreation uses would be expected to occur should this area be designated a wilderness.

WILDLIFE

The Mottesheard roadless area provides habitat for a diversity of wildlife species. The primary featured species of the area are black bear and turkey. Grouse and gray squirrel are featured along the southern and eastern perimeter of the area. If this roadless area were designated as a wilderness, maintenance of the 15 acre wildlife clearing would be discontinued.

WATER AVAILABILITY AND USE

The West Virginia side of this roadless area drains into Potts Creek and the Virginia side drains into Johns Creek. Wilson Branch, near the western boundary of the area, supports wild trout. The branch has good water chemistry and a good macroinvertebrate monitoring score. There are no known water storage needs or any existing special use water permit authorizations. Water quality should remain at its current level whether or not the area is designated wilderness.

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LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 32 percent, or 2,124 acres, is classified as suitable for timber production. In the last 10 years, approximately 49 acres of timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 2,124 acres of suitable lands in this roadless area represent 0.7 percent of all lands suitable for timber production on the Jefferson National Forest. Mottesheard roadless area is within an area that was leased for Federal oil and gas in the 1980's. No oil or gas wells were drilled and the Federal leases expired. As of December 1999, no Federal oil and gas leases or other Federal mineral leases are in effect. The potential for energy minerals, primarily natural gas, is estimated to be low to moderate. Manganese was mined in Monroe County from 1894 through the 1940's. In the 1990's, the West Virginia Geological and Economic Survey and the U.S. Geological Survey conducted a survey of the manganese resources in this area. The manganese is associated with the Helderberg formation, which along the east flank of Peters Mountain, is more sandy (clastic) than the typical Helderberg limestone. On the southeast flank of Peters Mountain, which is north of the roadless area, the potential for occurrence of manganese is high. The roadless area has not been the site of major manganese mining such as on the southeast flank of Peters Mountain. In the roadless area, the potential for the occurrence of manganese and iron is estimated to be moderate to high while the potential for development of commercial deposits is estimated to be low. The potential for other Federal leasable minerals, including other metallic minerals, is estimated to be low.

CULTURAL RESOURCES

As of March 1998, 833 acres of this roadless area have been surveyed for cultural resources. There are three inventoried 1900 era homesteads within this roadless area. Additionally, there are also two prehistoric transient camps believed to have been used prior to the year 800 A.D. This area has low potential for additional prehistoric or historic resources.

LAND USES

No special use permit authorizations have been issued for land uses within this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. Wilderness designation may limit options for containing fires. Gypsy moth infestations are in the vicinity of this roadless area right now. Mortality can be severe (up to 25-30 percent) and oaks are the preferred hosts. Approximately 89 percent of the area is composed of the Dry Mesic Oak and Dry/Dry Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chances that they may spread to other National Forest or private land.

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Need

**MOUNTAIN LAKE
WILDERNESS
ADDITION A**

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

MOUNTAIN LAKE WILDERNESS ADDITION A

ID NUMBER: 14104

Overview

LOCATION, VICINITY, AND ACCESS

The Mountain Lake Wilderness Addition A roadless area is located on the Jefferson National Forest, Blacksburg Ranger District, Craig and Giles Counties, Virginia. The area adjoins the southeastern section of the existing Mountain Lake Wilderness and is found within portions of U.S.G.S. Virginia-West Virginia Quadrangles Waiteville and Newport. The area is bounded by Mountain Lake Wilderness to the west, Forest Development Road (FDR) 10721 and private land to the north, VA 601 to the east and private land to the south. Major vehicle access is provided by VA 601 from the east and VA 632 to FDR 156 to the north.

Surface Ownership	Acres
Forest Service	1,467
Private	0
Park Service	0
TOTAL	1,467

There are no improved or unimproved roads within the area. FDR 10721, an improved road, serves as part of the northern boundary of the roadless area. FDR 156 is also an improved road that forms a portion of the boundary in the extreme northwestern corner of the area. This road provides access to a private inholding within the Mountain Lake Wilderness, a use that was established prior to the area being designated as wilderness in 1984.

There is one Forest Development Trail (FDT) within the area. A 1.5 mile segment of the Appalachian National Scenic Trail (FDT 1) passes through the area from near the terminus of FDR 10721 to Rocky Gap in the southeast corner of the area.

There are several old access and logging roads within the area. Most have become overgrown and impassable to anything but foot traffic.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the Mountain Lake Wilderness Addition A roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone or shale with parallel drainages interspersed with broad limestone valleys. Included in this area is Johns Creek Mountain. Slopes vary from very steep on sideslopes to nearly flat along Johns Creek in the northwestern corner of the area. Drainage density is high on the slopes of Johns Creek Mountain. The area contains the headwaters of several tributaries that feed into Johns Creek. Elevation ranges from approximately 2160 feet adjacent to FDR 156 in the northwestern section of the area to 3400 feet at a point along the crest of Johns Creek Mountain, adjacent to the existing wilderness and roadless area boundary, in the extreme southwestern corner of the area.

The roadless area is forested by eastern deciduous and coniferous species. Approximately 17 percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, white pine, and red

maple dominate the overstory. The remaining 83 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

**MOUNTAIN
LAKE
WILDERNESS
ADDITION A**

CURRENT USE

The area is primarily used for dispersed recreation activities such as hunting and hiking. The Appalachian National Scenic Trail receives a moderate to high amount of use, depending on the season. A trailhead parking lot has been proposed by the Appalachian National Scenic Trail community, at the intersection of the trail with VA 601 near Rocky Gap on Johns Creek Mountain, to alleviate a potentially dangerous parking situation. A constructed parking lot would require less excavation on the west side of VA 601, inside the roadless area boundary. As of October 1998, no decision has been made to implement the proposal. The area is easily accessed along the eastern and northern boundaries. Approximately 12 percent, or 180 acres, of the area are classified as suitable for timber production. There are no outstanding mineral rights within the area.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 1.5 miles of trail and some of the old access and logging roads are visually evident and influences ecological processes, as a minimum, in the vicinity of the trail and roads. Some of the old roads are becoming overgrown and are regaining a more natural appearance.

Much of the area was cut over and frequently burned in the late 1800's and early 1900's. Approximately 85 percent of the timber is in the 21-100 year old age class, 12 percent is in the 101+ years age class, and three percent is in the 11-20 year age class. The area has no timber in the 0-10 year age class but has 150 acres of possible inventoried old growth.

Featured species for the area is 50 percent deer, 33 percent turkey, and 17 percent gray squirrel. There are no wildlife openings or recently seeded roads in this roadless area.

The roadless area adjoins a portion of the southeastern boundary of the Mountain Lake Wilderness. A large block of National Forest Land is located east of the area, private land adjoins the southern boundary, and a combination of private and National Forest land is to the north.

An electric power transmission line passes through the extreme southwestern corner of the area and serves as the roadless area boundary in that area.

KEY ATTRACTIONS

The area is primarily used by hikers and hunters. The Appalachian National Scenic Trail receives moderate to high use in the spring and during fall hunting season. Mountain Lake Wilderness, the largest wilderness on the Jefferson National Forest, adjoins the area. There are no known threatened, endangered, or sensitive species within the area.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is minimally affected by outside forces. Much of the Mountain Lake Wilderness Addition A roadless area appears

**MOUNTAIN LAKE
WILDERNESS
ADDITION A**

to be natural but there are signs of disturbance. There are 1.5 miles of maintained trail and several old access and logging roads that are evident. There are no acres of 0-10 year old age class within the area. The overall influence of human activities to the area is minimal, primarily due to the area's challenging topography. Several areas along the western edge of VA 601, within the roadless area, have long been used for illegal dumping. The slope away from the road is almost vertical in places and is littered with a large number of household appliances, which are readily visible from the road during leaf off conditions.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Mountain Lake Wilderness Addition A roadless area is 1,467 acres in size and is located entirely on National Forest land. The area adjoins the existing Mountain Lake Wilderness. Elevations range from approximately 2160 feet adjacent to FDR 156 in the northwestern section of the area to 3400 feet at a point along the crest of Johns Creek Mountain in the extreme southwestern corner of the area. A solitude core area of 532 acres exists in the central and southwestern portions of the area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The ratio of core acres of solitude to the roadless area is approximately 36 percent. When combined with the existing wilderness, visitors feel like they are in an unconfined, natural area. Visitor use of the area can be described as moderate. The Appalachian National Scenic Trail receives a moderate to high level of use in the spring and fall. The further one gets away from roads and the periphery of the area, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance. However, some peripheral areas may be impacted by noises and sights associated with traffic on improved roads or from activities associated with adjoining private land, which may reduce the feeling of solitude and isolation.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads and trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Mountain Lake Wilderness Addition A roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hiking and hunting are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Mountain Lake Wilderness Addition A roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (1,467 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbour's Creek, and Shawvers Run. Within the southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridge tops. Shale and limestone are the bedrock on the lower slopes.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The area's large relief and highly dissected topography creates a wide

range of ecological types from hot, dry windswept ridgetops to cool, moist, protected coves.

**MOUNTAIN
LAKE
WILDERNESS
ADDITION A**

The vast majority of the area, approximately 75 percent, is in the Dry Mesic Oak ecological community type. Nineteen percent is in the Xeric Pine and Pine-Oak type, five percent in the Mixed and Western Mesophytic type, and one percent in the Conifer-Northern Hardwood type.

There are 150 acres of inventoried possible old growth. The ecological community types represented are: 96 acres Dry Mesic Oak (0 acres suitable) which represents 0.3 percent of the Forest's total and 54 acres Xeric Pine and Pine-Oak (0 acres suitable) which represents 6.0 percent of the Forest's total.

There are no known threatened, endangered, or sensitive species within the area.

Approximately 80 percent of the area is classified as having High to Very High Scenic Integrity.

The western boundary of the roadless area runs coincident with Mountain Lake Wilderness.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Mountain Lake Wilderness Addition A roadless area makes its preservation as potential wilderness practical. The western boundary of the area adjoins the existing Mountain Lake Wilderness and would increase the size of the wilderness from 11,113 acres to approximately 12,580 acres. The eastern, northern, and southern boundaries are defined primarily by improved roads and property line boundaries. There are no outstanding mineral rights within the roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Forest Service wilderness boundary lines delineate the western boundary of the roadless area. FDR 10721, FDR 156, and property line boundaries delineate most of the northern boundary. An offset from the roads would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the roads (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, etc.). An offset of 100 feet from the centerline of the roads is recommended and identical to that established for the adjoining Mountain Lake Wilderness. If a trailhead parking lot is constructed along VA 601, in the vicinity of Rocky Gap, an offset of 100 feet around the perimeter of the lot is also recommended. Much of the remaining boundary follows existing property lines. Approximately 0.1 miles of the boundary line adjoins other National Forest land where the boundary line would be more difficult to establish.

Availability for Wilderness

RECREATION, INCLUDING TOURISM

There are no developed recreation sites within this roadless area. Hiking and hunting are the major recreation attractions to the immediate area. Mountain Lake Wilderness adjoins the area. Peters Mountain Wilderness is located approximately 6.7 air miles northwest of the area.

WILDLIFE

The Mountain Lake Wilderness Addition A roadless area provides habitat for a diversity of wildlife species. Featured species of the area are deer, turkey, and gray squirrel. There are

**MOUNTAIN LAKE
WILDERNESS
ADDITION A**

no known threatened, endangered, or sensitive wildlife species within the area.

WATER AVAILABILITY AND USE

The roadless area contains the headwaters of several tributaries that feed into Johns Creek. There are no known water storage needs or any existing special use water permit authorizations. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations within the area. Approximately 12 percent of the area, or 180 acres, is classified as suitable for timber production. No timber harvest has taken place in the past 10 years; however, future timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 180 acres of suitable lands within this roadless area represents approximately 0.06 percent of all lands suitable for timber production on the Jefferson National Forest. There are no outstanding mineral rights within the area.

CULTURAL RESOURCES

Approximately 82 acres have been surveyed for cultural resources, as of March 1998, within the roadless area. No sites were identified; however, the area exhibits a low to moderate potential for prehistoric and historic resources.

LAND USES

No special use permit authorizations have been issued for land uses in this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Fire suppression would be primarily by hand tools. Use of motorized and mechanized transport and equipment such as ATV's, bulldozers, and chainsaws would be allowed only upon specific approval by the appropriate line officer. Thus, wildfires would likely attain larger sizes than under current management. The roadless area is bounded by private lands to the south and in mixed ownership to the north. Wilderness designation may limit options for containing fires on private and/or federal lands. The Mountain Lake Wilderness Addition A roadless area is expected to be in the generally infested area for gypsy moth within the next five to ten years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 75 percent of the area is comprised of the Dry Mesic Oak ecological community type. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

MOUNTAIN LAKE WILDERNESS ADDITION B

ID NUMBER: 14105

**MOUNTAIN
LAKE
WILDERNESS
ADDITION B**

Overview

LOCATION, VICINITY, AND ACCESS

The Mountain Lake Wilderness Addition B roadless area is located on the Jefferson National Forest, New River Valley Ranger District, Craig and Giles Counties, Virginia and Monroe County, West Virginia. The area

Surface Ownership	Acres
Forest Service	3,958
Private	59
Park Service	0
TOTAL	4,017

adjoins the northeastern section of the existing Mountain Lake Wilderness and is found within a portion of U.S.G.S. Virginia-West Virginia Quadrangle Waiteville. The area is bounded by Mountain Lake Wilderness to the west, Forest Development Road (FDR) 10531 to the north, and a combination of other National Forest and private land to the east and south. Major vehicle access is provided by VA 632 from the south and VA 636, WV 17, WV 15, and FDR 10631 from the east.

There are two improved roads within the area. FDR 10631 is an open road and enters the area from VA 636 and runs 0.5 miles into the area and terminates on the south side of Porterfield Branch. Former FDR 753 (now identified as P5) enters the area from VA 632 and runs north for approximately 0.9 miles and terminates adjacent to the Mountain Lake Wilderness boundary. Though the road is no longer maintained by the Forest Service, the road does provide access to a private inholding within the existing wilderness area and is considered an improved road. Total improved road mileage is 1.4 miles.

There are no unimproved roads within the area.

There is one Forest Development Trail (FDT) within the area. The Potts Mountain Trail (FDT 55) traverses the area from east to west along the crest of Potts Mountain, a distance of 1.23 miles. The trail is designated for foot travel only.

There are numerous old access and logging roads scattered throughout the area. Some have become overgrown and impassable to anything but foot traffic. Others are being used for illegal ATV and 4-wheel drive traffic, particularly in the eastern area of the area adjacent to private lands.

There is a 59 acre private inholding located in the southcentral portion of the roadless area.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the Mountain Lake Wilderness Addition B roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone or shale with parallel drainages interspersed with broad limestone valleys. Included in this area is Potts Mountain and Piney Ridge. Slopes vary from very steep on sideslopes to nearly flat along the larger drainages. Drainage density is high on the slopes of Piney Ridge and Potts Mountain and moderate elsewhere. The area contains the headwaters of several streams and many tributaries that feed into Johns Creek, Little Oregon Creek, and Crosier Branch. Elevation ranges from approximately 1960 feet adjacent to Johns Creek in the southwestern section of the area to 3400 feet at a point along the crest of Potts Mountain adjacent to the existing wilderness and roadless area boundary.

The roadless area is forested by eastern deciduous and coniferous species. Approximately 21 percent of the area has a site index of 70 or greater, indicating moderate to high

**MOUNTAIN LAKE
WILDERNESS
ADDITION B**

productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, white pine, and red maple dominate the overstory. The remaining 79 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

CURRENT USE

The area is primarily used for dispersed recreation activities such as hunting and hiking. Public access to the area is limited to a few roads, FDR's 10631 and 10531. Approximately 13 percent, or 517 acres, of the area are classified as suitable for timber production. There are no outstanding mineral rights within the area.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 1.4 miles of improved road and 1.23 miles of maintained trail are visually evident and influences ecological processes, as a minimum, in the vicinity of the roads and trail. Old access and logging roads still exist and are evident. Many are becoming overgrown and are regaining a more natural appearance. Illegal ATV and 4-wheel drive traffic is evident, particularly along the eastern boundary of the area adjacent to private land.

Much of the area was logged and frequently burned in the late 1800's and early 1900's. Approximately 82 percent of the timber is in the 21-100 year old age class, 15 percent is in the 101+ years age class, and three percent is in the 11-20 year age class. The area has no timber in the 0-10 year age class but has 27 acres of possible inventoried old growth.

Featured species for the area is 90 percent deer, eight percent turkey, and two percent bear. There are no wildlife openings or recently seeded roads in this roadless area.

The roadless area adjoins a portion of the northeastern boundary of the Mountain Lake Wilderness. The other three sides of the area are surrounded primarily by private land with small inclusions of other National Forest land.

KEY ATTRACTIONS

The area is primarily used by hunters and some hikers. The majority of use in this roadless area occurs during big game hunting season. Mountain Lake Wilderness, the largest wilderness on the Jefferson National Forest, adjoins the area. There are no federally threatened, endangered, or sensitive species within the area.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is minimally affected by outside forces. Much of the Mountain Lake Wilderness Addition B roadless area appears to be natural but there are signs of disturbance. There are 1.4 miles of improved road and 1.23 miles of maintained trail that are evident. If this roadless area becomes wilderness, only FDR 10631 would be removed from the Forest's transportation system. Former FDR 753 (now P5), which provides access to a private inholding within the existing Mountain Lake Wilderness, would continue to be used to access the private land. The landowner has a legitimate right-of-way to cross over National Forest land to access this property.

Some old access and logging roads have become overgrown and are impassable, causing minimal impact on the area's natural ecological processes. Some old roads receive a significant amount of illegal ATV and 4-wheel drive traffic adjacent to private property in the eastern and southern portions of the area. There are no acres of 0-10 year old age class within the area. The overall influence of human activities on the interior of the area is minimal, primarily due to the area's remoteness and challenging topography.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Mountain Lake Wilderness Addition B roadless area is 4,018 acres in size, of which 3,959 acres are in Forest Service ownership and 59 acres are in private ownership. The area adjoins the existing Mountain Lake Wilderness and is bounded on the other three sides by private land with inclusions of National Forest land. Width of the roadless area varies from 0.2 miles to approximately 4.2 miles before adjoining with private land. There is 59 acre private land inholding in the southern portion of the area. Public access to the area is limited due to the land ownership pattern of the area. Elevations range from approximately 1960 feet adjacent to Johns Creek in the southwestern section of the area to 3400 feet at a point along the crest of Potts Mountain. A solitude core area of 3,271 acres exists within the area, of which 584 acres are Semi-Primitive Motorized and 2,687 acres are Semi-Primitive Non-Motorized. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The proportion of semi-primitive core acres providing a level of solitude within this roadless area is approximately 81 percent. When combined with the existing wilderness, visitors feel like they are in an unconfined, natural area. Visitor use of the area can be described as low. The area receives a moderate level of use during hunting season. Use by hikers is low. The further one gets away from roads and the periphery of the area, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance. However, some peripheral portions of the area may be affected by noises and sights associated with traffic on VA 632 or from activities from private land which may reduce the feeling of solitude and isolation. In addition, there is considerable illegal ATV and 4-wheel drive traffic scattered throughout the periphery of the area, particularly along the eastern boundary, which also may reduce the feeling of solitude and isolation.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. The level of personal risk increases as one gets further away from the edge of the roadless area and away from roads and trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Mountain Lake Wilderness Addition B roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Opportunities for activities such as hunting and hiking are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Mountain Lake Wilderness Addition B roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (4,018 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbours Creek, and Shawvers Run. Within the southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

**MOUNTAIN LAKE
WILDERNESS
ADDITION B**

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridge tops. Shale and limestone are the bedrock on the lower slopes.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The area's large relief and highly dissected topography creates a wide range of ecological types from hot, dry windswept ridgetops to cool, moist, protected coves.

Approximately 45 percent of the roadless area is in the Dry Mesic Oak ecological community type, 24 percent is in the Dry and Dry Mesic Oak–Pine type, 19 percent is in the Dry and Xeric Oak type, 11 percent is in the Xeric Pine and Pine-Oak type, one percent is in the Conifer/Northern Hardwood type, and less than one percent is in the Mixed Mesophytic type.

There are 27 acres of inventoried possible old growth. The ecological community type represented is: 27 acres Dry Mesic Oak (0 acres suitable), which represents 0.09 percent of the Forest's total.

There are no known threatened, endangered, or sensitive species within the area.

Approximately 73 percent of the area is classified as having High Scenic Integrity.

The western boundary of the roadless area runs coincident with Mountain Lake Wilderness.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Mountain Lake Wilderness Addition B roadless area makes its preservation as potential wilderness practical. The western boundary of the area adjoins the existing Mountain Lake Wilderness and would increase the size of the wilderness from 11,113 acres to approximately 15,131 acres. The eastern and southern boundaries would be difficult to manage and administer due to the lack of public access across private land. There are no outstanding mineral rights or federal leases of oil or gas within this roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Forest Service wilderness boundary lines delineate the western boundary of the roadless area. FDR 10531 delineates a portion of the northern boundary. An offset from this road would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, gravel placement, etc.). An offset of 100 feet from the centerline of the road is recommended and identical to that established for the adjoining Mountain Lake Wilderness. Much of the remaining boundary follows existing property lines. Approximately 1.5 miles of the boundary line adjoins other National Forest land where the boundary line would be more difficult and expensive to establish.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There are no developed recreation sites within this roadless area. Hunting and hiking are the major recreation attractions to the immediate area. Mountain Lake Wilderness adjoins the area. Peters Mountain Wilderness is located approximately 7.3 air miles to the west of the area.

WILDLIFE

The Mountain Lake Wilderness Addition B roadless area provides habitat for a diversity of wildlife species. Featured species of the area are deer, turkey, and bear. There are no known threatened, endangered, or sensitive wildlife species within the area.

**MOUNTAIN
LAKE
WILDERNESS
ADDITION B****WATER AVAILABILITY AND USE**

The roadless area contains the headwaters of several streams and many tributaries that feed into Johns Creek, Little Oregon Creek, and Crosier Branch. There are no known water storage needs or any existing special use water permit authorizations. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 13 percent of the area, or 517 acres, is classified as suitable for timber production. No timber harvest has taken place in the past 10 years; however, future timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 517 acres of suitable lands within this roadless area represents approximately 0.2 percent of all lands suitable for timber production on the Jefferson National Forest. There are no outstanding mineral rights or federal oil or natural gas leases within the area.

CULTURAL RESOURCES

No cultural resource surveys have been conducted within the area to date. The area exhibits a low to moderate potential for prehistoric and historic resources.

LAND USES

No special use permit authorizations have been issued for land uses in this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Fire suppression would be primarily by hand tools. Use of motorized and/or mechanized equipment and transport such as ATV's , bulldozers, and chainsaws would be allowed only upon specific approval by the appropriate line officer. Thus, wildfires would likely attain larger sizes than under current management. The roadless area is bounded by private lands to the southern and eastern portions of the area. Wilderness designation may limit options for containing fires on private and/or federal lands. The Mountain Lake Wilderness Addition B roadless area is expected to be in the generally infested area for gypsy moth in the next five to ten years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 64 percent of the area is in the Dry Mesic Oak ecological community type. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

**MOUNTAIN LAKE
WILDERNESS
ADDITION C**

MOUNTAIN LAKE WILDERNESS ADDITION C

ID NUMBER: 14106

Overview

LOCATION, VICINITY, AND ACCESS

The Mountain Lake Wilderness Addition C roadless area is located on the Jefferson National Forest, New River Valley Ranger District, Giles County, Virginia. The area adjoins the northwestern corner of the existing Mountain Lake Wilderness, to the west of Little Mountain, and is found within portions of U.S.G.S. Virginia-West Virginia Quadrangles Interior and Waiteville. The area is bounded by Mountain Lake Wilderness to the east, VA 635 to the north, and White Rock Branch to the south and west. Major vehicle access is provided by several routes heading east or north from US 460.

Surface Ownership	Acres
Forest Service	494
Private	0
Park Service	0
TOTAL	494

There is one improved road within the area. Forest Development Road (FDR) 10470 enters the area from VA 635 and travels 0.16 miles into the northwest corner of the area. Total improved road mileage is 0.16 miles.

There are no unimproved roads or Forest Development Trails (FDT) within the roadless area.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the Mountain Lake Wilderness Addition C roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone or shale with parallel drainages interspersed with broad limestone valleys. Included in this area is Kire Mountain. Nearby mountains include Fork Mountain to the north, Little Mountain and Potts Mountain to the east and south, and Rocky Mountain to the west. Slopes vary from very steep on sideslopes to nearly flat along White Rock Branch. Drainage density is moderate. The area contains the headwaters of several tributaries that feed into Stony Creek. Elevation ranges from approximately 2740 feet adjacent to VA 635 in the northern section of the area to 3400 feet at a point along the crest of Kire Mountain.

The roadless area is forested by eastern deciduous and coniferous species. Approximately 17 percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, white pine, and red maple dominate the overstory. The remaining 83 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

CURRENT USE

The area is primarily used for dispersed recreation activities such as hunting and hiking. Approximately 52 percent, or 257 acres, of the area are classified as suitable for timber production. There are no outstanding mineral rights or oil or gas leases within the area.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 0.16 miles of improved road is visually evident and influences ecological processes, as a minimum, in the vicinity of the road. VA 635 and VA 613, though outside the roadless boundary, are visually evident from many points around the periphery of the area. White Rocks Campground, a developed recreation facility, is located approximately 0.20 miles from the southeast corner of the area.

Much of the area was logged and frequently burned in the late 1800's and early 1900's. Approximately 96 percent of the timber is in the 21-100 year old age class and the remaining four percent is in the 11-20 year age class. The area has no timber in the 0-10 year age class but has 19 acres of possible inventoried old growth.

Featured species for the area is bear. There are no wildlife openings or recently seeded roads in this roadless area.

The roadless area adjoins a portion of the northwestern boundary of the Mountain Lake Wilderness. The other three sides of the area are surrounded by other National Forest lands.

KEY ATTRACTIONS

The area is primarily used by hunters. Mountain Lake Wilderness adjoins the area and Peters Mountain Wilderness is located approximately four air miles to the west. There are no federally threatened, endangered, or sensitive species within the area.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is minimally affected by outside forces. Much of the Mountain Lake Wilderness Addition C roadless area appears to be natural but there are signs of disturbance. There is approximately 0.16 miles of improved road that is evident. If this roadless area becomes wilderness, this road would be in wilderness and removed from the Forest's transportation system. There are no acres of 0-10 year old age class within the area. The overall influence of human activities to the area is minimal, primarily due to the area's challenging topography.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Mountain Lake Wilderness Addition C roadless area is 491 acres in size. Kire Mountain, in the center of the area, is the highest point within the area. The area is bounded to the north by VA 635 and a combination of VA 613 and White Rock Branch to the west. White Rock Branch also forms the southern boundary of the area. Elevations range from approximately 2740 feet adjacent to VA 635 to 3400 feet at a point along the crest of Kire Mountain. There is no solitude core area for this small roadless area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. However, if this roadless area were added to the adjoining wilderness, the core area of the wilderness would be afforded additional protection. When combined with the existing wilderness, visitors feel like they are in an unconfined, natural area. Visitor use of the area can be described as low. The area receives some use during hunting season. The further one gets away from roads and the periphery of the area, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance. However, peripheral areas may be impacted by noises and sights associated with traffic on VA 635 and VA 613, which may reduce the feeling of solitude and isolation.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive

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ADDITION C**

camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. The level of personal risk increases as one gets further away from the edge of the roadless area and away from roads and trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Mountain Lake Wilderness Addition C roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hunting and hiking are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Mountain Lake Wilderness Addition C roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (491 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbours Creek, and Shawvers Run. Within the southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridge tops. Shale and limestone are the bedrock on the lower slopes.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The area's large relief and highly dissected topography creates a wide range of ecological types from hot, dry windswept ridgetops to cool, moist, protected coves.

The vast majority of the area, approximately 96.5 percent, is in the Dry Mesic Oak ecological community type. The remaining 3.5 percent is in the Mixed and Western Mesophytic type.

There are 19 acres of inventoried possible old growth. The ecological community type represented is: 19 acres Dry Mesic Oak (14 acres suitable) which represents 0.07 percent of the Forest's total.

There are no known threatened, endangered, or sensitive species within the area.

Approximately 39 percent of the area is classified as having High Scenic Integrity.

The eastern boundary of the roadless area runs coincident with Mountain Lake Wilderness. Peters Mountain Wilderness is located approximately four air miles to the east of the roadless area.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Mountain Lake Wilderness Addition C roadless area makes its preservation as potential wilderness practical. The eastern boundary of the area adjoins the existing Mountain Lake Wilderness and would increase the size of the wilderness from 11,113 acres to approximately 11,604 acres. The remaining boundary follows VA 635 or White Rock Branch. There are no outstanding mineral rights within the roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Forest Service wilderness boundary lines delineate the eastern boundary of the roadless

area. VA 635 and White Rock Branch delineate the remaining boundaries. An offset from VA 635 would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, etc.). An offset of 100 feet from the centerline of VA 635 is recommended.

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Availability for Wilderness

RECREATION, INCLUDING TOURISM

There are no developed recreation sites within this roadless area. Hunting and hiking are the major recreation attractions to the immediate area. White Rocks Campground, a developed facility, is located 0.20 miles from the southeast boundary of the roadless area. Mountain Lake Wilderness adjoins the area.

WILDLIFE

The Mountain Lake Wilderness Addition C roadless area provides habitat for a diversity of wildlife species. Featured species of the area is bear. There are no known threatened, endangered, or sensitive wildlife species within the area.

WATER AVAILABILITY AND USE

The roadless area contains the headwaters of several tributaries that feed into Stony Creek. There are no known water storage needs or any existing special use water permit authorizations. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 52 percent of the area, or 257 acres, is classified as suitable for timber production. No timber harvest has taken place in the past 10 years; however, future timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 257 acres of suitable lands within this roadless area represents approximately 0.08 percent of all lands suitable for timber production on the Jefferson National Forest. There are no outstanding mineral rights or federal oil or natural gas leases within the area.

CULTURAL RESOURCES

Approximately 53 acres have been surveyed for cultural resources, as of March 1998, within the roadless area. One prehistoric transient camp has been identified. The area exhibits a moderate to high potential for additional prehistoric and historic resources.

LAND USES

No special use permit authorizations have been issued for land uses in this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Fire suppression would be primarily by hand tools. Use of motorized and/or mechanized equipment and transport such as ATV's, bulldozers, and chainsaws would be allowed only upon specific approval by the appropriate line officer. Thus, wildfires would likely attain larger sizes than under current management. The roadless area is surrounded by other National Forest lands. Wilderness designation may limit options for containing

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fires. The Mountain Lake Wilderness Addition C roadless area is expected to be in the generally infested area for gypsy moth in the next five to ten years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 96.5 percent of the area is composed of the Dry Mesic Oak ecological community type. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

NORTH FORK OF POUND

ID NUMBER: 14509

Overview

LOCATION, VICINITY, AND ACCESS

The North Fork of Pound roadless area is located on the Jefferson National Forest, Clinch Ranger District, in the northwestern corner of Wise County, Virginia, south of the Kentucky/Virginia border. The area is situated between the crest of Pine Mountain and North Fork of Pound Lake and is found within portions of U.S.G.S. Kentucky-Virginia Quadrangles Flat Gap and Jenkins West. The area is generally bounded by Pine Mountain to the north, an electric power transmission corridor to the east, a combination of private property and other National Forest lands to the west, a combination of the north shore of North Fork of Pound Lake, other National Forest land, and private property to the south. Major vehicle access to the area is limited. US 23, west of Pound, to VA 671 to Forest Development Road (FDR) 834 provides vehicular access to within 0.4 miles of the roadless area near Phillips Creek Picnic Area in the southwestern portion of the area. FDR 2027, off VA 671, also provides access to the area through Cane Patch Campground. Boat access is available via several boat launches along the shore of North Fork of Pound Lake.

Surface Ownership	Acres
Forest Service	4,756
Private	4
Park Service	0
TOTAL	4,760

There are no improved within the roadless area.

An unimproved road about .2 miles long provides access to a water tank on a private inholding.

Portions of two Forest Development Trails (FDT) are within the area. FDT 202, the Phillips Creek Trail, is a 1.0 mile loop hiking and interpretive trail that begins and ends near the Phillips Creek Picnic Area. Approximately 0.8 miles of this trail are in the roadless area. FDT 206, the Laurel Fork Trail, is a 1.6 mile hiking trail that accesses Laurel Fork Campground on the north shore of North Fork of Pound Lake. Approximately 0.9 miles of this trail are within the roadless area. Total maintained trail mileage is 1.7 miles.

There are numerous abandoned access roads and railroad grades throughout the area. Some have become overgrown and impassable to anything but foot traffic, while others remain well defined. The area does experience significant illegal ATV traffic, primarily accessing the area from the north side of Pine Mountain along a non-system ridgeline trail, then moving southward toward North Fork of Pound Lake.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)**NORTH FORK
OF POUND**

According to ecological mapping, the North Fork of Pound roadless area lies in the Pine and Cumberland Mountains Subsection of the Southern Cumberland Mountain Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section contains most of Virginia's coal resources and is characterized by faulted and folded monoclinical mountains comprised of sandstone and shale interspersed with limestone. Included in this area is Pine Mountain. The highly dissected landscapes found within this section are the result of differential erosion rates of the various rock beds. The area contains the headwaters of several streams tributary to the North Fork Pound River. These include Phillips Creek, Laurel Fork, Hopkins Branch, and Stacy Branch. Elevation ranges from approximately 1581 feet along the north shore of North Fork of Pound Lake to 3120 feet at a point along the crest of Pine Mountain.

The roadless area is forested by mixed mesophytic hardwood and coniferous species. Approximately 99 percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. The best sites in this area occur in colluvial drainages or toeslopes where overstory species may include typical cove and bottomland hardwood species such as yellow-poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, and red maple. White oak, northern red oak, and hickory forest types occupy upper and midslope positions. Common understory types are mountain laurel, rhododendron, huckleberry, blueberry, greenbriar, and other shrubs and forbs.

The vast majority of the area, approximately 80 percent, is in the Dry Mesic Oak ecological community type. The Mixed and Western Mesophytic ecological community type represents 17 percent of the area while the River Floodplain type represents two percent of the area. The Dry and Dry-Mesic Oak-Pine type represents less than one percent of the area.

CURRENT USE

The area is primarily used for dispersed recreation activities such as hunting, fishing, hiking, primitive camping, and illegal ATV use. The two trails within the area receive a moderate amount of use. Nearly the entire roadless area is within the designated Public Water Supply for the Town of Pound. The water is impounded in North Fork of Pound Lake before delivery to the town. The population served is approximately 1800. In 1995, local governments passed resolutions asking the Forest Service to prohibit timber cutting within the roadless area so as to not adversely affect the water quality of North Fork of Pound Lake. According to the North Fork of Pound Opportunity Area Analysis (Draft, 1994), approximately 99 percent, or 4706 acres, are classified as suitable for timber production. The CISC (Continuous Inventory of Stand Conditions) database has not been updated.. There is a four-acre private inholding located in the southeastern portion of the area adjacent to Stacy Branch. The town of Pound, Virginia owns this inholding. A 50,000 gallon water tank is located on this inholding. The tank is not in operation. Inventory data indicate about 946 acres of privately owned, outstanding or reserved, mineral rights underlying Federal surface ownership. Tract J-985 is entirely within the roadless area and has 268.71 acres of outstanding mineral rights. Tract J-1352d has 876.92 acres of reserved oil and gas rights. About 677 acres of this tract are within the roadless area. Natural gas development is occurring in the area southwest of the roadless area. As part of this ongoing development of natural gas fields, development of the privately owned natural gas on tract J-1352d is planned for the very near future.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

There are no improved within the area. However, the 1.7 miles of developed trails are visually evident and influence ecological processes, as a minimum, in the vicinity of the

**NORTH FORK OF
POUND**

trails. Many old access roads, railroad grades, and trails still exist and are evident while others are becoming overgrown and are regaining a more natural appearance. Illegal ATV traffic is evident, particularly along the northern boundary of the area adjacent to private land.

Much of the area was cut over and frequently burned in the late 1800's and early 1900's. Approximately 72 percent of the timber is in the 21-100 year old age class and 27 percent is in the 101 plus years age class. The area has 153 acres of possible inventoried old growth.

No known timber harvests have been made in this area since the mid 1960's when the US Army Corps of Engineers began purchasing land for the construction of the North Fork of Pound Reservoir. Much of the area, especially the lower half of Pine Mountain, was in pasture and old fields that have reverted to young timber stands. Most of the older stands of trees are located where the original resident's woodlots were located prior to US Army Corps of Engineers land acquisition. In May 1983, the land was transferred to the US Forest Service.

According to the North Fork of Pound Opportunity Area Analysis (Draft, 1994), featured species of the area is wild turkey. The northern portion of the roadless area is bounded by exceptionally rugged private property along Pine Mountain. The western boundary is a mix of other National Forest and private land and follows partly along Bad Creek. The southern boundary follows other National Forest land north of Cane Patch Campground and Phillips Creek Picnic Area, a large section of the north shore of North Fork of Pound Lake, private property boundaries adjacent to the Stacy Branch drainage, and a portion of a Chesapeake and Ohio Railroad track. The eastern boundary follows an electric power transmission line corridor for approximately 1.1 miles, from just east of the old Pine Mountain Lookout on Pine Mountain to its intersection with the railroad track.

The closest existing wilderness areas to this roadless area are Beartown Wilderness on the Wythe Ranger District, approximately 63 air miles to the east, and Big Laurel Branch Wilderness, on the Watauga Ranger District of the Cherokee National Forest, approximately 62 air miles to the southeast.

KEY ATTRACTIONS

Activities associated with hunting, lakeshore fishing, and hiking are key attractions to the area. North Fork of Pound Lake provides opportunities for water sports including fishing and boating. Laurel Fork Campground, a primitive facility within the roadless area, can be accessed by the Laurel Fork Trail or by boat. This campground contains two fire rings and two fiberglass toilet structures. Cane Patch Campground and Phillips Creek Picnic Area are developed facilities just outside the roadless area boundary in the southwestern portion of the area.

All, or portions of, two unique communities identified by the Virginia Division of Natural Heritage are located within the area. The 390- acre Indian Grave Gap area is situated in the headwaters of the Laurel Fork and Phillips Creek drainages and encompasses a complex of unique forest communities and a naturally open exemplary seepage wetland community. About three acres of the 215- acre Pine Mountain Tunnel area are located in the southeastern portion of the area. Five individuals of the sensitive Eastern small-footed bat were captured, tagged, and released in this area in June 1995. There are no other known Federally threatened, endangered, or sensitive species within the area.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area and the area is minimally affected by outside forces. Much of the North Fork of Pound roadless area appears to be natural but there are signs of disturbance. There are 1.7 miles of maintained trail and numerous old access roads and railroad grades throughout the area. These trails and old roads influence ecological processes, as a minimum, in the vicinity of the trails and roads. Some of the old roads have become overgrown and are impassable to all but foot traffic. The old roads, railroad grades, old homesites, fields, and other past improvements have been abandoned and the forces of nature are beginning to mute their appearance. Much of the area has the look of a once managed area that has been neglected and given over to the forces of nature. Illegal ATV traffic occurs in several areas along the northern boundary. There is a four-acre private inholding with watertank, located adjacent to Stacy Branch in the southeastern corner of the area while an electric power transmission line corridor forms the eastern boundary. There are numerous unmaintained cemeteries and individual gravesites located within the area. Documented cemeteries include Laurel Fork Cemetery and the Short Family Cemetery. Laurel Fork Campground is a primitive facility located within the roadless area near the north shore of North Fork of Pound Lake. There are 30 acres of 0-10 year old age class within the area, all of which are old fields reverting to young timber stands. The overall influence of recent human activities to the area is minimal, primarily due to the area's remoteness and challenging topography.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The North Fork of Pound roadless area is 4,760 acres in size, of which 4,756 acres are located on National Forest land. The area includes the southern face of Pine Mountain from North Fork of Pound Lake to the crest of Pine Mountain. The highly dissected topography allows the user to quickly get away from noises and sights associated with activities from the adjoining lake, private land, and Forest Service recreation areas. Elevations range from approximately 1581 feet along the north shore of North Fork of Pound Lake to 3120 feet at a point along the crest of Pine Mountain. A solitude core area of 4,255 acres exists in the area exclusive of small areas in the southeastern section of the area and north of the recreation facilities at Cane Patch Campground and Phillips Creek Picnic Area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The ratio of core acres of solitude to the roadless area is approximately 89 percent. Visitor use of the area can be described as low to moderate. The further one gets away from roads, the lake, and the periphery of the area, the greater the feeling of being in an unconfined, natural area. Past human developments and improvements are becoming muted by the forces of nature. However, some areas may be impacted around the periphery of the area by noises associated with traffic on improved and unimproved roads, adjacent campgrounds and picnic areas, motorized boats on the lake, activities from adjoining private land, and noises associated with the power transmission line corridor and railroad which may reduce the feeling of solitude and isolation.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads and trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

North Fork of Pound roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hunting, fishing, primitive camping, and hiking are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

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The roadless area is unique because it is within the Pine and Cumberland Mountains Subsection of the Southern Cumberland Mountain Ecosystem Section (4,760 acres). This ecosystem subsection and section is not represented in any existing wildernesses on the Jefferson National Forest or other areas in the Appalachian Mountains.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. All, or portions of, two unique communities identified by the Virginia Division of Natural Heritage are located in the area, which may provide opportunities for scientific and educational purposes (see 1.i.). Swainson's warbler, a locally rare bird species, is found within the roadless area. There are no known Federally threatened, endangered, or sensitive species within the area.

The area is within the coal producing region of Virginia. Several cemeteries and individual gravesites are known to exist within the area.

There are 153 acres of inventoried possible old growth. The ecological community types represented are: 39 acres Dry Mesic Oak (39 acres suitable) which represents 0.1 percent of the Forest's total; 71 acres Mixed/Western Mesophytic (71 acres suitable) which represents 1.9 percent of the Forest's total for that type; and 22 acres Dry and Dry-Mesic Oak-Pine (22 acres suitable) which represents 0.46 percent of the Forest's total for this type.

Approximately 96 percent of the area is classified as having high existing scenic integrity.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of North Fork of Pound roadless area makes its preservation as potential wilderness practical. Most of the boundary follows property lines, other National Forest lands, and the north shore of North Fork of Pound Lake. Boundaries would need to be established on the ground where the boundary joins other National Forest lands, particularly where the boundary falls along sideslopes and ridges in the southwestern and southeastern portions of the area. Although surrounding private lands and North Fork of Pound Lake contrast somewhat with the area, the effects are generally limited to the periphery along the boundary of the roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Forest Service boundary lines delineate approximately half of the roadless area boundary. An electric power transmission line corridor, railroad track, and the north shore of North Fork of Pound Lake delineate about one-quarter of the area while adjoining National Forest land makes up the remainder of the area. Defining the on-the-ground boundary where the roadless area adjoins other National Forest land would be time consuming and expensive, particularly in areas along the western and southwestern boundaries. An offset from the powerline corridor, railroad track, and lake would enhance wilderness characteristics of the area by avoiding impacts that are a result of maintaining these facilities. An offset of 300 feet from the centerline of the powerline corridor and railroad track and the high water mark of the lake is recommended. Monitoring and managing the continuing illegal ATV traffic coming from the southside of Pine Mountain into the area will be difficult due to the location and remoteness of the activity.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There is one developed recreation facility within the roadless area. Laurel Fork

Campground is a primitive facility that is accessible by foot or boat. Two other facilities, Cane Patch Campground and Phillips Creek Picnic Area, are located just outside the roadless boundary in the southwestern portion of the area. The adjacent North Fork of Pound Lake provides water oriented recreation opportunities in the form of fishing and boating. Several boat launches are located around the periphery of the lake. Hunting, fishing, hiking, and dispersed camping are popular uses within the roadless area. The area is approximately 11 miles north of Wise, Virginia and two miles west of Pound, Virginia. No impacts to existing, legal recreation uses would be expected should this roadless area be designated as wilderness.

WILDLIFE

The North Fork of Pound roadless area provides habitat for a diversity of wildlife species. Wild turkey is the featured species. Swainson's warbler is known to occur within the roadless area.

WATER AVAILABILITY AND USE

The roadless area encompasses the headwaters of several streams tributary to the North Fork of Pound River and lake: Phillips Creek, Laurel Fork, Hopkins Branch, and Stacy Branch. Water chemistry in Phillips Creek is good, but there is insufficient flow to support a sport fishery. The area is totally within the municipal watershed of Pound, Virginia. There are no other known water storage needs or any existing special use water permit authorizations. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 99 percent of the area, or 4706 acres, is classified as suitable for timber production. In the past 10 years, no timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 4706 acres of suitable lands within this roadless area represents approximately 1.5 percent of all lands suitable for timber production on the Jefferson National Forest. Private subsurface minerals ownership is held on 926 acres within this area. The potential for energy minerals, primarily natural gas, is estimated to be high. Federal oil and gas leases have been issued in this area and other areas along the east slope of Pine Mountain since the 1980's. A Federal oil and gas lease, issued in 1984, covers approximately 3500 acres of the roadless area. The Federal oil and gas lease is in effect and is held by production of natural gas. Natural gas development, to date, has been on a portion of the gas field on nearby private land. The Federal oil and gas leaseholder plans to continue the development of the natural gas field onto the Federal lease area, within the roadless area, in the very near future. Tract J-1459, a 103 acre tract acquired by the Federal government in 1991, is not under Federal oil and gas lease. A 211 acre portion of Tract J-550a, in the northeast corner of the roadless area, was under Federal oil and gas lease, but the lease terminated. As of December 1999, this northeast corner of the roadless area is not currently under lease. The entire roadless area is located on the western fringe of the Southwest Virginia coal field. The potential for metallic minerals, or other Federal leasable minerals, is estimated to be low.

CULTURAL RESOURCES

Approximately 20 acres have been surveyed for cultural resources, as of April 1998, within the roadless area. The Short Family Cemetery, a late 19th/early 20th century burial ground, was identified and recorded during this survey. The area does contain additional cemeteries and individual gravesites but these have not yet been recorded. Several rock shelters are located in the area, some of which have been subject to looting and vandalism. A comprehensive inventory of these rock shelters has not been completed. The

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area exhibits a high potential for additional historic and prehistoric resources.

NORTH MOUNTAIN

LAND USES

No special use permit authorizations have been issued for land uses in this roadless area. The owner of the federal oil and gas lease is expected to begin drilling for natural gas in the very near future.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands to the north and along portions of the western and southeastern boundaries. Wilderness designation may limit options for containing fires on private and/or federal lands. The North Fork of Pound roadless area is expected to be in the generally infested area for gypsy moth in about twenty years, assuming the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia., Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 80 percent of the area is composed of the Dry Mesic Oak ecological community type. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

NORTH MOUNTAIN

ID NUMBER: 14507

Overview

LOCATION, VICINITY, AND ACCESS

North Mountain roadless area is located on the Jefferson National Forest, New Castle Ranger District, Craig and Botetourt Counties, Virginia. The area is bounded by Forest Development Road (FDR) 224 to the north, VA 311 and private land to the west, a powerline to the east, and private land to the south. The area is found within U.S.G.S. Virginia Quadrangles Catawba and Looney. Major vehicular access is provided by VA 311 along the western end and FDR 224 along the northern end.

Surface Ownership	Acres
Forest Service	8,371
Private	39
Park Service	0
TOTAL	8,410

There is only one improved road in the area. There is a 1.25 mile road in the

southeast corner that accesses a private inholding on the crest of North Mountain. This road is not listed on the Forest Service Transportation Information System (TIS) records. Total improved road mileage is 1.25 miles.

There are no unimproved roads within the area. Total unimproved road mileage is 0.00 miles.

