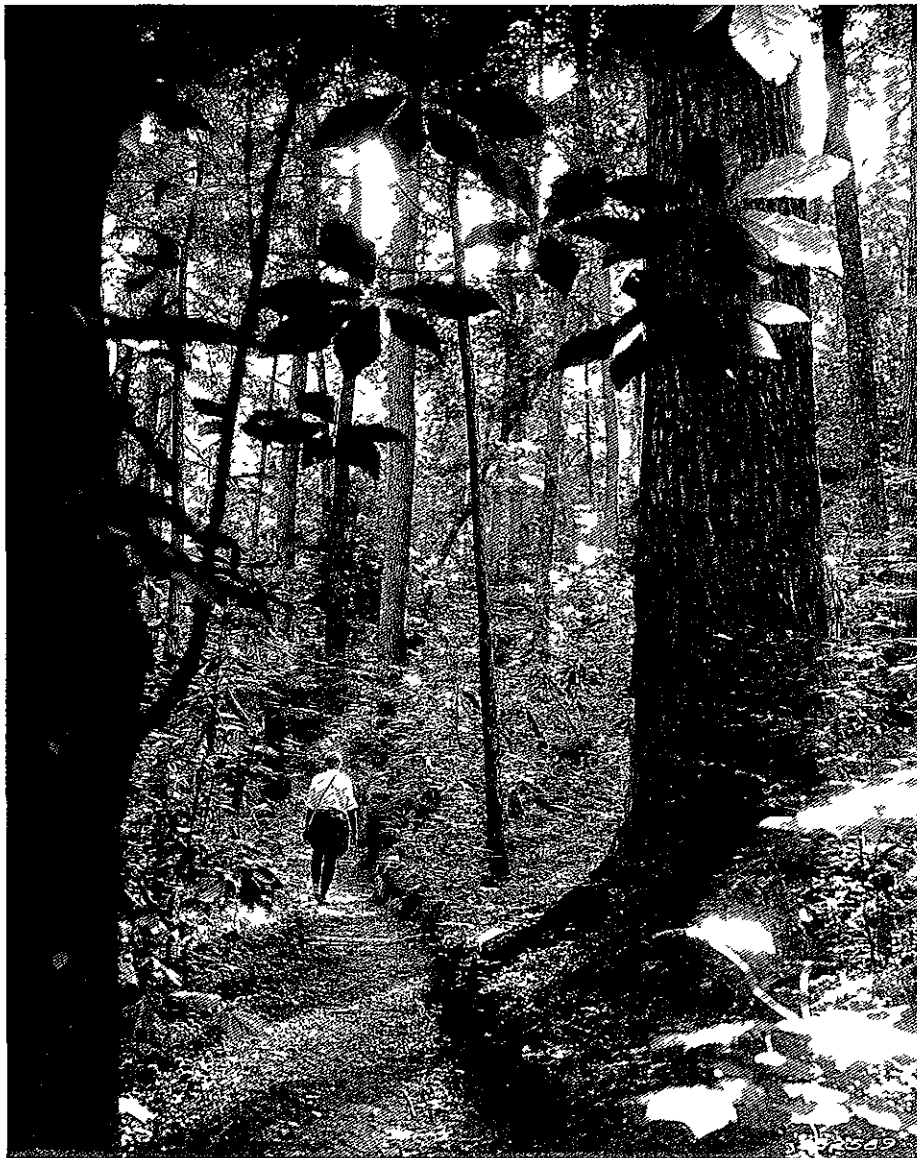


United States
Department of
Agriculture

Forest Service
Southern Region



Land and Resource Management Plan Amendment 5



Nantahala and Pisgah National Forests
North Carolina

LAND AND RESOURCE MANAGEMENT PLAN

NANTAHALA AND PISGAH NATIONAL FORESTS

AMENDMENT 5

NATIONAL FORESTS IN NORTH CAROLINA

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March, 1994

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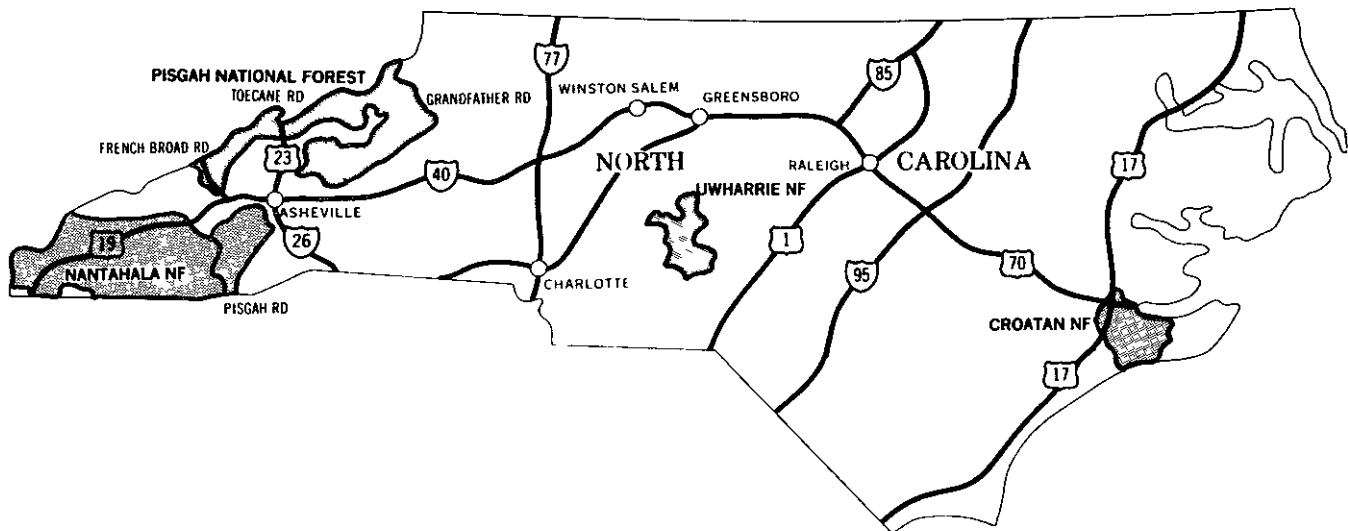
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**Nantahala and Pisgah National Forests
Land and Resource Management Plan**

Amendment 5

March 1994

Introduction

The decision to implement the Nantahala and Pisgah Forest Plan (hereinafter Forest Plan), was approved in 1987. During the period 1987 through 1991, there have been 6 amendments to the Forest Plan. A summary of the amendments follow:

Amendment 1 (April 1987) - incorporates management requirements for the Suppression of the Southern Pine Beetle.

Amendment 2 - (July 1989) - incorporates requirements for managing vegetation in the Appalachian Mountains

Amendment 3 - (October 1989) - incorporates requirements for 2 programs: 1) the Forest Heritage Scenic Byway program, and 2) Firewood permits

Amendment 4 - (April 1990) - reduces the emphasis on clearcutting as a preferred harvest method

Amendment 5 (March 1994) - Significant amendment to the Forest Plan to address the Chief's remand on appeals

Amendment 6 - (August 1992) Change in a management area boundary on Highlands Ranger District to correct mistakes made in the 1987 plan

Please Note

For the reader convenience, Chapter III of the Forest Plan has been edited to incorporate Forest Plan Amendments 1 through 6

Amendments 1, 3 and 4 have been inserted directly into this chapter with citations to the amendments

Amendment 2 appends this document as Appendix I of the Forest Plan.

Amendment 6 is inserted in the new land allocation.

Changes to Chapter III due to Amendment 5 have been either highlighted or underlined so that the reader may distinguish what changes were made

This document also updates appendices in the plan

The environmental analysis of Amendment 5 is documented in a Final Supplement to the Final Environmental Impact Statement.

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CHAPTER III

FOREST MANAGEMENT DIRECTION