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MOUNTAIN**

There are four developed trails within the area. Forest Development Trail (FDT) 263, North Mountain Trail, runs the length of the area along the ridgetop of North Mountain for 13.2 miles. Three other trails intersect FDT 263 and run north to FDR 224; FDT 186 (Deer Trail-1.6 miles), FDT 188 (Grouse Trail-1.5 miles), and FDT 187 (Turkey Trail-1.7 miles). The trails are open to foot, bicycle, and horse traffic. All four trails are utilized in a major mountain bicycle race each year (500+ riders). There are several illegal four-wheel drive and ATV roads that enter the area from private land along the southern boundary.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, this area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone or shale with parallel drainages with broad limestone valleys. Included in this area is North Mountain with a series of small, steep sideslope drains. Elevation ranges from approximately 1410 feet along VA 600 near the southeastern corner to 3062 feet along the crest of North Mountain.

Approximately 75 percent of the area is underlain by Silurian-aged sandstone, and 25 percent is underlain by Brallier and Martinsburg shale. Ridgetop and sideslope soils consist primarily of moderately deep, loamy-skeletal Typic Dystrochrepts (Dekalb and Berks series). Foothills and benches are often Typic Fragiuults (Laidig series) or other more productive colluvial Hapludults. Drainages contain deep loamy-skeletal Typic-Hapludults and Dystrochrepts formed in colluvium from sandstone (Oriskany and Sherando series) or shale (Shelocata series).

Vegetation is mainly broadleaf deciduous species. Approximately 19 percent of the area has a site index of 70 or greater indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages, toeslopes, or along alluvial floodplains of small to medium sized streams. Here yellow poplar, northern red oak, white oak, basswood, cucumber tree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 81 percent of the area has a site index of 60 or below, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

CURRENT USE

The area is primarily used for dispersed recreation activities such as hiking and mountain biking along the four trails, as well as hunting and illegal ATV use. There are several wildlife clearings just south of FDR 224 totaling approximately 16 acres. Approximately 18 percent, or 1538 acres, are classified suitable for timber production within the area. Mineral rights are outstanding on approximately 60 acres.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 1.25 miles of improved road, within the roadless area, is visually evident and influences ecological processes, as a minimum, in the vicinity of the road. Many old access roads and logging roads still exist and are evident; however, lack of maintenance and use is allowing some of them to become overgrown and regain a more natural appearance. Other old roads are being kept open by frequent illegal ATV traffic, particularly in the southern end. Wildlife clearings are also evident.

Most of the area was logged and frequently burned in the early 1900's. The predominant age of timber in the area is 21-100 years old. Approximately 93 percent of the area is in

**NORTH
MOUNTAIN**

the 21-100 year old age class, three percent is in the 11-20 year age class, three percent in the 101 plus years class and one percent is in the 0-10 year class. There are no acres of inventoried possible old growth.

KEY ATTRACTIONS

The area is popular with hikers, mountain bikers, and hunters. Approximately 39 acres of the Dragons Tooth Trail/McAfee Knob Special Biological Area is found along the southwest boundary of this area. This area contains the globally rare shrub, piratebush.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area and the area is minimally affected by outside forces. North Mountain roadless area appears to be natural but there are signs of recent disturbance. There are 41 acres of 0-10 year old age class and 282 acres of 11-20 age class. There are 1.25 miles of improved road and 18 miles of maintained trails within the area.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The North Mountain roadless area is 8,409 acres in size. Approximately 40 of those acres are within a private inholding in the center of the area. Landform consists of the ridgetop of North Mountain divided by a series of sideslope drainages. Elevations range from 1,410 feet along VA 600 near the southeastern corner to 3,062 feet along the crest of North Mountain. A solitude core area of 5,436 acres exists along the ridgetop of North Mountain. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The proportion of core acres of solitude to the roadless area is approximately 64 percent. There are 1.25 miles of improved road and four trails totaling 18 miles within the roadless area. Visitors feel like they are in an unconfined, natural area. The area consists mainly of a northeast to southwest running ridgetop and most of the ridgetop's two sides. Due to the shape of this area, noise from the surrounding lands can be heard from most locations within this area (state highways, FS roads, private land). Activities on surrounding lands would be visible from most locations within this area, particularly the ridgetop and southeast flank. The highest level of noise is concentrated in the western end due to the close proximity of heavily used VA 311.

A major mountain bike race, with approximately 500 riders, has occurred in this area the last few years.

It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads. Within the area there are isolated and remote areas but there is also a degree of evidence of human impact (roads, wildlife clearings, past timber harvests). The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

North Mountain roadless area does present a range of dispersed recreational activities of which are typically found on the Jefferson National Forest. Activities such as hunting, fishing, hiking, mountain biking and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

North Mountain roadless area is in the Ridge and Valley Subsection of the Northern Ridge

and Valley Ecosystem Section. This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Shawvers Run, Barbours Creek, Peters Mountain, Mountain Lake, Kimberling Creek, and Beartown. Within the Southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Barbours Creek Wilderness is the closest existing wilderness to this roadless area and is located approximately 10 air miles to the north.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridge tops. Shale and limestone are the bedrock on the lower slopes.

There are no designated Research Natural Areas or Experimental Forests within the roadless area.

The majority of the area, approximately 56 percent, is in the Dry/Dry-Mesic Oak-Pine ecological community type. The Dry Mesic Oak type represents about 42 percent of the area while the Xeric Pine Pine-Oak type represents two percent. Other minor types represent less than one percent of the area.

CISC data indicates 53 acres of possible old growth in the Dry Mesic Oak forest type. However, recent field work in the area showed no actual inventoried possible old growth.

The sensitive plant, piratebush, occurs within the area. No other threatened, endangered, or sensitive species are known to occur within this area.

Approximately 92 percent of this area is classified as having High Scenic Integrity.

SIZE, SHAPE, AND MANAGEABILITY

The North Mountain roadless area is a long ridgetop running northeast to southwest and includes most of the upper slopes on both sides of the mountain. The topography provides little opportunity for remote settings. From most locations within this area, one can observe activities occurring on private or other Forest Service land. Activities occurring on the 40 acre private inholding on the crest of North Mountain do have the potential to impact wilderness attributes. Additionally, a primitive road that accesses the private land may also affect any potential wilderness values. Most of the boundary follows property boundary lines and human improvements such as roads and powerlines. Surrounding lands are mostly private to the south and east and Forest Service to the north and west.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Most of the boundary follows features such as roads, powerlines, and property line boundaries. An offset from boundary roads, such as VA 311, would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, road alignment, etc.). An offset of approximately 300 feet from the centerline of existing roads is recommended. There are several wildlife clearings along FDR 224. An offset off from FDR 224 would include most of these clearings and allow for continuing maintenance activities should this area become wilderness.

Availability for Wilderness

RECREATION, INCLUDING TOURISM

There are no developed recreation sites within this roadless area. The four trails in the

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area receive a moderate amount of hiking and mountain biking use and a low amount of horse use. A mountain bike race on these trails has resulted in as many as 500 participants in past years. Other activities include hunting and illegal 4-wheel drive and ATV use.

WILDLIFE

The North Mountain roadless area provides habitat for diverse wildlife species. The featured species for the area is 68 percent turkey, and 31 percent deer. No threatened, endangered, or sensitive wildlife species are known to occur within the area.

WATER AVAILABILITY AND USE

The north and west side of North Mountain drains into Craig Creek, while the south and east side drains into Catawba Creek. There are no known water storage needs or any existing special use water permit authorizations. Water quality should remain at its current level whether or not the area is designated wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 18 percent, or 1,538 acres, is classified as suitable for timber production. In the last 10 years, approximately 40 acres of timber has been harvested. Several timber harvest projects were proposed in this roadless area in 1997. Proposed harvesting was to take place along FDR 224 and VA 618 along the northern boundary. Approximately 16 areas either partially or completely within the roadless area were part of the proposal. An environmental assessment was prepared and signed on October 17, 1997. An appeal was accepted on December 17, 1997 and the original decision was reversed and sent back to the New Castle Ranger District. Timber harvest and the associated production of wood products from this area would be precluded by wilderness designation. The 1,538 acres of suitable lands in this roadless area represent approximately 0.5 percent of all lands suitable for timber production on the Jefferson National Forest. Approximately 41 acres of this area has mineral rights outstanding. There are no federal oil or natural gas leases within the area.

CULTURAL RESOURCES

To date, 563 acres of this roadless area have been surveyed for cultural resources. No prehistoric or historic sites have been identified. This area exhibits a low potential for prehistoric or historic resources.

LAND USES

Over the last few years, a special use permit authorization has been issued for a competitive mountain bike race held within the area. The landowner that owns the private inholding within the North Mountain area has a road right-of-way to access his property.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Fire suppression would be primarily by hand tools. Use of motorized and mechanized transport and equipment such as ATV's, bulldozers, and chainsaws would be allowed only upon specific approval by the appropriate line officer. Thus, wildfires would likely attain larger sizes than under current management. Wilderness designation may limit options for containing fires. Gypsy moth infestations are in the vicinity of this roadless area right now. Mortality can be severe (up to 25-30 percent) and oaks are the preferred hosts. There is also evidence of southern pine beetle activity in the western end of the

area. Approximately 98 percent of the area is composed of the Dry Mesic Oak and Dry/Dry Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chances that they may spread to other National Forest or private land.

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MOUNTAIN**

**PATTERSON
MOUNTAIN**

Portions of this roadless area are occupied by near pure stands of table mountain pine and/or pitch pine forest types. These pine-dominated stands occur primarily on southeast to southwest facing ridges and slopes with dry, well-drained soils. Table mountain pine has serotinous cones that usually require significant heat in the tree canopy from fire to open the cones, thus allowing for seed dispersal and regeneration. Other oak dominated forest types that contain a component of these pine species also occupy a large portion of this roadless area. If this area was designated wilderness, the use of management ignited prescribed fire to manipulate these fire dependent ecosystems for restoration and maintenance would likely not be allowed. This will result in further declines in acreage and the open structure of these forest types along with the flora and fauna these ecosystems support.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

PATTERSON MOUNTAIN

ID NUMBER: 14506

Overview

LOCATION, VICINITY, AND ACCESS

Patterson Mountain roadless area is located on the Jefferson National Forest, New Castle Ranger District, Botetourt County, Virginia. The area is bounded by private land to the west and Forest Development Roads (FDR) 184 and 5020 to the east. The area is found within portions of the U.S.G.S. Virginia Quadrangles Strom and Oriskany. Major vehicular access is provided by FDR's 184 and 5020 along the eastern boundary of the area.

Surface Ownership	Acres
Forest Service	4,862
Private	0
Park Service	0
TOTAL	4,862

There is one improved road within the area. FDR 5016 enters the area from FDR 184 and runs north and east for 1.7 miles. Total improved road mileage is 1.7 miles.

One unimproved road is located within the roadless area boundary. FDR 5015 enters the area from FDR 184 and runs eastward for 1.0 mile. Total unimproved road mileage is 1.0 mile.

Five Forest Development Trails (FDT) access the area that provide a series of hiking loop opportunities. The Patterson Mountain Trail (FDT 148) follows the crest of Patterson Mountain for approximately 5.9 miles. The Tucker Trail (FDT 191) is 1.0 miles in length and climbs from FDR 515 northward to FDT 148. The Helms Trail (FDT 181, 1.0 miles), Elmore Trail (FDT 151, 1.3 miles), and Loop Trail (FDT 153, 1.5 miles) are located within the central portion of the roadless area. All five trails are foot only trails that receive a low amount of use.

GEOGRAPHY, TOPOGRAPHY AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, this area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous

**PATTERSON
MOUNTAIN**

Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone or shale with parallel drainages with broad limestone valleys. Included in this area is Patterson Mountain with a series of small, steep sideslope drainages. Elevation ranges from approximately 1133 feet at the beginning of the Elmore Trail along FDR 184 to 2250 feet at a point along the crest of Patterson Mountain.

Approximately 75 percent of the area is underlain by Silurian-aged sandstone, and 25 percent is underlain by Brailier and Martinsburg shale. Ridgetop and sideslope soils consists of mostly moderately deep, loamy-skeletal Typic Dystrochrepts (Dekalb and Berks series). Footslopes and benches are often Typic Fragludults (Laidig series) or other more productive colluvial Hapludults. Drainages contain deep loamy-skeletal Typic-Hapludults and Dystrochrepts formed in colluvium from sandstone (Oriskany and Sherando series) or shale (Shelocla series).

Vegetation is mainly broadleaf deciduous species. Approximately six percent of the area has a site index of 70 or greater indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages, toeslopes, or along alluvial flood plains of small to medium sized streams. Here yellow poplar, northern red oak, white oak, basswood, cucumber tree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 94 percent of the area has a site index of 60 or below, indicating a moderate to poor productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

CURRENT USE

The area is primarily used for dispersed recreation activities such as hiking and hunting. Approximately 21 percent, or 1020 acres, is classified as suitable for timber production within the area. All minerals are owned by the U.S.A. There are no federal oil or gas leases within the area. A 10 acre tract in the northwest corner is under a special use permit authorization for a private water supply. There are approximately three acres of maintained wildlife clearings in the area.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 2.7 miles of improved and unimproved roads, as well as the 10.7 miles of maintained trails in the roadless area, are visually evident and influence ecological processes, as a minimum, in the vicinity of the roads and trails. Other old access roads and logging roads still exist and are evident; however, lack of maintenance and use is allowing some of them to become overgrown and regain a more natural appearance. Other old roads are being kept open by frequent illegal ATV traffic.

Most of the area was logged and frequently burned in the late 1800's and early 1900's. Approximately 93 percent of the timber is in the 21-100 year old age class. About three percent is in the 0-10 year age class, one percent in the 11-20 year age class, and three percent is in the 101 plus years age class.

The Patterson Mountain OHV trail system is directly adjacent to the eastern boundary of the area. Large tracts of other National Forest land generally bound the area to the east, south, and west. A mix of private and National Forest land bounds the area to the north

KEY ATTRACTIONS

The area is popular with hunters and the extensive trail system in the area receives most of its use during fall hunting season. There are good scenic views from the Patterson

Mountain Trail as the trail winds its way along the crest of Patterson Mountain. The rare Virginia white-haired leatherflower is known to occur in this area.

**PATTERSON
MOUNTAIN**

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is minimally affected by outside forces. Patterson Mountain roadless area appears to be natural but there are signs of recent disturbance. There are 153 acres of timber in the 0-10 year age class and 39 acres in the 11-20 year age class within this roadless area. There is a 1.7 mile long improved road, a 1.0 mile long unimproved road, and 10.7 miles of maintained trail within the area.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Patterson Mountain roadless area is 4,863 acres in size and is located entirely on National Forest land. Landform consists of the ridgetop of Patterson Mountain divided by a series of sideslope drainages. Elevations range from 1,133 feet at the beginning of the Elmore Trail along FDR 184 to 2,250 feet at a point along the crest of Patterson Mountain. A solitude core area of 2,377 acres exists in the center of this area along the ridgetop of Patterson Mountain. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The proportion of core acres of solitude of the roadless area is approximately 49 percent. There is one improved road totaling 1.7 miles, one unimproved road totaling 1.0 miles and five maintained trails totaling 13.1 miles. Visitors feel like they are in an unconfined, natural area. Noise from the surrounding lands can be heard along the boundary from state highways, Forest roads, and from activities associated with private land. The eastern end of the area is adjacent to the Patterson Mountain OHV trail system.

It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads. Within the area, there are isolated and remote areas but there is a degree of evidence of human impact (roads, wildlife clearings, past timber harvests). The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Patterson Mountain roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hunting, hiking, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Patterson Mountain is in the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section. This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Shawvers Run, Barbours Creek, Peters Mountain, Mountain Lake, Kimberling Creek, and Beartown. Within the Southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Barbours Creek Wilderness is the closest existing wilderness to this roadless area and is located approximately 7.0 air miles to the west.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridge tops. Shale and limestone are the bedrock on the lower slopes.

**PATTERSON
MOUNTAIN**

There are no designated Research Natural Areas or Experimental Forests within the roadless area.

Approximately 80 percent of the area is in the Dry/Dry-Mesic Oak-Pine ecological community type with another 16 percent in the Dry Mesic Oak type. The Xeric Pine/Pine-Oak type accounts for the remaining four percent.

There are 92 acres of inventoried possible old growth in the Dry/Dry-Mesic Oak-Pine ecological community type (0 acres suitable), which represents 1.9 percent of the Forest's total for this ecological community type.

Patterson Mountain roadless area contains the sensitive Virginia white-haired leatherflower.

Approximately 82 percent of the area is classified as having High Scenic Integrity.

SIZE, SHAPE, AND MANAGEABILITY

The Patterson Mountain roadless area is along ridgetop running northeast to southwest. The roadless area has this ridge as the core of the area and also includes the slopes on both sides. The topography provides little opportunity for remote areas. From most locations within this area, one can see activities occurring on private land or other Forest Service areas. Directly south of Patterson Mountain roadless area is Price Mountain roadless area. Only FDR 184 separates the two areas. Most of the boundary follows property boundary lines and human improvements such as roads. Surrounding lands are primarily private in ownership to the north and National Forest to the south, west, and east. The private land near this area does have the potential to impact wilderness attributes.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Most of the boundary follows human made features such as roads and property line boundaries. An offset from boundary roads such as FDR 184 would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, gravel placement, road alignment, etc.). An offset of approximately 100 feet from the centerline of existing roads is recommended. The Patterson Mountain ATV area is adjacent to the northeast corner of this area. In this area, the boundary of the roadless area will be more difficult to mark as it primarily follows ridges and drainages.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There are no developed recreation sites within this roadless area. The main attraction to the area are the numerous hunting opportunities the area presents. The area also has 10.7 miles of hiking trails.

WILDLIFE

The Patterson Mountain roadless area provides habitat for diverse wildlife species. The featured species for the area is 61 percent turkey, 36 percent deer, and three percent gray squirrel. No threatened, endangered, or sensitive wildlife species are known to occur within this roadless area.

WATER AVAILABILITY AND USE

The north and west sides of Patterson Mountain roadless area drain directly into Craig Creek. The south and east sides drain into Patterson Creek and ultimately Craig Creek. There is a special use permit authorization for a 10 acre area near the northern end of the area that is used as a water supply for a private landowner. There are no other known water storage needs or existing special use water permits. Water quality should remain at its current level whether or not the area is designated wilderness.

**PATTERSON
MOUNTAIN****LIVESTOCK, TIMBER, AND MINERALS**

There are no livestock operations or potential for such operations. Approximately 21 percent, or 1,020 acres, is classified as suitable for timber production. In the last 10 years, approximately 153 acres of timber has been harvested in this area. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 1,020 acres of suitable lands in this roadless area represent 0.3 percent of all lands suitable for timber production on the Jefferson National Forest. All minerals are owned by U.S.A. There are no federal oil or gas leases within the area.

CULTURAL RESOURCES

As of March, 1998, 263 acres have been surveyed for cultural resources. There are nine inventoried transient camps believed to have been used prior to 1,000 B.C. within the Patterson Mountain roadless area. This area exhibits a low potential for additional prehistoric and historic resources.

LAND USES

There is a special use permit authorization for a 10 acre area near the northern end of the area that is used as a domestic water supply.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Fire suppression would be primarily by hand tools. Use of motorized and mechanized transport and equipment such as ATV's, bulldozers, and chainsaws would be allowed only upon specific approval by the appropriate line officer. Thus, wildfires would likely attain larger sizes than under current management. Wilderness designation may limit options for containing fires. Gypsy moth infestations are in the vicinity of this roadless area right now. Mortality can be severe (up to 25-30 percent) and oaks are the preferred hosts. Approximately 96 percent of the area is composed of the Dry Mesic Oak type and Dry/Dry Mesic Oak Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chances that they may spread to other National Forest or private land.

Portions of this roadless area are occupied by near pure stands of table mountain pine and/or pitch pine forest types. These pine-dominated stands occur primarily on southeast to southwest facing ridges and slopes with dry, well-drained soils. Table mountain pine has serotinous cones that usually require significant heat in the tree canopy from fire to open the cones, thus allowing for seed dispersal and regeneration. Other oak dominated forest types that contain a component of these pine species also occupy a large portion of this roadless area. If this area was designated wilderness, the use of management ignited prescribed fire to manipulate these fire dependent ecosystems for restoration and maintenance would likely not be allowed. This will result in further declines in acreage and the open structure of these forest types along with the flora and fauna these ecosystems support.

Need

**PATTERSON
MOUNTAIN**

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

**PETERS
MOUNTAIN
WILDERNESS
ADDITION A**

PETERS MOUNTAIN WILDERNESS ADDITION A

ID NUMBER: 14102

Overview

* These acres were purchased by the National Park Service for the benefit of the Appalachian National Scenic Trail and are managed by the Forest Service under a Memorandum of Understanding.

Surface Ownership	Acres
Forest Service	1,296
Private	0
Park Service	275
TOTAL	1,570

LOCATION, VICINITY, AND ACCESS

The Peters Mountain Wilderness Addition A roadless area is located on the Jefferson National Forest, New River Valley Ranger District, Giles County, Virginia and Monroe County, West Virginia. The area is located primarily on the southside of Peters Mountain and is found within a portion of U.S.G.S. Virginia-West Virginia Quadrangle Interior. The area is generally bounded by Peters Mountain to the north, Peters Mountain Wilderness to the east, Forest Development Road 11080 (Mystery Ridge Road) and a large tract of National Forest land to the west, and a combination of VA 635 and private land to the south. Major vehicle access is provided by VA 635 from the southeast.

There are no improved or unimproved roads within the area; however, there are several old access and logging roads scattered throughout the area. Some are becoming overgrown and impassible to anything but foot traffic.

There are two Forest Development Trails (FDT) within the area. Approximately 4.9 miles of the Appalachian National Scenic Trail (FDT 1) traverses along the crest of Peters Mountain from Symms Gap northeast to Pine Swamp Ridge before heading south into Peters Mountain Wilderness. About 0.35 miles of the Groundhog Trail (FDT 65), a connector trail to the Appalachian National Scenic Trail, enters the area from the north side of Peters Mountain. A short segment of the Allegheny Trail (FDT 701) is located in the extreme northeast corner of the roadless area. This trail terminates at its intersection with the Appalachian National Scenic Trail.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the Peters Mountain Wilderness Addition A roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone or shale with parallel drainages interspersed with broad limestone valleys. Included in this area is Peters Mountain. Slopes vary from very steep on sideslopes to gentle in the larger drainages. Drainage density is moderate. The area contains the headwaters of several tributaries that flow into Stony Creek, a major stream to the south of the roadless area. Elevation ranges from approximately 1950 feet adjacent to VA 635 and Stony Creek to 3956 feet at a point along the crest of Peters Mountain in the extreme northeastern corner of the area.

The roadless area is forested by eastern deciduous and coniferous species. Approximately 33 percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, white pine, and red

maple dominate the overstory. The remaining 67 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

**PETERS
MOUNTAIN
WILDERNESS
ADDITION A**

CURRENT USE

The area is primarily used for dispersed recreation activities such as hiking, hunting, and primitive camping. Approximately 32 percent, or 486 acres, of the area are classified as suitable for timber production. There are outstanding mineral rights on 504 acres within the area. There are no federal oil or gas leases within the area.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 5.25 miles of maintained trail and several of the old access and logging roads are visually evident and influence natural processes in their vicinity. Some old roads are becoming overgrown and are regaining a more natural appearance. Some four-wheel drive and ATV traffic occurs along the private road that is coincident with the Allegheny Trail in the extreme northeastern portion of the roadless area.

Much of the area was logged and frequently burned in the late 1800's and early 1900's. All of the timber is in the 21-100 year old age class. The area contains no possible inventoried old growth.

Featured species for 98.5 percent of the area is bear and 1.5 percent is turkey. Turkey is featured in one small area in the extreme southwestern corner. There are no wildlife openings or recently seeded roads in this roadless area.

The roadless area adjoins the western and most of the northern boundary of Peters Mountain Wilderness. Land north of the boundary is primarily in private ownership with a small section of federal land running down the north side of Peters Mountain to WV 219 and 24. A large block of National Forest land adjoins the western boundary of the roadless area. A mix of National Forest, private land, and VA 635 comprise the southern boundary. The adjoining private land is comprised of forest land, woodlots, farmland, and several residences and outbuildings.

KEY ATTRACTIONS

The area is popular with hunters and hikers. Peters Mountain Wilderness adjoins the roadless area and Mountain Lake Wilderness is located several miles to the east. There are no known federally threatened, endangered, or sensitive species within the area.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is somewhat affected by outside forces. Much of the Peters Mountain Wilderness Addition A roadless area appears to be natural but there are signs of disturbance. There are approximately 5.25 miles of maintained trail and several old access and logging roads evident. There are no acres of 0-10 year old age class within the area. The overall influence of human activities to the interior of the area is minimal, primarily due to the topography.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

**PETERS
MOUNTAIN
WILDERNESS
ADDITION A**

The Peters Mountain Wilderness Addition A roadless area is 1,588 acres in size of which 1,292 acres are within the proclaimed boundary of the Jefferson National Forest. The remaining 296 acres are outside the proclamation boundary. These acres were purchased by the National Park Service for the benefit of the Appalachian National Scenic Trail and are managed by the Forest Service under a Memorandum of Understanding. The crest of Peters Mountain is generally the northern boundary of the area. Mystery Ridge forms the western boundary while the Peters Mountain Wilderness forms the eastern boundary. The southern boundary follows private property boundaries and VA 635. Elevations range from approximately 1950 feet adjacent to VA 635 to 3956 feet at a point along the crest of Peters Mountain. A solitude core area of 1,260 acres exists in most of the area except for an area along the southern boundary. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The ratio of core acres of solitude to the roadless area is approximately 80 percent. If this roadless area were added to the existing wilderness, the core area size would represent a much higher percentage. When combined with the existing wilderness, visitors feel like they are in an unconfined, natural area. Visitor use of the area can be described as low to moderate. The area receives a moderate level of use during hunting season. The further one gets away from roads and the periphery of the area, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance. However, some peripheral portions of the area may be impacted by noises and sights associated with traffic on State and Forest Service roads, or activities from adjoining private land, which may reduce the feeling of solitude and isolation. A lime plant, and associated quarry, is located approximately one mile south of the roadless area in Goldbond. A constant "hum" and "thumping" noise from the plant is audible within the area when the plant is in operation. The area is also under the flight path used by the US military for low level altitude training missions.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. The level of personal risk increases as one gets further away from the edge of the roadless area and away from roads and trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Peters Mountain Wilderness Addition A roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Opportunities for activities such as hunting, hiking, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Peters Mountain Wilderness Addition A roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (1,588 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbours Creek, and Shawvers Run. Within the southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridge tops. Shale and limestone are the bedrock on the lower slopes.

There are no designated Research Natural Areas or Experimental Forests within the roadless area. The area's large relief and highly dissected topography creates a wide

range of ecological types from hot, dry windswept ridgetops to cool, moist, protected coves.

The vast majority of the area, approximately 94 percent, is in the Dry Mesic Oak ecological community type. The Dry and Dry-Mesic Oak-Pine type represents six percent of the area.

The area has no inventoried possible old growth.

There are no known threatened, endangered, or sensitive species within the area.

The entire area is classified as having High to Very High Scenic Integrity.

The eastern boundary of the roadless area runs coincident with Peters Mountain Wilderness. Mountain Lake Wilderness is located approximately 9.0 air miles to the east of the roadless area.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Peters Mountain Wilderness Addition A roadless area makes its preservation as potential wilderness practical. The eastern boundary of the area adjoins the existing Peters Mountain Wilderness and would increase the size of the wilderness from 3,328 acres to approximately 4,896 acres. Portions of the remaining boundary follow existing property line boundaries or roads. Adjoining private lands to the north and southwest contrast somewhat with the area, but the effects are generally limited to the periphery along the boundary of the roadless area. There are no outstanding mineral rights within the roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Forest Service boundary lines and roads delineate approximately three-fourths of the roadless area boundary. An offset from VA 635 would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, etc.). An offset of 300 feet from the centerline of VA 635 would be recommended. This is the same as that established for Peters Mountain Wilderness.

Availability for Wilderness

RECREATION, INCLUDING TOURISM

There are no developed recreation sites within this roadless area. Hunting, hiking, and dispersed camping use are the major recreation attractions to the area. Peters Mountain Wilderness is located immediately adjacent to the roadless area. Mountain Lake Wilderness is located approximately 9.0 air miles to the east.

WILDLIFE

The Peters Mountain Wilderness Addition A roadless area provides habitat for a diversity of wildlife species. Featured species of the area is 98 percent bear and two percent turkey. There are no known threatened, endangered, or sensitive wildlife species within the area.

WATER AVAILABILITY AND USE

The roadless area contains the headwaters of several tributaries that flow into Stony Creek, a major stream to the south of the roadless area. There are no known water storage needs or any existing special use water permit authorizations. Water quality is

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WILDERNESS
ADDITION A**

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expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 32 percent of the area, or 486 acres, is classified as suitable for timber production. No timber harvest has taken place in the past 10 years; however, future timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 486 acres of suitable lands within this roadless area represents approximately 0.2 percent of all lands suitable for timber production on the Jefferson National Forest. There are outstanding mineral rights on 504 acres within the area. There are no federal oil or gas leases within the area.

CULTURAL RESOURCES

No cultural resource surveys have been conducted to date within the area. The area exhibits a low potential for prehistoric and historic resources.

LAND USES

No special use permit authorizations have been issued for land uses in this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Fire suppression would be primarily by hand tools. Use of motorized and mechanized transport and equipment such as ATV's, bulldozers, and chainsaws would be allowed only upon specific approval by the appropriate line officer. Thus, wildfires would likely attain larger sizes than under current management. The roadless area is bounded by private lands to the north and southwest section of the area. Wilderness designation may limit options for containing fires on private and/or federal lands. The Peters Mountain Wilderness Addition A roadless area is expected to be in the generally infested area for gypsy moth in the next five to ten years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 100 percent of the area is composed of the Dry Mesic Oak and Dry and Dry-Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

PETERS MOUNTAIN WILDERNESS ADDITION B

ID NUMBER: 14103

**PETERS
MOUNTAIN
WILDERNESS
ADDITION B**

Overview

LOCATION, VICINITY, AND ACCESS

The Peters Mountain Wilderness Addition B roadless area is located on the Jefferson National Forest, New River Ranger District, Giles County, Virginia. The area is located on the southside of Peters Mountain and is found within a portion of U.S.G.S. Virginia-West Virginia Quadrangle Interior. The area is bounded by Peters Mountain to the north, Peters Mountain Wilderness to the west, a large tract of National Forest land to the east, and a combination of National Forest and private lands to the south. Major vehicle access is provided by VA 722 from the south and VA 613 to Forest Development Road (FDR) 10412 from the east. Several other FDR's are within a short hiking distance from the roadless area boundary: FDR 10401 through Kelly Flats to the south, FDR's 10441 and 10373 from the east, and FDR 945 from the extreme northeast.

Surface Ownership	Acres
Forest Service	2,903
Private	0
Park Service	0
TOTAL	2,903

There are no improved or unimproved roads within the area; however, there are numerous old access and logging roads scattered throughout the area. Some are becoming overgrown and impassible to anything but foot traffic.

There are two Forest Development Trails (FDT) within the area. A 3.25 mile segment of the Flat Peter Trail (FDT 52), designated for foot traffic only, traverses the roadless area paralleling North Fork in the central portion of the area before heading west along Dixon Branch and entering Peters Mountain Wilderness. Portions of the Allegheny Trail (FDT 701) winds in and out of National Forest and private land along the crest of Peters Mountain. Approximately 1.3 miles of this trail are located within the roadless area boundary. This trail is also a private road that accesses private property and receives ATV use.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, the Peters Mountain Wilderness Addition B roadless area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone or shale with parallel drainages interspersed with broad limestone valleys. Included in this area are Peters Mountain, Fork Mountain, and Huckleberry Ridge. Slopes vary from very steep on sideslopes to nearly flat in the large drainages. Drainage density is moderate. The area contains the headwaters and numerous tributaries of several streams that flow into Stony Creek, including North Fork and Dixon Branch. Elevation ranges from approximately 2590 feet adjacent to VA 722 in the southeastern section of the area to 3881 feet at a point along the crest of Peters Mountain.

The roadless area is forested by eastern deciduous and coniferous species. Approximately 33 percent of the area has a site index of 70 or greater, indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages or toeslopes or along alluvial floodplains of small to medium sized streams where yellow poplar, northern red oak, white oak, basswood, cucumbertree, white ash, eastern hemlock, white pine, and red maple dominate the overstory. The remaining 67 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

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CURRENT USE

The area is primarily used for dispersed recreation activities such as hiking, hunting, and primitive camping. The ranger district has proposed a major reconstruction of the Flat Peter Trail. That portion of the trail traversing the roadless area interior would require power excavating equipment to complete the project. No date has been scheduled for this work as of October 1998. Approximately 36 percent, or 1,032 acres, of the area are classified as suitable for timber production. There are no outstanding mineral rights or federal oil or natural gas leases within the area.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 4.55 miles of maintained trail and many of the old access and logging roads are visually evident and influence ecological processes, as a minimum, in the vicinity of the trails and roads. Some are becoming overgrown and are regaining a more natural appearance. Some 4-wheel and ATV traffic occurs along the private road that is coincident with the Allegheny Trail along the crest of Peters Mountain.

Most of the area was cut over and frequently burned in the late 1800's and early 1900's. Approximately 99.8 percent of the timber is in the 21-100 year old age class and the remaining 0.2 percent is in the 11-20 year age class. The area has 40 acres of possible inventoried old growth.

Featured species for the area is 99+ percent bear and less than one percent grouse. There are no wildlife openings or recently seeded roads in this roadless area.

The roadless area adjoins the eastern boundary of the Peters Mountain Wilderness. Land north of the boundary is in private ownership. Intensively managed National Forest lands adjoin the eastern boundary of the roadless area. A mix of National Forest and private lands comprise the southern boundary. This area includes the Kelly Flats area where intensive management practices have, and continue to, be implemented in an effort to restore a pitch pine/grassland ecological community unique to the area. The adjoining private land is comprised of woodlots, farmland, and several residences and outbuildings.

KEY ATTRACTIONS

The area is popular with hunters and hikers. Peters Mountain Wilderness adjoins the roadless area and Mountain Lake Wilderness is located several miles to the east. There are no federally threatened, endangered, or sensitive species within the area.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is minimally affected by outside forces. Much of the Peters Mountain Wilderness Addition B roadless area appears to be natural but there are signs of disturbance. There are approximately 4.55 miles of maintained trail and numerous old access and logging roads that are evident. The Allegheny Trail winds in and out of the area along the northern boundary. The trail is also used to access private property by motorized means. There are no acres of 0-10 year old age class within the area. The overall influence of human activities to the interior of the area is minimal, primarily due to the area's challenging topography. Areas that bound private property are more subject to human activity and disturbance.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Peters Mountain Wilderness Addition B roadless area is 2,906 acres in size. All but

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three acres are on National Forest land. The crest of Peters Mountain is generally the northern boundary of the area. Fork Mountain bisects the Eastern portion of the area, while Huckleberry Ridge bisects the eastern portion. The southern boundary follows private property boundaries or connects with adjacent National Forest lands. Elevations range from approximately 2590 feet adjacent to VA 722 to 3881 feet at a point along the crest of Peters Mountain. A solitude core area of 2,172 acres exists in the central and northern portions of the roadless area, of which 510 acres are Semi-Primitive Motorized and 1,662 acres are Semi-Primitive Non-Motorized. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The proportion of core acres of solitude to the roadless area is approximately 75 percent. If this roadless area were added to the existing wilderness, the core area size would represent a much higher percentage. When combined with the existing wilderness, visitors feel like they are in an unconfined, natural area. Visitor use of the area can be described as low to moderate. The area receives a moderate level of use during hunting season. The further one gets away from roads and the periphery of the area, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance. However, some peripheral areas may be impacted around by noises and sights associated with traffic on State and Forest Service roads, or activities from adjoining private land, which may reduce the feeling of solitude and isolation. The area also lies directly under a flight path that the US military utilizes for low level altitude training missions.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads and trails. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Peters Mountain Wilderness Addition B roadless area does present a range of dispersed recreational activities, which are typically found on the Jefferson National Forest. Activities such as hunting, hiking, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Peters Mountain Wilderness Addition B roadless area is within the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section (2,906 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Beartown, Kimberling Creek, Peters Mountain, Mountain Lake, Barbours Creek, and Shawvers Run. Within the southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridge tops. Shale and limestone are the bedrock on the lower slopes.

here are no designated Research Natural Areas or Experimental Forests within the roadless area. The area's large relief and highly dissected topography creates a wide range of ecological types from hot, dry windswept ridgetops to cool, moist, protected coves.

The vast majority of the area, approximately 82 percent, is in the Dry Mesic Oak ecological community type. Ten percent is in the Dry and Dry-Mesic Oak-Pine type, seven percent in the Mixed-Western Mesophytic type, and less than one percent in the Xeric Pine/Pine-Oak

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ecological community types.

There are 40 acres of inventoried possible old growth. The ecological community types represented are: 25 acres Dry Mesic Oak (14 acres suitable) which represents 0.08 percent of the Forest's total and 19 acres Xeric Pine and Pine-Oak (0 acres suitable) which represents 2.1 percent of the Forest's total.

There are no known threatened, endangered, or sensitive species within the area.

Approximately 94 percent of the area is classified as having High Scenic Integrity.

The western boundary of the roadless area runs coincident with Peters Mountain Wilderness. Mountain Lake Wilderness is located approximately 2.4 air miles to the east-southeast of the roadless area.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of Peters Mountain Wilderness Addition B roadless area makes its preservation as potential wilderness practical. The western boundary of the area adjoins the existing Peters Mountain Wilderness and would increase the size of the wilderness from 3,328 acres to approximately 6,234 acres. Portions of the remaining boundary follow existing property line boundaries or roads. It is recommended that the roadless boundary be shifted to the southside of the Allegheny Trail and private road on the crest of Peters Mountain to avoid conflicts with motorized vehicles and activities on private property. The roadless area was designed and shaped to avoid intensively managed areas to the east and south. Adjoining private lands along the southeastern corner contrast somewhat with the area, but the effects are generally limited to the periphery along the boundary of the roadless area. There are no outstanding mineral rights within the roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Forest Service boundary lines and roads delineate approximately one-half of the roadless area boundary. An offset from State and Forest Service maintained roads would enhance wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, etc.). An offset of 300 feet from the centerline of State Roads and 100 feet from Forest Service maintained roads is recommended. Defining the on-the-ground boundary where the roadless area adjoins other National Forest land will be time consuming and expensive, particularly in areas along the eastern and southwestern boundaries. Re-adjusting the northern boundary to follow the south side of the Allegheny Trail and private road, where they cross National Forest land, would require minimal effort.

Availability for Wilderness

RECREATION, INCLUDING TOURISM

There are no developed recreation sites within this roadless area. Hunting, hiking, and dispersed camping use are the major recreation attractions to the area. Peters Mountain Wilderness is located immediately adjacent to the roadless area. Mountain Lake Wilderness is located approximately 2.4 air miles to the east-southeast.

WILDLIFE

The Peters Mountain Wilderness Addition B roadless area provides habitat for a diversity of wildlife species. Featured species of the area is 99+ percent bear and less than one percent grouse. There are no known threatened, endangered, or sensitive wildlife species

within the area.

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WATER AVAILABILITY AND USE

The roadless area encompasses the headwaters and numerous tributaries of several streams that flow into Stony Fork, including North Fork and Dixon Branch. There are no known water storage needs or any existing special use water permit authorizations. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 36 percent of the area, or 1,032 acres, is classified as suitable for timber production. No timber harvest has taken place in the past 10 years; however, future timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 1,032 acres of suitable lands within this roadless area represents approximately 0.3 percent of all lands suitable for timber production on the Jefferson National Forest. There are no outstanding mineral rights or federal oil or natural gas leases within the area.

CULTURAL RESOURCES

Approximately 1,028 acres have been surveyed for cultural resources, as of March 1998, within the roadless area. One prehistoric transient camp has been identified. An historic late 19th-early 20th century railroad and train wreck are also identified within the area. The area exhibits a moderate to high potential for additional prehistoric and historic resources.

LAND USES

No special use permit authorizations have been issued for land uses in this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Fire suppression would be primarily by hand tools. Use of motorized and/or mechanized equipment and transport such as ATV's, bulldozers, and chainsaws would be allowed only upon specific approval by the appropriate line officer. Thus, wildfires would likely attain larger sizes than under current management. The roadless area is bounded by private lands to the north and southeast section of the area. Wilderness designation may limit options for containing fires on private and/or federal lands. The Peters Mountain Wilderness Addition B roadless area is expected to be in the generally infested area for gypsy moth in the next five to ten years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed stands can be severe (up to 25-30 percent) following a first defoliation and oaks are the preferred hosts. Approximately 92 percent of the area is composed of the Dry Mesic Oak and Dry and Dry-Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chance that they may spread to other National Forest land and/or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

PRICE MOUNTAIN

PRICE MOUNTAIN

ID NUMBER: 14507

Overview

LOCATION, VICINITY, AND ACCESS

Price Mountain roadless area is located on the Jefferson National Forest, New Castle Ranger District, Botetourt and Craig Counties, Virginia. The area is bounded by Forest Development Road (FDR) 184 to the north and west, VA 606 to the south, and private land to the east. The area is found within portions of the U.S.G.S. Virginia Quadrangles Oriskany and Salisbury. Major vehicular access is provided by VA 606 along the southern end and FDR 184 along the western and northern ends.

Surface Ownership	Acres
Forest Service	9,114
Private	7
Park Service	0
TOTAL	9,121

There are two improved roads in the area. FDR 267 enters the area from VA 606 and runs northeastward for 4.25 miles on the south slope of Switzer Mountain. FDR 5017, 1.2 miles in length, spurs off of FDR 267 and parallels Kelly Hollow. This road accesses a seven acre private inholding. Total improved road mileage is 5.45 miles.

There are two unimproved roads within the area: FDR 5013 - 0.8 miles and FDR 5014 - 0.4 miles. Both are gated roads that lead off from FDR 184 in the western end of the area. Total unimproved road mileage is 1.2 miles.

There are three developed trails within the area. Forest Development Trail (FDT) 334, Price Mountain Trail, runs the length of the area along the ridgetop of Price Mountain for approximately 10 miles and is open to hiking and horseback riding. Two other trails intersect FDT 334 and run north down the slope of Price Mountain: FDT 149 (Sulphur Ridge Trail-3.0 miles) and FDT 182 (Kelly Trail-1.5 miles). Both trails are open to hiking. All three trails receive a low amount of use.

GEOGRAPHY, TOPOGRAPHY AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, this area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone or shale with parallel drainages with broad limestone valleys. Included in this area is Price Mountain with a series of small, steep sideslope drains. Elevation ranges from approximately 1091 feet along FDR 184 near the northern tip of the area to 2720 feet at a point along the crest of Price Mountain.

Approximately 75 percent of the area is underlain by Silurian-aged sandstone, and 25 percent is underlain by Brallier and Martinsburg shale. Ridgetop and sideslope soils consists primarily of moderately deep, loamy-skeletal Typic Dystrochrepts (Dekalb and Berks series). The lowerslopes and benches are often Typic Fragiudults (Laidig series) or other more productive colluvial Hapludults. Drainages contain deep loamy-skeletal Typic-Hapludults and Dystrochrepts formed in colluvium from sandstone (Oriskany and Sherando series) or shale (Shelocta series).

Vegetation is mainly broadleaf deciduous species. Approximately 17 percent of the area has a site index of 70 or greater indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages, toeslopes, or along alluvial flood plains of small to medium sized streams. Here, yellow poplar, northern red oak, white oak, basswood, cucumber tree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 82 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur

on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring in the driest sites. Approximately 341 acres along the crest and north side of Switzer Mountain are classified as unproductive land.

**PRICE
MOUNTAIN**

CURRENT USE

The area is primarily used for dispersed recreational activities such hunting and hiking along the trails, as well as illegal ATV use. Approximately 26 percent, or 2393 acres, are classified suitable for timber production within the area. Mineral rights are all owned by the U.S.A. There are no federal oil or gas leases within the area.

The U.S. military conducts regular training flights over this area.

The Forest Service possesses a right-of-way for a parking lot adjacent to VA 684. A foot trail leading a short distance from this parking lot provides access to the eastern end of the area.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 5.45 miles of improved road, 1.2 miles of unimproved road, and 14.5 miles of maintained trail in the roadless area are visually evident and influence ecological processes, as a minimum, in the vicinity of the roads and trails. Many old access roads and logging roads still exist and are evident; however, lack of maintenance and use is allowing some of them to become overgrown and regain a more natural appearance. Other old roads are being kept open by frequent illegal ATV traffic.

Most of the area was logged and frequently burned in the late 1800's and early 1900's. Approximately 89 percent of the timber is in the 21-100 year old age class, six percent is in the 101 plus years age class, three percent in the 11-20 year class, and two percent is in the 0-10 year old age class.

The northern portion of the area is primarily bounded by a large block of National Forest land. The eastern and western portions of the area are bounded by a mix of private and National Forest ownership while private land abuts the roadless area to the south.

KEY ATTRACTIONS

Activities associated with hunting and hiking are key attractions to the area. The sensitive Virginia white-haired leatherflower is known to occur in this area. This species is globally rare. There are no known federally listed threatened, endangered or sensitive species within the area.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is somewhat affected by outside forces. Price Mountain roadless area appears to be natural except where evidence indicates recent disturbance. There are approximately 175 acres of 0-10 year age class and 274 acres in the 11-20 year age class within the area. There are also 5.45 miles of improved roads, 1.2 miles of unimproved roads, and 14.5 miles of maintained trail within this roadless area.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

PRICE MOUNTAIN

The Price Mountain roadless area is 9,121 acres in size. Approximately seven of those acres are within a private inholding in the center of the area. Landform consists of the ridgetop of Price Mountain, Sulphur Ridge and Switzer Mountain. These ridgetops are divided by a series of sideslope drainages. A number of larger drainages separate these ridges. Kelly Hollow and Little Patterson Creek are drainages between Price Mountain and Switzer Mountain. Elevations range from 1,091 feet along FDR 184 near the northern tip of the area to 2,720 feet at a point along the crest of Price Mountain. A solitude core area of 4,629 acres exists in the center of the Price Mountain roadless area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The proportion of core acres of solitude of the roadless area is approximately 51 percent. There are 5.45 miles of improved roads and 1.2 miles of unimproved roads within the area. There are three developed trails within the roadless area totaling 14.5 miles. Visitors generally feel like they are in an unconfined, natural area. Noise from the surrounding lands can be heard along the boundary of the area (state highways, Forest Service roads and private land). Additionally, this area is frequently flown over by U.S. military jets on training missions.

It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads. Within the area there are isolated and remote areas but there is a degree of evidence of human impact (roads, wildlife clearings, past timber harvest). The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Price Mountain roadless area does present a range of dispersed recreational activities of which are typically found on the Jefferson National Forest. Activities such as hunting, hiking, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Price Mountain roadless area is in the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section. This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Shawvers Run, Barbours Creek, Peters Mountain, Mountain Lake, Kimberling Creek, and Beartown. Within the Southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Barbours Creek Wilderness is the closest existing wilderness to this roadless area and is located approximately 7 air miles to the northwest.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridge tops. Shale and limestone are the bedrock on the lower slopes.

There are no designated Research Natural Areas or Experimental Forests within the roadless area.

Approximately 52 percent of the area is in the Dry/Dry-Mesic Oak-Pine ecological community type, 24 percent is in the Xeric Pine and Pine-Oak type, and 23 percent is in the Dry Mesic Oak type. The Mixed and Western Mesophytic and Conifer-Northern Hardwood ecological community types comprise less than one percent of the area.

There are 279 acres of inventoried possible old growth in the Price Mountain roadless area. There are 86 acres in the Dry and Dry-Mesic Oak-Pine ecological community type (5 acres suitable), which represents 1.8 percent of the Forest's total for that type. There are 148 acres in the Dry Mesic Oak type (62 acres suitable) which represents 0.5 percent of

the Forest's old growth for that type. There are 2 acres in the Mixed and Western Mesophytic type (2 acres suitable), which represents 0.05 percent of the Forest's total for that type. There are also 43 acres in the Xeric Pine and Pine-Oak type (0 acres suitable), which represents 4.8 percent of the Forest's total for that type.

**PRICE
MOUNTAIN**

The Price Mountain roadless area contains the sensitive Virginia white-haired leatherflower. No other known federally listed threatened, endangered, or sensitive species occur within the area.