This chapter discusses the goals and objectives of forest management and the concept of management areas.

FOREST GOALS

Forest goals describe the basic thrust of the Plan. The goals are the desired conditions for which the Forest will be managed. **Replace the goals in the Forest Plan with goals as follows:**

- 1. Blend the needs of people and environmental values in such away that the Nantahala and Pisgah National Forests sustain ecosystems that are diverse, productive, and resilient to short-term stress and long-term change through principles of multiple-use and sustained-yield. Strive for balance, equity, and harmony between people and land, across interests, across regions and across generations, meeting this generations' resource needs, while maintaining options for future generations.**
- 2. Improve the quality of life for citizens of western North Carolina by helping to meet the basic needs of people and communities who depend on National Forest resources for water, food, fuel, shelter, livelihood, recreation, and spiritual renewal. Use resources wisely and efficiently to improve economic prosperity of local communities, the southern Appalachian region, and the nation.**
- 3. Maintain, and where possible, enhance the diversity of plant and animal communities of the southern Appalachians. Maintain viable populations of existing native wildlife, fish, and plants. Favor plant and animal communities that warrant special attention. Protect unique plant and animal communities. Provide for a system of old growth forest communities across the Nantahala and Pisgah National Forests.**
- 4. Rehabilitate ecosystems damaged by indiscriminate logging and fire before Federal acquisition so as to sustain their diversity and productivity. Work within the ecological potential of sites and landscapes, maintain native diversity, and mimic nature's processes to the greatest degree possible. Emphasize recovery and conservation of threatened, endangered, and sensitive species. Restore productivity of oak-hickory forest communities now in a state of low productivity for plants and animals due to land use practices prior to Forest Service acquisition.**
- 5. Emphasize high value hardwood sawtimber. Take advantage of the forests' capability to produce large trees of hardwood species valued for beauty and durability of this wood such as Northern red oak and black cherry. Emphasize high quality hardwood species on highly productive sites.**