Approximately 89 percent of this area is classified as having High Scenic Integrity.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of this roadless area makes its preservation as potential wilderness practical. However, a seven acre private inholding does have the potential to impact wilderness attributes. This inholding is located in the upper reaches of Kelly Hollow at the end of FDR 5017. Directly north of Price Mountain roadless area is Patterson Mountain roadless area. Only FDR 184 separates the two areas. Directly southwest of Price Mountain roadless area is the Broad Run roadless area. Only VA 606 separates these two areas. Most of the boundary follows property boundary lines and human improvements such as roads. Surrounding lands are mostly private to the east of the area and Forest Service to the northwest and southwest. The private land near this area does have the potential to impact wilderness attributes but the steep ridges and side drains buffer the magnitude of potential impacts.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Most of the boundary follows human made features such as roads and property line boundaries. An offset from boundary roads such as VA 606 would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, road alignment, etc.). An offset of approximately 300 feet from the centerline of VA 606 would be recommended while an offset of 100 feet from the centerline of FDR 184 would be recommended.

Availability for Wilderness

RECREATION, INCLUDING TOURISM

There are no developed recreation sites within this roadless area. Hiking on the Price Mountain and Sulphur trails is an attraction to this area that offers good views of the surrounding countryside. Hunting is also very popular in the area.

WILDLIFE

The Price Mountain roadless area provides habitat for diverse wildlife species. The featured species for the area is approximately 70 percent deer, 27 percent turkey, and three percent gray squirrel. The gray squirrel area is adjacent to a gray squirrel featured area in the adjoining Patterson Mountain roadless area. No threatened, endangered, or sensitive wildlife species are known to occur within this roadless area.

WATER AVAILABILITY AND USE

Most of this roadless area drains into Craig Creek. The southern one-third of the area drains into Catawba Creek. There are no known water storage needs or any existing special use water permit authorizations.

PRICE MOUNTAIN Water quality should remain at its current level whether or not the area is designated wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 26 percent, or 2,393 acres, is classified as suitable for timber production. In the last 10 years, approximately 175 acres of timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 2,393 acres of suitable lands in this roadless area represent 0.8 percent of all lands suitable for timber production on the Jefferson National Forest. All minerals are owned by the U.S.A. There are no federal oil or gas leases within the area.

CULTURAL RESOURCES

As of March, 1998, 327 acres of this roadless area have been surveyed for cultural resources. There are five inventoried transient camps in the Price Mountain roadless area. The area exhibits a low potential for additional prehistoric and historic resources.

LAND USES

No special use permit authorizations have been issued for lands in this roadless area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Fire suppression would be primarily by hand tools. Use of motorized and mechanized transport and equipment such as ATV's, bulldozers, and chainsaws would be allowed only upon specific approval by the appropriate line officer. Thus, wildfires would likely attain larger sizes than under current management. Wilderness designation may limit options for containing fires. Gypsy moth infestations are in the vicinity of this roadless area right now. Mortality can be severe (up to 25-30 percent) and oaks are the preferred hosts. Approximately 76 percent of the area is composed of the Dry Mesic Oak type and Dry/Dry Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chances that they may spread to other National Forest or private land.

Portions of this roadless area are occupied by near pure stands of table mountain pine and/or pitch pine forest types. These pine-dominated stands occur primarily on southeast to southwest facing ridges and slopes with dry, well-drained soils. Table mountain pine has serotinous cones that usually require significant heat in the tree canopy from fire to open the cones, thus allowing for seed dispersal and regeneration. Other oak dominated forest types that contain a component of these pine species also occupy a large portion of this roadless area. If this area was designated wilderness, the use of management ignited prescribed fire to manipulate these fire dependent ecosystems for restoration and maintenance would likely not be allowed. This will result in further declines in acreage and the open structure of these forest types along with the flora and fauna these ecosystems support.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

RACCOON BRANCH ROADLESS AREA

ID NUMBER: 14404

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Overview

LOCATION, VICINITY, AND ACCESS

The Raccoon Branch roadless area is located on the Jefferson National Forest, Mount Rogers National Recreation Area, Smyth County, Virginia. The area is bounded by a mixture of private and National Forest land to the north, VA 650 to the west and south, and VA 16 and Raccoon Branch Campground to the east. The area is found within a portion of U.S.G.S. Virginia Quadrangles Atkins and Troutdale. Major vehicular access is provided by VA 650 to the west and south, VA 16 to the east.

Surface Ownership	Acres
Forest Service	4,384
Private	0
Park Service	0
TOTAL	4,384

There is one improved road in the area. Forest Development Road (FDR) 49370, a gated road, enters the area from Raccoon Branch Campground and runs 1.51 miles to the southwest paralleling Raccoon Branch. This road is also coincident with the Virginia Highlands Horse Trail. Total improved road mileage is 1.51 miles.

There are no unimproved roads within the area.

Eight Forest Development Trails (FDT) access the area. Approximately 4.5 miles of the Appalachian National Scenic Trail (FDT 1) traverse the area in a north-south direction from Trimpi Shelter over High Point and down to Dickey Gap. Approximately 5.8 miles of the Virginia Highlands Horse Trail (FDT 337) traverse the area in an east-west direction from Raccoon Branch Campground over Bobby's Ridge and down to Comers Creek. The Virginia Highlands Horse Trail is a regionally significant trail that traverses over 80 miles of the NRA from Elk Garden, near Whitetop Mountain, to the New River Trail State Park. The section of the Virginia Highlands Horse Trail from Raccoon Branch Campground to the Appalachian National Scenic Trail crossing is open to horseback riders, hikers, and mountain bikers. The section of the Virginia Highlands Horse Trail from the Appalachian National Scenic Trail crossing to VA 650 is open to horseback riders and hikers. The Mullins Branch Trail (FDT 4513) is a foot only trail that enters the area from the north and climbs 2.5 miles up Dickey Ridge until intersecting with the Appalachian National Scenic Trail. The Dickey Knob Trail (FDT 346) is a foot and mountain bike trail that climbs 2.6 miles to the summit of Dickey Knob from Raccoon Branch Campground. The Raccoon Branch Trail (FDT 4610) is a foot and mountain bike trail that runs for 0.2 miles out of Raccoon Branch Campground before intersecting with the Dickey Knob Trail. The Hickory Ridge Trail (FDT 4516) is a mountain bike and foot trail that begins at VA 650 near Dickey Gap and climbs 0.6 miles to its intersection with the Virginia Highlands Horse Trail and Appalachian National Scenic Trail. Bobby's Trail (FDT 4514) is a foot only trail that connects the Virginia Highlands Horse Trail and Appalachian National Scenic Trail. The Raccoon Branch trail shelter is located along this 0.8 mile long trail. Lastly, the 1.6 mile Scott Branch Trail (FDT 4515) is a somewhat overgrown trail on the east side of the roadless area that receives light use. Total maintained trail mileage is 18.6 miles.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, this area lies in the Southern Blue Ridge Mountains Subsection of the Blue Ridge Mountains Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by tectonic uplifted mountain ranges composed of igneous and metamorphic rock, forming many high gradient, deeply incised streams. The Raccoon Branch roadless area is heavily dissected with ridges. Dickey Ridge and Bobbys Ridge are long ridges running nearly the length of the roadless area. Two predominate peaks are found on Dickey Ridge; High Point and

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Dickey Knob. Numerous streams are found within the area. Raccoon Branch is the area's largest stream and it forms the drainage between Dickey Ridge and Bobbys Ridge. Other streams include Scott Branch, Shanty Branch, Muddy Branch, Mullins Branch, and Russell Hollow. In addition to these streams, Dickey Creek flows along the southeastern and eastern boundary, while Comers Creek flows along the southwestern and western boundary. All water in the roadless area flows into the South Fork of the Holston River approximately two miles to the north. Elevation ranges from approximately 2580 feet along VA 650 near the northwest corner to 4042 feet on the summit of High Point.

Vegetation is mainly broadleaf deciduous species with some yellow pine. Approximately 44 percent of the area has a site index of 70 or greater indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages, toeslopes, or along floodplains of small to medium sized streams. Here yellow poplar, northern red oak, white oak, basswood, cucumber tree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 56 percent of the area has a site index of 60 or lower, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and east midslope aspects with yellow pine occurring in the driest sites.

CURRENT USE

The area is primarily used for dispersed recreation activities such as horseback riding, mountain biking, hiking and hunting. Some fishing occurs along Comers and Dickey Creeks along the boundary of the roadless area. Both streams are stocked annually with trout. The section of the Appalachian National Scenic Trail passing through this area receives a moderate amount of use, particularly around the Raccoon Branch trail shelter. The Virginia Highlands Horse Trail also receives a moderate amount of use. The Dickey Knob Trail and Raccoon Branch Trail are popular hikes for campers staying at the Raccoon Branch Campground. The other trails in the area receive a low amount of use.

A portion of the 'Beast of the East', a 300 mile endurance race involving canoeing, hiking, and mountain biking, was run through a portion of the roadless area in June 1998 and again in May 1999. Mountain biking was featured through this area.

The Raccoon Branch Campground is located outside the eastern boundary of the area along VA 16. The campground has 20 sites, water, and restrooms with flush toilets. The campground is open year-round and receives moderate use.

Hurricane Campground is located outside the southwestern corner of the roadless area and has 29 sites, water, restrooms with flush toilets, and showers. The campground is open April through October and receives moderate to high use.

Approximately 29 percent, or 1275 acres, are classified as suitable for timber production within the area. Inventory data indicate 150 acres of privately owned, outstanding or reserved, mineral rights underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 1.51 miles of improved road and 18.6 miles of maintained trail in the roadless area are visually evident and influences ecological processes, as a minimum, in the vicinity of the roads and trails. The Virginia Highlands Horse Trail often appears as a low standard road. The trail is maintained with a bulldozer and is often hardened with crushed stone applied by dump truck. Many old logging roads still exist; however, lack of maintenance and use is allowing many of them to become overgrown and regain a more natural appearance.

Most of the area was cut over and frequently burned in the early 1900's. The predominant age range for timber in the area is 21-100 years, which represents 82 percent of the area. Six percent of the timber is in the 101 plus year old age class. The roadless area has 268 acres of possible inventoried old growth.

Featured species for the area is deer. The area contains 14 wildlife openings, totaling approximately 23 acres, which are regularly maintained by mowing.

The Raccoon Branch trail shelter, and associated privy, are maintained facilities located just off the Appalachian National Scenic Trail in the west central portion of the area. Maintenance of these facilities is expected to continue regardless of the future designation of the Raccoon Branch roadless area.

The area to the north of the roadless area is mostly private land with some National Forest land. The private lands are a mix of woodlands, pastures, farms, and residences with outbuildings. The old Slabtown mines are found on National Forest lands to the north of the area. The eastern, southern, and western boundaries adjoin large blocks of National Forest land. A large rock slide is within the roadless area near the eastern boundary. The 300-foot high slide area has stabilized and some small pines are growing where they have been able to grab hold. The bottom of this slide area was utilized as a borrow pit in the 1960's and 1970's, but is now inactive. Another borrow pit is located approximately 0.25 miles up FDR 49370 from Raccoon Branch Campground. This pit has a 10 foot high bank and has been inactive since the early 1980's. The Raccoon Branch Campground is just east of the roadless area.

KEY ATTRACTIONS

The area is very popular with horseback riders and hikers. The Hurricane and Raccoon Branch Campgrounds, adjacent to the roadless area, provide a starting point for many hikes into the area. The Virginia Highlands Horse Trail receives use from Fox Creek Horse Camp, a parking lot along VA 16, and parking along FDR 84 near Hurricane Campground. Mountain biking is a growing activity in this area, particularly on the Dickey Knob Trail and Virginia Highlands Horse Trail. Activities associated with hunting and fishing are also key attractions to this area. There are several locations along VA 650 where visitors park vehicles and set up camp.

Several unique plant, animal, and insect species occur within or adjacent to the roadless area. Populations of five-rowed peatmoss, fraser fir, and Appalachian fir club moss, all associated with spruce-fir forests, along with the yellow-bellied sapsucker, black sculpin, and Nelson's early black stonefly are present in the area. Five-rowed peatmoss is listed as very common and secure globally but occurs very rarely in Virginia. Fraser fir is listed as very rare globally, including Virginia. Appalachian fir club moss is listed as either very rare and local throughout its range or found locally in a restricted range globally and is very rare in Virginia. Yellow-bellied sapsucker is listed as very common and secure globally but extremely rare in Virginia. The black sculpin, or a variant of black sculpin, is listed as very rare globally and extremely rare in Virginia. Nelson's early black stonefly is found along the roadless area boundary and is listed as extremely rare both globally and in Virginia. There are no other known Federally threatened, endangered, or sensitive species in the area.

Wilderness Capability

NATURAL INTEGRITY AND APPEARANCE

Natural processes are operating within the area and the area is minimally affected by outside forces. Much of the Raccoon Branch roadless area appears to be natural but there are signs of recent disturbance. The 1.51 miles of improved road and 18.6 miles of maintained trail are visually evident. If this roadless area becomes wilderness, the

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improved road would be in wilderness and removed from the Forest's transportation system. This improved road is also coincident with the Virginia Highlands Horse Trail and would remain on the Forest's trail system. The Virginia Highlands Horse Trail, through this area, is similar in appearance to a low standard road. Moderate to heavy use of this trail requires it to be wide and, in some places, hardened with crushed stone. Maintenance is accomplished with a bulldozer. Some old access and logging roads and trails in this roadless area have become overgrown and impassable, causing minimal impact on the area's natural ecological processes.

There are 14 maintained wildlife openings totaling 23 acres within the area. Two inactive borrow pits are located near the eastern boundary of the area.

The foundation of an old firetower is still evident on the top of Dickey Knob. The Raccoon Branch trail shelter is located adjacent to Bobbys Trail, approximately 0.8 miles east of the Appalachian National Scenic Trail.

There are no acres in the 0-10 year old age class.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Raccoon Branch roadless area is 4384 acres in size and is located entirely on National Forest land. Elevations range from 2580 feet near the northwest corner along VA 650 to 4042 feet on the summit of High Point. A solitude core area of 2816 acres exists in the central portion of the area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The areas near VA 16 and VA 650 are classified as roaded natural. The ratio of core acres of solitude to the roadless area is approximately 64 percent. Visitor use to this area can be described as moderate from spring through fall. After hunting season, use is light until spring when Appalachian National Scenic Trail hikers and horseback riders return to the area. The visitor can expect to encounter other visitors along the Appalachian National Scenic Trail and Virginia Highlands Horse Trail. The further away one gets from improved roads and developed trails, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance away from roads and trails. However, some areas will be impacted by noises associated with traffic on improved roads around the periphery of the roadless area and activities occurring on adjoining private lands. These impacts are expected to be limited to the immediate vicinity of the roads and trails and adjoining private lands.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

This roadless area does present a range of dispersed recreational activities of which are typically found on the Jefferson National Forest. Activities such as horseback riding, mountain biking, hiking, hunting, fishing, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Raccoon Branch roadless area is in the Southern Blue Ridge Subsection of the Blue Ridge Mountains ecosystem Section. This ecosystem subsection and section is represented by the following wildernesses, totaling 12,089 acres, on the Jefferson National Forest: Lewis Fork, Little Wilson Creek, and Little Dry Run. Within the Southern Appalachians, 19 wildernesses and 62 roadless areas are classified within this subsection.

Geologic rock types of this area are dominated by quartzite, sandstone, and shale.

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There are no designated Research Natural Areas or Experimental Forests within the roadless area.

Approximately 49 percent of the area is in the Dry Mesic Oak ecological community type. Another 26 percent is in the Mixed/Western mesophytic type, 21 percent is in the Dry/Dry-Mesic Oak-Pine type, and 3 percent is in the Xeric Pine/Pine Oak type.

There are 268 acres of possible inventoried old growth in the area. All 268 acres are represented in the Dry Mesic Oak ecological community type and are classified unsuitable. These 212 acres represent less than one percent of the Forest's total old growth in this type.

Four locally rare species, five-rowed peatmoss, Fraser fir, Appalachian fir club moss, yellow-bellied sapsucker, and two sensitive species, black sculpin, and Nelson's early black stonefly, are documented from this area.

Approximately 61 percent of the area is classified as having high existing scenic integrity.

The Raccoon Branch roadless area is separated from the Seng Mountain Roadless Area, to the west, by VA 650. The nearest existing wilderness is Lewis Fork, approximately four air miles to the southwest.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of this roadless area makes its preservation as potential wilderness practical. Most of the boundary follows property boundary lines and roads. However, there are four areas where the boundary follows no discernible feature. Surrounding lands are mostly Forest Service, except for private land to the north. Although adjoining private lands contrast with the area, the effects are generally limited to the periphery along the boundary of the roadless area. Except for areas along the periphery, the high peaks and deep valleys protect this roadless area from the sights and sounds of civilization. Most of the 5.8 miles of the Virginia Highlands Horse Trail receives moderate use and is maintained with bulldozers. This trail would be difficult to return to a natural condition. There are 150 acres of privately owned mineral rights within the roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Most of the boundary follows features such as roads and property line boundaries. There are four areas, however, where the boundary follows no discernible feature. In the northwest corner there is approximately 4000 feet of boundary that follows an interior property line. Purchase of the Barton Tract in 1994 made this an interior line. It is recommended that this boundary stays in its present location and utilizes the interior line. Just south of Trimpi trail shelter, and the old Slabtown mines, the roadless area boundary appears to follow the 3,000-foot contour line for approximately 2500 feet. The boundary was drawn in this location to exclude the Trimpi trail shelter and the old Slabtown mines. This section of boundary would be difficult to establish on the ground. A straight line bearing is recommended to establish this boundary. In the center of the northern boundary of the roadless area the boundary dips south and creates an indentation into the area. This boundary is following an old interior National Forest property line. This property, excluded from the roadless area, was acquired by the Forest Service in 1993. Changing the boundary to follow the southernmost fenceline of the Mullins Branch grazing pasture is recommended. This would add approximately 65 acres to the area and consolidate the shape of the roadless area. On the eastern edge of the area the Raccoon Branch Campground and a one-acre private land inholding, with cabin, are excluded. The existing boundary does not appear to follow any feature. A recommendation is to have the

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roadless area boundary leave VA 16 where Hutton Branch flows into Dickey Creek and then follow Dickey Creek around the campground. Below the campground, the boundary would leave Dickey Creek at the private cabin and then follow the old road that accesses the private cabin until it connects back with VA 16. This old road is not on the Forest Service transportation system. The owners of the cabin have a prescriptive right to use the road for access purposes.

An offset from improved roads bounding the area would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, gravel placement, road alignment, etc.). An offset of 300 feet from the centerline of VA 16 and VA 650 is recommended. An offset of 100 feet around the old road to the private cabin is recommended.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There is one developed recreation facility within this roadless area; the Raccoon Branch trail shelter, which is associated with the Appalachian National Scenic Trail. Dispersed recreation activities such as horseback riding, mountain biking, hiking, hunting, fishing, and dispersed camping are the largest recreation attractions to the area. The Appalachian National Scenic Trail and Virginia Highlands Horse Trail attract a great deal of visitor use. A trailhead parking lot is located on the east side of VA 16 across from Raccoon Branch Campground. Minimal parking is available at Dickey Gap at the VA 16/VA 650 intersection. Visitors park here to access the Appalachian National Scenic Trail and Hickory Ridge Trail. Established uses that would be discontinued should this area be designated a wilderness include: (1) mountain biking, and (2) heavy equipment maintenance of the Virginia Highlands Horse Trail where this trail passes through the roadless area.

WILDLIFE

This roadless area provides habitat for a diversity of wildlife species. Featured species of the area is deer. Fourteen wildlife clearings totaling 23 acres are in the roadless area. If this area is designated as a wilderness, maintenance of the wildlife clearings would be discontinued. The yellow-bellied sapsucker is known to occur within this area.

WATER AVAILABILITY AND USE

Comers Creek flows along the western and southwestern boundary. Dickey Creek flows along the eastern and southeastern boundary. Both streams are annually stocked with trout. Shanty Branch, Raccoon Branch, and Dickey Creek support populations of wild trout. All three streams have good water chemistry. All water from the roadless area ultimately drains into the South Fork of the Holston River. There are no existing special use water permit authorizations or known water storage needs. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Two pastures within the Sugar Grove Grazing Allotment are located just outside the roadless area boundary. The Mullins Branch pasture is just north of the area. The southern fenceline of this pasture is the roadless area boundary. The Barton Tract East pasture is located just outside the northwest boundary. There is a thin strip of woods between this grazing pasture and the roadless area boundary. Approximately 23 percent, or 103 acres, of the area is classified as suitable for timber production. In the last 10 years no timber has been harvested. In

the last 20 years, approximately 38 acres of timber has been harvested. Timber harvest and the associated production of wood products from this area would be precluded by wilderness designation. The 1023 acres of suitable lands in this roadless area represent less than one percent of all lands suitable for timber production on the Jefferson National Forest. Private subsurface minerals ownership is held on 150 acres within this area. No Federal oil and gas leases or other Federal leases are in effect in this area as of December 1999. The potential for energy minerals, primarily natural gas, is estimated to be low. This area is located south of the Glade Mountain District (1944, Miller, R.L.). manganese was prospected and mined in this district. This roadless area does not have a history of extensive mining. The potential for commercial deposits of Federal leasable minerals, including metallic minerals, is estimated to be low. The 65 acres of land recommended to be included in the roadless area (see 2.f.) in the northern portion of the area contain no outstanding mineral rights.

CULTURAL RESOURCES

As of March 1998, approximately 540 acres of this roadless area has been surveyed for cultural resources. Three prehistoric transient camps have been documented. In addition, an additional prehistoric site has been located but further work is needed to classify the site type. The area exhibits a moderate to high potential for additional prehistoric and historic resources.

LAND USES

One special use authorization has been issued within this roadless area. A segment of the 300 mile endurance race, the 'Beast of the East', occurred in June 1998 and May 1999. No other special land use authorizations have been issued within the area. Two inactive borrow pits are in the area: near Raccoon Branch Campground along FDR 49370 and along the prescriptive right-of-way road that accesses private property along the eastern boundary.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands on the northern perimeter. Wilderness designation may limit options for containing fires on private and/or federal lands. Raccoon Branch roadless area is expected to be in the generally infested area for gypsy moth in the next ten to twenty years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed timber stands can be severe (up to 25-30%) following a first defoliation and oaks are the preferred hosts. Approximately 71 percent of the area is composed of the Dry Mesic Oak type or Dry/Dry Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chances that they may spread to other national forest or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

ROGERS RIDGE

ROGERS RIDGE

ID NUMBER: 04010

Overview

* Cherokee National Forest - 4,734 acres,
Jefferson National Forest - 180 acres

Surface Ownership	Acres
Forest Service*	4,914
Private	19
Park Service	0
TOTAL	4,933

LOCATION AND VICINITY

Rogers Ridge roadless area is located on the Cherokee National Forest, Watauga Ranger District, Johnson County, Tennessee and the Jefferson National Forest, Mount Rogers National Recreation Area, Washington County, Virginia. The area is generally bounded by private land and 2.1 miles of non-system road on Piney Knob Ridge (access to private land) to the west, north, and east and FDR 123 to the south. The area is found within U.S. G.S. Tennessee-North Carolina-Virginia Quadrangle Grayson. Major vehicle access is provided by county roads and FDR 123 to the south and Virginia State Highway 726 to the north. There is one improved road within the roadless area (FDR 124 - 2.4 miles). There are two trails in the area, FDT 192 - Rogers Ridge Horse Trail (5.77 miles) and FDT 51 - Gentry Creek Falls Trail (2.29 miles).

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

This area lies in the Central Appalachian Forest-Meadow province of the Southern Appalachian Mountains. Landform consists of mountain peaks and ranges separated by intermountain basins. Rogers Ridge is a mountain ridge divided by a series of small, steep sideslope drains. Elevation ranges approximately from 2600' at the drains to 4880' on the ridgetop near Mt. Rogers 5. Soils are Dystrachrepts, Kanhapludults, and Hapludults with mixed kaolinitic and micaceous mineralogy with mesic temperature and udic moisture regimes. Vegetation is composed of mainly broadleaf deciduous species (white and scarlet oaks) with mixed mesophytic species and yellow poplar at low elevations, with pitch pine on drier and disturbed sites, and chestnut oak and northern red oak at moderate elevations. This area has been further classified as being in the Southern Blue Ridge Mountains subsection of the Blue Ridge Mountains section ecological unit classification.

CURRENT USE

The area is primarily used for dispersed recreation activities such as hunting, hiking, and horseback riding. There are two private inholdings within the area (the upper tract is approximately 13 acres in size and the lower tract about 6 acres). A concrete shed is located on the upper tract and two access ways (.2 mile) provide for ingress and egress.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 2.40 miles of improved system road located in the roadless area as well as the concrete shed on the private inholding contrast with their immediate surrounding characteristics, although the majority of the area has a natural appearance. Although most of the area was timbered in the past, few obvious signs remain and those are disappearing into forest growth. The private land along the boundary contrast with the roadless area in sections from the development of houses, roads, tree nurseries, and other improvements.

KEY ATTRACTIONS

Those acres identified on the Jefferson National Forest are part of the Mount Rogers National Recreation Area. Approximately 3,000 acres of the roadless area are within the

Rogers Ridge Scenic Area (3,865 acres). There are also several mountain balds within the area.

ROGERS RIDGE**Wilderness Capability****NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area and the area is minimally affected by outside forces. Rogers Ridge roadless area appears to be natural but there are signs of recent disturbance. There are no acres of 0-10 age classes or any maintained wildlife openings within this roadless area. There are 2.4 miles of maintained improved road within the area and 8.06 miles of maintained trail.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

Rogers Ridge Roadless area is 4,934 acres in size and is located entirely on National Forest land. Rogers Ridge is a mountain ridge divided by series of steep sideslope drains. Elevation ranges from 2600' at the drains to 4800' along the ridge crest. A solitude core area of 2,000 acres exists in a elongated dog bone shape pattern. The relationship of core acres of solitude to the roadless area is approximately 40 percent. There is one improved road (2.4 total miles) located within the roadless area. There are two trails within the roadless area (8.06 miles), one of which is a horse trail. Visitor use for the most part is light with small group sizes. The designated horse trail does tend to have larger group sizes than the hiking trail. Visitors feel like that they are in a unconfined, natural area. Noise from the surrounding lands can be heard along the periphery of the roadless area. Noise impacts and the reduced feeling of solitude and isolation are also felt when the improved road within the area is being used for Forest Service activities. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from the improved road and trails. Within the area there are some vestiges of isolated, scattered pockets of forest primeval but there is a degree of evidence of human impact. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

Rogers Ridge roadless area does present a range of dispersed recreational activities of which are typically found on the Cherokee National Forest as a whole. Activities such as hiking, hunting, fishing, and primitive camping, are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Rogers Ridge is in the Southern Blue Ridge Mountain subsection of the Blue Ridge Mountain ecosystem section (4,934 acres). This ecosystem subsection and section is represented by the following wildernesses on the Cherokee National Forest: Big Laurel Branch, Pond Mountain, and Unaka Mountain (17,757 acres).

Rogers Ridge roadless area contains a diversity of geologic features (mountain balds, waterfalls, creeks, etc.) that are typical of the Southern Appalachian Mountains that draw people to the area to experience the scenic views.

Geologic rock types of this area consist of the Erwin Formation (White, vitreous quartzite, massive, with interbeds of dark-green silty and sandy shale, minor siltstones and very fine sandstone); Hampton Formation (Dark greenish-gray, silty and sandy shale, micaceous shale; numerous layers of medium-grained, feldspathic, thinly bedded sandstone); Unicoi Formation (Sequence of gray feldspathic sandstone, arkose, conglomerate, graywacke, siltstone and shale; greenish amygdaloidal basalt flows) and the Mount Rogers Group (Metavolcanics, typically purplish and reddish; massive lavas and tuffs; altered rhyolites

ROGERS RIDGE

and quartz latites; strongly foliated; interbedded arkose, shale and conglomerate).

There are no designated Research Natural Areas or Experimental Forests with the roadless area. High elevation grassy balds, a unique vegetation community that may have the potential to significantly contribute to scientific or educational values are located within this roadless area as well as Gentry Creek waterfall.

Mountain Bittercress (*Cardamine clematits*), Blue Ridge St. John's-Wort (*Hypericum Mitchelianum*) and Mountain Rattlesnake-Root (*Prenanthes roanensis*), all sensitive plant species have been identified as occurring in this roadless area.

Approximately 35% of the area is in the Northern Hardwood ecological community type. Another 21% is in the Mixed Mesophytic type, 19% in the Dry and Dry-Mesic Oak-pine type, 18% in the Dry-Mesic Oak type, and the remaining in miscellaneous types.

Possible old growth is present on approximately 309 acres of Northern Hardwood forest which represents 27% of this forest community type on the national forest. These acres are within the unsuitable land base. Possible old growth makes up approximately six percent of the roadless area. Approximately 3,244 acres (68%) is in the late forest successional type. Another 1,347 acres are in the mid-successional forest type class.

Rogers Ridge roadless area has approximately 282 acres classified as Scenic Attractiveness Class A - Distinctive. These acres were identified as foreground along major streams in the area.

The following streams contain trout populations in this roadless area (all trout species are considered significant on the Cherokee National Forest with brook trout considered a native species): Gentry Creek (rainbow trout, brook trout), Grindstone Branch (rainbow trout, brook trout), Cut Laurel Branch (rainbow trout, brook trout), Kate Branch (rainbow trout, brook trout), Richardson Branch (brook trout), and Whetstone Branch (brook trout).

SIZE, SHAPE, AND MANAGEABILITY

As described previously, the size and shape of Rogers Ridge roadless area makes its preservation as potential wilderness practical. The boundary follows topographic features, property boundary lines, and human improvements such as roads. Although surrounding lands contrast dramatically with the area, the effects are limited to the periphery along the boundary of the roadless area and as such, any activity that does occur would not dominate the user's wilderness experience. High ridges and distance are more likely to limit the sights and sounds of civilization than the actual boundaries. The private inholdings near the western and southern boundary do have the potential to impact wilderness attributes but the surrounding steep ridges and side drains will buffer the magnitude of the potential impacts.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

The boundary follows obvious human made features such as roads and property line boundaries as well as natural features such ridges. A offset from the boundary roads such as FDR 123 would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, gravel placement, road alignment, etc.). A offset of approximately 300 feet from the centerline of existing roads is recommended. The trailhead parking lots (FDT 192 and FDT 51) need to be excluded from the roadless area.

Wilderness Availability.**RECREATION, INCLUDING TOURISM**

There are no developed recreation sites within this roadless area. There is a potential National Recreation Survey Site (NFRS site 54.0 - 24 acres) within the roadless area. There are no immediate plans to develop this site. Designation as wilderness would prevent this site from being developed. There are two trails in the roadless area (see Overview). Those acres identified on the Jefferson National Forest are part of the Mount Rogers National Recreation Area.

ROGERS RIDGE**WILDLIFE**

Fishery management activities are related to monitoring the known trout populations (identified in Section 2d), surveying additional streams (Gilbert Branch) for trout populations, and the periodic removal of competing trout and other fish from brook trout streams.

WATER AVAILABILITY AND USE

This roadless area contains the headwaters of Gentry Creek, which is a tributary stream of Laurel Creek, which drains into the South Fork Holston River. It also contains the headwaters of McQueen Branch, which is a headwater stream of the South Fork Holston River. There are no known water storage needs or any existing special use water permits. Water quality should remain at its current level whether or not the area is designated wilderness. Mitigation measures for ground-disturbing activities in non-wilderness areas should minimize adverse impacts on water quality. Ground disturbing activities in wilderness are held to a minimum.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations.

Approximately 4 percent or 180 acres of the Rogers Ridge roadless area is classified as suitable for timber production. In the last 10 years, no acres of timber have been harvested. Timber harvest and the associated production of wood products from this area would be precluded by wilderness designation. This amounts to less than 1 percent of the lands suitable for timber production on the Cherokee National Forest.

Hard rock mineral production potential is low and unlikely at this time. All mineral rights are in federal ownership. No gas and oil leases have been issued in the roadless area as the potential for discovery of these natural resources is low and unlikely.

CULTURAL RESOURCES

The Rogers Ridge roadless area has been partially surveyed and contains six identified cultural resource sites. These have been classified as Class II sites, which require additional evaluation to determine if they are eligible for listing in the National Register of Historic Places (pursuant to 36 CFR 60).

LAND USES

No special use permits have been issued for lands in the area.

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Two private inholdings would be affected if the area was designated as wilderness (13 and 6 acres). Traditional access would be allowed but improvements to the private lands may be impacted by wilderness designation.

Present fire control techniques are not expected to be impacted substantially if the area

ROGERS RIDGE became designated wilderness. Since 1985, no recorded wildfires have occurred within the area.

SENG MOUNTAIN There are a total of 24 acres of southern yellow pine types greater than 70 years of age at a moderate to high risk of southern pine beetle attack. No additional acres will be at a moderate to high risk within the next ten years. However, these acres are not within the suitable land base.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

SENG MOUNTAIN ROADLESS AREA

ID NUMBER: 14405

Overview

LOCATION, VICINITY, AND ACCESS

The Seng Mountain roadless area is located on the Jefferson National Forest, Mount Rogers National Recreation Area, Smyth County, Virginia. The area is bounded by Forest Development Roads (FDR) 643 and 845 to the north, private land and VA 600 to the west, FDR 84 to the south, and Hurricane Campground and Comers Creek Trail to the east. The area is found within portions of U.S. G.S. Virginia Quadrangles Whitetop, Troutdale, and Konnarock. Major vehicular access is provided by VA 600 from the west, FDR 84 from the south, and FDR 643 from the northeast.

Surface Ownership	Acres
Forest Service	6,455
Private	0
Park Service	0
TOTAL	6,455

There is one improved road in the area. FDR 49410, a gated road, enters the area from FDR 643 along the northern boundary and runs 0.84 miles to the south. Total improved road mileage is 0.84 miles.

There are two unimproved roads in the area. FDR 4028, a gated road, enters the area from FDR 84 along the southern boundary and runs 1.34 miles to the north. FDR 84B, a gated road, enters the area from FDR 84 along the southwestern boundary and runs 2.9 miles to the east. Total unimproved road mileage is 4.24 miles.

Four Forest Development Trails (FDT) are within the area. Three trails form the 12.8 mile Rowland Creek Falls Circuit. Rowland Creek Trail (FDT 164), Jerrys Creek Trail (FDT 165), and Old 84 Trail (FDT 4630) form this loop and are open to hikers, mountain bikers, and horseback riders. The 4.2 mile Old 84 Trail traverses the area in an east-west direction from FDR 84 at Hurricane Gap to FDR 84 near Skulls Gap. The last 2.9 miles of this trail is coincident with FDR 84B. The Rowland Creek Trail climbs 3.1 miles from FDR 643 near the northern boundary until it intersects FDT 4630 and FDR 84 near Hurricane Gap. Approximately 2.4 miles of the Jerrys Creek Trail are within the roadless area. The portion within the roadless area starts at the end of FDR 845 and climbs up to an intersection with FDT 4630 and FDR 84. There are 3.1 miles of this trail that form the northern boundary of the roadless area. These 3.1 miles are also coincident with FDR 845, a gated road. The Barton Gap Trail (FDT 4624) is located in the eastern portion of the roadless area. This 1.6 mile trail is open to hikers, mountain bikers, horseback riders, and motorcycles and connects FDR 84 to FDR 643. Total maintained trail mileage is 11.3 miles.

Old access and logging roads are scattered throughout the area. Some are kept open by illegal ATV traffic, primarily in the northcentral portion of the roadless area.

**SENG
MOUNTAIN**

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, this area lies in the Southern Blue Ridge Mountains Subsection of the Blue Ridge Mountains Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by tectonic uplifted mountain ranges composed of igneous and metamorphic rock, forming many high gradient, deeply incised streams. The Seng Mountain roadless area is heavily dissected with ridges. Dominant ridges in the area include Bear Ridge, Seng Mountain, Chestnut Ridge, Pine Spur, Round Top and Double Top. Streams abound in the roadless area. Rowland Creek and Jerrys Creek are two of the larger streams. Other streams include St. Clairs Creek, Dry Fork, Cold Branch, Long Branch, Incline Hollow, and Bark Camp Branch. In addition, Hurricane Creek flows along the southeastern boundary of the roadless area while Comers Creek flows along the eastern boundary. All water in the roadless area flows into the South Fork of the Holston River, located approximately three air miles to the north. Elevation ranges from approximately 2480 feet along Dry Fork near the northwest corner to 4626 feet on the summit of Round Top.

Vegetation is mainly broadleaf deciduous species with some yellow pine. Approximately 61 percent of the area has a site index of 70 or greater indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages, toeslopes, or along floodplains of small to medium sized streams. Here yellow poplar, northern red oak, white oak, basswood, cucumber tree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 39 percent of the areas has a site index of 60 or lower, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and east midslope aspects with yellow pine occurring in the driest sites. The area also contains several of Virginia's few remaining pure stands of table mountain pine. This species requires fire to reproduce and is becoming increasingly uncommon within its natural range due to fire exclusion.

CURRENT USE

The area is primarily used for dispersed recreation activities such as horseback riding, mountain biking, hiking, trail motorcycling, fishing, and hunting. Some fishing occurs along Hurricane and Comers Creeks along the boundary of the roadless area. Both streams are stocked with trout. Trails in the area have historically received a low amount of use, but use has been increasing in recent years, particularly with mountain bikers. A brochure has been developed for the Rowland Creek Falls Circuit.

The Hurricane Campground is located outside the southeastern corner of the roadless area. The campground has 29 sites, water, restrooms with flush toilets, and showers. The campground is open April through October and receives a moderate to high level of use.

The Skulls Gap picnic area, located just outside the southwestern corner of the roadless area, has seven sites, a vault toilet, and running water. Approximately 70 percent, or 4473 acres, of the area are classified as suitable for timber production. Inventory data indicate 461 acres of privately owned, outstanding or reserved, mineral rights underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 0.84 miles of improved road, 4.24 miles of unimproved road, and 11.3 miles of maintained trail in the roadless area are visually evident and influence ecological

SENG MOUNTAIN

processes, as a minimum, in the vicinity of the roads and trails. Many old access and logging roads still exist; however, lack of maintenance and use is allowing some of them to become overgrown and regain a more natural appearance while others are kept open by illegal ATV traffic.

Most of the area was cut over and frequently burned in the early 1900's. Approximately 87 percent of the timber is in the 21-100 year old age class, 10 percent is in the 100+ years class, and two percent is in the 0-10 year class. The area contains 33 acres of possible inventoried old growth.

Featured species for the area is primarily deer. A 50 acre special area for gray squirrel is located along FDR 84 near Hurricane Gap. The area contains 17 maintained wildlife openings totaling approximately 30 acres. FDR 84B provides access for tractors to maintain several of the openings and is mowed and kept open by the Virginia Department of Game and Inland Fisheries. Although not indicated as a wildlife clearing, this mowed road represents seven acres of maintained clearing.

The area is nearly surrounded by National Forest except for the western boundary, which adjoins private land. The private lands are a mix of woodlands, pastures, farms, and residences with outbuildings. Two inactive borrow pits are within the area. One pit is located approximately 0.25 mile south of FDR 643 near the northern boundary of the area. This pit has 15 foot high walls that have stabilized and was last used in the 1970's. Another pit is located approximately 0.25 mile north of FDR 84 near Hurricane Gap, which was last used, in the early 1980's. This pit has 10 foot high walls and has stabilized. The Hurricane Campground is just southeast of the roadless area.

KEY ATTRACTIONS

A big attraction to the area is the Rowland Creek Falls, a 45 foot cascading waterfall, located along the Rowland Creek Trail in the central portion of the area. The Hurricane Campground and Skulls Gap Picnic Area, adjacent to the roadless area, provide a starting point for access into the area. Mountain biking is a growing activity over the area's roads and trails. Activities associated with hunting are also a key attraction to this area. There are several locations along FDR 84, FDR 643, and VA 650 where visitors park vehicles and set up camp. There are no Federally threatened, endangered, or sensitive species known to occur within the area.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area and the area is minimally affected by outside forces. Much of the Seng Mountain roadless area appears to be natural but there are signs of recent disturbance. The improved and unimproved roads and maintained trails within the roadless area are visually evident. If this roadless area is designated wilderness, the improved and unimproved roads would be in wilderness and removed from the Forest's transportation system. Some old access and logging roads and trails in this roadless area have become overgrown and impassable, causing minimal impact on the area's natural ecological processes, while others are kept open by illegal ATV traffic.

The wildlife openings are regularly maintained through regular mowing. Additionally, FDR 84B is mowed and kept open to facilitate maintenance of several of the openings. Two inactive borrow pits are located within the area. Both pits are relatively small with cut banks of less than 15 feet. The pits have been inactive for over 15 years and have stabilized.

There are 158 acres in the 0-10 year old age class and no acres in the 11-20 year old age

class.

SENG
MOUNTAIN

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Seng Mountain roadless area is 6423 acres in size and is located entirely on National Forest land. Elevations range from 2480 feet on Dry Fork near the northwest corner to 4626 feet on the summit of Round Top. A solitude core area of 2745 acres exists in the central portion of the area. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. Within the Seng Mountain roadless area, this ROS classification is semi-primitive motorized. The ratio of core acres of solitude to the roadless area is approximately 43 percent. Visitor use to this area can be described as light to moderate from spring through fall. Most use occurs on the periphery of the area except for the trails near Rowland Creek and Jerrys Creek. After hunting season, use is light until spring when visitors return to the area. The further away one gets from improved roads and developed trails, the greater the feeling of being in an unconfined, natural area since the area appears to be relatively free from disturbance away from roads and trails. However, some areas will be impacted by noises associated with traffic on improved roads around the periphery of the roadless area and activities occurring on adjoining private lands. The Barton Gap Trail receives some motorcycle use. These impacts are expected to be limited to the immediate vicinity of the roads and trails and adjoining private lands.

Much of the terrain in this roadless area is steep and rugged, offering the visitor good opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

This roadless area does present a range of dispersed recreational activities of which are typically found on the Jefferson National Forest. Activities such as horseback riding, mountain biking, hiking, off trail motorcycling, hunting, fishing, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Seng Mountain roadless area is in the Southern Blue Ridge Subsection of the Blue Ridge Mountains ecosystem Section (6,423 acres). This ecosystem subsection and section is represented by the following wildernesses, totaling 12,089 acres, on the Jefferson National Forest: Lewis Fork, Little Wilson Creek, and Little Dry Run. Within the Southern Appalachians, 19 wildernesses and 62 roadless areas are classified within this subsection.

Geologic rock types within this area are dominated by quartzite, sandstone, and shale. Soils at the higher elevations, generally 4,000 feet and greater, are considered to have a frigid temperature regime. This means soil temperatures are cooler and growing seasons shorter for these high elevation soils. Because of these cooler temperatures, the soils typically have thicker organic surface layers than soils at the lower elevations.

There are no designated Research Natural Areas or Experimental Forests within the roadless area.

Approximately 60 percent of the area is in the Dry Mesic Oak ecological community type. Another 18 percent is in the Mixed/Western mesophytic type, 13 percent is in the Dry/Dry-Mesic Oak-Pine type, 6 percent is in the Northern Hardwood type, and 3 percent is in the Xeric Pine/Pine Oak type.

SENG MOUNTAIN

There are 33 acres of possible inventoried old growth in the area. The ecological community types represented are: 32 acres Dry and Dry-Mesic Oak-Pine (26 acres suitable) which represents 0.6 percent of the Forest's total; and one acre Mixed and Western Mesophytic (suitable) which represents less than 0.1 percent of the Forest's total.

There are several stands of table mountain pine within the area, which offer opportunities for scientific and educational purposes.

The cascading Rowland Creek Falls is a scenic attraction to the area.

Approximately 62 percent of the area is classified as having high existing scenic integrity.

The Seng Mountain roadless area is separated from the Raccoon Branch roadless area, to the east, by VA 650. The nearest existing wilderness is Lewis Fork, approximately three air miles to the south.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of this roadless area makes its preservation as potential wilderness practical. Most of the boundary follows property boundary lines and roads. However, there are two areas where the boundary follows no discernible feature. Surrounding lands are primarily Forest Service ownership, except for private land to the west. Although adjoining private lands contrast somewhat with the area, the effects are generally limited to the periphery along the boundary of the roadless area. Except for areas along the periphery, the high peaks and deep valleys protect this roadless area from the sights and sounds of civilization. The 5.08 miles of improved and unimproved roads are closed to general public vehicle use and could be allowed to return to a natural condition. However, FDR 84B is mowed and kept open in order to access wildlife clearings. There are 461 acres of privately owned mineral rights underlying Federal surface ownership.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

Most of the boundary follows features such as roads and property line boundaries. There are two areas; however, where the boundary follows no discernible feature. In the northwest corner, between Pine Spur and Jerrys Creek, there is approximately 2500 feet of boundary that follows no feature. A recommendation is made to follow a small drainage approximately 500 feet north of the existing boundary in order to simplify marking on the ground. This drainage flows into Jerrys Creek near FDR 845 at which point the roadless area boundary would follow FDR 845. This would add approximately 20 acres to the area. Near Hurricane Campground, the roadless area boundary follows a drainage between Comers Creek Trail and FDR 84. The drainage does not quite intersect FDR 84. There is approximately 200 feet between the drainage and FDR 84. A recommendation is to follow the drainage to its headwaters and then a direct bearing south to FDR 84.

An offset from improved roads bounding the area would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, gravel placement, road alignment, etc.). An offset of 300 feet from the centerline of VA 600, FDR 84, and FDR 643 and an offset of 100 feet from the centerline of FDR 845 is recommended.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There are no developed recreation sites within this roadless area. Dispersed recreation activities such as horseback riding, mountain biking, hiking, trail motorcycling, hunting,

fishing, and dispersed camping are the principal recreation attractions to the area. A parking lot is located just outside the western boundary of the area at Horseshoe Bend on VA 600. Parking is also available at Skulls Gap Picnic Area outside the southwest boundary of the area. Minimal trailhead parking is available at the upper end of Rowland Creek Trail on FDR 84 and the lower end of Jerrys Creek Trail on FDR 643. Established recreation uses that would be discontinued should this area be designated a wilderness are: (1) mountain biking, and (2) trail motorcycling.

WILDLIFE

This roadless area provides habitat for a diversity of wildlife species. Featured species of the area is deer with a 50 acre area along FDR 84 near Hurricane Gap that features gray squirrel. The 17 wildlife clearings totaling 30 acres would no longer be maintained if this area becomes a designated wilderness.

WATER AVAILABILITY AND USE

The main drainages in this area are Comers Creek and Hurricane Creek. Both streams are stocked trout fisheries that support wild rainbow, brown, and brook trout. The lower reaches of Comers Creek, within the roadless area, and Hurricane Creek have good water chemistry and very good macroinvertebrate monitoring scores. Rowland Creek has a population of wild rainbow trout while Jerrys Creek and Incline Hollow have populations of wild brook trout. All water from this roadless area ultimately drains into the South Fork of the Holston River. There are no known water storage needs or any existing special use water permit authorizations within the area. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 70 percent, or 4473 acres, of the area is classified as suitable for timber production. In the last 20 years, approximately 158 acres of timber has been harvested. Timber harvest and the associated production of wood products from this area would be precluded by wilderness designation. The 4473 acres of suitable lands in this roadless area represent approximately 1.4 percent of all lands suitable for timber production on the Jefferson National Forest. Private subsurface minerals ownership is held on 479 acres within this area. No Federal oil and gas leases or other Federal mineral leases are in effect in this area as of October 1999. Federal oil and gas leasing occurred in this area in the 1980's. No oil or gas wells were drilled and the Federal leases expired. The potential for energy minerals, primarily natural gas, is estimated to be low. This area is located south of the Glade Mountain District (1944, Miller, R.L.) where manganese was prospected and mined. This roadless area does not have a history of extensive mining. The potential for commercial deposits of Federal leasable minerals, including metallic minerals, is estimated to be low.

CULTURAL RESOURCES

As of March 1998, approximately 469 acres of this roadless area has been surveyed for cultural resources. Four prehistoric transient camps have been documented. Four additional prehistoric sites have been located but further work is needed to classify the site types. The area exhibits a moderate to high potential for additional prehistoric and historic resources.

LAND USES

No special use permit authorizations have been issued in this roadless area. Two abandoned borrow pits are located within the bounds of the roadless area. One is located 0.25 miles south of FDR 643 near the northern boundary and the other is 0.25 miles

SENG MOUNTAIN north of FDR 84 near Hurricane Gap.

SHAWVERS RUN WILDERNESS ADDITION

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. The roadless area is bounded by private lands on the northern perimeter. Wilderness designation may limit options for containing fires on private and/or federal lands. Seng Mountain roadless area is expected to be in the generally infested area for gypsy moth in the next ten to twenty years, dependent upon the success of gypsy moth Slow-the-Spread efforts to the north in Virginia and West Virginia, and to the south in North Carolina. Mortality in already stressed timber stands can be severe (up to 25-30%) following a first defoliation and oaks are the preferred hosts. Approximately 73 percent of the area is composed of the Dry Mesic Oak type or Dry/Dry Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chances that they may spread to other national forest or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

SHAWVERS RUN WILDERNESS ADDITION

ID NUMBER: 14502

Overview

*Although not included in this evaluation, there is a 30 acre tract of private land located between this roadless area and the Shawvers Run Wilderness. The only motorized access to this private inholding is a road leading off from Forest Development Road (FDR) 5008.

Surface Ownership	Acres
Forest Service	1,926
Private*	0
Park Service	0
TOTAL	1,926

LOCATION, VICINITY, AND ACCESS

Shawvers Run Wilderness Addition roadless area is located on the Jefferson National Forest, New Castle Ranger District, Craig County, Virginia. The area is bounded by VA 18 and private land to the north, FDR 5008 to the west, private land to the south, and Shawvers Run Wilderness to the east. The area is found within a portion of the U.S.G.S. Virginia Quadrangle Potts Creek. Major vehicular access is provided by VA 311 in the southwestern area and FDR 5008 along the western end.

FDR P2, an access road with a prescriptive right-of-way, enters the roadless area off of FDR 5008. The road is approximately 0.47 miles in length and accesses a private inholding. Total improved road mileage is 0.47 miles.

Approximately 0.66 miles of a closed, unmaintained segment of FDR 5008 fall within the roadless area. This unimproved road segment is used, administratively, to access existing wildlife clearings for maintenance purposes. The Craig-Botetourt Electric Co-op also uses this segment to access a utility pole line in the southwestern end of the area. Total unimproved road mileage is 0.66 miles.

There are several abandoned access roads throughout the area. Some have become overgrown and impassable to anything but foot traffic, while others remain fairly well defined.

SHAWVERS
RUN
WILDERNESS
ADDITION

There are no maintained trails within the area.

GEOGRAPHY, TOPOGRAPHY, AND VEGETATION (INCLUDING ECOSYSTEM TYPE)

According to ecological mapping, this area lies in the Ridge and Valley Subsection of the Northern Ridge and Valley Section within the Central Appalachian Broadleaf-Coniferous Forest-Meadow Province. This Section is characterized by northeast/southwest trending ridges of sandstone or shale with parallel drainages and broad limestone valleys. Included in this area is Middle Mountain and a series of small, steep sideslope drainages. Elevation ranges from approximately 1720 feet near Steel Bridge Campground, at the beginning of FDR 5008, to 3148 feet at a point along the crest of Middle Mountain.

Vegetation is primarily broadleaf deciduous species. Approximately 43 percent of the area has a site index of 70 or greater indicating moderate to high productivity for tree growth. These areas occur in colluvial drainages, toeslopes, or along alluvial flood plains of small to medium sized streams. Here, yellow poplar, northern red oak, white oak, basswood, cucumber tree, white ash, eastern hemlock, and red maple dominate the overstory. The remaining 57 percent of the area has a site index of 60 or less, indicating a moderate to low productivity for tree growth. White oak, northern red oak, and hickory generally occur on north and west aspects. Chestnut oak, scarlet oak, and yellow pine occur on ridgetops and exposed south and east midslope aspects with yellow pine occurring on the driest sites.

CURRENT USE

The area is primarily used for dispersed recreation activities such as hunting, fishing and illegal ATV use. Approximately 71 percent, or 1,376 acres, are classified suitable for timber production within the area. A private inholding is located between the roadless area and Shawvers Run Wilderness. The inholding contains a cabin on it which is accessed via a road, with prescriptive right, that intersects with FDR 5008. The southern tip of the area has a powerline running through it adjacent to VA 311. The U.S. military conducts daily low level training flights over this area. A military training jet crashed into the nearby Shawvers Run Wilderness in 1994. Inventory data indicate 126 acres of privately owned, outstanding or reserved, mineral rights underlying Federal surface ownership.

APPEARANCE OF THE AREA AND CHARACTERISTICS OF SURROUNDING CONTIGUOUS AREAS

The 0.47 miles of improved and 0.66 miles of unimproved road in the roadless area are visually evident and influence ecological processes, as a minimum, in the vicinity of the roads. Many old access roads and logging roads still exist and are evident; however, lack of maintenance and use is allowing some of them to become overgrown and regain a more natural appearance. Other old roads are being kept open by frequent illegal ATV traffic.

Most of the area was cut over and frequently burned in the early 1900's. Approximately 76 percent of the timber in the area is in the 21 - 100 year old age class, seven percent is in the 101 plus years class, and two percent is in the 11-20 year age class. No acres are in the 0-10 year age class. There is no inventoried possible old growth in this roadless area.

Featured species for the area is primarily wild turkey. Gray squirrel, quail, and woodcock are also featured over small areas of the roadless area. There are five wildlife openings

**SHAWVERS RUN
WILDERNESS
ADDITION**

totaling approximately 29 acres. The openings are regularly maintained by mowing by the Forest Service and Virginia Department of Game and Inland Fisheries and are visually evident. The Virginia Department of Game and Inland Fisheries has also planted over 1400 shrubs throughout the area that benefit a variety of game and non-game wildlife species.

The area is bounded to the east by Shawvers Run Wilderness. The remainder of the area is bordered by private and other National Forest lands. Private lands are generally a combination of farms, pastures, forests, woodlots, and some residences, barns, and other outbuildings. Steel Bridge Campground, a 20 campsite facility, is located just outside the roadless area on the north side of Potts Creek.

KEY ATTRACTIONS

The area is popular with hunters and anglers. Steel Bridge Campground is located in close proximity to the roadless area. The federally endangered James spiny mussel is known to occur in Potts Creek along the western boundary of the area. The species is globally rare.

Wilderness Capability**NATURAL INTEGRITY AND APPEARANCE**

Natural processes are operating within the area but the area is somewhat affected by outside forces. Much of the Shawvers Run Wilderness Addition roadless area appears to be natural but there are signs of disturbance. There are 31 acres of 11-20 year old age class timber, 29 acres of maintained wildlife clearings, approximately 0.47 miles of improved and 0.66 miles of unimproved road, and many old access and logging roads within this area. A private inholding is located between the roadless area and Shawvers Run Wilderness. The inholding is accessed by a road, FDR P2, that runs through the roadless area.

OPPORTUNITY FOR SOLITUDE, CHALLENGE, AND PRIMITIVE RECREATION

The Shawvers Run Wilderness Addition roadless area is 1,926 acres in size and is located entirely on National Forest land. However, there is a private inholding located between this roadless area and Shawvers Run Wilderness. A road that accesses this property also runs through the roadless area. Landform consists of the ridgetop of Middle Mountain and several knobs divided by a series of sideslope drainages. Elevations range from 1,720 feet near Steel Bridge Campground to 3,148 feet at a point along the crest of Middle Mountain. A solitude core area of 612 acres exists along the upper reaches of Middle Mountain and adjacent to Shawvers Run Wilderness. A solitude core area refers to the semi-primitive Recreation Opportunity Spectrum (ROS) setting identified in the roadless inventory. The relationship of core acres of solitude to the roadless area is approximately 32 percent. If this roadless area were added to the adjoining Shawvers Run Wilderness, the wilderness would increase in size to 5,393 acres.

Terrain in the area is generally gentle to moderately sloping except along the upper reaches of Middle Mountain where slopes can be characterized as steep and rugged, offering the visitor opportunities for self-reliance and challenge in orienteering and backcountry primitive camping. Noises from surrounding private lands, state highways, and FDR's can be heard along the boundary, particularly near the northern and western boundaries. The northern end of the area is adjacent to Steel Bridge Campground. Daily flyovers from U.S. military training aircraft can also be heard within the area.

It is possible that one may encounter life-threatening situations but one does not expect them. It is possible that one may become lost. Level of personal risk increases as one gets further away from the edge of the roadless area and away from roads. Within the area

there are isolated and remote areas but there is a degree of evidence of human impact including roads, maintained wildlife clearings, and past timber harvests. The features of the area require the visitor to use a degree of outdoor skills to traverse the area.

**SHAWVERS
RUN
WILDERNESS
ADDITION**

This roadless area does present a range of dispersed recreational activities of which are typically found on the Jefferson National Forest. Activities such as hunting, fishing, hiking, and primitive camping are present in the area.

SPECIAL FEATURES (ECOLOGICAL, GEOLOGICAL, SCIENTIFIC, EDUCATIONAL, SCENIC, HISTORICAL, AND RARE PLANTS AND ANIMALS)

Shawvers Run Wilderness Addition roadless area is in the Ridge and Valley Subsection of the Northern Ridge and Valley Ecosystem Section. This ecosystem subsection and section is represented by the following wildernesses, totaling 32,312 acres, on the Jefferson National Forest: Shawvers Run, Barbours Creek, Peters Mountain, Mountain Lake, Kimberling Creek, and Beartown. Within the Southern Appalachians, 11 wildernesses and 43 roadless areas are classified within this subsection.

Two existing wildernesses are in the vicinity of this roadless area. Shawvers Run Wilderness adjoins the southeast boundary of the roadless area while Barbours Creek Wilderness is located approximately four air miles to the east.

Geologic rock types of this area are dominated by sandstone and shale. Sandstone is found on the upper slopes and ridge tops. Shale and limestone are the bedrock on the lower slopes.

There are no designated Research Natural Areas or Experimental Forests within the roadless area.

The majority of the area, 65 percent, is in the Dry Mesic Oak ecological community type while 32 percent of the area is in the Dry/Dry-Mesic Oak-Pine type. The remaining three percent is composed of the Xeric Pine/Pine-Oak, Mixed/Western Mesophytic and Conifer/Northern Hardwood ecological community types.

There is no inventoried possible old growth in this area.

The Federally endangered James spiny mussel is known to occur in Potts Creek, adjacent to the roadless area. There are no other known proposed, endangered, threatened, or sensitive species in the area.

Approximately 69 percent of the area is classified as having high existing scenic integrity.

SIZE, SHAPE, AND MANAGEABILITY

The size and shape of this roadless area, when combined with the existing Shawvers Run Wilderness, makes its preservation as potential wilderness practical. There is; however, a narrow tract of land that extends west toward VA 311 along the ridge of Middle Mountain which is surrounded on three sides by private land. Additionally, 45 acre private inholding is wedged between this roadless area and the Shawvers Run Wilderness. If this roadless area became a federally designated wilderness, this private land would be an inholding within a wilderness. Activities within this private land, including the access road, have the potential to impact wilderness attributes. Most of the boundary follows property lines and human improvements such as roads. Surrounding lands are approximately one-half private and one-half National Forest lands. There are 126 acres of privately owned mineral rights within the roadless area.

BOUNDARY CONDITIONS, NEEDS, AND MANAGEMENT REQUIREMENTS

**SHAWVERS RUN
WILDERNESS
ADDITION**

Most of the boundary follows human made features such as roads and property line boundaries as well as natural features such as streams. An offset from boundary roads would enhance the wilderness characteristics of the area by avoiding impacts that are a result of engineering work to the road (brush clearing, grading, culvert installation and cleaning, paving, gravel placement, road alignment, etc.). An offset of 300 feet from the centerline of existing roads is recommended.

Availability for Wilderness**RECREATION, INCLUDING TOURISM**

There are no developed recreation facilities within this roadless area; however, Steel Bridge Campground is located adjacent to the area's northwestern boundary. Hunting and fishing are the most popular recreational uses. The area adjoins the existing Shawvers Run Wilderness. No impacts to established, legal recreation uses would be expected should this roadless area be designated as wilderness.

WILDLIFE

This roadless area provides habitat for a diversity of wildlife species. The featured species for the area is primarily wild turkey, with smaller areas dedicated to featuring gray squirrel, quail, and woodcock. The Federally endangered James Spiny mussel is known to occur in Potts Creek adjacent to the area. Maintenance of the 29 acres of wildlife openings would be discontinued should this roadless area be designated as wilderness.

WATER AVAILABILITY AND USE

The roadless area drains into Potts Creek. A portion of Valley Branch, which supports wild trout, flows through the area. There are no known water storage needs or any existing special use water permit authorizations in the area. Water quality is expected to remain at its current level whether or not the area is designated as wilderness.

LIVESTOCK, TIMBER, AND MINERALS

There are no livestock operations or potential for such operations. Approximately 71 percent, or 1,376 acres, is classified as suitable for timber production. In the last 10 years, no timber has been harvested. Timber harvest, and the associated production of wood products from this area, would be precluded by wilderness designation. The 1,376 acres of suitable lands in this roadless area represents 0.4 percent of all lands suitable for timber production on the Jefferson National Forest. This roadless area is near the southwestern edge of the Clifton Forge iron district (1957, Lesure, F.G.). Iron mining in this district started before 1800 and ended by 1925. This district also contains small, low-grade manganese deposits that were prospected, but not extensively developed (1988, U. S. Geological Survey Bulletin 1758). The roadless area is estimated to have a high potential for the occurrence of manganese and iron (hematite and limonite), but a low potential for the development of these minerals. The area was leased for Federal oil and gas in the 1980's. No oil or gas wells were drilled and the Federal lease expired. Private subsurface minerals ownership is held on 48 acres within this area. No Federal oil and gas leases or other Federal mineral leases are in effect in this area as of December 1999. The potential for energy minerals, primarily natural gas, is estimated to be low to moderate. The potential for other Federal leasable minerals, including metallic minerals, is estimated to be low.

CULTURAL RESOURCES

As of March, 1998, no cultural resource surveys have been conducted within this roadless area. The area exhibits a low potential for prehistoric and historic resources.

LAND USES

The Craig-Botetourt Electric Co-op possesses a special use authorization for a utility pole line adjacent to the southwestern corner of the roadless area. The Co-op also is also authorized to use the unimproved portion of FDR 5008 to access and maintain their pole line. The access road, FDR P2, leading to the private inholding located between the roadless area and the Shawvers Run Wilderness is under a prescriptive right-of-way. No other special use permit authorizations have been issued for land uses in this roadless area.

SHAWVERS
RUN
WILDERNESS
ADDITION

**WILDERNESS
NEED**

MANAGEMENT CONSIDERATIONS (FIRE, INSECTS/DISEASE, AND NON-FEDERAL LANDS)

Present fire control techniques could be altered if this roadless area was designated wilderness. Mechanized ground-fire suppression is an important management tool that would be lost unless specifically approved in a wilderness resource management plan. Wilderness designation may limit options for containing fires. Gypsy moth infestations were reported to be in the vicinity of this roadless area in 1999. Mortality can be severe (up to 25-30 percent) and oaks are the preferred hosts. Approximately 97 percent of the area is composed of the Dry Mesic Oak and Dry/Dry Mesic Oak-Pine ecological community types. Wilderness designation would make control of insect and disease infestations more difficult, thus increasing the chances that they may spread to other National Forest or private land.

Need

See Wilderness Need-Roadless Area Evaluations at the end of this Appendix.

WILDERNESS NEED

The concept of wilderness is multifaceted as envisioned by the authors and framers of the 1964 Wilderness Act. As such there are a number of factors to consider in assessing the need for additional wilderness.

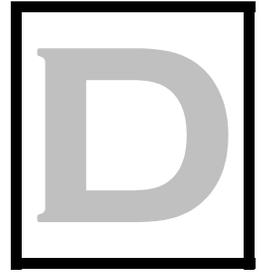
Outdoor recreation is one of the benefactors of wilderness and is one of the drivers of wilderness demand and wilderness management. According to trend data collected from 1965 to 1994, the trend in recreation visits to National Forest Wilderness has paralleled designations and increased over time (Cordell, 1999). In the Southeast and in the Jefferson National Forest Market Area, participation rates and trends in wilderness indicate a continued increase in visitation to wilderness, climbing an estimated 117% to approximately 5,640,000 visits by people within the forest market area by the year 2050 (see Table 3-2 in Developed and Dispersed Recreation discussion).

In addition to recreation in wilderness, there is a non-user component that values wilderness and is important to understand when analyzing roadless areas, allocations and the need for additional wilderness. Studies have shown that the non-visiting general public values the knowledge that natural environments exist and are protected. This motivation can be considered an existence benefit. The current generation also obtains the off-site benefit of knowing that protection today will provide Wilderness to future generations. Existence and bequest motivations are sometimes referred to as nonuse or passive use benefits. Several studies have shown the importance and value people place on these passive use benefits of wilderness (Cordell, 1999). These values are reflected in the National Survey on Recreation and the Environment (NSRE, 2001) finding that 69.8% of those surveyed agreed or strongly agreed to the question, "How do you feel about designating more federal lands in your state as wilderness?" Over 96 percent agreed or strongly agreed with the statement, "I enjoy knowing that future generations will be able to visit and experience wilderness areas."

**WILDERNESS
NEED**

Wilderness is valued for preserving representative natural ecosystems, diversity of landscapes and for research. Currently, at the forest scale, the Blue Ridge and Northern Ridge and Valley Sections and their respective subsections occurring within the Jefferson National Forest are represented by at least one of the 11 designated wildernesses (see Table W-5 in the Wilderness and Roadless discussion). The Cumberland Mountain Section/Black Mountains subsection occurs on the Clinch Ranger District and is currently unrepresented by wilderness. The North Fork of the Pound is the only inventoried Roadless Area within that section/subsection. At the regional/national scale, all of the forest's designated wildernesses and inventoried roadless areas lie within the Province M221, Central Appalachian Broadleaf Forest-Coniferous Forest-Alpine Meadow. Cordell (1999) calculated the ratio of wilderness to ecoregion area to determine representation of wilderness. Province M221 contains .6% of the National Wilderness Preservation System (NWPS) area and 2.3% of the total land area in the Continental United States area, yielding a ratio of .26. A ratio of at least 1 would be considered adequate representation. This indicates that Province M221 is currently underrepresented in the NWPS and thus underprotected.

Wild and Scenic Rivers ELIGIBILITY DETERMINATION



INTRODUCTION

This appendix contains eligibility evaluations of fourteen rivers located in or adjacent to the Jefferson National Forest for inclusion in the National Wild and Scenic Rivers System. The evaluations also determine the potential classifications as a wild, scenic, or recreational river for those evaluated rivers determined to be eligible.

As used in the National Wild and Scenic Rivers Act, the term "river" means a flowing body of water or estuary or a section, portion, or tributary thereof, including rivers, creeks, runs, kills, rills, and small lakes.

This Appendix explains the process for eligibility determinations and gives the eligibility criteria for scenic, recreational, geologic, wildlife, fisheries and aquatic, botanical/ecological and heritage/cultural values.

The next section lists suitability criteria. A determination that a river is eligible does not necessarily mean that it will meet suitability criteria. If a river is found to be suited and is recommended for designation by the Forest Service, it goes before Congress as a candidate for designation into the National Wild and Scenic Rivers System.

The remainder of the Appendix contains the actual evaluations of candidate rivers and the classifications assigned.

THE PROCESS: How RIVERS ARE EVALUATED

The first step in the process is the identification of the more outstanding rivers within the Jefferson National Forest and a determination whether those identified are eligible to be added to the National Wild and Scenic Rivers System. If found eligible, the second step is to make a determination as to the potential classification of the river, either as a national wild, scenic, or recreational river.

The Forest Plan does not identify rivers or streams that were evaluated or found eligible for Wild and Scenic Rivers designation. The Land and Resource Management Planning Handbook, Forest Service Handbook 1909.12, Chapter 8, gives direction for identification and evaluation of rivers. Fourteen rivers within the Forest were identified for evaluation. Russell Fork, one of those identified for evaluation, was the only river on the Forest in the Nationwide River Inventory (NRI) developed by the National Park Service, U.S. Department of Interior. FSH 1909.12 provides direction that each river identified in the NRI that crosses National Forest System (NFS) lands should be studied as part of the forest land management planning process. FSH 1909.12 also provides direction that other rivers can be identified in the land management planning process.

Personnel from the Forest's six ranger districts first provided input about rivers they considered most outstanding on their districts. The FS evaluation team met two times to consider Forest Service and state input, and input from other contacts with river interests in Virginia. To help complete the evaluation and potential classification of the rivers identified, the Jefferson NF involved district rangers and district employees; forest staff

INTRODUCTION

THE PROCESS: How RIVERS ARE EVALUATED

**THE PROCESS:
HOW RIVERS ARE
EVALUATED**

officers; forest specialists in resource areas being evaluated; non-Forest Service resource specialists in the different resource areas; Dick Gibbons, Virginia State Rivers coordinator; Bob Munson, planner with the Virginia Department of Conservation and Recreation; Dr. Paul Angermeier, Dept. of Fisheries and Wildlife Sciences, Virginia Tech; Dr. Joe Roggenbuck, School of Forestry, Virginia Tech; Randi Lemmon, National Committee for the New River and American Rivers; Tom Klatka, Roanoke Regional Preservation coordinator; Joe Williams, Virginia Commission of Game and Inland Fisheries; and Morgan Jones, Kentucky Wild Rivers program coordinator.

Table D-1 Rivers Studied for National Wild and Scenic Rivers System Eligibility

River	County, State	Total	Length	
			NFS Ownership *Left Bank	NFS Ownership *Right Bank
Little Stony Creek	Giles, VA	3.2	3.2	2.8
Stony Creek	Giles, VA	8.3	7.0	6.0
Clinch River	Scott, VA	5.5	0.4	0.0
Devil's Fork	Scott, VA	3.8	3.7	3.7
Guest River	Wise & Scott, VA	6.5	3.5	1.7
Little Stony Creek	Scott, VA	8.5	8.5	8.5
Roaring Branch	Wise, VA	3.0	3.0	3.0
Russell Fork ¹	Dickenson, VA & Pike, KY	8.7	0.0	4.4
James River	Botetourt, Rockbridge, Amherst, & Bedford, VA	23.0	10.0	0.0
North Creek	Botetourt, VA	7.0	7.0	7.0
Whitetop Laurel/ Green Cove Creeks	Washington, VA	12.0	10.5	10.0
Barbours Creek	Craig, VA	11.6	10.2	10.6
Laurel Creek	Bland, VA	3.2	1.1	2.6
Little Wolf Creek	Bland, VA	3.5	3.5	3.5

* Left and Right banks looking upstream

¹ Breaks Interstate Park ownership is left bank 6.5 miles and right bank 3.1 miles

The evaluation criteria for each resource were prepared by consulting sections 1(b) and 2 (b) of the National Wild and Scenic Rivers Act, FSH 1909.12, Chapter 8, and Federal Register, Vol. 47, No. 173, and the Kisatchie National Forest and George Washington National Forest criteria. The criteria were also reviewed by the Regional Office.

The first two steps in the Wild and Scenic Rivers evaluation process are part of the inventory for the Analysis of the Management Situation. This study addresses the first two steps only. The third step in the process assesses the suitability of those rivers found eligible. The suitability study involves extensive public involvement and includes the social/political issues. It determines if there is sufficient support for designation. The suitability study can be made as part of the Forest Plan Revision or later, as time and funding permit.

For a stream to be eligible for designation to the Wild and Scenic Rivers System, it must be free-flowing and the adjoining land determined to be "outstandingly remarkable" in one or more of the following values.

**THE PROCESS:
HOW RIVERS ARE
EVALUATED**

- ▶ Scenic
- ▶ Recreational
- ▶ Geological
- ▶ Fisheries/Aquatic
- ▶ Wildlife
- ▶ Heritage/Cultural
- ▶ Botanical/Ecological

As used in the National Wild and Scenic Rivers Act, the term "rivers" means a flowing body of water or estuary or a section, portion, or tributary thereof, including rivers, creeks, runs, kills, rills, and small lakes.

Within each value category, rivers are rated as one of the following:

Class A. Outstandingly remarkable values (ORVs) with national significance, having qualities which are nationally significant.

Class B. Outstandingly remarkable values (ORVs) with regional significance, having qualities significant in the physiographic province.

Class C. Locally significant values, with qualities that are shared with one of the many equally significant rivers in the physiographic province.

Class D. Values locally common to the Forest, with qualities that are common in the local area and in the physiographic province, but with no outstanding qualities.

Since there are three physiographic provinces within the Forest, resource values for each river being evaluated are compared with values of other rivers in the same physiographic province. The three physiographic provinces on the Forest are the Blue Ridge, the Appalachian Plateaus, and the Ridge and Valley.

The National Wild and Scenic Rivers Act sets no specific requirements concerning the length of a river segment being considered, but states that a river segment is of sufficient length if, when managed as a wild, scenic, or recreational river area, the "outstandingly remarkable" values are protected.

The determination of whether a river or river segment contains outstandingly remarkable values is, for the most part, a judgement based on the qualities of a river relative to the other rivers in the physiographic province. Listed below are the eligibility criteria established for the Jefferson National Forest.

ELIGIBILITY CRITERIA BY RESOURCE

If a river or segment of river is found to have a **Class A** or **B** value for any of the resource values and is free-flowing, it would be eligible. The determination is based on professional judgment of Forest Service specialists with input of non-Forest Service specialists from Kentucky and Virginia.

**EVALUATION OF
ADDITIONAL
OLD GROWTH
PATCHES****Recreation Values**

Class A. Outstandingly remarkable recreation values with national significance provide recreational opportunities which are, or have the potential to be, unique enough to attract visitors from well outside of the physiographic province and be known at a national level. Significant numbers of visitors would be willing to travel long distances, generally at least a 24-hour trip if by motor vehicle, to use the river resources for recreational purposes. River-related opportunities could include, but are not limited to viewing nature, viewing geological formations or cascades, water sports such as rafting or canoeing, trail use (either non-motorized or motorized), wildlife observations, fishing, hunting, and photography.

Class B. Outstandingly remarkable recreation values with regional significance provide recreational opportunities which are, or have the potential to be, an outstandingly remarkable recreational attraction within the physiographic province and attract, or have the potential to attract, visitors from outside the physiographic province. Significant numbers of visitors would be willing to travel moderate distances, over three hours, to use the river resources for recreational purposes. River-related opportunities could include, but are not limited to viewing nature, viewing geological formations or cascades, water sports such as rafting or canoeing, trail use (either non-motorized or motorized), wildlife observations, fishing, hunting, and photography.

Class C. Locally significant recreational values provide recreation opportunities which are, or have the potential to be, significant for the Forest, however, they are common throughout the physiographic province.

Class D . Locally common recreational values to the Forest provide recreational opportunities that are common throughout the Forest.

Scenic Values

Each landscape has its own unique natural scenic qualities. This inherent scenic attractiveness is a human perception of the natural beauty of landscape attributes based on the composition of landforms, rockforms, water forms and vegetative cover. Inherent scenic attractiveness also reflects the natural ability of a landscape to produce varying degrees of scenic satisfaction, varying degrees of positive physiological responses such as heart rate deceleration, and varying degrees of positive psychological responses such as general feelings of well-being.

Inherent scenic attractiveness considers not only natural variety, but also unity, vividness, intactness, coherence, mystery, uniqueness, harmony, balance and pattern and is assessed in relation to individual landscape character type (physiographic province). Character type is defined as an area of land that has common distinguishing natural visual characteristics. Scenic value assessment for eligibility in this exercise will utilize concepts and premises set forth in the U.S. Forest Service Scenery Management System (SMS). Rivers and streams that classify as "distinctive" under SMS will qualify for either a Class "A" or Class "B" designation in this study. Those that classify as "typical" will qualify for a Class "C" rating and "indistinctive" will qualify as a Class "D" rating.

It is not appropriate to compare inherent scenic attractiveness of water landscapes in one landscape character type to another. Therefore, during the scenic resource evaluation report, we will look at the scenic values of each river or stream as it compares with others within the same physiographic character type and then determine whether or not it may be outstandingly remarkable on a national scale.

Another measure of the scenic value of an area is the presence of "Special Places." The Scenery Management System describes them as "...specific locations and expanses in outdoor settings that have attractions and features that are identified as unique, different, distinctive, and extraordinary to people." Special places along streams and rivers may range from a particular small cascade and pool with enclosing rocks and vegetation to an entire stream corridor. That presence of moderate to high numbers of special places can increase the scenic value of an area dramatically.

The general scenic eligibility criteria are listed below, followed by inherent scenic attractiveness guidelines for watercourses within the three physiographic provinces. The guidelines will be used to determine within which **Class A** particular watercourse falls.

Class A . Outstandingly remarkable scenic values of national significance (Distinctive Nationally) include land forms with unusual or outstanding topographic features. Continuously flowing, with numerous flow characteristics, i.e., falls, cascades, rapids, pools, meanders or adjacent "distinctive" landforms, rockforms, or vegetation. The landscape elements of landform, vegetation, water, color, and related factors result in notable or exemplary visual features and/or attractions. Forest cover is continuous or if broken, has a high degree of vegetation patterns and unusual or outstanding diversity in plant species. Scenery and visual attractions are highly diverse over the majority of the river or river corridor. Special features might include focal points that are visually striking, particularly memorable, or rare in the province, e.g., rock arches, deep potholes, large or unusual trees; exceptional opportunities to view wildlife or wildflowers; important historic or cultural features.

Class B. Outstandingly remarkable scenic values with regional significance (Distinctive Regionally) include land forms with regionally significant topographic features. The landscape elements of landform, vegetation, water, color and related factors are of physiographic province significance. The forest cover is continuous or if broken, has a high degree of vegetation patterns which are regionally significant. Special features such as landforms, rockforms and vegetation are similar to others considered to be "distinctive" within the physiographic province. The river corridor may possess a moderate to high number of "special place" areas.

Class C . Locally significant scenic values indicate some variety in the terrain, but landform features are typical throughout the physiographic province. Forest cover is continuous with some variety in vegetation patterns and a common diversity in plant species. Corridors exhibit what would be considered a typical number of "special places" for the local area.

Class D. Locally common scenic values to the Forest indicate landscape elements, which are common to streams throughout the Forest. An occasional "special place" may be found along the river/stream corridor, but in general the streams and their corridors are non-distinctive.

Fisheries/Aquatic Values

Class A. Outstandingly remarkable fisheries/aquatic values with national significance feature wild trout and native trout or resident fish populations occurring solely because of the character of the stream. The area within the river corridor provides exceptionally high quality habitat for fish and aquatic organisms of national importance or may provide unique habitat or fish or an essential bridge in habitat conditions for federal- or state-listed threatened, endangered, or sensitive species. Diversity and quality of habitats are important considerations and could, in themselves, lead to a determination of outstandingly remarkable.

**THE PROCESS:
HOW RIVERS ARE
EVALUATED**

Class B. Outstandingly remarkable fisheries/aquatic values with regional significance indicate an area within a river corridor which provides quality habitat for fish or aquatic organisms that are unique to the physiographic province in which the area is located. It is important to recognize diverse habitats since they in themselves could have outstandingly remarkable values.

Class C. Locally significant fisheries/aquatic values indicate high quality fish or aquatic community habitat. These values are usually associated with quality fishing areas, however, these types of areas are common throughout the physiographic province.

Class D. Locally common fisheries/aquatic values to the Forest indicate that fish or aquatic community habitats are not unique, rare, or critical. These areas are common throughout the Forest.

Wildlife Values

Class A. Outstandingly remarkable wildlife value of national significance include resident wildlife populations that occur only because of the character of the stream and/or the riparian vegetation adjacent to the stream. The area within the river corridor provides exceptionally high quality habitat for wildlife of national significance or may provide unique habitat or a critical link in habitat conditions for federal- or state-listed threatened, endangered, or sensitive species. Diversity of habitats is an important consideration and could, in itself, lead to a determination of outstandingly remarkable.

Class B. Outstandingly remarkable wildlife values of regional significance indicate that the area within the river corridor provides quality habitat for wildlife not common to the physiographic province. Diversity and quality of habitats is an important consideration and could in itself, lead to a determination of outstandingly remarkable.

Class C. Locally significant wildlife values indicate high quality wildlife habitat. These values are usually associated with quality hunting or wildlife viewing areas. However, these habitat types are common throughout the physiographic province.

Class D. Locally common wildlife values to the Forest indicate that the wildlife and wildlife habitats are not unique, rare, or critical. These areas are common throughout the Forest.

Geologic Values

Class A. Outstandingly remarkable geologic values of national significance, which indicate that, the river or the area within the river corridor contains an example(s) of a geologic feature, process, or phenomena that is rare, unusual, or unique. The feature(s) may be in an unusually active stage of development, represent a textbook example, and/or represent a significant or rare combination of geologic features.

Class B. Outstandingly remarkable geologic values with regional significance indicate that the river or the area within the river corridor contains an example(s) of a geologic feature, process, or phenomena that is rare, unusual, one-of-a-kind, or significant in the physiographic province.

Class C. Locally significant geologic values indicate the geomorphic features and formations may be significant in the forest, but are typical of those commonly found in the physiographic province. There may be opportunities for geologic study.

Class D. Locally common geologic values to the Forest indicate that the geomorphic features are common throughout the Forest and offer no significant geologic features.

Botanical/Ecological Values

THE PROCESS:
HOW RIVERS ARE
EVALUATED

Class A. Outstandingly remarkable botanical and ecological values with national significance indicate that the riparian forest along the river corridor is contiguous, with no human-caused fragmentation. Geologic features, which harbor unique plants or plant communities, may be present, and there are no exotic and/or invading weed species present. The area within the river corridor could provide exceptionally high quality habitat for plant species of national importance or may provide unique habitat for federally listed threatened and endangered species. The occurrence of nationally rare plant species and/or communities could in itself lead to a determination of outstandingly remarkable if it thrives in a high quality habitat.

Class B. Outstandingly remarkable botanical and ecological values with regional significance indicate that the riparian or bottomland forest along the river corridor is contiguous, with no human-made fragmentation. There may be some localized invasion of exotic and/or invading weedy species, however, the invasions are localized enough to be controllable. Geologic features, which harbor plants or plant communities unique in the physiographic province, or the occurrence of plants species or plant communities uncommon or rare in the province, could in itself lead to a determination of regionally outstandingly remarkable if it thrives in a high quality habitat.

Class C. Locally significant botanical and ecological values indicate that the riparian forest along the river corridor remains largely contiguous, however, there may be fragmentation caused by human activity. Locally significant plant communities may be present along the river corridor. There may also be some uncontrolled invasions of exotic weedy species.

Class D. Locally common botanical and ecological values to the Forest indicate that the plant species and/or communities are common to the area. The Forest may be greatly disturbed by artificial means and/or highly fragmented. Other disturbed and/or artificial communities and uncontrollable invasion of exotics may be present.

Heritage/Cultural Values

Class A. Outstandingly remarkable cultural/historic values of national significance indicate the cultural resource sites within the corridor have unusual characteristics or exceptional research or interpretive values of national significance. These river corridors contain sites of national importance and meet the criteria for listing on the National Register of Historic Places (36 CFR 60).

Class B. Outstandingly remarkable cultural/historic values of regional significance indicate that the river corridors contain sites of regional significance that meet the criteria for listing on the National Register of Historic Places. Sites contain cultural or historic characteristics significant to the physiographic province.

Class C. Locally significant cultural/historic values indicate that the river corridors contain sites of state and local significance that meet the criteria for listing on the National Register of Historic Places. Sites may be similar to other sites known throughout the physiographic region, but are unique to the local area. Some sites may have been disturbed prior to being archeologically recorded. This also includes known sites that have not been evaluated respective to National Register of Historic Places criteria.

Class D. Locally common cultural/historic values to the Forest indicate that the river corridors contain sites common to the Forest or state. Known sites have been determined ineligible for listing in the National Register of Historic Places but may have interpretive value.

**THE PROCESS:
HOW RIVERS ARE
EVALUATED**

CLASSIFICATION CRITERIA

**SUITABILITY
CRITERIA**

The second step is a determination of the potential classification. The National Wild and Scenic Rivers Act (Section 2 (b)) states that "if included (in the National Wild and Scenic Rivers System, each river) shall be classified, designated, and administered" as a WILD, a SCENIC, or a RECREATIONAL river area. The classification selection is based on the conditions of the river and the adjacent land at the time of the evaluation. A river may be divided into segments by these classifications, based on current conditions.

A potential classification determination is needed to guide management of the stream and surrounding lands during the period before a Wild and Scenic River's suitability study is made. In addition to protecting and, to the extent practical, enhancing ORVs, management and development of a river identified as eligible for designation and its corridor will not be modified to the degree that eligibility or classification will be affected.

The following three river classifications are possible. A brief definition follows each classification.

Wild River Areas. Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

Scenic River Areas. Those rivers or sections that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

Recreational River Areas. Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

SUITABILITY CRITERIA

Determinations of suitability for inclusion in the National Wild and Scenic Rivers System are made by state agencies, the Forest Service, and other federal agencies. Criteria that determine suitability include the following:

- ▶ The current status of land ownership and use in the area;
- ▶ The reasonably foreseeable uses of the land and water that would be enhanced, foreclosed, or curtailed if the area were included in the National Wild Scenic Rivers System;
- ▶ The estimated cost of acquisition of land or of an interest in the land if the river area cannot be administered as a wild and scenic river without acquisition or easement as a means of control;
- ▶ The public, state, and local government interest in and potential involvement in management and administration;
- ▶ The amount and status of outstanding minerals.

THE EVALUATIONS: INDIVIDUAL RIVER EVALUATIONS AND CLASSIFICATIONS

RIVER EVALUATIONS: AND CLASSIFICATIONS

LITTLE STONY CREEK - New River Valley Ranger District

LITTLE STONY CREEK (NRV)

The river segment being evaluated for eligibility is approximately 3.2 miles long. It starts at the Jefferson National Forest boundary immediately below the Cascades Recreation Area and goes upstream to the JNF boundary above the Cascades Falls. It is located in Giles County, Virginia.

Little Stony Creek is in the Ridge and Valley Physiographic Province. One distinctive feature of this segment is that it flows in a deeply incised V-shaped mountain valley. The mountainsides rise steeply from the creek to a broad upland over 2000 feet above the creek. The extremely hard sandstone bedrock which caps the mountain tops occasionally breaks off into huge blocks and plunges down the steep slopes. During the Pleistocene period, the slopes bordering Little Stony Creek produced enormous talus deposits which extend down the Creek. The most common feature associated with Little Stony Creek, Cascade Falls, plunges over a sandstone rim and down a shale face.

Little Stony Creek is a tributary of the New River and with a watershed that is 18.8 square miles in size. The average annual streamflow in the channel is 23 cubic feet per second. The segment under consideration has an average gradient of 6.2 percent and includes a number of cascades. Water quality is good.

Existing NFS ownership of the bank along the segment being evaluated is 100 percent on the east side and approximately 2.8 miles on the west side.

Cascade Falls is an outstanding scenic attraction as it falls some 70 ft. into a plunge-pool surrounded by an amphitheater of sandstone and shale cliffs. Mixtures of hemlock, pine, oaks, maples, and other hardwoods clinging to the steep slopes provide a highly textured canopy for a large diversity of understory species including jack-in-the-pulpit, ferns, wildflowers, and many colorful mushrooms. The rock talus that has rolled down from the cliffs above left numerous automobile size boulders in the creek-bed, creating numerous whitewater cascades, pools, and "special place" nooks and crannies.

Little Stony Creek and the Cascades Picnic Site is probably the most frequently used area on the Forest. The Cascades National Recreation Trail (NRT) connects the picnic area just above private lands with the Cascades 3 miles above. Two miles of trail suffered substantial damage in flooding during the winter of 1996, resulting in the "lower" trail being closed. The repairs are funded and Cascades Falls is accessible by a paralleling portion of trail until the lower trail is opened again. The area is extensively used by all ages from young school groups, numerous college students from nearby colleges, to families. A viewing platform near the bottom of the Cascades was completed several years ago and another platform near the top of the falls was completed in December 1996. Major improvements to the picnic grounds and facilities also have been recently completed. Recreation uses for the stream segment include viewing nature and geological features, fishing, day-hiking, and photography.

Special fishing regulations apply to that portion of Little Stony Creek on NFS lands, mostly below the Cascades. These regulations permit fishing only with single hook artificial lures, only trout 9 inches or more can be kept, and no bait may be in one's possession while fishing in these waters. Little Stony is listed by the Virginia Department of Game and Inland Fisheries as a Wild Natural Trout, Class II stream. A stream of such rating is considered a good wild trout stream. Little Stony contains both rainbow and brook wild

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**LITTLE STONY
CREEK (NRV)**

trout. The upper reaches contain native brook trout, but rainbow trout comprise most of the trout populations below the Cascades. It is a popular trout stream.

Little Stony Creek Eligibility Evaluation

Scenic Values: This segment of Little Stony Creek is certainly distinctive and has outstandingly remarkable scenic values of regional and statewide scenic significance. Its combination of rockform, landform, waterform and vegetation diversity ranks the area above many areas within the Commonwealth. The area exhibits numerous areas that are considered "special places" and has a number of outstanding focal views of its many natural features. The waterfall is one of only a few of this caliber in the physiographic province and state.

A **Class B** rating, regionally significant, is assigned.

Recreational Values: Little Stony Creek is already a heavily used recreation area with the well known Cascades as the destination of most visitors. With the recent addition of the upper viewing platform and improvements to the picnic area, the area will probably receive even more use. Visitors to Cascades come from a wide area of Southwest Virginia. The recreation opportunities are significant at a regional level, but not at a national level.

A **Class B** rating, regionally significant, is assigned.

Fisheries/Aquatic Values: Little Stony Creek has a high quality wild trout fishery and is a significant Forest fishery resource.

A **Class C** rating, locally significant, is assigned.

Wildlife Values: There are no known native or exotic terrestrial wildlife species that are dependent upon this stream for their existence. Moreso than Big Stony, Little Stony has limited habitat diversity. It has a tremendous amount of exposed rock in the surroundings, but that is not uncommon for the area in general. Much of the common game and non-game species associated with hardwoods of this physiographic province are found around Little Stony.

A **Class D** rating, locally common, is assigned.

Heritage/Cultural Resource Values: Only one site has been registered along Little Stony Creek. This is the remains of a 19th and 20th century saw mill (steam-driven engine). No other sites have been found along this stream and due to the steepness on either side, it is unlikely. Possible exceptions are small overhangs or rockshelters that may have been overlooked from the trail. Sites that might be found proximal to this creek would be locally common to the Forest.

A **Class D** rating, locally common, is assigned.

Botanical/Ecological Values: There are no known rare botanical or ecological values.

A **Class D** rating, locally common, is assigned.

Geological Values: The distinctive V-shaped mountain valley and the Cascades Falls are significant in this physiographic province.

A **Class B** rating, regionally significant, is assigned.

Little Stony Creek Eligibility and Classification

Little Stony Creek is eligible for designation under the National Wild and Scenic Rivers Act. Scenic, recreational, and geological values are rated outstandingly remarkable, regionally significant. It is also free-flowing.

A preliminary classification for the 3.2 miles according to FSH 1909, Chapter 8, is for a recreational river. This determination is based mostly on shoreline development and accessibility. Most of the shoreline is accessible by trail and an old road, the upper trail. Two modern overlooks and connecting bridges have been constructed at the Cascades Falls and two laminated stringer foot bridges are under contract as replacement bridges on the lower trail. Also, the Cascades Picnic Area near the lower portion of the stream is adjacent to the stream with no screening.

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LITTLE STONY
CREEK (NRV)

STONY CREEK

STONY CREEK - New River Valley Ranger District

The portion of stream being studied for eligibility is 8.3 miles from the confluence of Laurel Branch to the JNF boundary near the confluence with Nettle Hollow. It is in Giles County, Virginia.

Stony Creek (commonly called Big Stony) is in the Ridge and Valley physiographic province and is a tributary of the New River and drains 38.5 square miles with an estimated average annual flow of 48 cubic feet per second. The boulder and cobble channel has a bankfull width of 40 feet and a gradient of 3.9 percent.

Existing National Forest System ownership of the land along the river consists of approximately 7 miles on the north side and approximately 6 miles on the south bank. State Highway 635 closely parallels the length of this section.

Approximately 3.5 miles of Big Stony Creek forms the boundary of Peters Mountain Wilderness. The Appalachian National Scenic Trail crosses on a laminated wood bridge near the intersection of State Road 635 and Forest Service Road 734, and goes through the Peters Mountain Wilderness to the top of Peters Mountain. A small JNF picnic area and a fully accessible fishing trail, the Cherokee Flats Trail, are nearby.

Stony Creek has varying degrees of scenic attractiveness. The lower portion along State Highway 635 has some areas of bubbling whitewater rushing over cobbles and some boulders. Portions are bounded by attractive rock outcrops and a mixture of streamside evergreen and deciduous tree species. Those areas rate as high scenic attractiveness. The clarity and quantity of the streamflow are in themselves very positive scenic attributes. The highway offers direct close visual association with the stream but to some degree, also detracts from the natural landscape. The upper reaches of the stream are more common to the physiographic province and have limited whitewater, less width, and a more passive meandering flow character. In this upper area, adjacent vegetation is quite dense, which severely limits views of the water from the highway.

Whitewater use of the stream is limited to non-stop runs only at very high water. The experience is described as a western-style flush – like paddling a flume – very dangerous and hard to exit. The gradient is steep, over 100 feet per mile for the first 5 miles. There are numerous Class III-IV drops and occasional Class IV-V rapids.

Big Stony is considered one of Virginia's better publicized put-and-take streams with some carryover and wild trout. It is a Class IV Wild Native Trout Stream and is adequately reproducing wild trout populations but has severally reduced summer flow characteristics. It has nearly 6 miles of heavily fished waters. Recreational fishing for stocked trout is a

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major activity on Big Stony.

A very important aquatic resource in Big Stony Creek is the candy darter, Etheostoma osburni. The fish population is localized and declining in the lower New River System and its presence is rare to uncommon. The Commonwealth of Virginia lists it as a species of special concern and the Forest Service lists it as a sensitive species.

Stony Creek Eligibility Evaluation

Scenic Values: Water clarity and quantity with some interesting rock outcrops and instream moderate size boulders are the most positive scenic attributes of this stream. The vegetation mix is generally continuous and is quite typical of other areas in the physiographic province. There is a low to moderate number of "special places" typical of the area along the watercourse. The presence of the state highway in close proximity is a negative deviation to the natural appearing landscape.

A **Class C** rating, locally significant, is assigned.

Recreation Values: This stream segment is an important recreational river on the Forest, primarily for fishing. It is well published and heavily fished. The Cherokee Flats accessible fishing trail and related facilities add significantly to the recreation value of the stream. Other uses include occasional whitewater use in winter or early spring, hunting, hiking, and viewing nature are other uses of the stream. It is one of the more significant streams on the Forest, but common to the physiographic province.

A **Class C** rating, locally significant, is assigned.

Fisheries/Aquatic Values: In Virginia, Etheostoma osburni (candy darter) is generally distributed in Big Stony Creek only. Although six other systems of the New River drainage have its critical habitat requirements, recent records do not indicate the presence of candy darter. Furthermore, the fish is endemic to the New River drainage in the Ridge and Valley of Virginia and the Appalachian Plateaus of West Virginia and is experiencing declines throughout its range. Stony Creek provides essential habitat in preventing this species from becoming federally listed.

A **Class A** rating, nationally significant, is assigned.

Wildlife Values: There are no known native or exotic terrestrial wildlife species that are dependent upon this stream for their existence. The diversity of terrestrial habitats along Big Stony Creek is not considered outstanding. Beaver have created wetlands along stretches of this creek, but these occur primarily in major tributaries leading into Big Stony. A white pine and hemlock component is found here, which is not abundant in the local landscape. Hardwoods occur along the floodplain, as does a heavy holly shrub component. These areas typically provide habitat for a variety of birds that utilize riparian habitats.

A **Class C** rating, locally significant, is assigned.

Heritage/Cultural Resource Values: There are two registered Native American sites along Stony Creek. There is also a significant amount of floodplain, which increases the probability of Native American sites and village sites from the Woodland prehistoric culture period. There is also a high probability of historic homesteads being found along this stream. The predictive model would indicate a potential for more historic and prehistoric sites that would be locally significant.

A **Class C** rating, locally significant, is assigned.

Botanical/Ecological Values: There are no known rare botanical or ecological values.

A **Class D** rating, locally common, is assigned.

Geological Values: Locally geologic values are common throughout the Forest and offer no significant geologic features.

A **Class D** rating, locally common, is assigned.

**RIVER
EVALUATIONS:
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STONY CREEK

CLINCH RIVER

Stony Creek Eligibility and Classification

Stony Creek is eligible for designation under the National Wild and Scenic Rivers Act. Fisheries/Aquatic Values are rated outstandingly remarkable, nationally significant. It is also free-flowing.

A preliminary classification for the 8.3 miles, according to FSH 1909, Chapter 8, is for a recreational river. For the most part, this determination is based on shoreline development and accessibility. The shoreline is largely accessible due to the paralleling state highway. There is also a number of homes on the private lands.

CLINCH RIVER - Clinch Ranger District

The river segment being evaluated for eligibility is approximately 5.5 miles long. It starts at the confluence with Little Stony Creek and goes upstream to the confluence with the Guest River. The study segment is in Scott County, east of Dungannon, Virginia.

This segment includes two interesting geologic features.

Firstly, it flows across the border between two major physiographic (geomorphic) provinces. The upstream end of this river segment, near the confluence with the Guest River, is located in the Appalachian Plateau Physiographic Province. In this province, the Paleozoic sedimentary bedrock layers are generally horizontal and form a plateau which extends for thousands of square miles. Over time, streams eroded and cut down into this plateau and created a dendritic stream pattern.

As the river flows downstream, it crosses into the Ridge and Valley Physiographic Province. In this province the Paleozoic sedimentary bedrock layers have been folded, faulted, and then eroded into a series of parallel ridges and valleys. Over time, streams cut down into these folded bedrock layers, creating a trellis stream pattern.

Secondly, this river segment flows through karst terrain where sinkholes abound. Many sinkholes are located in the rolling hills just south of this river segment. Some sinkholes are within one-quarter mile of the river's edge.

The Clinch River is a tributary to the Tennessee River. The watershed above the 5.5 mile reach being evaluated is 1,130 square miles. Average annual flow is 1400 cubic feet per second. The river has a low gradient of less than one percent, and the channel is over 200 feet wide.

This segment is on the JNF proclamation boundary and only about 0.4 miles of the Forest borders the river. This river segment does, however, potentially tie into the Guest River management. There are plans to provide public access to the Guest River in Scott County,

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immediately above the Guest River's confluence with the Clinch. With the Scott County access, recreation opportunities should be improved on the Clinch. This segment of the Clinch also provides a link between the confluence with the Guest River and the confluence with Little Stony. Both are important JNF streams being evaluated for Wild and Scenic River eligibility.

CLINCH RIVER

This is a pleasant section of stream, but it has no significant rapids or whitewater. Some of the shoreline is in pasture and there are several cabins and homes. A forested backdrop above the pastoral landscape has areas of exposed rock, which add to the attractiveness of the area. The meandering, slow-moving water brings a restful feeling to those using or viewing this segment of river.

The railroad tracks follow the river. Miller Yard, an old rail yard, is still used for storing cars, but gives the appearance of being abandoned.

An overview of the entire Clinch River is worth noting. A state of Virginia scenic river study made in 1990 of another portion of the Clinch considers the Clinch the most pristine of the Southwest Virginia rivers. The river spans 202 miles and includes distances from the Virginia/Tennessee stateline to its headwaters near Tazewell, Virginia. It is host to many federally and state listed endangered and state-listed threatened aquatic fauna. To date, 11 federally listed endangered mussels and one federally listed endangered fish occupy the Clinch. It has 11 state-listed endangered mussels, six state-listed threatened mussels, four state-listed threatened fish, and one state-listed threatened snail.

This is a popular fishing segment with various cool-water gamefish found. Some notable species include crappie, channel catfish, largemouth bass, smallmouth bass, rock bass, pickerel, and white bass. There are no known threatened, endangered, or sensitive aquatic species in this section.

Clinch River Eligibility Evaluation

Scenic Values: This river segment has a general overall attractiveness as it meanders along. There is little variety in flow characteristics and the forested and pastoral vegetation is typical of the region. The channel size and quantity of water running through the relatively pristine pastoral setting are the greatest positive attributes. They exhibit some distinctive qualities. The cliff lines add to the attractiveness but are not visually dominant. They are not considered outstandingly remarkable. The number of "special places" and distinctive areas along this segment are normal to low.

A **Class C** rating, locally significant, is assigned.

Recreation Values: Recreation use is primarily fishing, rafting, and canoeing. With continued development of access on the Guest River, it has the potential to become a more heavily used paddling and fishing stream. In addition, there is potential for additional federal ownership with better public recreation access. The potential for recreation use is significant for the Forest, but common on the larger streams within the physiographic province.

A **Class C** rating, locally significant, is assigned.

Fisheries/Aquatic Values: The segment under evaluation does not harbor the various threatened, endangered, or sensitive species found in other portions of the Clinch. The evaluated segment contains fisheries and aquatic resources representative of a locally significant, high quality recreational fishery.

A **Class C** rating, locally significant, is assigned.

Wildlife Values: Although this river is internationally known for its diverse aquatic fauna, its significance to wildlife species is low. The recommended rating for this river is a **Class C** because it provides habitat for waterfowl and species associated with larger stream systems and small floodplains – habitat types not common to the local area.

A **Class C** rating, locally significant, is assigned.

Heritage/Cultural Resource Values: The Clinch River has a number of large heritage/cultural sites downstream of the study area. The study area offers a high probability of heritage/cultural resources. Topography includes cliff-lines (possible rockshelters), toe ridges, saddles, finger ridges, and a significant amount of flood plain where large Woodland Period Native American villages might be found. Historic homesteads are another distinct possibility along the Clinch. There is potential for finding outstandingly remarkable values with regional significance.

A **Class B** rating, regionally significant, is assigned.

Botanical/Ecological Values: This segment of stream contains *Spiraea virginiana*, Virginia spiraea, a plant that has a federally-listed status of threatened and state listed status of endangered.

A **Class A** rating, nationally significant, is assigned.

Geological Values: This segment of river contains geologic values that are unusual and significant in the physiographic province.

A **Class B** rating, regionally significant, is assigned.

Clinch River Eligibility and Classification

This segment of the Clinch River is eligible for designation under the National Wild and Scenic Rivers Act. Heritage/cultural and geological values are rated regionally significant. Botanical/ecological values are rated outstandingly remarkable, nationally significant. It is also free-flowing.

Preliminary classification for the 5.5 miles, according to FSH 10-9, Chapter 8, is as a recreational river. This determination is based on shoreline development and accessibility. The railroad runs the length of the segment with a paralleling road into the Miller Yard.

DEVIL'S FORK - Clinch Ranger District

The river segment evaluated for eligibility is approximately 3.75 miles from the confluence of Stony Creek at State Route 619, upstream to the Forest 's boundary above Three Forks. It is located in Scott County, Virginia.

Devil's Fork is located near the southeastern border of the Appalachian Plateau Physiographic Province. In this border zone, the bedrock layers are tilted generally in a south and southeasterly direction, at a 5-degree to 15-degree angle of dip. The bedrock along the creek is sandstone and siltstone of the Lee Formation (Pennsylvanian age,

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about 300 million years old).

In the central portion of the stream below Three Forks, the stream flows down the slope of the underlying bedrock layers. In this portion of the stream, the bedrock layers have a tilt (dip) of about 6 degrees to the east.

DEVIL'S FORK

An old coal prospect is located on the south side of the creek, opposite the mouth of Saint Branch. This area near Saint Branch marks the point where the outcrop of the little Fire Creek coal bed traverses Devil's Fork. Near this area, there is an old coal car and a short road up to the mine spoils and exploration holes. The evidence of past mining is more an area of interest rather than a detraction from the recreation experience.

Devil's Fork is a tributary to the Clinch River. The reach under consideration has a boulder and cobble channel with an average gradient of 6 percent and an average annual streamflow of 16 cubic feet per second. The watershed drains an area of 12.6 square miles.

Existing NFS ownership of the banks is near 100 percent, with only a short section of stream on private land below the Forest boundary and State Route 619.

Devil's Fork is an attractive natural appearing stream with an immature and mature overstory of poplar, hemlock, and birch, with much rhododendron in the understory. The central portion of the stream below Three Forks goes through a gorge with large rock outcrops. In this portion of the stream, the stream flows down the slope of the underlying bedrock layers. These layers have tilt (dip) of about 6 degrees to the east. Many of the side drainages to the north are also in steep rocky drainages with steep gradients. Nearer the top of drainage to the west, some of the less steep branches are in private ownership.

In recent years, a four-mile loop trail was constructed in Devil's Fork drainage and a two-mile side trail to the top of Little Mountain. The lower part of the trail is actually an old logging and coal mining railroad grade that threads its way up the tumbling stream with numerous small cascades. The trail follows and frequently crosses the stream. About 1 1/2 miles up from the parking area, a cascade empties into the Devil's Bathtub, a deep tub-shaped hole carved out of solid rock by the swirling stream. Farther along the trail are the mouth of Corder Hollow and a 20-foot waterfall.

Public interest in the Devil's Fork drainage has been relatively high over the last 15 years, and much of the trail system was constructed by the Devil's Fork Trail Club. Most of the recreation use is day-hiking to the Devil's Bathtub. There is also some backpacking farther up the trail system.

Historical fisheries survey data show the stream once contained brook and rainbow trout. The stream is not presently stocked and does not receive significant fishing activity. Devil's Fork is listed as a class VI fishery. A class VI fishery does not contain a significant number of trout or a significant population of warm-water gamefish.

Devil's Fork Eligibility Evaluation

Scenic Values: This stream has a number of high scenic attractiveness areas due to the combination of diverse multi-aged overstory of evergreen and hardwood species and a wide variety of understory species. A full range of textures and colors are present. A number of rock outcrops and cliffs can be fully experienced by people walking the trail along the stream. A variety of stream flow characteristics exhibited by small cascades and pools are present. Stream clarity is good with moderate flow in a small-scale landscape. A moderate number of "special places" exist, including the Devil's Bathtub and a small

waterfall. The area has high scenic intactness and is locally significant.

A **Class C** rating, locally significant, is assigned.

Recreational Values: There has been much work on the public's part to develop the trail system and protect the Devil Fork drainage. Predominate recreation use is hiking in a mostly undisturbed area and viewing several unique stream features. The recreation opportunities are uncommon on the Forest, but common throughout the physiographic province.

A **Class C**, locally significant, is assigned.

Fisheries/Aquatic Values: Locally common fish and aquatic species are found here and aquatic community habitats are not unique, rare, or critical.

A **Class D**, locally common, is assigned.

Wildlife Values: This stream lies within an area inventoried in the Roadless Area Review and Evaluation II (RARE II) and the Jefferson Forest Plan Revision Roadless Inventory. While historic disturbance is evident, this area currently receives little disturbance other than recreationists accessing the area along the trail. Due to its roadless character, the area is not common on the District. Rock outcroppings and small cliffs exist along the stream corridor, providing den and shelter sites for a variety of species and possibly roost sites for bats. The northern long-eared myotis was recently documented along this stream course in 1993.

A **Class C**, locally significant, is assigned.

Heritage/Cultural Resource Values: No heritage/cultural resource surveys have been done around Devil's Fork by forest archaeologists. This area may have sandstone rockshelters that were inhabited by transient Native Americans. Any level areas along Devil's Fork have a high probability of past Native American habitation.

A **Class C**, locally significant, is assigned.

Botanical/Ecological Values: A **Class D** rating, locally common, is assigned.

Geological Values: The geologic values are common throughout the Forest and offer no significant geologic features.

A **Class D** rating, locally common, is assigned.

Devil's Fork Eligibility and Classification

Devil's Fork is not eligible for addition to the National Wild and Scenic Rivers System. There are no inventoried outstandingly remarkable resources.

GUEST RIVER - Clinch Ranger District

The river segment evaluated for eligibility is approximately 6.5 miles from the confluence with the Clinch River upstream to State Route 72 bridge just south of Coeburn, Virginia. It is located within Wise and Scott counties, Virginia.

This segment of the Guest River is on the Virginia State Scenic River system.

RIVER EVALUATIONS: AND CLASSIFICATIONS

DEVIL'S FORK

GUEST RIVER

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GUEST RIVER

The Guest River is near the southeastern part of the Appalachian Plateaus Physiographic Province. The Guest River has cut a 400 foot deep gorge into hard sandstone layers along the southeastern border of the Appalachian Plateau. Rockslides and flooding are dominant geologic processes shaping the Guest River today as well as for the past thousands of years. The rock cliffs along the gorge are the source of huge blocks of bedrock, which sporadically break away from the cliffs and tumble down into the gorge.

The bedrock layers in the gorge along the river are arched into a gentle fold, which is part of the Powell Valley Anticline. At the mouth of Hurricane Creek, the northeast-trending axis of the Powell Valley Anticline traverses the Guest River.

This river segment is a tributary to the Clinch River. The watershed area above the 6.5-mile reach under consideration is 90 square miles. Average flow is estimated to be 112 cubic feet per second. The channel gradient averages 1 1/2 percent, but drops much faster in places, making it a very technical whitewater stream. The river is free-flowing but does have a concrete diversion structure at one point to protect the railroad grade.

Existing NFS ownership and optioned private land consists of approximately 3.5 miles on the west bank and 1.7 miles on the east bank. The Forest Service has an acquisition plan for purchasing the remaining stream banks, and much of the gorge, to protect the unique qualities and provide recreation access. Most of the gorge is forested, excepting several home sites near the river in Scott County. Future plans include providing public access to the lower end of the gorge from the Scott County side.

Presently, the only public access to the 6.5-mile section is a newly constructed road down to the river from State Route 72. State roads 660 and 661 are to the northwest of the river and Route 660 runs parallel close to the rim of the gorge for about a mile. These roads are not seen from the gorge trail or Guest River, thus providing a feeling of remoteness.

The Guest River leaves the plateau country of Wise County to plunge 320 feet through the sandstone gorge to the Clinch River 6 miles downstream. The stream and the surrounding gorge are lined with large rock outcroppings and chimneys and cliff walls. The stream setting is complete with waterfalls, cascades, large pools, rhododendron, and a thick natural looking forest.

The Guest River and associated gorge is a highly attractive landscape in Southwest Virginia. The steep sandstone cliffs are punctuated with clinging vegetation, both overstory evergreen and hardwood plus a variety of shrubs and herbaceous plants. The stream, visible from the old railroad-grade-turned-hiking-trail, offers many views of whitewater cascades and pools interspersed among rocks and boulders that range from football size to garage size. The historic railroad grade and associated tunnel, and the Native American cultural sites are positive attributes that complement the aesthetic appeal of the area. The area is rated high in attractiveness and scenic integrity under the Forest Service's scenery management system.

In 1991, the Forest Service accepted a donation from Norfolk Southern of 5.57 miles of abandoned railroad through the gorge. Known as Interstate Railroad Company, it spans an area that begins approximately 1000 feet below the bridge on Route 72 to the Guest's confluence with the Clinch. Along with this ownership came interest and expectation from the local communities about development of the unique recreation opportunities within and adjacent to the gorge. Initial funding was made available and was used to prepare a master plan for the area, deck the railroad trestles, harden a portion of the trail for accessibility, acquire some key tracts, including the one needed for the access road, and contract construction of the access road and parking area. In 1993, Wise County received Intermodal Surface Transportation Efficiency Act (ISTEA) funding to pave the newly

constructed access road and parking area. Ultimately, improvements of the entire Guest River Gorge project are anticipated to exceed \$2 million dollars. An estimated 25,000 visitors a year are expected when the trail development is complete.

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Future plans for the Gorge include three public access points, parking areas, a section of trail that would be made fully accessible, interpretation of the cultural and natural resources in the Gorge, and facilities at each parking area. There is also a strong interest in camping facilities and a hands-on museum nearby. The trail will be open to hiking and bicycle riding and ultimately, a concessionaire may provide rental bicycles and golf carts.

GUEST RIVER

There is some whitewater recreation use on the river, which is considered one of the best heavy duty whitewater rivers in Virginia. It is a highly technical whitewater stream with a difficulty rating of IV-V(VI) and recommended for experts only. It is best run at higher flows after a day of moderate rain during winter or spring.

The Guest River contains a good cool water recreational fishery. Reproducing populations of smallmouth bass, sunfish, and several chub species are found in the stream.

The Guest River Gorge and surrounding area has a high potential for the presence of heritage/cultural resources. The area has been extensively surveyed for these resources in response to timber management, natural gas drilling operations, and road construction. These surveys have produced 35 sites that have been recorded with the State Historic Preservation Officer. The majority of the recorded sites are rock shelters or rock overhangs. There is evidence that some of the shelters were occupied as early as the Early Archaic Native American Culture Period ca. 8500 B.C.

Twenty-four percent of the recorded sites in the Guest River Gorge area have been Phase II surveyed. At least 41 percent of the recorded sites have been disturbed. The disturbance has been extensive, however, there remains a great deal of information to be gained from future scientific investigations.

The Guest River Gorge and its tributaries offer potential interpretive possibilities with regard to the plentiful cultural resources associated with the river.

Guest River Eligibility Evaluation

Scenic Values: The Guest River and associated gorge are highly distinctive in the Appalachian Plateau physiographic province. The combination of a variety of waterflow characteristics, towering cliffs, variety of vegetation, and huge boulders in and near the river make the area distinctive within the region. It has numerous special places and focal points of visual interest created by its natural elements.

A **Class B** rating, regionally significant, is assigned.

Recreation Values: When fully developed, it will be used for a variety of recreation activities including whitewater recreation, cool water fishing, cross-country skiing, hiking, bicycling, viewing scenery and wildlife, and interpretation. Much of the trail will also be fully accessible. The project already is a successful partnership with the local communities and will be marketed heavily as one of the major recreation opportunities in Southwest Virginia. It clearly has the potential of drawing a significant number of visitors from other parts of Virginia and surrounding states.

A **Class B** rating, regionally significant, has been assigned.

Fisheries/Aquatic Values: The stream contains locally common fish and aquatic species.

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

The aquatic community habitats are not unique, rare, or critical.

A **Class D** rating, locally common, has been assigned.

GUEST RIVER

**LITTLE STONY
CREEK (CRD)**

Wildlife Values: While the Gorge provides spectacular scenery, access for wildlife species into and out of the Gorge is difficult. Wildlife use is generally limited to species that have relatively small ranges and stay within the Gorge or can fly in and out of the area. The proposed plans for developing this area into a significant recreational spot could further deter mobile wildlife species by creating the risk of harassment or exposure in the Gorge. Although the potential for high quality wildlife habitat exists and one sensitive species, the green salamander (*Aneides aeneus*), has been documented within the stream corridor, the area does not have enough significance to wildlife to warrant a high classification.

A **Class C** rating, locally significant, has been assigned.

Heritage/Cultural Resource Values: The Guest River and the surrounding gorge area can be characterized as having a high potential for the presence of heritage/cultural resources. Surveys have produced 35 sites that have been recorded with the State Historic Preservation Officer. The majority of the sites are rock shelters or rock overhangs. While some sites have been disturbed, a great deal of information remains to be gained from future scientific investigations. The Guest River also offers potential heritage interpretive possibilities.

A **Class B** rating, regionally significant, has been assigned.

Botanical/Ecological Values: This segment of river contains *Spiraea virginiana*, Virginia Spiraea, a plant that has federally-listed status of threatened, and state-listed status of endangered.

A **Class A** rating, nationally significant, has been assigned.

Geologic Values: This segment of the river contains examples of unusual and significant geologic features in the physiographic province.

A **Class B** rating, regionally significant, has been assigned.

Guest River Eligibility and Classification

The Guest River is eligible for designation under the National Wild and Scenic Rivers Act. Scenic, recreational, heritage/cultural, and geological values are rated outstandingly remarkable, regionally significant. Botanical/ecological values are rated outstandingly remarkable, nationally significant. It is also free-flowing.

The preliminary classification for the 6.5 miles according to FSH 1909, Chapter 8, is for a recreational river. This determination is based on planned and approved access roads and trailhead parking facilities, the planned facilities adjacent to the river, and the paralleling railroad trail and bridges. There is the one diversion structure and substantial evidence of human activity. With the planned access roads and the old railroad bed, the trail is readily accessible.

LITTLE STONY CREEK - Clinch Ranger District

The portion of stream being studied for eligibility is approximately 8.5 miles from the confluence of Clinch River to Forest Service Route 700, in Scott County, Virginia.

This segment is located along the southeastern border of the Appalachian Plateau physiographic province. In part of this border zone, adjacent to the Ridge and Valley province, geologic forces pushed up and overturned the bedrock layers along the edge of the plateau. The northeast-trending Hunter Valley Fault slices through the mouth of Little Stony Creek. Between the Hanging Rock area and the mouth of Little Stony Creek, the bedrock layers have been folded and overturned by faulting and thrusting. The bedrock layers jut out of the ground at steep angles (30 to 80 degrees angle of dip).

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

**LITTLE STONY
CREEK (CRD)**

There is a dramatic difference in Little Stony Fork above and below the 2,150 foot elevation near Forest Service Road 701. Upstream from this area, Little Stony Creek flows in a roughly U-shaped valley, incised about 200 feet into the plateau surface. Downstream from this area, Little Stony Creek flows in a deep V-shaped valley, incised 400 to 600 feet below the plateau surface.

This river segment is a tributary to the Clinch River. The 16.4-square-mile watershed has an average annual flow of 20.4 cubic feet per second. The reach under consideration has an average gradient of 3.5 percent. All of the stream banks from the Hanging Rock Picnic Area to FS 700 are in NFS ownership. The remaining approximately one-mile-stretch between the picnic area and the confluence with the Clinch River is in private ownership. Much of the Little Stony watershed is in private ownership and the entire watershed is visible from the stream above Hanging Rock Picnic Area is NFS land.

The stream appears to be in a fairly natural environment. Much of the overstory vegetation is cove hardwood and hemlock. Mountain laurel and rhododendron are abundant in the understory along the stream.

The portion of Little Stony Creek that flows through the U-shaped valley bottom is attractive but fairly typical of other creeks in the physiographic province. The portion downstream from Forest Service Road 701 is distinctively different. Hikers on the streamside-trail experience several waterfalls cascading into pools and bubbling over moderately sized rocks. Water clarity appears high and water flow is generally substantial. The 400 foot high rock cliffs caress a variety of lush vegetation both in the overstory and understory. Many textures are present, created by understory mosses, ferns, mushrooms, rhododendrons, bark, and exposed rocks.

The Little Stony National Recreation Trail parallels the lower portion of the stream downstream from FS 701. The trail was built on the site of an old narrow gauge railroad with foot bridges built on the original rock abutments. A new 100 foot concrete and treated beam foot bridge was recently constructed across a side drainage, Corden Branch. Above FS 701, the Chief Benge Scout Trail follows Little Stony Creek. It runs from the trailhead at FS 701 to High Knob tower. Near the Hanging Rock Picnic Area, there is a large rock outcrop of the Hunters Valley fault for which the Hanging Rock Picnic Area was named. Near the top of the gorge there are several very nice waterfalls and large pools.

There is local interest in reconstructing the Little Stony NRT to make it fully accessible from the trailhead on FS 701 down to the waterfalls just below the upper foot bridge. A small accessible platform overlooking the falls has been suggested.

Little Stony Creek is a stocked trout stream above FS 701. It is listed as a Class VI trout stream by the Virginia Department of Game and Inland Fisheries.

There is one sensitive species, the green salamander (*Aneides aeneus*).

Little Stony Creek Eligibility Evaluations

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

**LITTLE STONY
CREEK (CRD)**

Scenic Values: About 50 percent of Little Stony Creek has distinctive visual characteristics in rockform, landform, and waterform. These characteristics combined with an attractive variety of vegetation make the area a distinctive visual asset to the region. A moderate to high number of special places are present in the gorge area.

A **Class B** rating, regionally significant, is assigned.

Recreation Values: Hiking opportunities are good with the Chief Benge Scout Trail and the Little Stony NRT following the stream. The stream segment also goes through Hanging Rock, a rustic Forest Service picnic area. The drainage is used for hunting, fishing, viewing scenery and nature from several prominent rock outcrops, viewing water falls, and hiking. The recreation opportunities are significant for the Forest, but common within the physiographic province.

A **Class C**, locally significant, is assigned.

Fisheries/Aquatic Values: The fisheries and aquatic resources represent a locally significant and high quality recreational fishery.

A **Class C**, locally significant, is assigned.

Wildlife Values: Little Stony Creek lies within a RARE II area but is not inventoried as roadless in the Forest Plan Revision Inventory because of its small size. The stream course flows through a 400-foot deep gorge approximately 1 3/4 miles long and varying in width from 1700 feet to 2,500 feet. The topography is very steep with rock outcrops and the vegetation is oak-hickory changing to oak-poplar in the very bottom. Pitch pine and table mountain pine are found in the rocky bluffs. The understory is rhododendron and mountain laurel. The last logging along the stream corridor occurred in the 1920s. One sensitive species is known to occupy Little Stony Creek in large numbers – the green salamander (*Aneides aeneus*).

A **Class B**, regionally significant, is assigned due to its diversity of habitats, significance to a forest sensitive species, and its roadless character.

Heritage/Cultural Resource Values: No heritage/cultural resource surveys have been done in this area nor are there any registered sites. There is high potential for rockshelters along the stream and sites in the flood plain at the confluence of Little Stony Creek and the Clinch River. There is the potential for locally significant sites.

A **Class C**, locally significant, is assigned.

Botanical/Ecological Values: There are no known rare botanical or ecological values.

A **Class D** rating, locally common, is assigned.

Geologic Values: The segment of stream contains examples of geologic features that are unusual and significant in the physiographic province.

A **Class B** rating, regionally significant, is assigned.

Little Stony Creek Eligibility and Classification

Little Stony Creek is eligible for designation under the National Wild and Scenic Rivers Act. Scenic, geological, and wildlife values are rated outstandingly remarkable, regionally significant. It is also free-flowing.

A preliminary classification of the 8.5 miles according to FSH 1909, Chapter 8, is for a recreational river. This determination is based mostly on the development of the NRT with the modern bridge across Corden Branch, road access at Hanging Rock Picnic Area, access to the stream by FS 701, and paralleling FS 700.

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

ROARING BRANCH - Clinch Ranger District

**LITTLE STONY
CREEK (CRD)**

This segment of Roaring Branch being studied for eligibility is approximately 3 miles long starting at Alternative Route 58 to its headwaters. Roaring Branch is just outside of Big Stone Gap in Wise Co., Virginia.

**ROARING
BRANCH**

This segment is located near the southeastern border of the Appalachian Plateaus Physiographic Province. In this border zone, the bedrock layers have been folded and eroded into long ridges and valleys which are more typical of the nearby Ridge and Valley Province.

Roaring Branch provides a good example of how bedrock structure and geologic processes controlled the development of the stream and the landscape of the Roaring Branch watershed. The Roaring Branch watershed developed on the Roaring Branch Syncline.

The Roaring Branch Syncline developed in ancient geologic time. Deep in the earth, the bedrock layers were folded into a trough or syncline. Later, this section of bedrock was uplifted during the mountain-building process.

At the surface of the earth, erosion cut into the syncline or trough. Erosion carved out a landscape that conforms to the shape and scale of the syncline or trough. This conformity is so close that the valley bottom containing Roaring Branch follows almost exactly the axis of the syncline or trough.

Roaring Branch is an excellent example of a "structural landform" developed by erosion and controlled by the structure of the underlying bedrock.

This stream is a tributary to the Powell River. The average gradient of the reach under consideration is nearly 8 percent. Average annual flow in this small steep boulder and cobble channel is estimated to be 2 cubic feet per second. The watershed is 1.6 square miles in size.

The confluence of Roaring Branch with the Powell River is just below the Forest boundary on U.S. 23. From U.S. 23 upstream, the stream banks are entirely in NFS ownership. Also, the drainage – except possibly for several small areas on the ridge top to the south – is in NFS ownership.

Roaring Branch drainage is one of the finest natural settings in Southwest Virginia. This first mile of stream falls rapidly through a gorge with steep rock-faces and large 300-plus year old hemlock with rhododendron understory. People walking along the streamside trail are offered a continuous series of visual delights, particularly in the steeper gorge section. The stream has numerous free-fall small cascades, cascades over tilted bedrock troughs, many small pools flowing through the boulder and cobble-strewn stream channel. The moss-covered steps erected by the Civilian Conservation Corp (CCC) and the 300-year old towering hemlocks create a nostalgic natural aesthetic in a tightly constricted landscape edged with steep side slopes and rock cliffs. The abundance of mosses, ferns, and rhododendrons accompanied by the sounds of rushing water create a lush environment for the visitor to this distinctive landscape.

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

The main recreation use of the watershed is hiking the Stone Mountain Trail. The trail starts at the mouth of Roaring Branch and continues to climb to Butte Knob, a spectacular crag (at about 2900 feet) that boasts one of southwestern Virginia's best views.

**ROARING
BRANCH**

Recreation use is fairly light, primarily because there is limited parking opportunity. With adequate parking and an increased interest in dispersed recreation opportunities in this area, the watershed has the potential of being a popular area.

Over most of the drainage, mineral rights reserved with water rights are held by Virginia Coal and Iron Company.

Historic sampling data shows an established population of brook and rainbow trout in Roaring Branch. In 1951, a fisheries survey described Roaring Branch as a Grade A stream with excellent spawning habitat for trout, and noted it had a brook trout population only. Roaring Branch, today, is not actively managed for recreation fishing. It has no known recommended fisheries use and no known threatened, endangered, or sensitive fish or aquatic species.

Roaring Branch Eligibility Evaluations

Scenic Values: The steamcourse and steep-sided drainage created by Roaring Branch lay the foundation for a highly aesthetic compact environment. The flow characteristics of white-water and pools running through the boulder-strewn channel and lush vegetation below the towering 300-year old hemlocks combine to make this a distinctive scenic landscape within the region. A moderate-to-high number of small "special places" makes the entire drainage a "special place" in its own right.

A **Class B** rating, regionally significant, is assigned.

Recreation Values: The most important recreation use in the Roaring Branch drainage is day hiking on the Stone Mountain Trail. This is an extremely nice trail through old growth timber along the cascading stream. Use is light, but would be expected to increase with improvements to the trailhead. In addition to day hiking there is backpacking, fishing, hunting, nature study, and photography. It is one of the better stream-related recreation opportunities on the Forest, but common to the physiographic province.

A **Class C** rating, significant for the Forest, has been assigned.

Fisheries/Aquatic Values: Roaring Branch contains locally common fish and aquatic species; aquatic community habitats are not unique, rare, or critical.

A **Class D** rating, locally common, is assigned.

Wildlife Values: Roaring Branch lies within a RARE II area which has experienced no disturbance other than recreational use of the trail for at least 50 years. Scattered dense stands of large hemlock are present along the streambanks; rock outcrops are also present. Small sawtimber-sized mixed hardwoods exist along its length. A rating of **Class C** is recommended for this stream due to its undisturbed state and mature (probably considered old growth) pockets of hemlock. These two qualities in themselves are locally significant values, however, the habitat types along this stream are common throughout the Forest.

A **Class C** rating, locally significant, is assigned.

Heritage/Cultural Resource Values: No heritage/cultural resource surveys have been done on Roaring Branch by JNF archaeologists. The potential, however, is always high for location of prehistoric sites up level areas along a stream and particularly at the stream source where there are springs. Also, the potential is high for rockshelters in steep areas along sandstone outcrops where stream erosion is evident.

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

RUSSELL FORK

A **Class C** rating, locally significant, is assigned.

Botanical/Ecological Values: There are no known rare botanical or ecological values.

A **Class D** rating, locally common, is assigned.

Geological Values: Roaring Branch is an excellent example of a "structural landform" developed by erosion and controlled by the structure of the underlying bedrock – a rare phenomena in the physiographic province.

A **Class B** rating, regionally significant, is assigned.

Roaring Branch Eligibility and Classification

Roaring Branch is eligible for designation under the National Wild and Scenic Rivers Act. Scenic and geological resources are rated outstandingly remarkable, regionally significant. It is also free-flowing.

A preliminary classification for the 3 miles, according to FSH 10-9, Chapter 8, is for a wild river. This determination is based on the lack of any shoreline development and accessibility by foot trail only.

RUSSELL FORK - Clinch Ranger District

The river segment being evaluated for eligibility is approximately 8.7 miles long. It starts at the railroad bridge crossing above Elkhorn City, goes upstream to the confluence of White Branch with Russell Fork and, also goes upstream on the Pound River for approximately 1 mile to the gauging station below John W. Flannagan Reservoir. This segment is in both Dickenson Co., Virginia, and Pike Co., Kentucky.

Many of the unique qualities of Russell Fork are recognized. It is the only stream in or adjacent to the Jefferson National Forest that is on the U.S. Park Service 1982 Nationwide Rivers Inventory of significant free-flowing rivers. This inventory listed both its recreational and geological values as outstanding. The state of Virginia studied the river for designation as a State Scenic River and prepared a draft report. Presently, there is interest in increasing the number of water releases. The Corp of Engineers is doing a study, An Operational Change to Provide Recreational White Water, for the John W. Flanagan Reservoir. Several books and reports detail the outstanding value of this segment from a whitewater-enthusiast point-of-view.

Russell Fork is in the Appalachian Plateaus physiographic province. The Russell Fork river has eroded deeply into the Plateau. As a result, this segment of the Russell Fork river now flows across the bottom of a canyon which is 800 feet deep at the Breaks Interstate Park.

The Russell Fork segment flows through an important geologic transition zone between Pine Mountain and the surrounding plateau. In this plateau, the Paleozoic sedimentary bedrock layers are generally horizontal and form a dissected plateau that extends for thousands of square miles. In contrast, at Pine Mountain the bedrock layers are faulted and bent upward. As a result, Pine Mountain juts up from the plateau as a distinctive,

RIVER EVALUATIONS: AND CLASSIFICATIONS monoclinal ridge extending more than 100 miles across Tennessee, Kentucky, and Virginia.

The Russell Fork segment marks the northeast end of the 100-plus mile long Pine Mountain. It is in the transition zone between the inclined bedrock layers of Pine Mountain and the horizontal bedrock layers of the Plateau.

ROARING BRANCH

Russell Fork is within the Big Sandy drainage basin and a tributary to the Ohio River. The watershed area above the reach under consideration is 526 square miles. The average annual flow in the river in this reach is estimated to be 630 cubic feet per second. To protect its outstanding values, the Kentucky State Nature Preserves Commission recommended designation of the Kentucky portion as an "Outstanding Resource Water." This recommendation was never acted upon.

Ownership of the river banks is divided between the NFS, the Breaks Interstate Park, and private ownership. Mileages are approximate. Ownership of the east/south bank, left looking upstream, is 6.5 miles of Breaks Interstate Park, 0 miles of NFS, and 2.2 miles of privately owned. Ownership of the west/north bank, right looking upstream, is 3.1 miles of Breaks Interstate Park, 4.4 miles of NFS, and 1 mile of privately owned. The mile of the north bank of the Pound River is NFS ownership. The south bank is private.

One of the most important uses of Russell Fork is recreation. Russell Fork cuts a 1600 foot deep gorge through the Pine Mountain., forming what is called the "Great Breaks of the Pine Ridge." This gorge offers giant vertical walls and furious whitewater as it bisects the Kentucky-Virginia line. It and the canyon through which it courses are the focal point of Breaks Interstate Park – a 4200-acre park situated on the Russell Fork at the Kentucky-Virginia state line with a lodge, restaurant, and variety of recreation activities. Many residents and visitors are content to observe Russell Fork from the numerous park overlooks along the rim of the gorge. Others hike the trails in the gorge and along the river.

Viewers at the park overlooks are offered spectacular views of the gorge and river far below. Tremendous rock cliffs drop hundreds of vertical feet to a forested floor of continuous tree canopy broken only by the river and the railroad line which runs along it. Some of the most memorable views are those of The Chimney and The Towers which appear as tall spires soaring up from the bottom of the gorge. The canopy is a mixture of evergreens and hardwoods that displays quite a color-show in the fall. People rafting, boating, or using the lower area in other ways experience outstanding views of cliff lines and rock spires, along with whitewater and quiet pools among large boulders and cascading rapids. Some of the bottom lands are dotted with large diameter hardwoods and an extensive boulder field on NFS land. The railroad viewed from above provides additional visual/cultural interest as it winds through both Towers and Skegg tunnels. It detracts from the remote experience when rafting the river but is not highly detracting visually during leaf out months. It is positioned perhaps 25 to 35 vertical feet above the river surface and often has tree-screening on the slope between it and the river.

An increasingly important recreation activity is whitewater rafting. Russell Fork is known for its deep gorge and nearly 2 miles of intense and dangerous whitewater. Russell Fork has a national reputation for ferocity. It has a difficulty rating of IV-V++ with rapids and falls with names such as Triple Drop, El Horrendo, Fling Falls, and Climax (a class V++ falls at the end of the gorge). Most people run the Breaks gorge during October weekend water releases scheduled by the Corps of Engineers during the annual fall drawdown of Flannagan Reservoir.

Russell Fork provides good habitat for recreational trout fishing. It is stocked with trout and is heavily fished above the Breaks Interstate Park. Angling pressure, however, is light

within the gorge due to the rugged terrain and absence of access.

Fish species that are popular include smallmouth bass, rock bass, stocked brown and rainbow trout. The stocked trout have been reproducing and have established a limited wild trout fishery. It is listed as a Class IV Wild Trout Stream. This Class IV stream contains an adequately reproducing wild trout population but has severely reduced summer-flow characteristics.

The gorge provides an incredibly unique canyon habitat unlike anywhere else in the physiographic province. The Breaks Interstate Park touts this as the largest canyon east of the Mississippi. Large cliffs and vertical rock outcrops provide potential nesting habitat for the peregrine falcon (a federally-listed endangered species) and the golden eagle. Forests in the canyon are protected from harvest and road disturbance by the steep topography and park status, thus creating a large area of undisturbed maturing forest. This adds the component of connectivity-corridor to the area. Areas such as this are uncommon in a region where strip mining and timber harvesting are prevalent on the surrounding private lands.

This area has high potential for the presence of rockshelters used by Native Americans in prehistory. There are numerous rockshelters in deeply eroded sandstone drainages elsewhere on the Clinch Ranger District. Floodplains and terraces along Russell Fork also have high potential for prehistoric sites and some potential for historic sites.

No heritage/cultural resource surveys have been done on federal/public lands in the vicinity of Russell Fork and there is no record of sites along this part of the Russell Fork. The area does, however, have a high potential for a trading route from the Ridge and Valley physiographic province of Virginia deep into Kentucky to the northwest.

Russell Fork Eligibility Evaluations

Scenic Values: The Russell Fork exhibits outstanding scenic values both from high positions along the rim of the gorge as well as from the river itself. The high vertical cliffs, towering rock spires, quantity of water, variety of flow characteristics, associated vegetation, numerous "special places," and its large scale, make the area distinctive regionally and nationally.

A **Class A** rating, nationally significant, is assigned.

Recreational Values: This river and canyon are the reason the Breaks Inter-state Park exists. One of the most important recreation activities is viewing the scenery in the gorge. Other significant recreation activities include hiking, fishing, and whitewater rafting. These recreation activities and the Park facilities draw visitors from well outside the Forest and region during water releases in October.

A **Class B** rating, regionally significant, is assigned.

Fisheries/Aquatic Values: Russell Fork is a high quality fishery with a significant Forest aquatic resource.

A **Class C** rating, locally significant, is assigned.

Wildlife Values: The gorge area contains potential nesting habitat for a federally listed endangered species, the peregrine falcon, and habitat diversity uncommon to the region (cliffs and mature forests).

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

RUSSELL FORK

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

RUSSELL FORK

JAMES RIVER

A **Class A** rating, nationally significant, is assigned.

Heritage/Cultural Values: The waterway has a high potential for rockshelters used by Native Americans. It also has some potential for historic sites and high potential for a trading route from the Ridge and Valley physiographic province of Virginia deep into Kentucky to the northwest. There is the potential for outstandingly remarkable values with regional significance.

A **Class B** rating, regionally significant, is assigned.

Botanical/Ecological Values: This segment of river contains *Spiraea virginiana*, a plant that has federal status, listed threatened, and state status, listed endangered.

A **Class A** rating, nationally significant, is assigned.

Geologic Values: This segment of Russell Fork, flowing through the canyon that is deeply eroded into the plateau, contains geological features that are rare and unusual in the physiographic province.

A **Class B** rating, regionally significant, is assigned.

Russell Fork Eligibility and Classification

Russell Fork is eligible for designation under the National Wild and Scenic Rivers Act. Scenic, wildlife, and botanical/ecological values are rated outstandingly remarkable, nationally significant. Recreational, heritage/cultural, and geological values are rated regionally significant. It is a free-flowing stream.

The classification for the 9.7 miles, according to FSH 1909, Chapter 8, is recreational river. This determination is based on the paralleling State Route 612 and the road bridge at Bartlick; the paralleling railroad over most of the length and the railroad bridge downstream from Bartlick; the homes and structures along part of the segment; and the access road at Garden Hole and Potters Flats. There is substantial evidence of human activity. Most of the river area is readily accessible by roads and the paralleling railroad.

JAMES RIVER - Glenwood Ranger District

The river segment being evaluated is from pool level behind the Snowden Dam upstream to about 1 mile southeast of Buchanan where the last JNF lands join the south side of the river, a distance of approximately 23 miles. The segment runs through Botetourt and Rockbridge counties and is on the border between Amherst and Bedford counties, immediately above the Snowden Dam backwater.

This river segment flows along the border of two physiographic provinces: the Blue Ridge and the Ridge and Valley. The Blue Ridge rises from the south banks of the James River; the Ridge and Valley extends from the north banks of the James River. Because of this border location, the river segment provides a good opportunity to interpret the geologic processes that are shaping the two major landscapes of western Virginia.

At Glasgow, the James River turns south through a water gap in the Blue Ridge. The James River is one of the few rivers that flows southeast across the northeast-trending grain of the Ridge and Valley and Blue Ridge physiographic provinces.

Between Glasgow and the downstream end of this segment, on the Blue Ridge slopes south of the James River, there are rockslides triggered by the June 1995 rainstorms. This

segment of the river provides an opportunity to see a fresh example of the geologic processes that are carving the modern landscape.

The reach under consideration has a large channel more than 400 feet wide and a very low gradient of less than one-half percent. The tributary watershed area is more than 2000 square miles and the average annual flow is approximately 2500 cubic feet per second. The river is free-flowing but does have remains of old dams and locks that once were part of the James River and Kanawha Canal and the remains of the Balcony Falls Dam below Glasgow.

NFS ownership of land along the river (much of this is actually railroad property on the river for the tracts run adjacent to the river) is 10 miles of the south side. All the north side downstream to Glasgow is private. Below Glasgow there is about 1 mile of NFS ownership on the north side. The north side of the river borders the George Washington National Forest.

From Buchanan to the southern end of the river segment being evaluated, the James is paralleled and crossed by railroads and highways. Much of the private land is in pasture and row crops with intermingled woods. NFS ownership is mostly forested. On the west side of the river, downstream from Glasgow, is the James River Face Wilderness offering spectacular scenery.

This segment of the James River has high scenic value, particularly in the area that parallels the James River Face Wilderness. The section from the State Highway 759 bridge-crossing down to the Snowden Dam has a variety of flow characteristics that includes serene quiet-moving segments and whitewater rapids. In addition, people on this section of the river are treated to views of towering rock bluffs and a typical but attractive variety of vegetation. The pastoral farmlands with the forested mountain backdrop complement each other as positive aesthetic amenities. Longer views into forested drainages are offered to river-users at a number of the river bends. The setting is also highlighted by views of historic remnants of the old Kanawha Canal, an addition to the visual diversity of the area.

Above Glasgow, there are few rapids, all Class 2 or less. The largest rapid in the section below Glasgow where the river runs through the watergap in the Blue Ridge is at Balcony Falls, a Class 3 rapid. Below Balcony Falls, there are several Class 2 rapids with several small riffles following before reaching the backwater of Snowden Dam, the end of the evaluation segment.

The James River, through this segment, receives moderate use for paddling and fishing. A canoe livery has been operating for approximately 20 years, offering trips on portions of this segment.

One of the biggest needs has been public access. The Glenwood Ranger District has been working with the state of Virginia to provide additional access and better camping for river users. Several key tracts of land have been acquired by the NFS on the east side of the river. These NFS tracts offer excellent potential river access and camping opportunities.

In addition to being known for floating and canoeing, this segment of the James is also important for its fisheries. The James River provides some of the better smallmouth bass fisheries in Virginia. Other common coolwater and warmwater game and non-game fish can also be found in the river, including bluegill, other common sunfishes, various species of catfish, pickerel, and largemouth bass.

The James River has a large number of historic and prehistoric sites along its banks. These include large Native American villages of the Woodland Culture Period, Archaic

**RIVER
EVALUATIONS:
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CLASSIFICATIONS**

JAMES RIVER

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

JAMES RIVER

Culture Period sites, historic locks and dams, industrial complexes and furnaces. There are over 50 known sites in all and certainly more to be found. Pig-iron from iron furnaces in the area was shipped through the locks and downstream to Richmond to make cannons during the Civil War. Sluice navigation began in 1816 to Balcony Falls and in 1827 to Buchanan. The Kanawha Canal and James River were incorporated in 1831, making navigation available to Balcony Falls in 1850 and to Buchanan in 1851. The canal continued until put out of business by the railroad soon after 1880. In 1876, iron and whiskey were still chief items of export. This formidable historic activity would leave considerable archaeological site potential.

The James River in its entirety is under study by a large, diverse group spearheaded by the Preservation Alliance of Virginia. The focus on heritage, natural, recreational resources and the level of recognition (federal and/or state) are being considered.

James River Eligibility Evaluations

Scenic Values: This is an attractive section of river with a variety of flow characteristics, distinctive combinations of water, exposed river rocks, clifflines, and a nice but common variety of vegetation. The adjoining combination of pastoral farmlands and forested mountain backdrop offer a serene aesthetic experience that is contrasted by the exciting, visually diverse whitewater rapids section between Glasgow and the Snowden Dam. The quantity of water, its clarity, and the scale of the river add to its distinctive quality within the region. It exhibits a moderate-to-high number of "special places" punctuated by nostalgic historic remnants of the old Kanawha Canal.

A **Class B** rating, regionally significant, is assigned.

Recreation Values: River-based recreation of the James is one of the more outstanding river-related recreation values within the physiographic province. The water-based recreation in the area has the most possibilities for improvement. The NFS has acquired several key tracts bordering the river with potential for access and river-user campsites. Overall, the James River recreation values are regionally significant, drawing visitors from well outside the region, and the potential to become more important.

A **Class B**, regionally significant, is assigned.

Fisheries/Aquatic Values: This segment of the James River has a high quality cool water fisheries containing some of the better smallmouth fishing in Virginia. In addition to smallmouth bass, other cool and warm water fish are common. It is a significant Forest resource.

A **Class C** rating, locally significant, is assigned.

Wildlife Values: This segment is mostly bordered by private lands, with public access to NFS streamside ownership being fairly limited except at the Locher Tract. There are currently five known sites on private land and three on NFS land that contain plants that are considered "sensitive." At present, there are no known aquatic or terrestrial threatened or endangered species documented from this section of the stream. Three of the NFS tracts that border the river have open pasture fields and are managed under the District's grazing program

A **Class D**, locally common, is assigned.

Heritage/Cultural Resource Values: There are numerous historic and prehistoric sites along the James. These include large Native American villages of the Woodland Culture

Period, Archaic Culture Period sites, historic locks and dams, industrial complexes and furnaces – over 50 sites in all. There are certainly more to be found.

A **Class B**, regionally significant, is assigned.

Botanical/Ecological Values: This segment of river contains a globally significant riparian bedrock community (mesotrophic scrub community). This community is dominated by prairie-like vegetation that occurs due to river scour reducing growth of woody species and weeds.

A **Class B** rating, regionally significant, is assigned.

Geologic Values: The James River is a rare example of a river cutting through the Blue Ridge and flowing southeast across the northeast-trending grain of the Ridge and Valley and Blue Ridge physiographic provinces.

A **Class B** rating, regionally significant, is assigned.

James River Eligibility and Classifications

The James River is eligible for designation under the National Wild and Scenic Rivers Act. Scenic, recreational, heritage/cultural, botanical/ecological, and geological values are rated outstandingly remarkable, regionally significant. It is also free-flowing.

The preliminary classification for the 23 miles according to FSH 1909, Chapter 8, is for a recreational river. This determination is based on the paralleling railroads, paralleling roads and access roads, a full range of agricultural uses on private lands, and the existence of several small communities and the town of Glasgow.

NORTH CREEK - Glenwood Ranger District

The river segment being evaluated is an approximately 7-mile portion of North Creek, including a main tributary from the confluence of North Creek with Jennings Creek upstream to the top of Apple Orchard Falls. It is in Botetourt Co., Virginia.

This portion of North Creek is in the Blue Ridge physiographic province. The Creek affords the opportunity to view the hydro-geologic processes and resulting landforms in large mountain streams on the west side of the Blue Ridge.

North Creek is a tributary to the James River. The reach under consideration has a watershed area of 11.8 square miles. Average annual streamflow is 15 cubic feet per second. The boulder and cobble channel has an average gradient of 4.5 percent. The stream maintains at least a fair summer flow. North Creek has been designated an "Exceptional Surface Water" under Virginia's antidegradation policy. Designation gives streams permanent protection to preserve their still clean waters. Most of the drainage is forested.

The shoreline of North Creek is 100 percent NFS. About three-fourths of the segment can be accessed from FS 59, which runs parallel. FS 59 ends at the parking lot at the confluence of Cornelius Creek with North Creek. There is also access from Parkers Gap by FS 3034 to a point approximately one-half mile below Apple Orchard Falls. The North Creek Watershed is almost entirely in NFS ownership. Only the heads of several order-one drainages in the watershed are privately owned.

North Creek is an attractive stream with a variety of flow characteristics. There is a

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

JAMES RIVER

NORTH CREEK

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

NORTH CREEK

moderate-to-high number of "special places" located along the channel. The most notable "special place" and scenic portion is Apple Orchard Falls. The Falls area has a pleasant variety of towering evergreen and hardwood overstory trees with massive trunks above a forest floor of evergreen and deciduous flowering shrubs, ferns, and wildflowers. The area immediately below the Falls is strewn with large boulders which create interesting spaces and micro "special places." A substantial number of other "special place" areas along the course of the stream are often associated with small whitewater cascades, pools, rock outcrops, or boulder clusters and attractive vegetation.

Recreation use in the North Creek Drainage is high. The area is located just off Interstate 81 and within 1-4 hours of large population centers. North Creek Campground has had recent improvements and a log cabin has been moved to the campground and partially restored. Recreation use in the drainage consists of camping, hiking, backpacking, fishing, hunting, and viewing scenery and nature. Because of the heavy recreation use in the drainage, there is a special regulation prohibiting camping within 300 feet of the stream.

Many of the recreation opportunities in the drainage are associated with trails. From the end of FS 59 to Apple Orchard Falls, North Creek is closely paralleled and crossed several times by the Apple Orchard National Recreation Trail. Improvements have been made to this trail during the last few years, and several additional bridges are planned. With the improvements and better visitor information, this trail has the potential to become one of the most heavily used trails on the Forest. The Cornelius Creek Trail has been designated an NRT and, with the Apple Orchard Falls Trail, makes a 6-mile loop. The Appalachian Trail traverses the upper portion of the drainage.

The lower portion of North Creek is a stocked trout stream that is heavily fished. The upper portion also contains a good wild trout fishery. The stream and its tributaries upstream from the first bridge above North Creek Campground are designated for special fishing regulations. These regulations permit fishing with single hook artificial lures only; require that trout less than 9 inches be immediately returned to the water unharmed; and, state that no bait may be in possession while fishing these waters. This stream section above the campground contains wild trout – mostly rainbow trout that reproduce naturally, although the native brook trout are present in the headwaters tributaries. The lower portion is put-and-take trout water. North Creek contains a coldwater fishery and is listed as a Class II wild trout stream by the Virginia Department of Game and Inland Fisheries. It contains rainbow trout, brook trout, blacknose dace, fantail darter, and torrent sucker.

North Creek has 15 inventoried historic and prehistoric sites close by and twenty others within 2000 feet of its banks. There is high potential for numerous other sites along level areas, terraces, and ridges above this stream. Lithic resources utilized by Native Americans for over 9000 years are available in Arnold's Valley a short distance away, making this area attractive for its natural resources.

North Creek Eligibility Evaluation

Scenic Values: The North Creek drainage offers a distinctive variety of water features, flow characteristics, vegetation textures and colors, cliffs, boulders, and other rockforms and is highlighted by Apple Orchard Falls. A substantial number of "special places" exists along this stream segment. The combination makes the area and stream distinctive scenically within the region.

A **Class B** rating, regionally distinctive, is assigned.

Recreation Values: The North Creek drainage is an important recreation resource on the Forest with many visitors coming significant distances to camp, hike, fish, and hunt. Few areas offer the variety of recreation opportunities as accessible to the public. With the completion of existing plans for the drainage, recreation opportunities will further increase in importance. The North Creek drainage is an outstanding recreation resource and draws visitors from well outside the region.

A **Class B**, regionally significant, is assigned.

Fisheries/Aquatic Values: North Creek has a high quality wild trout fishery and is a significant forest resource.

A **Class C**, locally significant, is assigned.

Wildlife Values: The portion of this stream from the confluence of Jennings Creek upstream to the confluence with Cornelius Creek is paralleled by an open road system. There is one known site along the lower section that contains two species of plants that are considered "sensitive." The headwaters of this stream are within the range of one terrestrial species that is considered "sensitive." There are no known aquatic species present.

A **Class D**, locally common, is assigned.

Heritage/Cultural Resource Values: North Creek has numerous inventoried historic and prehistoric sites and the potential for numerous other sites.

A **Class C** locally significant, is assigned.

Botanical/Ecological Values: There are no known rare botanical or ecological values.

A **Class D** rating, locally common, is assigned.

Geologic Values: The geomorphic features and formations are typical of those commonly found in the physiographic province.

A **Class C** rating, locally common, is assigned.

North Creek Eligibility and Classifications

North Creek is eligible for designation under the National Wild and Scenic Rivers Act. Scenic and recreation resources are rated outstandingly remarkable, regionally significant. It is also free-flowing.

The preliminary classification for the 7 miles, according to FSH 1909, Chapter 8, is for a recreational river. This determination is based on the paralleling access road, FS 59, North Creek Campground and other developments along the stream and access road Forest Service 3034, about one-half mile below Apple Orchard Falls.

WHITETOP LAUREL AND GREEN COVE CREEKS - Mount Rogers National Recreation Area

The segment of stream being studied for eligibility is approximately 10.5 miles of Whitetop Laurel Creek and approximately 1.5 miles of Green Cove Creek. The Whitetop Laurel portion is from the Forest boundary above Damascus, upstream on Whitetop

RIVER EVALUATIONS: AND CLASSIFICATIONS

NORTH CREEK

WHITETOP LAUREL GREEN COVE CREEKS

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

Laurel to the Forest boundary at the intersection of U.S. Highway 58 and State Route 859. The Green Cove portion is from the confluence with Whitetop Laurel to the Forest boundary near the confluence of Star Hill Branch. Green Cove Creek, included in the same study segment as Whitetop Laurel for the 1.5 miles being studied for eligibility, has similar ownership patterns, fisheries, wildlife populations, recreation use, etc. The segment is in Washington Co., Virginia.

**WHITETOP
LAUREL GREEN
COVE CREEKS**

These creeks are located in the Blue Ridge physiographic province and flow through a landscape that contains geologic deposits from a global Ice Age estimated to be 650 to 700 million years ago. The Konnarock Formation bedrock exposed along these creeks includes tillite, a sedimentary rock formed by lithification of a glacial deposit. The Konnarock Formation also includes an unusual sedimentary rock, rhythmite, believed deposited in a glacial lake. The rhythmite contains repetitive bands of alternating green siltstone/sandstone and maroon mudstone. In some bedrock exposures, the rhythmite contains "dropstones," ice-rafted pebbles which dropped, when the ice rafts melted, into the muddy floor of the glacial lake.

Whitetop Laurel Creek is a tributary to the South Fork of the Holston River which is tributary to the Tennessee River System. The 62-square mile watershed includes portions of Whitetop Mountain in Mount Rogers NRA, the highest point in Virginia. The reach under consideration has an average gradient of less than 2 percent, with an average annual streamflow of 77 cubic feet per second. Whitetop Laurel has been nominated as an "Exceptional Surface Water" under Virginia's antidegradation policy. Designated streams have permanent protection to preserve their still-clean waters.

NFS ownership is fairly good for the study segment. Only about 1.5 miles of the north bank is privately owned at Taylor's Valley and one private tract between the stream and U. S. Highway 58. About 2 miles of the south bank at Taylor's Valley is privately owned.

The Whitetop Laurel drainage contains an 800-acre Special Management Area, so designated in the Jefferson Forest Plan.

These are both beautiful streams, falling with a good gradient and numerous pools, riffles, and low cascades. Oaks, birch, red and sugar maple, hemlock, yellow poplar, and white pine make up much of the forest overstory. Thick rhododendron is common in much of the understory along the shore. Rock bluffs are present in some areas, punctuated with vegetation that protrudes from rock crevices and adds attractive spring and fall color. The high large timber-trestle bridges and old rust-covered steel-truss bridges are distinctive attractive amenities. The water pools, whitewater riffles, the clarity – all are positive amenities that, when coupled with rockform, landform, and vegetation diversity, result in a moderate-to-high number of "special places."

US Highway 58 parallels the lower portion of Whitetop Laurel for several miles, however, much of the shoreline is free of roads. There is also public road access at Taylor's Valley, a small community along the stream; at Forest parking areas off U.S. Highway 58; and at Creek Junction. Private land with several stream-side cabins is immediately below the Forest parking area off U.S. Highway 58. Other improvements include the Virginia Creeper National Recreation Trail, with its bridges and trestles. The support structures for the bridges are highly visible.

Several large springs at Taylor's Valley feed a waterline to Damascus. The line is in the stream below Taylor's Valley and is partially visible.

Much of the recreation use is centered around the Virginia Creeper Trail and fishing. The Virginia Creeper Trail, a converted railroad bed, runs the length of this stream segment. The Virginia Creeper is fast becoming one of the premier mountain biking trails in the

United States and has been featured in national magazines. In addition to mountain biking, hiking and horseback riding are popular on the Virginia Creeper Trail. The Appalachian National Scenic Trail also closely parallels the Virginia Creeper Trail below Creek Junction. In fact, 1 mile of the Appalachian Trail coincides with the Virginia Creeper Trail. There is whitewater-use on Whitetop Laurel after heavy rains or snowmelt in the spring. Recreation use is estimated to be 50,000 recreation-visitor-days each year.

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

**WHITETOP
LAUREL GREEN
COVE CREEKS**

Both Whitetop Laurel and Green Cove Creeks are excellent aquatic resources. The study segment is a put-and-take and wild trout fishery. The segment also receives annual stockings of brown trout as part of the put-and-grow program. The Virginia Department of Game and Inland Fisheries lists the upstream segment of Whitetop Laurel as a Class I stream. A Class I stream has outstanding natural beauty with wilderness – or at least remote characteristics, an abundance of large deep pools, and excellent fish cover. The stream has a good population of wild trout, or the potential for such, and is considered an exceptional wild trout stream. Whitetop Laurel has a state fish rating of "A," the highest ranking category. Rainbow trout and brook trout are found in the headwaters, and brown trout occur here as well as other types of stream fish. Green Cove is listed as a Class II stream. A Class II stream contains a good wild trout population or the potential for one; maintains adequate water quality and temperature; maintains adequate summer flow; and has adjacent land that is not extensively developed. Green Cove contains a good wild trout population and has a state fish rating of "A." Rainbow trout occur here, as well as other types of stream fish.

Special trout regulations apply to both streams – Whitetop Laurel from the first railroad trestle above Taylor's Valley to the mouth of Green Cove Creek at Creek Junction; the lower mile of Green Cove Creek from its mouth to its intersection with State Route 859. Regulations permit fishing with single- hook artificial lures only and set the minimum size limit in this section at 12 inches.

Additional aquatic/fisheries resources of significance in both Whitetop Laurel and Green Cove Creeks are the green fin darter (*Etheostoma* *clorobanchium*), sharphead darter (*Etheostoma* *acuticeps*), fatlips minnow (*Phenacobius* *crassilabrum*), and the hellbender (*Cryptobranchus* *alleganiensis* *alleganiensis*). The green fin darter is a state-listed threatened species. The sharphead darter is a state-listed endangered species, the fatlips minnow is a species of special concern, and the hellbender is a candidate for federal listing.

No archaeological sites are listed around these streams. Several prehistoric sites 1.5 miles north and 2.5 miles west of Damascus on the South Fork of the Holston River are registered. There are many areas along these streams with level flood plains where Native American villages might exist. Also, very steep areas along the streams may have rockshelters which provided living areas and transient travel quarters for Native Americans. Woodland and Archaic cultural periods sites might be expected along these streams.

Whitetop Laurel and Green Cove Creeks Eligibility Evaluations

Scenic Values: This stream segment is very attractive and is surrounded by a natural-appearing forested setting. The clear water has a variety of flow characteristics, including pools and riffles running over cobbles and some moderate-to-large size boulders. The combination of the natural elements of landform, rockform, waterform, and vegetation are enhanced by the presence of cultural features such as the high wood trestles and the old steel-truss bridges. All these amenities and the presence of a moderate-to-high number of "special places" make the streams distinctive in the physiographic province.

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

**WHITETOP
LAUREL GREEN
COVE CREEKS**

A **Class B** rating, regionally significant, is assigned.

Recreation Values: This stream segment is an important recreation opportunity. It is one of the most important fishing areas on the Forest and its trail opportunities are unique. Other recreation uses include camping, hunting, whitewater recreation, photography, historic interpretation, and nature viewing. A significant number of visitors travel to the streams from other parts of Virginia and from other states. The recreation values are significant within the region, but relatively common at a national level.

A **Class B** rating, regionally significant, is assigned.

Fisheries/Aquatic Values: This stream segment has a high quality fisheries and aquatic community. There is a diversity of habitat that is important for several rare species. The greenfin darter (*Etheostoma cholorbranchium*) is an extremely localized fish in Whitetop Laurel. It is extremely rare in the state of Virginia and has a global status of rare-to-uncommon.

A **Class C** rating, locally significant, is assigned to the fisheries/aquatic values.

Wildlife Values: The Whitetop Laurel Gorge contains an 800-acre "special area," so-designated in the Forest Plan. Although these streams provide habitat for wildlife species that are proposed for threatened and endangered species listing or sensitive species designation by the Forest Service, they do not possess exceptionally high quality habitat or habitat that has regionally outstanding values.

A **Class C** rating, locally significant, is assigned to the wildlife values.

Heritage/Cultural Values: There is a potential for sites with qualities that would be shared with the many significant areas of the region.

A **Class C** rating, locally significant, is assigned.

Botanical/Ecological Values: There are no known rare botanical or ecological values.

A **Class D** rating, locally common, is assigned.

Geologic Values: This segment contains examples of geomorphic features and formation that are unusual and significant in the physiographic province.

A **Class B** rating, regionally significant, is assigned.

Whitetop Laurel and Green Cove Creeks Eligibility and Classification

This segment of Whitetop Laurel and Green Cove Creeks is eligible for designation under the National Wild and Scenic Rivers Act. Scenic, recreation, and geological resources are rated regionally significant. These streams are also free-flowing.

The classification for the 10.5 miles, according to FSH 1909, Chapter 8, is recreational river. This determination is based on the extensive shoreline development and substantial evidence of human activity. This includes the community of Taylor's Valley, U.S. Highway 58, and the impact of the old railroad grade and the bridges and trestles. Much of the segment is also easily accessible by roads.

BARBOURS CREEK - New Castle Ranger District

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

**BARBOURS
CREEK**

The river segment evaluated for eligibility is approximately 11.6 miles long – 8 miles on the main stream and 3.6 miles on the South Prong. The segment starts at the Forest boundary above the confluence of Cove Branch and runs to the headwaters of both main forks. Most of the segment is in Craig Co., Virginia., however, approximately one-half mile of the South Prong is in Botetourt Co., Virginia.

Barbours Creek is in the Ridge and Valley physiographic province. In this province, the underlying bedrock layers have been deformed into nearly parallel folds which trend generally northeast. The rock formations and the bedrock structure shaped the landforms and controlled the development of mountains and valleys. For example, Barbours Creek and the neighboring Potts Mountain, Rich Patch Mountains, and Bald Mountain have a northeast trend across the landscape because the underlying bedrock structure has a northeast trend. Because of the persistent northeast trend of the mountains, the mountain slopes are divided into northwest aspects and southeast aspects.

Barbours Creek is tributary to Craig Creek, which is tributary to the James River. The watershed area is 18.2 square miles and is nestled between Bald Mountain and Potts Mountain. The reach under consideration has an average gradient of 2.4 percent. Average annual flow is estimated to be 22.6 cubic feet per second.

Ownership of the river banks is approximately 7.1 miles NFS on the north bank of the main fork and approximately 7.5 miles of NFS on the south bank. The South Prong is approximately 3.1 miles NFS on both sides.

Both forks of Barbours Creek are almost entirely accessible by paralleling roads. Paved State Route 617 goes up the main fork within a mile of the headwaters. Forest Service 180 goes up the South Prong.

The segment runs through U-shaped drainages with some moderately steep side slopes. The vegetation is generally continuous with a common mix of evergreen and deciduous overstory species. There is a fairly common mix of tree bole sizes but no apparent areas of distinctively large stems or unusual vegetation features. Waterform is typical and rockform is quite minimal.

The main recreation use of the stream is put-and-take fisheries. It is a popular trout stream. Adjacent to the stream is the Forest Service's rustic Pines Campground. One section of the campground is open to horse camping. Across from the campground, an accessible trail follows a short section of Barbours Creek. Barbours Creek has stream structures installed to improve fisheries habitat. Upstream from the campground, there is a woody-debris demonstration project where trees were felled into the stream and allowed to affect the stream naturally to see what effect they will have on trout habitat.

The main fork of Barbours Creek is primarily a put-and take and wild trout fishery. It does contain some wild trout – brook trout – in the main stream, but the Virginia Department of Game and Inland Fisheries lists it as a Class VI stream, not containing a significant number of trout or a significant population of warmwater gamefish. Adequate water quality and water temperature allows for a summer carryover of stocked trout. The present use of the South Fork of Barbours Creek is as a wild trout fishery and its recommended fisheries-use is the same. The South Fork is listed as a Class II trout stream by the Virginia Department of Game and Inland Fisheries. A Class II stream contains a good wild trout population or the potential for one. It has a fish rating of "A" which means the creek has a good wild trout population or the potential for such.

RIVER EVALUATIONS: AND CLASSIFICATIONS	Wildlife populations and hunting opportunities are common in most of the surrounding NFS land.
BARBOURS CREEK	Only a few hundred feet have been surveyed for heritage/cultural resources. There are three Archaic Cultural Period Native American sites clustered about the creek near the confluence of Cove Branch and Barbours Creek (on the flood plain). No other sites are registered along these streams, however, any level areas may have Archaic or Woodland sites. Historic homesteads may also be found along the springs and branches entering the streams.

Barbours Creek Eligibility Evaluations

Scenic Values: The stream segment is generally attractive with a typical variety of vegetation, rockform, and landform. Water characteristics are quite common to the Ridge and Valley physiographic province. A low-to-moderate number of "special places" occur along the stream channels.

A **Class D** rating, locally common, is assigned.

Recreation Values: Recreation opportunities along Barbours Creek consist of camping, fishing that includes accessible fishing opportunities, hunting, and hiking. Most use is light-to-moderate except after stream-stocking and at special fishing events at the Pines Accessible Trail. The recreation values are significant to the Forest, but common throughout the physiographic province.

A **Class C** rating, locally significant, is assigned.

Fisheries/Aquatic Values: The fish and aquatic resources represent a significant forest resource.

A **Class C** rating, locally significant, is assigned.

Wildlife Values: This stream is paralleled along much of its length by an open road system. In the vicinity of the Pines Campground, a constructed trail is accessible by disabled individuals. There are no known terrestrial, as well as no known aquatic or plant, threatened, endangered, sensitive, or proposed species present. The recommended rating for this stream is **Class D**, because the wildlife and wildlife habitats are not significant, rare, or critical and are considered common throughout the Forest.

A **Class D** rating, locally common, is assigned.

Heritage/Cultural Resource Values: There is the potential for sites with qualities that would be shared with the many significant areas of the region.

A **Class C** rating, locally significant, is assigned.

Botanical/Ecological Values: There are no known rare botanical or ecological values.

A **Class D** rating, locally common, is assigned.

Geologic Values: The geologic values found in the Barbours Creek drainage are common on the Forest.

A rating of **Class D**, locally common, is assigned to this segment.

Barbours Creek Eligibility and Classification

Barbours Creek is not eligible for addition to the National Wild and Scenic Rivers System. There are no inventoried outstandingly remarkable resources.

RIVER
EVALUATIONS:
AND
CLASSIFICATIONS

LAUREL CREEK - New River Valley Ranger District

The portion of Laurel Creek evaluated for eligibility is approximately 3.2 miles long from its confluence with Hunting Camp Creek upstream, closely paralleling State Route 615 until it leaves the Forest boundary above the confluence with Little Wolf Creek. The stream is in Bland Co., Virginia..

BARBOURS
CREEK

LAUREL CREEK

LITTLE WOLF
CREEK

The field review shows that portions of the stream have been channelized where it runs along the edge of State Route 615. Since it does not meet the criteria for free-flowing, a detailed resource write-up was not included.

Laurel Creek Eligibility and Classification

Laurel Creek is determined to be ineligible for designation under the National Wild and Scenic Rivers Act since it is not free-flowing.

LITTLE WOLF CREEK - New River Valley Ranger District

The Little Wolf Creek drainage being evaluated is approximately 3.5 miles from its confluence with Laurel Creek to its headwaters. It is located in Bland Co., Virginia.

Little Wolf Creek is in the Ridge and Valley physiographic province. In this province, the underlying bedrock layers have been deformed into nearly parallel folds which trend generally northeast. Geologic uplift and erosion of this folded structure has shaped the modern landscape of northeast-trending ridges and valleys. Little Wolf Creek flows in one of these northeast-trending valleys.

Little Wolf Creek flows into Laurel Creek and then into Hunting Camp Creek, tributary to the New River. The 3.6-square mile watershed produces an average annual flow of 4.4 cubic feet per second. The reach under consideration has a channel of cobble and gravel, with some bedrock outcrops. Average gradient is 2.6 percent.

Stream banks on both sides for the length of the segment are in NFS ownership. Also, the entire drainage from ridge-to-ridge is in NFS ownership.

At the confluence of Little Wolf Creek and Laurel Creek, a rock bluff adds positive aesthetic interest to hikers entering the drainage. Waterflow is quite low, but it creates interest as it flows over exposed shelves of bedrock. The drainage near the confluence is restricted and steep-sided, which contrasts sharply with the more open U-shaped character in the upper reaches around the beaver ponds. More extensive views of the surrounding landforms are present in the upper reaches as one looks across the grassy meadows, over the meandering stream and beaver pond areas. The beaver pond areas add interest and a bit of distinctive diversity in vegetation types, pattern, and open space. A moderate number of "special places" exist along this stream course.

Five hundred acres of the lower portion of the drainage carries a Special Management Area designation in the Jefferson Management Plan. These special management areas possess unique or special values that require special recognition in management. One area of interest in the Little Wolf Creek Drainage is a relatively large area of Beaver

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

Meadows, about a mile up from Virginia 615. Below the beaver ponds, the stream is shallow with no particular pools or areas of interest. Through the beaver meadows, the stream meanders with much deeper water, undercut banks, and a distinctly different, more-grassy vegetation on the deposited sediment surrounding the stream.

**LITTLE WOLF
CREEK**

The lower portion of Little Wolf Creek is to be listed in the new Virginia Wildlife Viewing Guide. In addition to the wildlife viewing and hunting in the area, the Appalachian National Scenic Trail runs up the drainage. A planned trail connecting the High Water Trail to the Appalachian Trail will make a loop trail opportunity.

Little Wolf Creek is known to contain a few brown trout but currently has no significant fisheries or recommended fisheries. It is listed as a Class VIII trout stream by the Virginia Department of Game and Inland Fisheries. It does not contain a significant number of trout or a significant population of warmwater gamefish.

Little Wolf Creek Eligibility Evaluations

Scenic Values: Pockets of distinct diversity in vegetation pattern, openings and waterform created by the beaver ponds, and riffles over exposed bedrock give the stream local significance. Also, a moderate number of "special places" exist.

A **Class C** rating, locally significant, is assigned.

Recreation Values: Recreation opportunities consist primarily of hiking and viewing wildlife and nature. With the wildlife viewing designation, the stream is somewhat unique on the Forest, but that in itself does not make it significant at a regional level. The Appalachian National Scenic Trail parallels and crosses the stream numerous times, enhancing the recreation experience of the hikers. However, the stream environment does not draw significant numbers of hikers to the drainage. Recreation values are significant at a Forest level, but not regionally.

A **Class C** rating, locally significant, is assigned.

Fisheries/Aquatic Values: The fish and aquatic resources are common to the Forest, and the fish and aquatic community habit is not unique, rare, or critical.

A **Class D** rating, locally common, is assigned.

Wildlife Values: Little Wolf Creek contains a variety of wildlife habitats, which are common to most forested watersheds in Southwestern Virginia. There is a beaver dam complex within the stream that attracts numerous bird and wildlife species. Species normally associated with beaver dams and the associated wet areas include bobcats, muskrats, red-winged blackbirds, white-tailed deer, wood duck, black bear, and numerous amphibians and reptiles. The area is listed in the Virginia Wildlife Viewing Guide. In addition to non-consumptive uses of wildlife, good hunting is associated with the drainage. While the stream provides quality wildlife habitat, similar beaver complexes and wildlife habitats are common on the Forest. A **Class C** rating has been assigned.

A **Class C** rating, locally significant, is assigned.

Heritage/Cultural Resource Values: No known sites have been registered nor have there been heritage/cultural resource surveys along Little Wolf Creek. There is the potential for sites with qualities that would be shared with the many significant areas in the region.

A **Class C** rating, locally significant, is assigned.

Botanical/Ecological Values: There are no known rare botanical or ecological values.

A **Class D** rating, locally common, is assigned.

Geologic Values: The geomorphic features found in Little Wolf Creek are common throughout the Forest.

A **Class D** rating, locally common, is assigned.

**RIVER
EVALUATIONS:
AND
CLASSIFICATIONS**

**LITTLE WOLF
CREEK**

Little Wolf Creek Eligibility and Classification

Little Wolf Creek is not eligible for designation to the National Wild and Scenic Rivers System. There are no inventoried outstandingly remarkable resources.

River	Length	Outstandingly Remarkable Values							Preliminary Classification
		Scenic	Recreational	Aquatic	Wildlife	Cultural	Botanic	Geologic	
Little Story Ck NRV	3.2	B	B					B	Rec
Stony Creek	8.3			A					Rec
Clinch River	5.5					B	A	B	Rec
Devil's Fork	3.8								n/a
Guest River	6.5	B	B			B	A	B	Rec
Little Story Ck CRD	8.5	B			B			B	Rec
Roaring Branch	3.0	B						B	Wild
Russell Fork ¹	8.7	A	B		A	B	A	B	Rec
James River	23.0	B	B			B	B	B	Rec
North Creek	7.0	B	B						Rec
Whitetop Laurel/ Green Cove Creeks	12.0	B	B					B	Rec
Barbours Creek	11.6								n/a
Laurel Creek	3.2								n/a
Little Wolf Creek	3.5								n/a

A = Nationally Significant

B = Regionally Significant

TERRESTRIAL SPECIES VIABILITY



TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

KEYS TO CODES:

Status Description:

- F Federally listed or proposed as Threatened or Endangered.
- S Regional Forester's Sensitive Species List.
- O Locally rare and other.

F Rank Description:

- F? Present on the forest, but abundance information is insufficient to develop rank.
- FC Not present, no known occurrences on the forest unit, and unit is outside the species range or habitat is not present.
- F1 Extremely rare on the forest unit, generally with 1-5 occurrences.
- F2 Very rare on the forest unit, generally with 6-20 occurrences.
- F3 Rare and uncommon on the forest unit, from 21-100 occurrences.
- F4 Widespread, abundant, and apparently secure on the forest unit.
- F5 Demonstrably secure on the forest unit.
- FP Possibly could occur on the forest unit, but documented occurrences not known.
- FH Of documented historical occurrence on the forest unit; may be rediscovered.
- FX Once occurred but has been extirpated from the forest unit; it is not likely to be rediscovered.

Viability Risk:

- 1 Very High
- 2 High
- 3 Moderately High
- 4 Moderate
- 5 Low

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative						
					A	B	D	E	F	G	I
Taxa: Mammal											
<i>Condylura cristata</i>	Star-nosed mole	O	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3
<i>Condylura cristata</i>	Star-nosed mole	O	F3	Early-Successional Riparian	3	3	3	3	3	3	3
<i>Condylura cristata</i>	Star-nosed mole	O	F3	Late Successional Riparian	5	5	5	5	5	5	5
<i>Corynorhinus townsendii virginianus</i>	Virginia big-eared bat	F	F1	Caves and Mines	2	2	2	2	2	2	2
<i>Glaucomys sabrinus coloratus</i>	Carolina northern flying squirrel	F	F1	Mature High-Elevation Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Glaucomys sabrinus coloratus</i>	Carolina northern flying squirrel	F	F1	Spruce-Fir Forests	1	1	1	1	1	1	1
<i>Lontra canadensis</i>	River otter	O	F3	Late Successional Riparian	5	5	5	5	5	5	5
<i>Lontra canadensis</i>	River otter	O	F3	Water Quality	5	5	5	5	5	5	5
<i>Mustela nivalis</i>	Least weasel	O	F2	Remoteness	4	4	4	4	4	4	4
<i>Mustela nivalis</i>	Least weasel	O	F2	Mixed Landscapes	4	4	4	4	4	4	4
<i>Myotis grisescens</i>	Gray bat	F	F1	Caves and Mines	2	2	2	2	2	2	2
<i>Myotis grisescens</i>	Gray bat	F	F1	Late Successional Riparian	3	3	3	3	3	3	3
<i>Myotis leibii</i>	Eastern small-footed bat	S	F2	Late Successional Riparian	4	4	4	4	4	4	4
<i>Myotis leibii</i>	Eastern small-footed bat	S	F2	Caves and Mines	3	3	3	3	3	3	3
<i>Myotis leibii</i>	Eastern small-footed bat	S	F2	Rock Outcrops and Cliffs	3	3	3	3	3	3	3
<i>Myotis septentrionalis</i>	Northern long-eared bat	O	F3	Snags	5	5	5	5	5	5	5
<i>Myotis septentrionalis</i>	Northern long-eared bat	O	F3	Caves and Mines	4	4	4	4	4	4	4
<i>Myotis septentrionalis</i>	Northern long-eared bat	O	F3	Den Trees	4	4	4	4	4	4	4
<i>Myotis sodalis</i>	Indiana bat	F	F1	Caves and Mines	2	2	2	2	2	2	2
<i>Myotis sodalis</i>	Indiana bat	F	F1	Snags	3	3	3	3	3	3	3
<i>Myotis sodalis</i>	Indiana bat	F	F1	Den Trees	2	2	2	2	2	2	2
<i>Neotoma magister</i>	Allegheny woodrat	O	F3	Rock Outcrops and Cliffs	4	4	4	4	4	4	4
<i>Sorex dispar</i>	Long-tailed shrew	O	F3	Rock Outcrops and Cliffs	4	4	4	4	4	4	4
<i>Spilogale putorius</i>	Spotted skunk	O	F2	Mature Mesic Hardwood Forests	4	4	4	4	4	4	4
<i>Spilogale putorius</i>	Spotted skunk	O	F2	Rock Outcrops and Cliffs	3	3	3	3	3	3	3
<i>Sylvilagus obscurus</i>	Appalachian cottontail	O	F3	Early-Successional Forests	4	4	4	3	4	3	4
<i>Sylvilagus obscurus</i>	Appalachian cottontail	O	F3	High Elevation Early Succession	3	3	3	3	3	3	3
<i>Sylvilagus obscurus</i>	Appalachian cottontail	O	F3	Shrub Balds	3	3	3	3	3	3	3

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative						
					A	B	D	E	F	G	I
Taxa: Amphibian											
<i>Aneides aeneus</i>	Green salamander	0	F2	Mature Hemlock Forests	2	2	2	2	2	2	2
<i>Aneides aeneus</i>	Green salamander	0	F2	Caves and Mines	3	3	3	3	3	3	3
<i>Aneides aeneus</i>	Green salamander	0	F2	Rock Outcrops and Cliffs	3	3	3	3	3	3	3
<i>Aneides aeneus</i>	Green salamander	0	F2	Mature Mesic Hardwood Forests	4	4	4	4	4	4	4
<i>Desmognathus marmoratus</i>	Shovelnose salamander	0	F1	Water Quality	3	3	3	3	3	3	3
<i>Desmognathus marmoratus</i>	Shovelnose salamander	0	F1	Downed Wood	3	3	3	3	3	3	3
<i>Desmognathus marmoratus</i>	Shovelnose salamander	0	F1	Late Successional Riparian	3	3	3	3	3	3	3
<i>Desmognathus wrighti</i>	Pigmy salamander	0	F1	Spruce-Fir Forests	1	1	1	1	1	1	1
<i>Desmognathus wrighti</i>	Pigmy salamander	0	F1	Downed Wood	3	3	3	3	3	3	3
<i>Desmognathus wrighti</i>	Pigmy salamander	0	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Plethodon hubrichti</i>	Peaks of Otter salamander	S	F2	Mature Mesic Hardwood Forests	4	4	4	4	4	4	4
<i>Plethodon hubrichti</i>	Peaks of Otter salamander	S	F2	Downed Wood	4	4	4	4	4	4	4
<i>Plethodon wehrlei</i>	Wehrle's salamander	0	F3	Downed Wood	5	5	5	5	5	5	5
<i>Plethodon wehrlei</i>	Wehrle's salamander	0	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5
<i>Plethodon welleri</i>	Weller's salamander	S	F1	Spruce-Fir Forests	1	1	1	1	1	1	1
<i>Plethodon welleri</i>	Weller's salamander	S	F1	Downed Wood	3	3	3	3	3	3	3
<i>Plethodon yonahlossee</i>	Yonahlossee salamander	0	F3	Downed Wood	5	5	5	5	5	5	5
<i>Plethodon yonahlossee</i>	Yonahlossee salamander	0	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5
<i>Pseudacris brachyphona</i>	Mountain chorus frog	0	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3
<i>Pseudacris brachyphona</i>	Mountain chorus frog	0	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5
<i>Pseudacris brachyphona</i>	Mountain chorus frog	0	F3	Late Successional Riparian	5	5	5	5	5	5	5
<i>Pseudotriton montanus</i>	Eastern mud salamander	0	F3	Late Successional Riparian	5	5	5	5	5	5	5
<i>Pseudotriton montanus</i>	Eastern mud salamander	0	F3	Open Wetlands	3	3	3	3	3	3	3
<i>Pseudotriton montanus</i>	Eastern mud salamander	0	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3
<i>Pseudotriton montanus</i>	Eastern mud salamander	0	F3	Downed Wood	5	5	5	5	5	5	5

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative							
					A	B	D	E	F	G	I	
Taxa: Reptile												
<i>Crotalus horridus</i>	Timber rattlesnake	0	F3	Rock Outcrops and Cliffs	4	4	4	4	4	4	4	
<i>Crotalus horridus</i>	Timber rattlesnake	0	F3	Mature Yellow Pine Forests	4	4	4	3	3	4	4	
<i>Crotalus horridus</i>	Timber rattlesnake	0	F3	Woodlands-Savannas-Grasslands	3	3	3	3	3	3	3	
<i>Crotalus horridus</i>	Timber rattlesnake	0	F3	Mature Oak Forests	5	5	5	5	5	5	5	
<i>Crotalus horridus</i>	Timber rattlesnake	0	F3	Downed Wood	5	5	5	5	5	5	5	
<i>Elaphe guttata guttata</i>	Corn snake	0	F3	Snags	5	5	5	5	5	5	5	
<i>Elaphe guttata guttata</i>	Corn snake	0	F3	Mature Yellow Pine Forests	4	4	4	3	3	4	4	
<i>Elaphe guttata guttata</i>	Corn snake	0	F3	Downed Wood	5	5	5	5	5	5	5	
<i>Elaphe guttata guttata</i>	Corn snake	0	F3	Woodlands-Savannas-Grasslands	3	3	3	3	3	3	3	
<i>Opheodrys vernalis</i>	Smooth green snake	0	F1	Grassy Balds	1	1	1	1	1	1	1	
<i>Opheodrys vernalis</i>	Smooth green snake	0	F1	High Elevation Early Succession	1	1	1	1	1	1	1	
<i>Opheodrys vernalis</i>	Smooth green snake	0	F1	Shrub Balds	1	1	1	1	1	1	1	
<i>Pituophis melanoleucus melanoleucus</i>	Northern pine snake	0	F1	Downed Wood	3	3	3	3	3	3	3	
<i>Pituophis melanoleucus melanoleucus</i>	Northern pine snake	0	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1	
<i>Pituophis melanoleucus melanoleucus</i>	Northern pine snake	0	F1	Mature Yellow Pine Forests	2	2	2	1	1	2	2	
<i>Thamnophis sauritus sauritus</i>	Eastern ribbon snake	0	F3	Open Wetlands	3	3	3	3	3	3	3	
<i>Thamnophis sauritus sauritus</i>	Eastern ribbon snake	0	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3	
<i>Thamnophis sauritus sauritus</i>	Eastern ribbon snake	0	F3	Downed Wood	5	5	5	5	5	5	5	
<i>Thamnophis sauritus sauritus</i>	Eastern ribbon snake	0	F3	Early-Successional Riparian	3	3	3	3	3	3	3	

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative						
					A	B	D	E	F	G	I
Taxa: Bird											
Accipiter cooperii	Cooper's hawk	0	F2	Mixed Landscapes	4	4	4	4	4	4	4
Accipiter striatus	Sharp-shinned hawk	0	F3	Mature Hemlock Forests	3	3	3	3	3	3	3
Accipiter striatus	Sharp-shinned hawk	0	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5
Aegolius acadicus	Northern saw-whet owl	0	F1	Snags	3	3	3	3	3	3	3
Aegolius acadicus	Northern saw-whet owl	0	F1	Spruce-Fir Forests	1	1	1	1	1	1	1
Aegolius acadicus	Northern saw-whet owl	0	F1	Remoteness	3	3	3	3	3	3	3
Caprimulgus carolinensis	Chuck-wills-widow	0	F1	Mature Yellow Pine Forests	2	2	2	1	1	2	2
Caprimulgus carolinensis	Chuck-wills-widow	0	F1	Mixed Landscapes	3	3	3	3	3	3	3
Caprimulgus vociferus	Whip-poor-will	0	F3	Mixed Landscapes	5	5	5	5	5	5	5
Caprimulgus vociferus	Whip-poor-will	0	F3	Canopy Gaps	5	5	5	5	5	5	5
Carpodacus purpureus	Purple finch	0	F1	Mixed Landscapes	3	3	3	3	3	3	3
Carpodacus purpureus	Purple finch	0	F1	Spruce-Fir Forests	1	1	1	1	1	1	1
Catharus guttatus	Hermit thrush	0	F1	Mature High-Elevation Mesic Hardwood Forests	3	3	3	3	3	3	3
Catharus guttatus	Hermit thrush	0	F1	Spruce-Fir Forests	1	1	1	1	1	1	1
Catharus ustulatus	Swainson's thrush	0	F1	Spruce-Fir Forests	1	1	1	1	1	1	1
Certhia americana	Brown creeper	0	F2	Snags	4	4	4	4	4	4	4
Certhia americana	Brown creeper	0	F2	Spruce-Fir Forests	2	2	2	2	2	2	2
Coccyzus erythrophthalmus	Black-billed cuckoo	0	F2	Canopy Gaps	4	4	4	4	4	4	4
Coccyzus erythrophthalmus	Black-billed cuckoo	0	F2	Mature Forest Interiors	4	4	4	4	4	4	4
Colinus virginianus	Northern bobwhite	0	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1
Colinus virginianus	Northern bobwhite	0	F1	Mature Yellow Pine Forests	2	2	2	1	1	2	2
Contopus borealis	Olive-sided flycatcher	0	F1	Spruce-Fir Forests	1	1	1	1	1	1	1
Corvus corax	Common raven	0	F3	Rock Outcrops and Cliffs	4	4	4	4	4	4	4
Corvus corax	Common raven	0	F3	High Elevation Early Succession	3	3	3	3	3	3	3
Corvus corax	Common raven	0	F3	Grassy Balds	3	3	3	3	3	3	3
Corvus corax	Common raven	0	F3	Remoteness	5	5	5	5	5	5	5
Dendroica cerulea	Cerulean warbler	0	F3	Mature Forest Interiors	5	5	5	5	5	5	5
Dendroica cerulea	Cerulean warbler	0	F3	Late Successional Riparian	5	5	5	5	5	5	5
Dendroica cerulea	Cerulean warbler	0	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5
Dendroica cerulea	Cerulean warbler	0	F3	Canopy Gaps	5	5	5	5	5	5	5
Dendroica discolor	Prairie warbler	0	F3	Early-Successional Forests	4	4	4	3	4	3	4
Dendroica discolor	Prairie warbler	0	F3	Open Wetlands	3	3	3	3	3	3	3
Dendroica dominica	Yellow-throated warbler	0	F2	Late Successional Riparian	4	4	4	4	4	4	4

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative							
					A	B	D	E	F	G	I	
<i>Dendroica fusca</i>	Blackburnian warbler	0	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3	
<i>Dendroica magnolia</i>	Magnolia warbler	0	F2	Spruce-Fir Forests	2	2	2	2	2	2	2	
<i>Empidonax alnorum</i>	Alder flycatcher	0	F1	Spruce-Fir Forests	1	1	1	1	1	1	1	
<i>Empidonax alnorum</i>	Alder flycatcher	0	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Empidonax flaviventris</i>	Yellow-bellied flycatcher	0	F1	Canopy Gaps	3	3	3	3	3	3	3	
<i>Empidonax flaviventris</i>	Yellow-bellied flycatcher	0	F1	Late Successional Riparian	3	3	3	3	3	3	3	
<i>Empidonax minimus</i>	Least flycatcher	0	F2	Mixed Landscapes	4	4	4	4	4	4	4	
<i>Empidonax minimus</i>	Least flycatcher	0	F2	Mature Oak Forests	4	4	4	4	4	4	4	
<i>Empidonax traillii</i>	Willow flycatcher	0	F2	Bogs, Fens, Seeps, Seasonal Ponds	2	2	2	2	2	2	2	
<i>Empidonax traillii</i>	Willow flycatcher	0	F2	Early-Successional Riparian	2	2	2	2	2	2	2	
<i>Falco sparverius</i>	American kestrel	0	F3	Woodlands-Savannas-Grasslands	3	3	3	3	3	3	3	
<i>Falco sparverius</i>	American kestrel	0	F3	Snags	5	5	5	5	5	5	5	
<i>Icteria virens</i>	Yellow-breasted chat	0	F3	Early-Successional Forests	4	4	4	3	4	3	4	
<i>Icterus spurius</i>	Orchard oriole	0	F3	Woodlands-Savannas-Grasslands	3	3	3	3	3	3	3	
<i>Icterus spurius</i>	Orchard oriole	0	F3	Mature Oak Forests	5	5	5	5	5	5	5	
<i>Icterus spurius</i>	Orchard oriole	0	F3	Mixed Landscapes	5	5	5	5	5	5	5	
<i>Lanius ludovicianus</i>	Loggerhead shrike	0	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1	
<i>Limnothlypis swainsonii</i>	Swainson's warbler	0	F2	Mature Mesic Hardwood Forests	4	4	4	4	4	4	4	
<i>Limnothlypis swainsonii</i>	Swainson's warbler	0	F2	Canopy Gaps	4	4	4	4	4	4	4	
<i>Limnothlypis swainsonii</i>	Swainson's warbler	0	F2	Mature Forest Interiors	4	4	4	4	4	4	4	
<i>Loxia curvirostra</i>	Red crossbill	0	F1	Mature Hemlock Forests	1	1	1	1	1	1	1	
<i>Loxia curvirostra</i>	Red crossbill	0	F1	Spruce-Fir Forests	1	1	1	1	1	1	1	
<i>Parus atricapillus</i>	Black-capped chickadee	0	F3	Spruce-Fir Forests	3	3	3	3	3	3	3	
<i>Parus atricapillus</i>	Black-capped chickadee	0	F3	Mature High-Elevation Mesic Hardwood Forests	5	5	5	5	5	5	5	
<i>Passerculus sandwichensis</i>	Savannah sparrow	0	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1	
<i>Pheucticus ludovicianus</i>	Rose-breasted grosbeak	0	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5	
<i>Pheucticus ludovicianus</i>	Rose-breasted grosbeak	0	F3	Canopy Gaps	5	5	5	5	5	5	5	
<i>Poocetes gramineus</i>	Vesper sparrow	0	F1	Grassy Balds	1	1	1	1	1	1	1	

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative							
					A	B	D	E	F	G	I	
<i>Poocetes gramineus</i>	Vesper sparrow	0	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1	1
<i>Regulus satrapa</i>	Golden-crowned kinglet	0	F2	Spruce-Fir Forests	2	2	2	2	2	2	2	2
<i>Regulus satrapa</i>	Golden-crowned kinglet	0	F2	Mature High-Elevation Mesic Hardwood Forests	4	4	4	4	4	4	4	4
<i>Scolopax minor</i>	American woodcock	0	F2	Bogs, Fens, Seeps, Seasonal Ponds	2	2	2	2	2	2	2	2
<i>Scolopax minor</i>	American woodcock	0	F2	Early-Successional Riparian	2	2	2	2	2	2	2	2
<i>Sitta canadensis</i>	Red-breasted nuthatch	0	F2	Spruce-Fir Forests	2	2	2	2	2	2	2	2
<i>Sitta canadensis</i>	Red-breasted nuthatch	0	F2	Mature Hemlock Forests	2	2	2	2	2	2	2	2
<i>Sitta canadensis</i>	Red-breasted nuthatch	0	F2	Snags	4	4	4	4	4	4	4	4
<i>Sphyrapicus varius appalachiensis</i>	Appalachian yellow-bellied sapsucker	0	F2	Snags	4	4	4	4	4	4	4	4
<i>Sphyrapicus varius appalachiensis</i>	Appalachian yellow-bellied sapsucker	0	F2	Mature Oak Forests	4	4	4	4	4	4	4	4
<i>Sphyrapicus varius appalachiensis</i>	Appalachian yellow-bellied sapsucker	0	F2	Mature High-Elevation Mesic Hardwood Forests	4	4	4	4	4	4	4	4
<i>Troglodytes troglodytes</i>	Winter wren	0	F1	Mature High-Elevation Mesic Hardwood Forests	3	3	3	3	3	3	3	3
<i>Troglodytes troglodytes</i>	Winter wren	0	F1	Spruce-Fir Forests	1	1	1	1	1	1	1	1
<i>Vermivora chrysoptera</i>	Golden-winged warbler	0	F2	Early-Successional Forests	3	3	3	2	3	2	3	3
<i>Vermivora chrysoptera</i>	Golden-winged warbler	0	F2	High Elevation Early Succession	2	2	2	2	2	2	2	2
<i>Vermivora pinus</i>	Blue-winged warbler	0	F3	Early-Successional Forests	4	4	4	3	4	3	4	4
<i>Vireo gilvus</i>	Warbling vireo	0	F3	Canopy Gaps	5	5	5	5	5	5	5	5
<i>Vireo gilvus</i>	Warbling vireo	0	F3	Late Successional Riparian	5	5	5	5	5	5	5	5
<i>Vireo griseus</i>	White-eyed vireo	0	F3	Early-Successional Forests	4	4	4	3	4	3	4	4
<i>Wilsonia canadensis</i>	Canada warbler	0	F3	Canopy Gaps	5	5	5	5	5	5	5	5
<i>Wilsonia canadensis</i>	Canada warbler	0	F3	Mature High-Elevation Mesic Hardwood Forests	5	5	5	5	5	5	5	5
<i>Wilsonia canadensis</i>	Canada warbler	0	F3	Spruce-Fir Forests	3	3	3	3	3	3	3	3

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

Scientific Name	Common Name	Status	FRank	Habitat Element	Viability Risk by Alternative						
					A	B	D	E	F	G	I
Taxa: Invertebrate											
<i>Anaplectoides brunneomedia</i>	Brown-lined dart moth	O	F2	Grassy Balds	2	2	2	2	2	2	2
<i>Anaplectoides brunneomedia</i>	Brown-lined dart moth	O	F2	Spruce-Fir Forests	2	2	2	2	2	2	2
<i>Anaplectoides brunneomedia</i>	Brown-lined dart moth	O	F2	High Elevation Early Succession	2	2	2	2	2	2	2
<i>Arrhopalites commorus</i>	Cave springtail	S	F1	Caves and Mines	2	2	2	2	2	2	2
<i>Autochton cellus</i>	Golden-banded skipper	O	F1	Early-Successional Riparian	1	1	1	1	1	1	1
<i>Brachoria dentata</i>	Millipede	S	F1	Caves and Mines	2	2	2	2	2	2	2
<i>Brachoria dentata</i>	Millipede	S	F1	Downed Wood	3	3	3	3	3	3	3
<i>Brachoria dentata</i>	Millipede	S	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Brachoria ethotela</i>	Hungry mother millipede	S	F2	Downed Wood	4	4	4	4	4	4	4
<i>Brachoria ethotela</i>	Hungry mother millipede	S	F2	Mature High-Elevation Mesic Hardwood Forests	4	4	4	4	4	4	4
<i>Brachoria insolita</i>	Millipede	O	F1	Downed Wood	3	3	3	3	3	3	3
<i>Brachoria insolita</i>	Millipede	O	F1	Mature High-Elevation Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Brachypanorpa jeffersoni</i>	Jefferson's short-nosed scorpionfly	S	F1	Mature High-Elevation Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Brachypanorpa jeffersoni</i>	Jefferson's short-nosed scorpionfly	S	F1	Spruce-Fir Forests	1	1	1	1	1	1	1
<i>Buotus carolinus</i>	Millipede	S	F1	Downed Wood	3	3	3	3	3	3	3
<i>Buotus carolinus</i>	Millipede	S	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Caecidotea incurva</i>	Incurved cave isopod	S	F2	Caves and Mines	3	3	3	3	3	3	3
<i>Catocala herodias gerhardi</i>	Herodias underwing	S	F1	Glades and Barrens	1	1	1	1	1	1	1
<i>Catocala herodias gerhardi</i>	Herodias underwing	S	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1
<i>Catocala herodias gerhardi</i>	Herodias underwing	S	F1	Mature Oak Forests	3	3	3	3	3	3	3
<i>Catocala marmorata</i>	Marbled underwing	O	F2	Late Successional Riparian	4	4	4	4	4	4	4
<i>Celastrina ebenina</i>	Dusky azure	O	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Celastrina ebenina</i>	Dusky azure	O	F1	Basic Mesic Forests	1	1	1	1	1	1	1
<i>Cicindela ancocisconensis</i>	Tiger beetle	S	F1	River Channels	1	1	1	1	1	1	1
<i>Cicindela patruela</i>	Barrens tiger beetle	S	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1
<i>Cicindela patruela</i>	Barrens tiger beetle	S	F1	Rock Outcrops and Cliffs	2	2	2	2	2	2	2

Scientific Name	Common Name	Status	FRank	Habitat Element	Viability Risk by Alternative						
					A	B	D	E	F	G	I
<i>Cleidogona fidelitor</i>	Faithful millipede	O	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Cleidogona hoffmani</i>	Hoffman's cleidogonid millipede	S	F2	Downed Wood	4	4	4	4	4	4	4
<i>Cleidogona hoffmani</i>	Hoffman's cleidogonid millipede	S	F2	Caves and Mines	3	3	3	3	3	3	3
<i>Cleidogona lachesis</i>	Millipede	S	F1	Spruce-Fir Forests	1	1	1	1	1	1	1
<i>Cleidogona lachesis</i>	Millipede	S	F1	Downed Wood	3	3	3	3	3	3	3
<i>Conotyla aeto</i>	Millipede	O	F1	Downed Wood	3	3	3	3	3	3	3
<i>Conotyla aeto</i>	Millipede	O	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Conotyla celeno</i>	Celeno millipede	O	F1	Downed Wood	3	3	3	3	3	3	3
<i>Conotyla celeno</i>	Celeno millipede	O	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Dixioria coronata</i>	Millipede	S	F2	Spruce-Fir Forests	2	2	2	2	2	2	2
<i>Dixioria fowleri</i>	Millipede	S	F2	Mature Mesic Hardwood Forests	4	4	4	4	4	4	4
<i>Dixioria fowleri</i>	Millipede	S	F2	Downed Wood	4	4	4	4	4	4	4
<i>Erora laeta</i>	Early hairstreak	O	F2	Mature Mesic Hardwood Forests	4	4	4	4	4	4	4
<i>Escaryus cryptorobius</i>	Montane centipede	S	F2	Downed Wood	4	4	4	4	4	4	4
<i>Escaryus cryptorobius</i>	Montane centipede	S	F2	Mature High-Elevation Mesic Hardwood Forests	4	4	4	4	4	4	4
<i>Escaryus orestes</i>	Whitetop Mountain centipede	S	F2	Mature High-Elevation Mesic Hardwood Forests	4	4	4	4	4	4	4
<i>Escaryus orestes</i>	Whitetop Mountain centipede	S	F2	Downed Wood	4	4	4	4	4	4	4
<i>Litocampa sp. 4</i>	Dipluran	O	F1	Caves and Mines	2	2	2	2	2	2	2
<i>Mesomphix rugeli</i>	Wrinkled button	O	F3	Mature High-Elevation Mesic Hardwood Forests	5	5	5	5	5	5	5
<i>Polygonia progne</i>	Gray comma	O	F3	Mixed Landscapes	5	5	5	5	5	5	5
<i>Pseudanopthalmus cordicollis</i>	Little Kennedy cave beetle	O	F1	Caves and Mines	2	2	2	2	2	2	2
<i>Pseudotremia alecto</i>	Millipede	S	F1	Downed Wood	3	3	3	3	3	3	3
<i>Pseudotremia alecto</i>	Millipede	S	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Pseudotremia alecto</i>	Millipede	S	F1	Caves and Mines	2	2	2	2	2	2	2
<i>Rudiloria trimaculata tortua</i>	Millipede	O	F2	Downed Wood	4	4	4	4	4	4	4
<i>Rudiloria trimaculata tortua</i>	Millipede	O	F2	Mature Mesic Hardwood Forests	4	4	4	4	4	4	4
<i>Semionellus placidus</i>	Millipede	S	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Semionellus placidus</i>	Millipede	S	F1	Downed Wood	3	3	3	3	3	3	3
<i>Speyeria diana</i>	Diana fritillary	S	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5
<i>Speyeria diana</i>	Diana fritillary	S	F3	Canopy Gaps	5	5	5	5	5	5	5

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative							
					A	B	D	E	F	G	I	
Taxa: Plant-Vascular												
<i>Abies fraseri</i>	Fraser fir	O	F1	Spruce-Fir Forests	1	1	1	1	1	1	1	1
<i>Aconitum reclinatum</i>	Trailing wolfsbane	S	F1	Rock Outcrops and Cliffs	2	2	2	2	2	2	2	2
<i>Aconitum uncinatum</i>	Blue monkshood	O	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3	3
<i>Aconitum uncinatum</i>	Blue monkshood	O	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5	5
<i>Aconitum uncinatum</i>	Blue monkshood	O	F3	Basic Mesic Forests	3	3	3	3	3	3	3	3
<i>Aconitum uncinatum</i>	Blue monkshood	O	F3	Mature High-Elevation Mesic Hardwood Forests	5	5	5	5	5	5	5	5
<i>Adlumia fungosa</i>	Climbing fumatory	O	F2	Rock Outcrops and Cliffs	3	3	3	3	3	3	3	3
<i>Adlumia fungosa</i>	Climbing fumatory	O	F2	Late Successional Riparian	4	4	4	4	4	4	4	4
<i>Adlumia fungosa</i>	Climbing fumatory	O	F2	Basic Mesic Forests	2	2	2	2	2	2	2	2
<i>Agastache scrophulariifolia</i>	Giant purple hyssop	O	F2	Mature High-Elevation Mesic Hardwood Forests	4	4	4	4	4	4	4	4
<i>Agastache scrophulariifolia</i>	Giant purple hyssop	O	F2	Basic Mesic Forests	2	2	2	2	2	2	2	2
<i>Arabis glabra</i>	Tower mustard	O	F1	Early-Successional Forests	2	2	2	1	2	1	2	2
<i>Arabis glabra</i>	Tower mustard	O	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1	1
<i>Arnoglossum muehlenbergii</i>	Great Indian plantain	O	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3	3
<i>Asplenium pinnatifidum</i>	Lobed spleenwort	O	F3	Rock Outcrops and Cliffs	4	4	4	4	4	4	4	4
<i>Asplenium resiliens</i>	Blackstem spleenwort	O	F3	Rock Outcrops and Cliffs	4	4	4	4	4	4	4	4
<i>Aster oblongifolius</i>	Aromatic aster	O	F1	Rock Outcrops and Cliffs	2	2	2	2	2	2	2	2
<i>Aster surculosus</i>	Creeping aster	O	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1	1
<i>Aster surculosus</i>	Creeping aster	O	F1	Glades and Barrens	1	1	1	1	1	1	1	1
<i>Athyrium pycnocarpon</i>	Narrow-leaved glade fern	O	F2	Mature High-Elevation Mesic Hardwood Forests	4	4	4	4	4	4	4	4
<i>Athyrium pycnocarpon</i>	Narrow-leaved glade fern	O	F2	Mature Mesic Hardwood Forests	4	4	4	4	4	4	4	4
<i>Baptisia australis</i>	Blue wild indigo	O	F1	Early-Successional Forests	2	2	2	1	2	1	2	2
<i>Baptisia australis</i>	Blue wild indigo	O	F1	River Channels	1	1	1	1	1	1	1	1
<i>Bartonia virginica</i>	Yellow screwstem	O	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3	3
<i>Berberis canadensis</i>	American barberry	S	F1	Glades and Barrens	1	1	1	1	1	1	1	1
<i>Berberis canadensis</i>	American barberry	S	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1	1

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative							
					A	B	D	E	F	G	I	
Taxa: Plant-Vascular												
<i>Botrychium matricariifolium</i>	Chamomile grape fern	O	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1	
<i>Bouteloua curtipendula</i>	Side-oats grama	O	F1	Glades and Barrens	1	1	1	1	1	1	1	
<i>Bouteloua curtipendula</i>	Side-oats grama	O	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1	
<i>Boykinia aconitifolia</i>	Brook saxifrage	O	F3	River Channels	3	3	3	3	3	3	3	
<i>Boykinia aconitifolia</i>	Brook saxifrage	O	F3	Spray Cliffs	4	4	4	4	4	4	4	
<i>Buckleya distichophylla</i>	Piratebush	S	F2	Rock Outcrops and Cliffs	3	3	3	3	3	3	3	
<i>Buckleya distichophylla</i>	Piratebush	S	F2	Mature Oak Forests	4	4	4	4	4	4	4	
<i>Buckleya distichophylla</i>	Piratebush	S	F2	Carolina Hemlock Forests	2	2	2	2	2	2	2	
<i>Calamagrostis canadensis</i>	Canada reedgrass	O	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Calamagrostis canadensis</i>	Canada reedgrass	O	F1	Spruce-Fir Forests	1	1	1	1	1	1	1	
<i>Calamagrostis canadensis</i>	Canada reedgrass	O	F1	Grassy Balds	1	1	1	1	1	1	1	
<i>Calamagrostis canadensis</i>	Canada reedgrass	O	F1	Mature High-Elevation Mesic Hardwood Forests	3	3	3	3	3	3	3	
<i>Campanula aparinoides</i>	Marsh bellflower	O	F2	Bogs, Fens, Seeps, Seasonal Ponds	2	2	2	2	2	2	2	
<i>Cardamine clematitidis</i>	Mountain bittercress	S	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Cardamine clematitidis</i>	Mountain bittercress	S	F1	Mature High-Elevation Mesic Hardwood Forests	3	3	3	3	3	3	3	
<i>Cardamine clematitidis</i>	Mountain bittercress	S	F1	Spruce-Fir Forests	1	1	1	1	1	1	1	
<i>Cardamine flagellifera</i>	Bittercress	O	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3	
<i>Cardamine flagellifera</i>	Bittercress	O	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Cardamine rotundifolia</i>	Round-leaved watercress	O	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3	
<i>Carex buxbaumii</i>	Brown bog sedge	O	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Carex buxbaumii</i>	Brown bog sedge	O	F1	Open Wetlands	1	1	1	1	1	1	1	
<i>Carex cristatella</i>	Crested sedge	O	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Carex cristatella</i>	Crested sedge	O	F1	Grassy Balds	1	1	1	1	1	1	1	
<i>Carex eburnea</i>	Bristle-leaf sedge	O	F3	Rock Outcrops and Cliffs	4	4	4	4	4	4	4	
<i>Carex flava</i>	Yellow sedge	O	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Carex hitchcockiana</i>	Hitchcock's sedge	O	F2	Mature Mesic Hardwood Forests	4	4	4	4	4	4	4	

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative							
					A	B	D	E	F	G	I	
Taxa: Plant-Vascular												
<i>Carex pallescens</i>	Pale sedge	0	F1	Grassy Balds	1	1	1	1	1	1	1	
<i>Carex pedunculata</i>	Longstalk sedge	0	F2	Mature Mesic Hardwood Forests	4	4	4	4	4	4	4	
<i>Carex plantaginea</i>	Plantain-leaved sedge	0	F2	Mature Mesic Hardwood Forests	4	4	4	4	4	4	4	
<i>Carex plantaginea</i>	Plantain-leaved sedge	0	F2	Basic Mesic Forests	2	2	2	2	2	2	2	
<i>Carex purpurifera</i>	Purple sedge	0	F1	Basic Mesic Forests	1	1	1	1	1	1	1	
<i>Carex purpurifera</i>	Purple sedge	0	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3	
<i>Carex ruthii</i>	Ruth's sedge	0	F2	Bogs, Fens, Seeps, Seasonal Ponds	2	2	2	2	2	2	2	
<i>Carex tetanica</i>	Rigid sedge	0	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Carex trisperma</i>	Three-seeded sedge	0	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Carex vesicaria</i>	Inflated sedge	0	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Carex woodii</i>	Wood's sedge	0	F3	Mature Hemlock Forests	3	3	3	3	3	3	3	
<i>Carex woodii</i>	Wood's sedge	0	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5	
<i>Carex woodii</i>	Wood's sedge	0	F3	Mature High-Elevation Mesic Hardwood Forests	5	5	5	5	5	5	5	
<i>Cheilanthes eatonii</i>	Chestnut lipfern	0	F1	Glades and Barrens	1	1	1	1	1	1	1	
<i>Cheilanthes eatonii</i>	Chestnut lipfern	0	F1	Rock Outcrops and Cliffs	2	2	2	2	2	2	2	
<i>Chenopodium simplex</i>	Giant-seed goosefoot	0	F2	Rock Outcrops and Cliffs	3	3	3	3	3	3	3	
<i>Chrysogonum virginianum</i>	Green-and-gold	0	F3	Canopy Gaps	5	5	5	5	5	5	5	
<i>Chrysogonum virginianum</i>	Green-and-gold	0	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5	
<i>Chrysosplenium americanum</i>	Golden saxifrage	0	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3	
<i>Chrysosplenium americanum</i>	Golden saxifrage	0	F3	Late Successional Riparian	5	5	5	5	5	5	5	
<i>Cleistis bifaria</i>	Small spreading pogonia	S	F2	Woodlands-Savannas-Grasslands	2	2	2	2	2	2	2	
<i>Clematis coactilis</i>	Virginia white-haired leatherflower	S	F2	Glades and Barrens	2	2	2	2	2	2	2	
<i>Coeloglossum viride var. virescens</i>	Long-bracted green orchis	0	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5	
<i>Collinsia verna</i>	Eastern blue-eyed Mary	0	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3	
<i>Corallorhiza bentleyi</i>	Bentley's corralroot	0	F1	Mixed Landscapes	3	3	3	3	3	3	3	
<i>Coreopsis verticillata</i>	Whorled tickseed	0	F2	Early-Successional Forest	3	3	3	2	3	2	3	

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative						
					A	B	D	E	F	G	I
Taxa: Plant-Vascular											
<i>Cuscuta rostrata</i>	Beaked dodder	0	F1	Mature High-Elevation Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Cuscuta rostrata</i>	Beaked dodder	0	F1	Spruce-Fir Forests	1	1	1	1	1	1	1
<i>Cuscuta rostrata</i>	Beaked dodder	0	F1	Mature Hemlock Forests	1	1	1	1	1	1	1
<i>Cymophyllus fraserianus</i>	Fraser's sedge	0	F3	Late Successional Riparian	5	5	5	5	5	5	5
<i>Cymophyllus fraserianus</i>	Fraser's sedge	0	F3	Mature High-Elevation Mesic Hardwood Forests	5	5	5	5	5	5	5
<i>Cymophyllus fraserianus</i>	Fraser's sedge	0	F3	Mature Hemlock Forests	3	3	3	3	3	3	3
<i>Cypripedium reginae</i>	Showy lady's-slipper	0	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1
<i>Cystopteris tenuis</i>	Upland bladder-fern	0	F3	Rock Outcrops and Cliffs	4	4	4	4	4	4	4
<i>Diarrhena americana</i>	Eastern beakgrass	0	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Diervilla lonicera</i>	Northern bush honeysuckle	0	F2	Shrub Balds	2	2	2	2	2	2	2
<i>Diervilla lonicera</i>	Northern bush honeysuckle	0	F2	Glades and Barrens	2	2	2	2	2	2	2
<i>Diervilla lonicera</i>	Northern bush honeysuckle	0	F2	Rock Outcrops and Cliffs	3	3	3	3	3	3	3
<i>Diphylleia cymosa</i>	Umbrella leaf	0	F2	Bogs, Fens, Seeps, Seasonal Ponds	2	2	2	2	2	2	2
<i>Diphylleia cymosa</i>	Umbrella leaf	0	F2	Mature High-Elevation Mesic Hardwood Forests	4	4	4	4	4	4	4
<i>Dirca palustris</i>	Leatherwood	0	F2	Late Successional Riparian	4	4	4	4	4	4	4
<i>Dirca palustris</i>	Leatherwood	0	F2	Basic Mesic Forests	2	2	2	2	2	2	2
<i>Dirca palustris</i>	Leatherwood	0	F2	Mature Mesic Hardwood Forests	4	4	4	4	4	4	4
<i>Dodecatheon meadia</i> ssp. <i>meadia</i>	Eastern shooting star	0	F2	Bogs, Fens, Seeps, Seasonal Ponds	2	2	2	2	2	2	2
<i>Dodecatheon meadia</i> ssp. <i>meadia</i>	Eastern shooting star	0	F2	Basic Mesic Forests	2	2	2	2	2	2	2
<i>Dryopteris cristata</i>	Crested shield fern	0	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3
<i>Dryopteris goldiana</i>	Goldie's woodfern	0	F2	Bogs, Fens, Seeps, Seasonal Ponds	2	2	2	2	2	2	2
<i>Elodea canadensis</i>	Broad waterweed	0	F3	Lakeshores	4	4	4	4	4	4	4
<i>Elodea canadensis</i>	Broad waterweed	0	F3	Open Wetlands	3	3	3	3	3	3	3
<i>Elymus canadensis</i>	Nodding wild rye	0	F1	Early-Successional Riparian	1	1	1	1	1	1	1
<i>Elymus canadensis</i>	Nodding wild rye	0	F1	River Channels	1	1	1	1	1	1	1
<i>Epilobium angustifolium</i>	Fireweed	0	F2	Woodlands-Savannas-Grasslands	2	2	2	2	2	2	2
<i>Epilobium angustifolium</i>	Fireweed	0	F2	Grassy Balds	2	2	2	2	2	2	2

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative						
					A	B	D	E	F	G	I
Taxa: Plant-Vascular											
<i>Epilobium angustifolium</i>	Fireweed	0	F2	Canopy Gaps	4	4	4	4	4	4	4
<i>Eriophorum virginicum</i>	Tawny cotton-grass	0	F2	Bogs, Fens, Seeps, Seasonal Ponds	2	2	2	2	2	2	2
<i>Eupatorium godfreyanum</i>	Godfrey's thoroughwort	0	F3	Mature Oak Forests	5	5	5	5	5	5	5
<i>Eupatorium godfreyanum</i>	Godfrey's thoroughwort	0	F3	High Elevation Early Succession	3	3	3	3	3	3	3
<i>Eupatorium incarnatum</i>	Pink thoroughwort	0	F1	Glades and Barrens	1	1	1	1	1	1	1
<i>Eupatorium incarnatum</i>	Pink thoroughwort	0	F1	Rock Outcrops and Cliffs	2	2	2	2	2	2	2
<i>Eupatorium maculatum</i>	Spotted joe-pye weed	0	F1	Grassy Balds	1	1	1	1	1	1	1
<i>Eupatorium maculatum</i>	Spotted joe-pye weed	0	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1
<i>Euphorbia commutata</i>	Cliff spurge	0	F3	Glades and Barrens	3	3	3	3	3	3	3
<i>Gaylussacia brachycera</i>	Box huckleberry	0	F2	Table Mountain Pine Forests	2	3	2	2	2	2	2
<i>Gaylussacia brachycera</i>	Box huckleberry	0	F2	Woodlands-Savannas-Grasslands	2	2	2	2	2	2	2
<i>Gaylussacia brachycera</i>	Box huckleberry	0	F2	Mature Yellow Pine Forests	3	3	3	2	2	3	3
<i>Gentiana austromontana</i>	Appalachian gentian	S	F3	Grassy Balds	3	3	3	3	3	3	3
<i>Gentiana austromontana</i>	Appalachian gentian	S	F3	Mature High-Elevation Mesic Hardwood Forests	5	5	5	5	5	5	5
<i>Gentianopsis crinita</i>	Fringed gentian	0	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1
<i>Gnaphalium uliginosum</i>	Low cudweed	0	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1
<i>Gnaphalium uliginosum</i>	Low cudweed	0	F1	High Elevation Early Succession	1	1	1	1	1	1	1
<i>Goodyera repens var. ophioides</i>	Dwarf rattlesnake plantain	0	F2	Mature Mesic Hardwood Forests	4	4	4	4	4	4	4
<i>Goodyera repens var. ophioides</i>	Dwarf rattlesnake plantain	0	F2	Mature Hemlock Forests	2	2	2	2	2	2	2
<i>Helianthus atrorubens</i>	Savanna hairy sunflower	0	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5
<i>Helianthus laevigatus</i>	Smooth sunflower	0	F2	Glades and Barrens	2	2	2	2	2	2	2
<i>Helianthus laevigatus</i>	Smooth sunflower	0	F2	Woodlands-Savannas-Grasslands	2	2	2	2	2	2	2
<i>Heuchera americana var. hispida</i>	Rough alumroot	0	F1	Rock Outcrops and Cliffs	2	2	2	2	2	2	2
<i>Heuchera longiflora</i>	Long-flowered alumroot	0	F2	Rock Outcrops and Cliffs	3	3	3	3	3	3	3
<i>Hexalectris spicata</i>	Crested coral root	0	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Hexastylis shuttleworthii var. shuttleworthii</i>	Large-flowered heartleaf	0	F1	Late Successional Riparian	3	3	3	3	3	3	3

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative						
					A	B	D	E	F	G	I
Taxa: Plant-Vascular											
<i>Huperzia appalachiana</i>	Appalachian fir clubmoss	O	F1	Rock Outcrops and Cliffs	2	2	2	2	2	2	2
<i>Hydrastis canadensis</i>	Goldenseal	O	F1	Basic Mesic Forests	1	1	1	1	1	1	1
<i>Hydrophyllum macrophyllum</i>	Largeleaf waterleaf	O	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5
<i>Hydrophyllum macrophyllum</i>	Largeleaf waterleaf	O	F3	Basic Mesic Forests	3	3	3	3	3	3	3
<i>Hypericum drummondii</i>	Drummond's St. John's wort	O	F1	Glades and Barrens	1	1	1	1	1	1	1
<i>Hypericum mitchellianum</i>	Mitchell's St. John's-wort	S	F3	Grassy Balds	3	3	3	3	3	3	3
<i>Hypericum mitchellianum</i>	Mitchell's St. John's-wort	S	F3	Woodlands-Savannas-Grasslands	3	3	3	3	3	3	3
<i>Ilex collina</i>	Long-stalked holly	S	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1
<i>Isotria medeoloides</i>	Small whorled pogonia	F	F1	Mature Hemlock Forests	1	1	1	1	1	1	1
<i>Isotria medeoloides</i>	Small whorled pogonia	F	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Jeffersonia diphylla</i>	Twinleaf	O	F2	Mature Mesic Hardwood Forests	4	4	4	4	4	4	4
<i>Jeffersonia diphylla</i>	Twinleaf	O	F2	Basic Mesic Forests	2	2	2	2	2	2	2
<i>Juglans cinerea</i>	Butternut	S	F3	Basic Mesic Forests	3	3	3	3	3	3	3
<i>Juglans cinerea</i>	Butternut	S	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5
<i>Juglans cinerea</i>	Butternut	S	F3	Late Successional Riparian	5	5	5	5	5	5	5
<i>Juncus brachycephalus</i>	Small-head rush	O	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1
<i>Juncus brevicaudatus</i>	Narrow-panicked rush	O	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1
<i>Juncus subcaudatus</i>	Woods rush	O	F2	Bogs, Fens, Seeps, Seasonal Ponds	2	2	2	2	2	2	2
<i>Lathyrus venosus</i>	Smooth veiny peavine	O	F3	Woodlands-Savannas-Grasslands	3	3	3	3	3	3	3
<i>Lathyrus venosus</i>	Smooth veiny peavine	O	F3	Mature Oak Forests	5	5	5	5	5	5	5
<i>Leucothoe fontanesiana</i>	Highland dog-hobble	O	F1	Mature Hemlock Forests	1	1	1	1	1	1	1
<i>Liatis turgida</i>	Turgid gay-feather	S	F2	Glades and Barrens	2	2	2	2	2	2	2
<i>Lilium grayi</i>	Gray's lily	S	F1	Grassy Balds	1	1	1	1	1	1	1
<i>Lilium grayi</i>	Gray's lily	S	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1
<i>Liparis loeselii</i>	Loesel's twayblade	O	F1	Mature High-Elevation Mesic Hardwood Forests	3	3	3	3	3	3	3
<i>Liparis loeselii</i>	Loesel's twayblade	O	F1	Mature Hemlock Forests	1	1	1	1	1	1	1

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative							
					A	B	D	E	F	G	I	
Taxa: Plant-Vascular												
<i>Onosmodium virginianum</i>	Virginia false gromwell	O	F1	Glades and Barrens	1	1	1	1	1	1	1	
<i>Oryzopsis racemosa</i>	Black-fruit mountain ricegrass	O	F3	Rock Outcrops and Cliffs	4	4	4	4	4	4	4	
<i>Packera plattensis</i>	Prairie ragwort	O	F3	Glades and Barrens	3	3	3	3	3	3	3	
<i>Panax quinquefolius</i>	Ginseng	O	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5	
<i>Panax quinquefolius</i>	Ginseng	O	F3	Basic Mesic Forests	3	3	3	3	3	3	3	
<i>Panax trifolius</i>	Dwarf ginseng	O	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3	
<i>Parnassia asarifolia</i>	Kidneyleaf grass-of-parnassus	O	F3	Late Successional Riparian	5	5	5	5	5	5	5	
<i>Parnassia asarifolia</i>	Kidneyleaf grass-of-parnassus	O	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3	
<i>Parnassia grandifolia</i>	Large-leaved grass-of-parnassus	O	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Paronychia argyrocoma</i>	Silverling	O	F2	Rock Outcrops and Cliffs	3	3	3	3	3	3	3	
<i>Paxistima canbyi</i>	Canby's mountain-lover	S	F1	Canopy Gaps	3	3	3	3	3	3	3	
<i>Paxistima canbyi</i>	Canby's mountain-lover	S	F1	Mature Oak Forests	3	3	3	3	3	3	3	
<i>Paxistima canbyi</i>	Canby's mountain-lover	S	F1	Rock Outcrops and Cliffs	2	2	2	2	2	2	2	
<i>Pellaea atropurpurea</i>	Purple-stem cliffbreak	O	F3	Rock Outcrops and Cliffs	4	4	4	4	4	4	4	
<i>Phacelia bipinnatifida</i>	Fernleaf phacelia	O	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5	
<i>Phacelia bipinnatifida</i>	Fernleaf phacelia	O	F3	Basic Mesic Forests	3	3	3	3	3	3	3	
<i>Phacelia dubia</i>	Phacelia	O	F3	Glades and Barrens	3	3	3	3	3	3	3	
<i>Phacelia fimbriata</i>	Fringed scorpion-weed	O	F2	Basic Mesic Forests	2	2	2	2	2	2	2	
<i>Phacelia fimbriata</i>	Fringed scorpion-weed	O	F2	Spruce-Fir Forests	2	2	2	2	2	2	2	
<i>Phacelia fimbriata</i>	Fringed scorpion-weed	O	F2	Mature High-Elevation Mesic Hardwood Forests	4	4	4	4	4	4	4	
<i>Philadelphus hirsutus</i>	Streambank mock orange	O	F2	Rock Outcrops and Cliffs	3	3	3	3	3	3	3	
<i>Phlox amplifolia</i>	Broadleaf phlox	O	F1	Mature High-Elevation Mesic Hardwood Forests	3	3	3	3	3	3	3	
<i>Phlox buckleyi</i>	Sword-leaved phlox	S	F1	Glades and Barrens	1	1	1	1	1	1	1	
<i>Phlox subulata</i>	Moss pink	O	F3	River Channels	3	3	3	3	3	3	3	
<i>Phlox subulata</i>	Moss pink	O	F3	Rock Outcrops and Cliffs	4	4	4	4	4	4	4	
<i>Platanthera flava var. herbiola</i>	Turbercleled rein-orchid	O	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Platanthera orbiculata</i>	Large round-leaved orchid	O	F3	Mature High-Elevation Mesic Hardwood Forests	5	5	5	5	5	5	5	

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative							
					A	B	D	E	F	G	I	
Taxa: Plant-Vascular												
<i>Platanthera orbiculata</i>	Large round-leaved orchid	O	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5	
<i>Platanthera psycodes</i>	Small purple-fringed orchid	O	F2	Mature High-Elevation Mesic Hardwood Forests	4	4	4	4	4	4	4	
<i>Platanthera psycodes</i>	Small purple-fringed orchid	O	F2	Bogs, Fens, Seeps, Seasonal Ponds	2	2	2	2	2	2	2	
<i>Polygonum arifolium</i>	Halberdleaf tearthumb	O	F2	Open Wetlands	2	2	2	2	2	2	2	
<i>Polygonum cilinode</i>	Fringed black bindweed	O	F2	Canopy Gaps	4	4	4	4	4	4	4	
<i>Polygonum cilinode</i>	Fringed black bindweed	O	F2	Rock Outcrops and Cliffs	3	3	3	3	3	3	3	
<i>Populus grandidentata</i>	Large-tooth aspen	O	F3	Rock Outcrops and Cliffs	4	4	4	4	4	4	4	
<i>Populus grandidentata</i>	Large-tooth aspen	O	F3	Carolina Hemlock Forests	3	3	3	3	3	3	3	
<i>Populus grandidentata</i>	Large-tooth aspen	O	F3	Woodlands-Savannas-Grasslands	3	3	3	3	3	3	3	
<i>Prenanthes roanensis</i>	Roan rattlesnake-root	S	F1	Mature High-Elevation Mesic Hardwood Forests	3	3	3	3	3	3	3	
<i>Prenanthes roanensis</i>	Roan rattlesnake-root	S	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1	
<i>Prenanthes roanensis</i>	Roan rattlesnake-root	S	F1	Mixed Landscapes	3	3	3	3	3	3	3	
<i>Prosartes maculatum</i>	Spotted mandarin	O	F1	Mature High-Elevation Mesic Hardwood Forests	3	3	3	3	3	3	3	
<i>Prunus alleghaniensis</i>	Alleghany plum	O	F1	Mature Oak Forests	3	3	3	3	3	3	3	
<i>Prunus alleghaniensis</i>	Alleghany plum	O	F1	Glades and Barrens	1	1	1	1	1	1	1	
<i>Prunus alleghaniensis</i>	Alleghany plum	O	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1	
<i>Pycnanthemum torrei</i>	Torrey mountain mint	S	F1	Canopy Gaps	3	3	3	3	3	3	3	
<i>Rhododendron arborescens</i>	Smooth azalea	O	F1	Late Successional Riparian	3	3	3	3	3	3	3	
<i>Rhododendron arborescens</i>	Smooth azalea	O	F1	River Channels	1	1	1	1	1	1	1	
<i>Rhododendron arborescens</i>	Smooth azalea	O	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3	
<i>Rhododendron cumberlandense</i>	Cumberland azalea	O	F2	Grassy Balds	2	2	2	2	2	2	2	
<i>Rhododendron cumberlandense</i>	Cumberland azalea	O	F2	Mature High-Elevation Mesic Hardwood Forests	4	4	4	4	4	4	4	
<i>Rhododendron cumberlandense</i>	Cumberland azalea	O	F2	Mature Oak Forests	4	4	4	4	4	4	4	
<i>Rudbeckia triloba</i> var. <i>pinnatifida</i>	Pinnately-lobed brown-eyed sunflower	O	F1	Rock Outcrops and Cliffs	2	2	2	2	2	2	2	
<i>Rudbeckia triloba</i> var. <i>pinnatifida</i>	Pinnately-lobed brown-eyed sunflower	O	F1	Glades and Barrens	1	1	1	1	1	1	1	

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative							
					A	B	D	E	F	G	I	
Taxa: Plant-Vascular												
<i>Ruellia purshiana</i>	Pursh's wild petunia	O	F3	Woodlands-Savannas-Grasslands	3	3	3	3	3	3	3	
<i>Ruellia purshiana</i>	Pursh's wild petunia	O	F3	Mature Oak Forests	5	5	5	5	5	5	5	
<i>Ruellia purshiana</i>	Pursh's wild petunia	O	F3	Glades and Barrens	3	3	3	3	3	3	3	
<i>Sanicula trifoliata</i>	Large-fruited snakeroot	O	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3	
<i>Saxifraga michauxii</i>	Michaux's saxifrage	O	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3	
<i>Saxifraga michauxii</i>	Michaux's saxifrage	O	F3	Spray Cliffs	4	4	4	4	4	4	4	
<i>Saxifraga micranthidifolia</i>	Lettuce-leaved saxifrage	O	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3	
<i>Scirpus ancistrochaetus</i>	Northeastern bullrush	O	F1	Open Wetlands	1	1	1	1	1	1	1	
<i>Scutellaria saxatilis</i>	Rock skullcap	S	F3	Mature Mesic Hardwood Forests	5	5	5	5	5	5	5	
<i>Scutellaria saxatilis</i>	Rock skullcap	S	F3	Mature High-Elevation Mesic Hardwood Forests	5	5	5	5	5	5	5	
<i>Sibbaldiopsis tridentata</i>	Three-toothed cinquefoil	O	F1	Rock Outcrops and Cliffs	2	2	2	2	2	2	2	
<i>Sibbaldiopsis tridentata</i>	Three-toothed cinquefoil	O	F1	Glades and Barrens	1	1	1	1	1	1	1	
<i>Sibbaldiopsis tridentata</i>	Three-toothed cinquefoil	O	F1	Grassy Balds	1	1	1	1	1	1	1	
<i>Silene rotundifolia</i>	Round-leaved fire pink	O	F1	Rock Outcrops and Cliffs	2	2	2	2	2	2	2	
<i>Silene rotundifolia</i>	Round-leaved fire pink	O	F1	Glades and Barrens	1	1	1	1	1	1	1	
<i>Solidago arguta var. harrisii</i>	Shale-barren goldenrod	O	F3	Glades and Barrens	3	3	3	3	3	3	3	
<i>Solidago squarrosa</i>	Squarrose goldenrod	O	F1	Rock Outcrops and Cliffs	2	2	2	2	2	2	2	
<i>Solidago squarrosa</i>	Squarrose goldenrod	O	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1	
<i>Sparganium chlorocarpum</i>	Narrow-leaf burreed	O	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Spartina pectinata</i>	Freshwater cordgrass	O	F1	River Channels	1	1	1	1	1	1	1	
<i>Spartina pectinata</i>	Freshwater cordgrass	O	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Spermacoce glabra</i>	Smooth buttonweed	O	F1	River Channels	1	1	1	1	1	1	1	
<i>Spiraea alba</i>	Narrow-leaved meadow-sweet	O	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3	
<i>Spiraea virginiana</i>	Virginia spiraea	F	F1	River Channels	1	1	1	1	1	1	1	
<i>Spiranthes lucida</i>	Shining ladies'-tresses	O	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Stellaria longifolia</i>	Longleaf stitchwort	O	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3	

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative							
					A	B	D	E	F	G	I	
Taxa: Plant-Vascular												
<i>Stellaria longifolia</i>	Longleaf stitchwort	0	F3	Open Wetlands	3	3	3	3	3	3	3	
<i>Streptopus roseus</i>	Rosy twisted-stalk	0	F3	Mature High-Elevation Mesic Hardwood Forests	5	5	5	5	5	5	5	
<i>Streptopus roseus</i>	Rosy twisted-stalk	0	F3	Spruce-Fir Forests	3	3	3	3	3	3	3	
<i>Symphoricarpos albus</i> var. <i>albus</i>	Snowberry	0	F1	Glades and Barrens	1	1	1	1	1	1	1	
<i>Taxus canadensis</i>	Canada yew	0	F2	Spruce-Fir Forests	2	2	2	2	2	2	2	
<i>Taxus canadensis</i>	Canada yew	0	F2	Bogs, Fens, Seeps, Seasonal Ponds	2	2	2	2	2	2	2	
<i>Thalictrum coriaceum</i>	Leatherleaf meadowrue	0	F2	Mature Mesic Hardwood Forests	4	4	4	4	4	4	4	
<i>Thalictrum coriaceum</i>	Leatherleaf meadowrue	0	F2	Basic Mesic Forests	2	2	2	2	2	2	2	
<i>Thermopsis mollis</i>	Appalachian golden-banner	0	F2	Woodlands-Savannas-Grasslands	2	2	2	2	2	2	2	
<i>Thuja occidentalis</i>	Northern white cedar	0	F2	Rock Outcrops and Cliffs	3	3	3	3	3	3	3	
<i>Thuja occidentalis</i>	Northern white cedar	0	F2	River Channels	2	2	2	2	2	2	2	
<i>Trichostema brachiatum</i>	Glade bluecurls	0	F3	Glades and Barrens	3	3	3	3	3	3	3	
<i>Trichostema brachiatum</i>	Glade bluecurls	0	F3	Rock Outcrops and Cliffs	4	4	4	4	4	4	4	
<i>Trientalis borealis</i>	Northern starflower	0	F2	Mature High-Elevation Mesic Hardwood Forests	4	4	4	4	4	4	4	
<i>Trifolium virginicum</i>	Kate's mountain clover	0	F2	Glades and Barrens	2	2	2	2	2	2	2	
<i>Triosteum aurantiacum</i>	Horse gentian	0	F2	Basic Mesic Forests	2	2	2	2	2	2	2	
<i>Triosteum aurantiacum</i>	Horse gentian	0	F2	Woodlands-Savannas-Grasslands	2	2	2	2	2	2	2	
<i>Triphora trianthophora</i>	Nodding pogonia	0	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3	
<i>Tsuga caroliniana</i>	Carolina hemlock	S	F3	Carolina Hemlock Forests	3	3	3	3	3	3	3	
<i>Veronica americana</i>	American speedwell	0	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3	
<i>Veronica scutellata</i>	Marsh speedwell	0	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Vicia americana</i>	American purple vetch	0	F1	River Channels	1	1	1	1	1	1	1	
<i>Vicia americana</i>	American purple vetch	0	F1	Woodlands-Savannas-Grasslands	1	1	1	1	1	1	1	
<i>Viola conspersa</i>	American dog violet	0	F3	Mature High-Elevation Mesic Hardwood Forests	5	5	5	5	5	5	5	
<i>Viola conspersa</i>	American dog violet	0	F3	Bogs, Fens, Seeps, Seasonal Ponds	3	3	3	3	3	3	3	
<i>Woodsia appalachiana</i>	Appalachian cliff fern	0	F3	Rock Outcrops and Cliffs	4	4	4	4	4	4	4	

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

TABLE E-1. RISK TO SPECIES VIABILITY FOR EACH SPECIES/HABITAT RELATIONSHIP BY ALTERNATIVE

Scientific Name	Common Name	Status	F Rank	Habitat Element	Viability Risk by Alternative							
					A	B	D	E	F	G	I	
Taxa: Plant-Vascular												
<i>Woodsia ilvensis</i>	Rusty cliff fern	0	F2	Rock Outcrops and Cliffs	3	3	3	3	3	3	3	
<i>Xerophyllum asphodeloides</i>	Eastern turkey beard	0	F3	Woodlands-Savannas-Grasslands	3	3	3	3	3	3	3	
<i>Xerophyllum asphodeloides</i>	Eastern turkey beard	0	F3	Table Mountain Pine Forests	3	4	3	3	3	3	3	
Taxa: Plant-Nonvascular												
<i>Bazzania nudicaulis</i>	Liverwort	S	F1	Spruce-Fir Forests	1	1	1	1	1	1	1	
<i>Bryoerythrophyllum ferruginascens</i>	Moss	0	F1	Late Successional Riparian	3	3	3	3	3	3	3	
<i>Entodon sullivantii</i>	Sullivant's entodon	0	F1	Snags	3	3	3	3	3	3	3	
<i>Entodon sullivantii</i>	Sullivant's entodon	0	F1	Mature Mesic Hardwood Forests	3	3	3	3	3	3	3	
<i>Frullania oakesiana</i>	Liverwort	S	F1	Spruce-Fir Forests	1	1	1	1	1	1	1	
<i>Leptoscyphus cuneifolius</i>	Liverwort	0	F1	Spruce-Fir Forests	1	1	1	1	1	1	1	
<i>Plagiochila austinii</i>	Liverwort	S	F1	Spray Cliffs	2	2	2	2	2	2	2	
<i>Plagiochila austinii</i>	Liverwort	S	F1	Rock Outcrops and Cliffs	2	2	2	2	2	2	2	
<i>Plagiochila austinii</i>	Liverwort	S	F1	Late Successional Riparian	3	3	3	3	3	3	3	
<i>Plagiochila corniculata</i>	Liverwort	0	F1	Spruce-Fir Forests	1	1	1	1	1	1	1	
<i>Plagiochila sullivantii</i> var. <i>sullivantii</i>	Sullivant's leafy liverwort	0	F1	Spray Cliffs	2	2	2	2	2	2	2	
<i>Plagiochila sullivantii</i> var. <i>sullivantii</i>	Sullivant's leafy liverwort	0	F1	Rock Outcrops and Cliffs	2	2	2	2	2	2	2	
<i>Plagiochila sullivantii</i> var. <i>sullivantii</i>	Sullivant's leafy liverwort	0	F1	Late Successional Riparian	3	3	3	3	3	3	3	
<i>Sphagnum angustifolium</i>	Narrowleaf peatmoss	0	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Sphagnum capillifolium</i>	Pom-pom peat moss	0	F2	Bogs, Fens, Seeps, Seasonal Ponds	2	2	2	2	2	2	2	
<i>Sphagnum fallax</i>	Pretty peatmoss	0	F2	Bogs, Fens, Seeps, Seasonal Ponds	2	2	2	2	2	2	2	
<i>Sphagnum fimbriatum</i>	Peatmoss	0	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Sphagnum flexuosum</i>	Flexuose peatmoss	0	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Sphagnum girgensohnii</i>	Girgensohn's peatmoss	0	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Sphagnum girgensohnii</i>	Girgensohn's peatmoss	0	F1	Spruce-Fir Forests	1	1	1	1	1	1	1	
<i>Sphagnum girgensohnii</i>	Girgensohn's peatmoss	0	F1	Rock Outcrops and Cliffs	2	2	2	2	2	2	2	
<i>Sphagnum quinquefarium</i>	Five-rowed peatmoss	0	F2	Bogs, Fens, Seeps, Seasonal Ponds	2	2	2	2	2	2	2	
<i>Sphagnum quinquefarium</i>	Five-rowed peatmoss	0	F2	Spruce-Fir Forests	2	2	2	2	2	2	2	
<i>Sphagnum quinquefarium</i>	Five-rowed peatmoss	0	F2	Mature High-Elevation Mesic Hardwood Forests	4	4	4	4	4	4	4	
<i>Sphagnum rubellum</i>	Red peatmoss	0	F?	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Sphagnum subtile</i>	Delicate peatmoss	0	F1	Bogs, Fens, Seeps, Seasonal Ponds	1	1	1	1	1	1	1	
<i>Sphenolobopsis pearsonii</i>	Liverwort	S	F1	Spruce-Fir Forests	1	1	1	1	1	1	1	

TABLE E-2. SUMMARY OF EXPECTED ABUNDANCE, DISTRIBUTION, LIKELIHOOD OF LIMITATION, AND MANAGEMENT EFFECTS FOR HABITAT ELEMENTS BY FOREST PLAN REVISION ALTERNATIVES.

KEYS TO CODES:

HABITAT ABUNDANCE

Values used to categorize projected abundance of each habitat element after 50 years of implementing each forest plan revision alternative.

Habitat Abundance Descriptions	
R	Rare. The habitat element is rare, with generally less than 100 occurrences, or patches of the element generally covering less than one percent of the planning area.
O	Occasional. The habitat element is encountered occasionally, and generally found on one to ten percent of the planning area.
C	Common. The habitat element is abundant and frequently encountered, and generally found on more than ten percent of the planning area.

HABITAT DISTRIBUTION

Values used to categorize projected distribution of each habitat element after 50 years of implementing each forest plan revision alternative.

Habitat Distribution Descriptions	
P	Poor. The habitat element is poorly distributed within the planning area and intermixed lands relative to conditions present prior to European settlement. Number and size of high quality habitat patches is greatly reduced.
F	Fair. The habitat element is fairly well distributed within the planning area and intermixed lands relative to conditions present prior to European settlement. Number and size of high quality habitat patches is somewhat reduced.
G	Good. The habitat element is well distributed within the planning area and intermixed lands relative to conditions present prior to European settlement. Number and size of high quality habitat patches is similar to or only slightly reduced relative to reference conditions.

LIKELIHOOD OF LIMITATION

General likelihood that the habitat element will be limiting to viability of associated species based on its abundance and distribution. See text for description of process used to determine likelihood of limitation.

Likelihood of Limitation Descriptions	
L	Low
M	Moderate
H	High

TABLE E-2. SUMMARY OF EXPECTED ABUNDANCE, DISTRIBUTION, LIKELIHOOD OF LIMITATION, AND MANAGEMENT EFFECTS FOR HABITAT ELEMENTS BY FOREST PLAN REVISION ALTERNATIVES.

KEYS TO CODES:

MANAGEMENT EFFECT

Values used to categorize the role of management effects on each habitat element for each forest plan revision alternative.

Management Effects Descriptions	
1	Abundance and distribution of the habitat element is maintained or improved by providing optimal protection, maintenance, and restoration to all occurrences (with limited exceptions in some cases). Little additional opportunity exists to decrease risk to viability of associated species because management is at or near optimal.
2	Abundance and distribution of the habitat element is improved through purposeful restoration, either through active management or passively by providing for successional progression. Opportunity for decreasing risk to associated species is primarily through increasing rates of restoration, where possible.
3	The habitat element is maintained at approximately current distribution and abundance, though location of elements may shift over time as a result of management action or inaction. Opportunity to reduce risk to viability of associated species is primarily through adopting and implementing objectives to increase abundance and distribution of the habitat element.
4	Regardless of management efforts, the habitat element is expected to decrease in distribution and abundance as a result of factors substantially outside of Forest Service control (e.g., invasive pests, acid deposition). Opportunity to reduce risk to viability of associated species is primarily through cooperative ventures with other agencies and organizations.
5	The habitat element is expected to decrease in distribution and abundance as a result of management action or inaction. Opportunity to reduce risk to viability of associated species is primarily through adopting and implementing objectives to maintain or increase this habitat element.

Habitat Elements	Alternative						
	A	B	D	E	F	G	I
Bogs, Fens, Seeps, Seasonal Ponds							
Abundance	R	R	R	R	R	R	R
Distribution	P	P	P	P	P	P	P
Likelihood of Limitation	H	H	H	H	H	H	H
Management Effects	1	1	1	1	3	1	1
Open Wetlands							
Abundance	R	R	R	R	R	R	R
Distribution	P	P	P	P	P	P	P
Likelihood of Limitation	H	H	H	H	H	H	H
Management Effects	1	1	1	1	3	1	1
River Channels							
Abundance	R	R	R	R	R	R	R
Distribution	P	P	P	P	P	P	P
Likelihood of Limitation	H	H	H	H	H	H	H
Management Effects	1	1	1	1	3	1	1
Glades and Barrens							
Abundance	R	R	R	R	R	R	R
Distribution	F	F	F	F	F	F	F
Likelihood of Limitation	H	H	H	H	H	H	H
Management Effects	1	1	1	1	3	1	1
Carolina Hemlock Forests							
Abundance	R	R	R	R	R	R	R
Distribution	P	P	P	P	P	P	P
Likelihood of Limitation	H	H	H	H	H	H	H
Management Effects	4	4	4	4	4	4	4
Table Mountain Pine Forests							
Abundance	R	R	R	R	R	R	R
Distribution	F	G	F	P	P	F	F
Likelihood of Limitation	H	M	H	H	H	H	H
Management Effects	2	2	2	3	3	2	2
Spruce-Fir Forests							
Abundance	R	R	R	R	R	R	R
Distribution	P	P	P	P	P	P	P
Likelihood of Limitation	H	H	H	H	H	H	H
Management Effects	4	4	4	4	4	4	4
Beech Gap Forests							
Abundance	R	R	R	R	R	R	R
Distribution	P	P	P	P	P	P	P
Likelihood of Limitation	H	H	H	H	H	H	H
Management Effects	4	4	4	4	4	4	4
Basic Mesic Forests							
Abundance	R	R	R	R	R	R	R
Distribution	F	F	F	F	P	F	F
Likelihood of Limitation	H	H	H	H	H	H	H
Management Effects	1	1	1	1	3	1	1
Rock Outcrops and Cliffs							
Abundance	R	R	R	R	R	R	R
Distribution	G	G	G	G	G	G	G
Likelihood of Limitation	M	M	M	M	M	M	M
Management Effects	1	1	1	1	3	1	1

TABLE E-2. SUMMARY OF EXPECTED ABUNDANCE, DISTRIBUTION, LIKELIHOOD OF LIMITATION, & MGMT EFFECTS FOR HABITAT ELEMENTS BY ALTERNATIVE.

TABLE E-2. SUMMARY OF EXPECTED ABUNDANCE, DISTRIBUTION, LIKELIHOOD OF LIMITATION, & MGMT EFFECTS FOR HABITAT ELEMENTS BY ALTERNATIVE.

Habitat Elements	Alternative						
	A	B	D	E	F	G	I
Spray Cliffs							
Abundance	R	R	R	R	R	R	R
Distribution	G	G	G	G	G	G	G
Likelihood of Limitation	M	M	M	M	M	M	M
Management Effects	1	1	1	1	3	1	1
Grassy Balds							
Abundance	R	R	R	R	R	R	R
Distribution	F	F	F	F	P	F	F
Likelihood of Limitation	H	H	H	H	H	H	H
Management Effects	3	2	3	3	3	5	3
Shrub Balds							
Abundance	R	R	R	R	R	R	R
Distribution	F	F	F	F	F	P	F
Likelihood of Limitation	H	H	H	H	H	H	H
Management Effects	2	2	2	2	2	5	2
Canebrakes							
Abundance	R	R	R	R	R	R	R
Distribution	P	P	P	P	P	P	P
Likelihood of Limitation	H	H	H	H	H	H	H
Management Effects	3	3	3	3	3	3	3
Caves and Mines							
Abundance	R	R	R	R	R	R	R
Distribution	G	G	G	G	G	G	G
Likelihood of Limitation	M	M	M	M	M	M	M
Management Effects	1	1	1	1	1	1	1
Mature Mesic Hardwood Forests							
Abundance	C	C	C	C	C	C	C
Distribution	F	F	F	F	F	F	F
Likelihood of Limitation	L	L	L	L	L	L	L
Management Effects	2	2	2	1	3	1	2
Mature High-Elevation Mesic Hardwood Forests							
Abundance	O	O	O	O	O	O	O
Distribution	G	G	G	G	G	G	G
Likelihood of Limitation	L	L	L	L	L	L	L
Management Effects	2	2	2	1	3	1	2
Mature Hemlock Forests							
Abundance	R	R	R	R	R	R	R
Distribution	P	P	P	P	P	P	P
Likelihood of Limitation	H	H	H	H	H	H	H
Management Effects	4	4	4	4	4	4	4
Mature Oak Forests							
Abundance	C	C	C	C	C	C	C
Distribution	F	F	F	F	F	F	F
Likelihood of Limitation	L	L	L	L	L	L	L
Management Effects	3	3	3	5	3	3	3
Mature Yellow Pine Forests							
Abundance	O	O	O	O	O	O	O
Distribution	F	F	F	P	P	F	F
Likelihood of Limitation	M	M	M	H	H	M	M
Management Effects	3	3	3	5	5	3	3

Habitat Elements	Alternative						
	A	B	D	E	F	G	I
Early Succession							
Abundance	O	O	O	R	O	R	O
Distribution	F	F	F	P	F	P	F
Likelihood of Limitation	M	M	M	H	M	H	M
Management Effects	3	3	2	5	2	5	3
High Elevation Early Succession							
Abundance	R	R	R	R	R	R	R
Distribution	F	F	F	P	F	P	F
Likelihood of Limitation	H	H	H	H	H	H	H
Management Effects	3	3	2	5	2	5	3
Mature Forest Interiors							
Abundance	C	C	C	C	C	C	C
Distribution	F	F	F	F	F	F	F
Likelihood of Limitation	L	L	L	L	L	L	L
Management Effects	3	2	3	1	3	1	2
Canopy Gaps							
Abundance	C	C	C	C	C	C	C
Distribution	G	G	G	G	G	G	G
Likelihood of Limitation	L	L	L	L	L	L	L
Management Effects	2	2	2	2	2	2	2
Woodlands, Savannas, and Grasslands							
Abundance	R	R	R	R	R	R	R
Distribution	P	F	P	P	P	P	P
Likelihood of Limitation	H	H	H	H	H	H	H
Management Effects	3	3	3	5	5	3	3
Mixed Landscapes							
Abundance	C	C	C	C	C	C	C
Distribution	G	G	G	G	G	G	G
Likelihood of Limitation	L	L	L	L	L	L	L
Management Effects	3	3	3	3	3	3	3
Late Successional Riparian							
Abundance	C	C	C	C	C	C	C
Distribution	G	G	G	G	G	G	G
Likelihood of Limitation	L	L	L	L	L	L	L
Management Effects	1	1	1	1	2	1	1
Early-Successional Riparian							
Abundance	R	R	R	R	R	R	R
Distribution	F	F	F	F	F	F	F
Likelihood of Limitation	H	H	H	H	H	H	H
Management Effects	3	3	3	3	3	3	3
Snags							
Abundance	C	C	C	C	C	C	C
Distribution	G	G	G	G	G	G	G
Likelihood of Limitation	L	L	L	L	L	L	L
Management Effects	2	2	2	2	2	2	2
Downed Wood							
Abundance	C	C	C	C	C	C	C
Distribution	F	F	F	F	F	F	F
Likelihood of Limitation	L	L	L	L	L	L	L
Management Effects	2	2	2	2	2	2	2

TABLE E-2. SUMMARY OF EXPECTED ABUNDANCE, DISTRIBUTION, LIKELIHOOD OF LIMITATION, & MGMT EFFECTS FOR HABITAT ELEMENTS BY ALTERNATIVE.

TABLE E-2. SUMMARY OF EXPECTED ABUNDANCE, DISTRIBUTION, LIKELIHOOD OF LIMITATION, & MGMT EFFECTS FOR HABITAT ELEMENTS BY ALTERNATIVE.

Habitat Elements	Alternative						
	A	B	D	E	F	G	I
Den Trees							
Abundance	O	O	O	O	O	O	O
Distribution	F	F	F	F	F	F	F
Likelihood of Limitation	M	M	M	M	M	M	M
Management Effects	2	2	2	2	2	2	2
Hard Mast							
Abundance	C	C	C	C	C	C	C
Distribution	F	F	F	F	F	F	F
Likelihood of Limitation	L	L	L	L	L	L	L
Management Effects	3	3	3	3	3	3	3
Remoteness							
Abundance	C	C	C	C	C	C	C
Distribution	F	F	F	F	F	F	F
Likelihood of Limitation	L	L	L	L	L	L	L
Management Effects	3	3	3	3	3	3	3
Lakeshores							
Abundance	R	R	R	R	R	R	R
Distribution	G	G	G	G	G	G	G
Likelihood of Limitation	M	M	M	M	M	M	M
Management Effects	1	1	1	1	1	1	1
Water Quality							
Abundance	C	C	C	C	C	C	C
Distribution	F	F	F	F	F	F	F
Likelihood of Limitation	L	L	L	L	L	L	L
Management Effects	1	1	1	1	1	1	1

AQUATIC SPECIES VIABILITY



TABLE F-1. VIABILITY OUTCOME, BY WATERSHED, FOR ALL THREATENED, ENDANGERED, SENSITIVE, AND LOCALLY RARE (TESLR) AQUATIC SPECIES ON THE JEFFERSON NATIONAL FOREST.

KEYS TO CODES:

The Ownership Column is the percentage of the watershed managed by the Jefferson National Forest.

WHI Column is Watershed Health Index. See Chapter 3, Watershed Section for a complete discussion of the derivation of this column.

Sources of Impairment:

- S Sediment
- P Point Source Pollution
- T Temperature
- F Altered Flow

Viability Outcomes Description:

- 1 Species occurs within watersheds with no impairment. Likelihood of maintaining viability is high.
- 2 Species is potentially at risk in the watershed; however, Forest Service may influence conditions in the watershed to keep it well distributed. Therefore, likelihood of maintaining viability is moderate.
- 3 Species is potentially at risk within the watershed; however, Forest Service opportunity to affect outcomes for the species in the watershed is limited. Therefore species viability in the watershed is at risk.
- 4 The species so rare within the watershed (population is at very low density and/or at only a few local sites) that stochastic events (accidents, weather events, etc.) may place persistence of the species within the watershed at risk. Forest Service may influence conditions in the watershed to keep the species relatively secure. Therefore, likelihood of maintaining viability is moderate to low.
- 5 The species so rare within the watershed (population is at very low density and/or at only a few local sites) that stochastic events (accidents, weather events, etc.)

Species Status Description:

- T Federally Listed as Threatened
- E Federally Listed as Endangered
- C Candidate for Federal listing
- S Forest Service Sensitive
- LR Locally Rare
- X Extirpated or Extinct

TABLE F-1. VIABILITY OUTCOME, BY WATERSHED, FOR ALL TESLR AQUATIC SPECIES

Common Name	Scientific Name	G-Rank	Status	Watershed	Ownership Percent	Viability Outcome					WHI
						1	2	3	4	5	
Kosztarab's common stonefly	Acroneuria kosztarabi	G1	S	0505000203	20	PTF		S			E
spring blue darner	Aeshna mutata	G3G4	LR	0208020103	28	STF		P			E
black-tipped darner	Aeshna tuberculifera	G4	LR	0208020103	28	STF		P			E
black-tipped darner	Aeshna tuberculifera	G4	LR	0505000110	10	TF		SP			N/A
black-tipped darner	Aeshna tuberculifera	G4	LR	0505000201	27	SPTF					E
black-tipped darner	Aeshna tuberculifera	G4	LR	0505000203	20	SPTF					E
black-tipped darner	Aeshna tuberculifera	G4	LR	0601010101	11	TF		SP			N/A
elktoe	Alasmidonta marginata	G4	LR	0601010101	11	TF		SP			N/A
elktoe	Alasmidonta marginata	G4	LR	0601010202	15	TF		SP			N/A
elktoe	Alasmidonta marginata	G4	LR	0601020505	9	TF		SP			N/A
elktoe	Alasmidonta marginata	G4	LR	0601020601	9	T		SPF			N/A
Slippershell mussel	Alasmidonta viridis	G4G5	LR	0601020504	18	PTF		S			A
Western sand darter	Ammocrypta clara	G3	S	0601020505	9	TF		SP			N/A
comet darner	Anax longipes	G5	LR	0505000110	10	TF		SP			N/A
comet darner	Anax longipes	G5	LR	0601020601	9	T		SPF			N/A
Non T/E/S Species	Atlered Flow Sensitive			0301010107	2	F					N/A
Non T/E/S Species	Atlered Flow Sensitive			0301010108	2	F					N/A
Non T/E/S Species	Atlered Flow Sensitive			0505000101	3	F					N/A
Non T/E/S Species	Atlered Flow Sensitive			0505000103	2	F					N/A
Non T/E/S Species	Atlered Flow Sensitive			0505000105	23	F					N/A
Non T/E/S Species	Atlered Flow Sensitive			0505000207	3	F					N/A
Non T/E/S Species	Atlered Flow Sensitive			0505000210	0	F					N/A
Non T/E/S Species	Atlered Flow Sensitive			0507020203	1	F					N/A
Non T/E/S Species	Atlered Flow Sensitive			0507020205	12			F			N/A
Non T/E/S Species	Atlered Flow Sensitive			0507020206	0			F			N/A

Common Name	Scientific Name	G-Rank	Status	Watershed	Ownership Percent	Viability Outcome					WHI
						1	2	3	4	5	
Appalachian jewelwing	<i>Calopteryx angustipennis</i>	G4	LR	0208020106	0	TF		SP			N/A
Appalachian jewelwing	<i>Calopteryx angustipennis</i>	G4	LR	0208020108	61	SPTF					E
Appalachian jewelwing	<i>Calopteryx angustipennis</i>	G4	LR	0208020205	4	TF		SP			N/A
A crayfish	<i>Cambarus veteranus</i>	G3G4	LR	0601020601	9	T		SPF			N/A
Black sculpin	<i>Cottus baileyi</i>	G4Q	S	0601010202	15	TF		SP			N/A
hellbender	<i>Cryptobranchus alleganiensis</i>	G3G4	LR	0601010201	30	PTF	S				A
Spectaclecase	<i>Cumberlandia monodonta</i>	G2G3	S	0601020505	9	TF		SP			N/A
Spotfin chub	<i>Cyprinella monacha</i>	G2	T	0601010101	11	PTF		S			N/A
Spotfin chub	<i>Cyprinella monacha</i>	G2	T	0601010202	15	PTF		S			N/A
Steelcolor shiner	<i>Cyprinella whipplei</i>	G5	LR	0601020505	9	PTF		S			N/A
Fanshell	<i>Cyprogenia stegaria</i>	G1	E	0601020504	18	PTF		S			A
Fanshell	<i>Cyprogenia stegaria</i>	G1	E	0601020505	9	TF		SP			N/A
Dromedary pearlymussel	<i>Dromus dromas</i>	G1	E	0601020505	9	TF		SP			N/A
Elephant ear	<i>Elliptio crassidens</i>	G5	LR	0601020504	18	PTF		S			A
Elephant ear	<i>Elliptio crassidens</i>	G5	LR	0601020505	9	TF		SP			N/A
Yellow lance	<i>Elliptio lanceolata</i>	G2G3	S	0208020106	0	TF		SP			N/A
Yellow lance	<i>Elliptio lanceolata</i>	G2G3	S	0208020108	61	SPTF					E
Yellow lance	<i>Elliptio lanceolata</i>	G2G3	S	0208020109	43	PTF		S			A
Hagen's bluet	<i>Enallagma hageni</i>	G5	LR	0208020106	0	TF		SP			N/A
Hagen's bluet	<i>Enallagma hageni</i>	G5	LR	0505000201	27	SPTF					E
Hagen's bluet	<i>Enallagma hageni</i>	G5	LR	0601010201	30	PTF		S			A
Cumberlandian combshell	<i>Epioblasma brevidens</i>	G1	E	0601020504	18	PTF		S			A
Cumberlandian combshell	<i>Epioblasma brevidens</i>	G1	E	0601020505	9	TF		SP			N/A
Oyster mussel	<i>Epioblasma capsaeformis</i>	G1	E	0601020504	18	PTF		S			A

TABLE F-1. VIABILITY OUTCOME, BY WATERSHED, FOR ALL TESLR AQUATIC SPECIES

TABLE F-1. VIABILITY OUTCOME, BY WATERSHED, FOR ALL TESLR AQUATIC SPECIES

Common Name	Scientific Name	G-Rank	Status	Watershed	Ownership Percent	Viability Outcome					WHI
						1	2	3	4	5	
Oyster mussel	<i>Epioblasma capsaeformis</i>	G1	E	0601020505	9	TF		SP			N/A
Tan riffleshell	<i>Epioblasma florentina walkeri</i>	G1T1	E	0601010202	15	TF		SP			N/A
Green-blossom pearlymussel	<i>Epioblasma torulosa gubernaculum</i>	G2TX	EX	0601020504	18	PTF		S			A
Green-blossom pearlymussel	<i>Epioblasma torulosa gubernaculum</i>	G2TX	EX	0601020505	9	TF		SP			N/A
Snuffbox	<i>Epioblasma triquetra</i>	G3	S	0601020504	18	PTF		S			A
Snuffbox	<i>Epioblasma triquetra</i>	G3	S	0601020505	9	TF		SP			N/A
Slender chub	<i>Erimystax cahni</i>	G1	T	0601010101	11	TF		SP			N/A
Slender chub	<i>Erimystax cahni</i>	G1	T	0601020505	9	TF		SP			N/A
Sharphead darter	<i>Etheostoma acuticeps</i>	G3	S	0601010201	30	PF		ST			A
Greenfin darter	<i>Etheostoma chlorobranchium</i>	G4	LR	0601010201	30	SPF	T				A
Candy darter	<i>Etheostoma osburni</i>	G3	S	0505000106	4	F		SPT			N/A
Candy darter	<i>Etheostoma osburni</i>	G3	S	0505000108	18	PF		ST			BA
Candy darter	<i>Etheostoma osburni</i>	G3	S	0505000201	27	SPF	T				E
Candy darter	<i>Etheostoma osburni</i>	G3	S	0505000202	31	SPTF					E
Candy darter	<i>Etheostoma osburni</i>	G3	S	0505000203	20	SPF	T				E
Candy darter	<i>Etheostoma osburni</i>	G3	S	0505000204	14	TF		SP			N/A
Duskytail darter	<i>Etheostoma percnum</i>	G1	E	0601020505	9	TF		SP			N/A
Cumberland Johnny darter	<i>Etheostoma susanae</i>	G2	C	0513010101	1	STF		P			N/A
Tippecanoe darter	<i>Etheostoma tippecanoe</i>	G3	S	0601020504	18	PTF		S			A
Tippecanoe darter	<i>Etheostoma tippecanoe</i>	G3	S	0601020505	9	TF		SP			N/A
Tennessee pigtoe	<i>Fusconaia barnesiana</i>	G2G3	S	0601010202	15	TF		SP			N/A
Tennessee pigtoe	<i>Fusconaia barnesiana</i>	G2G3	S	0601020504	18	PTF		S			A
Tennessee pigtoe	<i>Fusconaia barnesiana</i>	G2G3	S	0601020505	9	TF		SP			N/A
Shiny pigtoe	<i>Fusconaia cor</i>	G1	E	0601010101	11	TF		SP			N/A

Common Name	Scientific Name	G-Rank	Status	Watershed	Ownership Percent	Viability Outcome					WHI
						1	2	3	4	5	
Shiny pigtoe	Fusconaia cor	G1	E	0601010202	15	TF		SP			N/A
Shiny pigtoe	Fusconaia cor	G1	E	0601020504	18	PTF		S			A
Shiny pigtoe	Fusconaia cor	G1	E	0601020505	9	TF		SP			N/A
Fine-rayed pigtoe	Fusconaia cuneolus	G1	E	0601020504	18	PTF		S			A
Fine-rayed pigtoe	Fusconaia cuneolus	G1	E	0601020505	9	TF		SP			N/A
Atlantic pigtoe	Fusconaia masoni	G2	S	0208020108	61	SPTF					E
Atlantic pigtoe	Fusconaia masoni	G2	S	0208020109	43	PTF		S			A
harpoon clubtail	Gomphus descriptus	G4	LR	0208020106	0	TF		SP			N/A
Green-faced clubtail	Gomphus viridifrons	G3	S	0208020108	61	SPTF					E
Green-faced clubtail	Gomphus viridifrons	G3	S	0505000103	2	TF		SP			N/A
Green-faced clubtail	Gomphus viridifrons	G3	S	0505000104	9	TF		SP			N/A
Green-faced clubtail	Gomphus viridifrons	G3	S	0505000105	23	PTF		S			BA
Green-faced clubtail	Gomphus viridifrons	G3	S	0505000110	10	TF		SP			N/A
Green-faced clubtail	Gomphus viridifrons	G3	S	0507020205	12	TF		SP			N/A
Green-faced clubtail	Gomphus viridifrons	G3	S	0601010101	11	TF		SP			N/A
Cracking pearlymussel	Hemistena lata	G1	E	0601010202	15	TF		SP			N/A
Cracking pearlymussel	Hemistena lata	G1	E	0601020504	18	PTF		S			A
Cracking pearlymussel	Hemistena lata	G1	E	0601020505	9	TF		SP			N/A
Maureen's shale stream beetle	Hydraena maureenae	G1G3	S	0208020106	0	TF		SP			N/A
Mountain brook lamprey	Ichthyomyzon greeleyi	G3G4	S	0601010101	11	STF		P			N/A
Mountain brook lamprey	Ichthyomyzon greeleyi	G3G4	S	0601020505	9	STF		P			N/A
Spiny riversnail	Io fluviialis	G2	S	0601010101	11	STF		P			N/A
Spiny riversnail	Io fluviialis	G2	S	0601020504	18	SPTF					A
Spiny riversnail	Io fluviialis	G2	S	0601020505	9	STF		P			N/A
Spiny riversnail	Io fluviialis	G2	S	0601020601	9	ST		PF			N/A
Beartown perlodid stonefly	Isoperla major	G1	S	0505000203	20	PTF					E

TABLE F-1. VIABILITY OUTCOME, BY WATERSHED, FOR ALL TESLR AQUATIC SPECIES

TABLE F-1. VIABILITY OUTCOME, BY WATERSHED, FOR ALL TESLR AQUATIC SPECIES

Common Name	Scientific Name	G-Rank	Status	Watershed	Ownership Percent	Viability Outcome					WHI
						1	2	3	4	5	
Beartown periodid stonefly	Isoperla major	G1	S	0505000203	20					R	E
Pink mucket pearlymussel	Lampsilis abrupta	G2	EX	0601020504	18	PTF		S			A
double-striped clubtail	Lanthis parvulus	G4	LR	0301010101	1	TF		SP			N/A
double-striped clubtail	Lanthis parvulus	G4	LR	0505000110	10	TF		SP			N/A
Tennessee Heelsplitter	Lasmigona holstonia	G3	S	0505000203	20	SPTF					E
Tennessee Heelsplitter	Lasmigona holstonia	G3	S	0601010202	15	TF		SP			N/A
Tennessee Heelsplitter	Lasmigona holstonia	G3	S	0601020505	9	TF		SP			N/A
Tennessee Heelsplitter	Lasmigona holstonia	G3	S	0601020601	9	T		SPF			N/A
Green floater	Lasmigona subviridis	G3	S	0208020106	0	TF		SP			N/A
Green floater	Lasmigona subviridis	G3	S	0208020301	5	TF		SP			N/A
Green floater	Lasmigona subviridis	G3	S	0505000104	9	TF		SP			N/A
Green floater	Lasmigona subviridis	G3	S	0505000106	4	TF		SP			N/A
Green floater	Lasmigona subviridis	G3	S	0505000108	18	PTF		S			BA
Green floater	Lasmigona subviridis	G3	S	0505000110	10	TF		SP			N/A
Green floater	Lasmigona subviridis	G3	S	0505000202	31	SPTF					E
Green floater	Lasmigona subviridis	G3	S	0505000203	20	SPTF					E
Green floater	Lasmigona subviridis	G3	S	0505000204	14	TF		SP			N/A
Birdwing pearlymussel	Lemiox rimosus	G1	E	0601020504	18	PTF		S			A
Birdwing pearlymussel	Lemiox rimosus	G1	E	0601020505	9	TF		SP			N/A
Fragile papershell	Leptodea fragilis	G5	LR	0601020504	18	PTF		S			A
Fragile papershell	Leptodea fragilis	G5	LR	0601020505	9	TF		SP			N/A
Fragile papershell	Leptodea fragilis	G5	LR	0601020601	9	T		SPF			N/A
Johnson's pronggill mayfly	Leptophlebia johnsoni	G4	S	0505000105	23	PTF		S			BA
northern common spreadwing	Lestes disjunctus disjunctus	G5T5	LR	0505000110	10	TF		SP			N/A

Common Name	Scientific Name	G-Rank	Status	Watershed	Ownership Percent	Viability Outcome					WHI
						1	2	3	4	5	
dot-tailed whiteface	<i>Leucorrhinia intacta</i>	G5	LR	0208020103	28	STF		P			E
dot-tailed whiteface	<i>Leucorrhinia intacta</i>	G5	LR	0505000110	10	TF		SP			N/A
Slabside pearl mussel	<i>Lexingtonia dolabelloides</i>	G2	C	0601010101	11	TF		SP			N/A
Slabside pearl mussel	<i>Lexingtonia dolabelloides</i>	G2	C	0601010201	30	PTF		S			A
Slabside pearl mussel	<i>Lexingtonia dolabelloides</i>	G2	C	0601010202	15	TF		SP			N/A
Slabside pearl mussel	<i>Lexingtonia dolabelloides</i>	G2	C	0601020504	18	PTF		S			A
Slabside pearl mussel	<i>Lexingtonia dolabelloides</i>	G2	C	0601020505	9	TF		SP			N/A
Black sandshell	<i>Ligumia recta</i>	G5	LR	0601010202	15	TF		SP			N/A
Black sandshell	<i>Ligumia recta</i>	G5	LR	0601020504	18	PTF		S			A
Black sandshell	<i>Ligumia recta</i>	G5	LR	0601020505	9	TF		SP			N/A
William's giant stonefly	<i>Megaleuctra williamsae</i>	G2	S	0505000203	20	SPTF					E
Popeye shiner	<i>Notropis ariommus</i>	G3	S	0301010101	1	TF		SP			N/A
Popeye shiner	<i>Notropis ariommus</i>	G3	S	0601010101	11	TF		SP			N/A
Popeye shiner	<i>Notropis ariommus</i>	G3	S	0601020504	18	PTF		S			A
Popeye shiner	<i>Notropis ariommus</i>	G3	S	0601020601	9	T		SPF			N/A
Emerald shiner	<i>Notropis atherinoides</i>	G5	LR	0601020504	18	SPTF					A
Emerald shiner	<i>Notropis atherinoides</i>	G5	LR	0601020505	9	STF		P			N/A
Roughhead shiner	<i>Notropis semperasper</i>	G2G3	S	0208020106	0	SPTF					N/A
Roughhead shiner	<i>Notropis semperasper</i>	G2G3	S	0208020107	10	SPTF					N/A
Roughhead shiner	<i>Notropis semperasper</i>	G2G3	S	0208020108	61	SPTF					E
Mirror shiner	<i>Notropis spectrucus</i>	G5	LR	0601010202	15	TF		SP			N/A
Mirror shiner	<i>Notropis spectrucus</i>	G5	LR	0601020504	18	PTF		S			A
Mirror shiner	<i>Notropis spectrucus</i>	G5	LR	0601020505	9	TF		SP			N/A
Yellowfin madtom	<i>Noturus flavipinnis</i>	G1	T								
Orangefin madtom	<i>Noturus gilberti</i>	G2	S	0208020106	0	TF		SP			N/A

TABLE F-1. VIABILITY OUTCOME, BY WATERSHED, FOR ALL TESLR AQUATIC SPECIES

TABLE F-1. VIABILITY OUTCOME, BY WATERSHED, FOR ALL TESLR AQUATIC SPECIES

Common Name	Scientific Name	G-Rank	Status	Watershed	Ownership Percent	Viability Outcome					WHI
						1	2	3	4	5	
Orangefin madtom	<i>Noturus gilberti</i>	G2	S	0208020108	61	SPTF					E
Orangefin madtom	<i>Noturus gilberti</i>	G2	S	0301010101	1	TF		SP			N/A
Orangefin madtom	<i>Noturus gilberti</i>	G2	S	0301010102	1	TF		SP			N/A
Allegheny snaketail	<i>Ophiogomphus alleghaniensis</i>	G3Q	S	0505000110	10	TF		SP			N/A
Allegheny snaketail	<i>Ophiogomphus alleghaniensis</i>	G3Q	S	0505000207	3	TF		SP			N/A
Little-wing pearlymussel	<i>Pegias fabula</i>	G1	E	0601010101	11	TF		SP			N/A
Little-wing pearlymussel	<i>Pegias fabula</i>	G1	E	0601010201	30	PTF		S			A
Little-wing pearlymussel	<i>Pegias fabula</i>	G1	E	0601010202	15	TF		SP			N/A
Blotchside logperch	<i>Percina burtoni</i>	G2	S	0601010101	11	TF		SP			N/A
Blotchside logperch	<i>Percina burtoni</i>	G2	S	0601020505	9	TF		SP			N/A
Longhead darter	<i>Percina macrocephala</i>	G3	S	0601010101	11	TF		SP			N/A
Longhead darter	<i>Percina macrocephala</i>	G3	S	0601010202	15	F		SPT			N/A
Roanoke logperch	<i>Percina rex</i>	G1G2	E	0301010101	1	TF		SP			N/A
Roanoke logperch	<i>Percina rex</i>	G1G2	E	0301010102	1	TF		SP			N/A
Fatlips minnow	<i>Phenacobius crassilabrum</i>	G3G4	S	0601010201	30	PTF		S			A
Kanawha minnow	<i>Phenacobius teretulus</i>	G3G4	S	0505000103	2	STF		P			N/A
Kanawha minnow	<i>Phenacobius teretulus</i>	G3G4	S	0505000104	9	STF		P			N/A
Kanawha minnow	<i>Phenacobius teretulus</i>	G3G4	S	0505000105	23	SPTF					BA
Kanawha minnow	<i>Phenacobius teretulus</i>	G3G4	S	0505000106	4	STF		P			N/A
Blackside dace	<i>Phoxinus cumberlandensis</i>	G2G3	T	0513010101	1	STF		P			N/A
Blackside dace	<i>Phoxinus cumberlandensis</i>	G2G2	T	0601020601	9	ST		PF			N/A
Tennessee dace	<i>Phoxinus tennesseensis</i>	G2G3	S	0601010101	11	PTF		S			N/A
Tennessee dace	<i>Phoxinus tennesseensis</i>	G2G3	S	0601010201	30	PTF	S				A
Tennessee dace	<i>Phoxinus tennesseensis</i>	G2G3	S	0601010202	15	PTF		S			N/A

Common Name	Scientific Name	G-Rank	Status	Watershed	Ownership Percent	Viability Outcome					WHI
						1	2	3	4	5	
Sheepnose	<i>Plethobasus cyphus</i>	G3	S	0601020504	18	PTF		S			A
Sheepnose	<i>Plethobasus cyphus</i>	G3	S	0601020505	9	TF		SP			N/A
James River spiny mussel	<i>Pleurobema collina</i>	G1	E	0208020103	28	STF		P			E
James River spiny mussel	<i>Pleurobema collina</i>	G1	E	0208020107	10	TF		SP			N/A
James River spiny mussel	<i>Pleurobema collina</i>	G1	E	0208020108	61	SPTF					E
James River spiny mussel	<i>Pleurobema collina</i>	G1	E	0208020109	43	PTF		S			A
James River spiny mussel	<i>Pleurobema collina</i>	G1	E	0208020301	5	TF		SP			N/A
Ohio river pigtoe	<i>Pleurobema cordatum</i>	G3	S	0601020505	9	TF		SP			N/A
Tennessee clubshell	<i>Pleurobema oviforme</i>	G3	S	0601010202	15	TF		SP			N/A
Tennessee clubshell	<i>Pleurobema oviforme</i>	G3	S	0601020504	18	PTF		S			A
Rough pigtoe	<i>Pleurobema plenum</i>	G1	S	0601020505	9	TF		SP			N/A
Pyramid pigtoe	<i>Pleurobema rubrum</i>	G2	S	0601020505	9	TF		SP			N/A
Non T/E/S Species	Point Source Sensitive			0301010107	2			P			N/A
Non T/E/S Species	Point Source Sensitive			0301010108	2			P			N/A
Non T/E/S Species	Point Source Sensitive			0505000101	3			P			N/A
Non T/E/S Species	Point Source Sensitive			0505000210	0			P			N/A
Non T/E/S Species	Point Source Sensitive			0507020203	1			P			N/A
Non T/E/S Species	Point Source Sensitive			0507020206	0			P			N/A
Rough rabbitsfoot	<i>Quadrula cylindrica strigillata</i>	G3T3	E	0601020504	18	PTF		S			A
Rough rabbitsfoot	<i>Quadrula cylindrica strigillata</i>	G3T3	E	0601020505	9	TF		SP			N/A
Rough rabbitsfoot	<i>Quadrula cylindrica strigillata</i>	G3T3	E	0601020601	9	T		SPF			N/A
Cumberland monkeyface pearl mussel	<i>Quadrula intermedia</i>	G1	E	0601020505	9	TF		SP			N/A

TABLE F-1. VIABILITY OUTCOME, BY WATERSHED, FOR ALL TESLR AQUATIC SPECIES

TABLE F-1. VIABILITY OUTCOME, BY WATERSHED, FOR ALL TESLR AQUATIC SPECIES

Common Name	Scientific Name	G-Rank	Status	Watershed	Ownership Percent	Viability Outcome					WHI
						1	2	3	4	5	
Pimpleback	Quadrula pustulosa	G5	LR	0601020504	18	PTF		S			A
Pimpleback	Quadrula pustulosa	G5	LR	0601020505	9	TF		SP			N/A
Appalachian monkeyface pearlymussel	Quadrula sparsa	G1	E	0601020504	18	PTF		S			A
Appalachian monkeyface pearlymussel	Quadrula sparsa	G1	E	0601020505	9	TF		SP			N/A
Non T/E/S Species	Sediment Sensitive			0301010107	2			S			N/A
Non T/E/S Species	Sediment Sensitive			0301010108	2			S			N/A
Non T/E/S Species	Sediment Sensitive			0505000101	3			S			N/A
Non T/E/S Species	Sediment Sensitive			0505000210	0			S			N/A
Non T/E/S Species	Sediment Sensitive			0507020203	1			S			N/A
Non T/E/S Species	Sediment Sensitive			0507020206	0			S			N/A
Non T/E/S Species	Sediment Sensitive			0513010101	1			S			N/A
slender emerald	Somatochlora elongata	G5	LR	0505000201	27	SPTF					E
white-faced meadowhawk	Sympetrum obtrusum	G5	LR	0505000201	27	SPTF					E
Nelson's early black stonefly	Taeniopteryx nelsoni	G1	S	0505000105	23	PTF		S			BA
Lobed roach-like stonefly	Tallaperla lobata	G2	LR	0601010101	11	TF		SP			N/A
Non T/E/S Species	Temperature Sensitive			0208020106	0	T					N/A
Non T/E/S Species	Temperature Sensitive			0208020107	10			T			N/A
Non T/E/S Species	Temperature Sensitive			0208020108	61	T					E
Non T/E/S Species	Temperature Sensitive			0208020109	43	T					A
Non T/E/S Species	Temperature Sensitive			0208020205	4			T			N/A
Non T/E/S Species	Temperature Sensitive			0208020301	5	T					N/A
Non T/E/S Species	Temperature Sensitive			0301010101	1	T					N/A
Non T/E/S Species	Temperature Sensitive			0301010102	1			T			N/A

Common Name	Scientific Name	G-Rank	Status	Watershed	Ownership Percent	Viability Outcome					WHI
						1	2	3	4	5	
Non T/E/S Species	Temperature Sensitive			0301010107	2	T					N/A
Non T/E/S Species	Temperature Sensitive			0301010108	2			T			N/A
Non T/E/S Species	Temperature Sensitive			0505000101	3			T			N/A
Non T/E/S Species	Temperature Sensitive			0505000103	2			T			N/A
Non T/E/S Species	Temperature Sensitive			0505000104	9			T			N/A
Non T/E/S Species	Temperature Sensitive			0505000105	23		T				N/A
Non T/E/S Species	Temperature Sensitive			0505000107	32		T				BA
Non T/E/S Species	Temperature Sensitive			0505000110	10			T			N/A
Non T/E/S Species	Temperature Sensitive			0505000207	3			T			N/A
Non T/E/S Species	Temperature Sensitive			0505000210	0			T			N/A
Non T/E/S Species	Temperature Sensitive			0507020203	1	T					N/A
Non T/E/S Species	Temperature Sensitive			0507020205	12	T					N/A
Non T/E/S Species	Temperature Sensitive			0507020206	0	T					N/A
Non T/E/S Species	Temperature Sensitive			0513010101	1	T					N/A
Non T/E/S Species	Temperature Sensitive			0601020504	18	T					
Non T/E/S Species	Temperature Sensitive			0601020505	9	T					N/A
Non T/E/S Species	Temperature Sensitive			0601020601	9	T					N/A
Purple lilliput	Toxolasma lividus	G2	S	0601010101	11	TF		SP			N/A
Deertoe	Truncilla truncata	G5	LR	0601020504	18	PTF		S			A
Deertoe	Truncilla truncata	G5	LR	0601020505	9	TF		SP			N/A
Purple bean	Villosa perpurpurea	G1	E	0601020505	9	TF		SP			N/A
Cumberland bean	Villosa trabalis	G2	EX	0601020505	9	TF		SP			N/A

TABLE F-1. VIABILITY OUTCOME, BY WATERSHED, FOR ALL TESLR AQUATIC SPECIES

INDEX

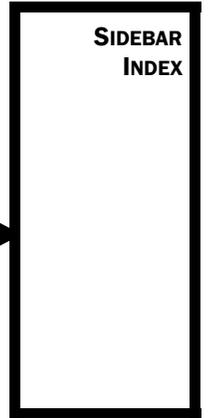
APPENDIX



Sections and Subsections within each Chapter are conveniently listed in the sidebar located on the outside margin of each page. This provides the reader a handy index to quickly search the paper version of this Environmental Impact Statement.

**SIDEBAR
INDEX**

SIDEBAR INDEX — >



For a more detailed search of particular words or phrases, this document is also available on CD-Rom and the internet at <www.southernregion.fs.fed.us/gwj/forestplan> where it can easily be searched electronically.

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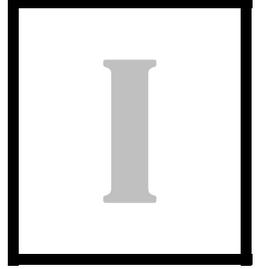
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RECREATION OPPORTUNITY SPECTRUM



Recreation Opportunity Spectrum Experiences						
Characteristics	Primitive (P)	Semi-Primitive Non-Motorized (SPNM)	Semi-Primitive Motorized (SPM)	Semi-Primitive 2 (SP2)	Roaded Natural	Rural
Access	Cross-country travel. Limited trail access. Non-motorized, non-mechanized travel only.	Non-motorized trails or cross country travel only. Primitive roads to access points, trailheads.	Motorized trails, primitive roads (level D). Roads to access points, trailheads.	Predominately Service level D roads. Open road density less than 0.5 miles per 1000 acres.	All service level roads from A to D. Easy access.	Full access.
Remoteness	Highest expectation of solitude and experiencing isolation from sounds of others. Out of sight and sound of human activity. More than 1 and 1/2 hr. walk.	Fairly high expectation of solitude and experiencing isolation from sounds of others. More than 1 1/2 hr. walk from any motorized travel.	Moderate expectation of solitude and some expectation of experiencing isolation from sights of others. More than 1/2 hr. walk from roads open to passenger cars.	Moderate expectation of solitude and some expectation of experiencing isolation from sights of others.	Moderate to high expectation of evidence of sights and sounds of others.	Moderate to High concentration of users and large number of people are within area and nearby with evidence of others being dominant.
Size	5,000+ acres	2,500+ acres	2,500+ acres	No criteria.	No criteria.	No criteria.
Social Encounters	No expected contact with other individuals.	Few contacts.	Few contacts.	Low contact on roads, low contact on trails.	Moderate contact on roads, low contact on trails, moderate to high contact in developed sites, or near rivers, lakes, and shores.	Moderate to high contact on roads, moderate contact on trails, high contact in developed sites, or near rivers, lakes, and shores.
Recreation Facilities/Site Management	No facilities for user comfort. Rustic, rudimentary facilities for site protection. Use undimensioned native materials.	Minimum facilities. Rustic, rudimentary facilities for site protection. Use undimensioned native materials.	Minimum facilities. Rustic, rudimentary facilities for site protection. Use undimensioned native materials.	Minimum facilities. Rustic, rudimentary facilities for site protection. Use undimensioned native materials.	Rustic facilities providing some comfort for user, as well as site protection.	Rustic facilities designed both for user comfort/convenience and site protection. Synthetic but harmonious materials may be

Recreation Opportunity Spectrum Experiences						
Characteristics	Primitive (P)	Semi-Primitive Non-Motorized (SPNM)	Semi-Primitive Motorized (SPM)	Semi-Primitive 2 (SP2)	Roaded Natural	Rural
Visitor Management	Low regimentation, No on-site controls or information facilities. Regulations on human waste disposal.	Subtle on-site regimentation and controls. Very limited informational facilities. Regulations on human waste disposal.	Subtle on-site regimentation and controls. Very limited informational facilities. Regulations on human waste disposal and motorized trail use.	Subtle on-site regimentation and controls. Very limited informational facilities. Regulations on human waste disposal and motorized trail use.	On site controls are noticeable but harmonize with natural environments. Simple information facilities.	On site controls are noticeable but harmonize with natural environments. Simple information facilities.
Naturalness	Very High. Unmodified natural environment. Vegetation management only for public safety, T&E species, insect control, and trail construction and maintenance.	High. Setting may have subtle modifications that would be noticed but not draw the attention of an observer.	High. Setting may have subtle modifications that would be noticed but not draw the attention of an observer.	Moderate. Settings may have modifications which range from being noticed to strongly dominant. Alterations would remain unnoticed or visually subordinate from sensitive travel routes.	Moderate. Settings may have modifications which range from being noticed to strongly dominant. Alterations would remain unnoticed or visually subordinate from sensitive travel routes.	Moderate. Natural setting may be culturally modified. May include Pastoral; agricultural intensively managed wildland resource landscapes or utility corridors.
Camping	No facilities developed. Low impact camping.	Minimum facilities, if any, provided.	Minimum facilities, if any, provided. Group hunter camps.	Minimum facilities, if any, provided. Group hunter camps.	Facilities defined. Variety of camping experiences.	Facilities highly developed.
Day Use	No facilities developed.	Minimum facilities, if any, provided.	Minimum facilities, if any, provided.	Minimum facilities, if any, provided.	Sites and areas defined. Overlooks, observation sites, day hike to attractions.	Sites and areas defined. Beaches, picnic areas, overlooks, observation sites, day hike to

Recreation Opportunity Spectrum Experiences						
Characteristics	Primitive (P)	Semi-Primitive Non-Motorized (SPNM)	Semi-Primitive Motorized (SPM)	Semi-Primitive 2 (SP2)	Roaded Natural	Rural
Hunting	Public land open to hunting.	Public land open to hunting.	Public land open to hunting.	Public land open to hunting.	Public land open to hunting.	Public land open to hunting.
Fishing	Trout streams and trail intersections.	Trout streams and trail intersections.	Trout streams and trail intersections.	Trout streams and trail intersections.	Stream or river with roads crossing or parallel.	Stream or river with roads crossing or parallel. Piers.
Driving (viewing scenery)	NA	NA	Motorized trails and primitive roads.	Public land/roads.	Public land/roads.	Public land/roads, scenic byways.
Nature Study	Self directed.	Self directed.	Self directed.	Self directed.	Self directed.	Interpretive trails.
Cultural Resource Study	Self directed.	Self directed.	Self directed.	Self directed.	Sites open to public.	Sites open to public.
Motorized Boating	None.	None.	Few impoundments.	Few impoundments.	Lakes	Lakes
Non-motorized Boating	Rivers	Rivers	Rivers, Lakes	Rivers, Lakes	Rivers, Lakes	Rivers, Lakes
Motorized Trail Use	No mechanical use (bikes) except wheel chairs.	Mechanical use (bikes) allowed.	Mechanical use (bikes) allowed. Designated OHV trails.	Mechanical use (bikes) allowed. Designated OHV trails.	Mechanical use (bikes) allowed. Designated OHV trails.	Mechanical use (bikes) allowed.
Non-motorized Trail Use	Hiking, horseback.	Hiking, horseback, mountain bikes.	Hiking, horseback, mountain bikes.	Hiking, horseback, mountain bikes.	Hiking, horseback, mountain bikes.	Interpretive trails. Fully accessible trails. Trails to major attractions.
Winter Sports	Occasional cross-country skiing.	Occasional cross-country skiing.	Occasional cross-country skiing, snowmobiling.	Occasional cross-country skiing, snowmobiling.	Occasional cross-country skiing, snowmobiling.	Occasional cross-country skiing.

Recreation Opportunity Spectrum Experiences						
Characteristics	Primitive (P)	Semi-Primitive Non-Motorized (SPNM)	Semi-Primitive Motorized (SPM)	Semi-Primitive 2 (SP2)	Roaded Natural	Rural
Interpretation	Self discovery. No on site facilities or on site interpretation.	Self discovery. No on site facilities or on site interpretation.	Self discovery. No on site facilities or on site interpretation.	Self discovery. No on site facilities or on site interpretation.	Self discovery augmented by brochures. On site interpretation such as interpretive trails, overlooks, simple wayside exhibits. Guided walks as well as unplanned encounters. Simple contact stations.	Self discovery and on site interpretation such as interpretive trails, overlooks, amphitheaters, kiosks, simple wayside exhibits, boardwalks. Guided walks as well as unplanned encounters. Simple contact stations.
Roads	No roads allowed. May be present but only for special uses or access for private inholdings.	No roads for public use. No new permanent or temporary road construction or reconstruction. Roads maintained as trails.	Primitive roads open for recreational or administrative use only. No new permanent or temporary road construction or reconstruction. Roads maintained as trails.	No new permanent road construction. Temporary roads and road reconstruction allowed as long as adjacent SPNM and SPM areas are not affected.	No limitations.	No limitations.