6. **Diversify silvicultural methods based on research and experimentation. Reduce clearcutting and increase use of other regeneration techniques, such as two-aged and selection methods. Apply clearcutting only when it is essential to meet specific forest plan objectives and within specific circumstances. Provide for a more natural appearing and diverse forest. In regenerating new stands of trees, mimic natural disturbance patterns where appropriate. On suitable sites, restore mast-bearing species such as oaks.**
7. **Protect the beauty of the Forests through special attention to visually sensitive areas and the careful application of resource management activities.**
8. **Provide different environmental and social settings for outdoor recreation opportunities that range from primitive to developed. Provide for a variety of recreation activities appropriate to these settings and the forest environment. Provide all recreation visitors to the National Forest the opportunity to participate in activities and programs and use facilities to the highest level of access practicable.**
9. **Bring the best science to bear on management of the Pisgah and Nantahala National Forests; integrate research and management to continually improve the scientific basis of ecosystem management. Involve scientists in management and make resources management a continuing experiment and learning opportunity.**
10. **Keep the public involved in open and honest dialogue; involve interested and affected people in the full process of making decisions about common resources. Ensure that everyone has access to information and knows what is going on. Facilitate discussion among interests and enlist them in joint problem-solving.**

FOREST MANAGEMENT OBJECTIVES

Forest management objectives are the desired goods and services that are expected by implementing the Plan. These goods and services produced will accomplish the goals of the Plan and address the major issues. Appendix E displays Plan outputs as annual averages over the life of the Plan, 1986-2000. In addition, Table D-1, Appendix D of the Environmental Impact Statement displays, by time periods, the annual outputs of goods and services that would be produced by the Plan over the entire planning horizon.

Amendment #5 supplements the forest management objectives with specific direction for threatened or endangered species. Also, recovery objectives are provided for candidate species that are likely to be listed soon. Specific recovery objectives are listed in Appendix A. The recovery objectives for the following animal and plant species are included:

Animal Species

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal Status</u>	<u>Occurrence</u>
<u>Alasmidonta raveneliana</u>	Appalachian Elktoe Mussel	C2	Occurs
<u>Canis rufus</u>	Red Wolf	E	Extirpated
<u>Cyprinella monacha</u>	Spotfin Chub	T	Occurs
<u>Falco peregrinus anatum</u>	American Peregrine Falcon	E	Occurs
<u>Felis concolor couguar</u>	Eastern Cougar	E	May Occur
<u>Glaucomys sabrinus coloratus</u>	Carolina Northern Flying Squirrel	E	Occurs
<u>Mesodon clarki nantahala</u>	Noonday Snail	T	Occurs
<u>Microhexcura montivaga</u>	Spruce fir moss spider	PE	Occurs
<u>Myotis sodalis</u>	Indiana Bat	E	Occurs
<u>Pegias fabula</u>	Little-wing Pearly Mussel	E	Occurs
<u>Plecotus townsendii virginianus</u>	Virginia Big-eared Bat	E	May Occur

Plant Species

<u>Scientific Name</u>	<u>Common Name</u>	<u>Federal Status</u>	<u>Occurrence</u>
<u>Aster avitus</u>	Alexander's Rock Aster	C1	May Occur
<u>Brachymenium andersonii</u>	Anderson's Brachymenium	C1	May Occur
<u>Geum radiatum</u>	Spreading Avens	E	Occurs
<u>Gymnoderma lineare</u>	Rock gnome lichen	PE	Occurs
<u>Helonias bullata</u>	Swamp Pink	T	Occurs
<u>Hexastylis naniflora</u>	Dwarf-flowered Heartleaf	T	May Occur
<u>Houstonia montana</u>	Mountain Bluet	E	Occurs
<u>Hudsonia montana</u>	Mountain Golden-Heather	T	Occurs
<u>Isotria medeoloides</u>	Small-Whorled Pogonia	E	Occurs
<u>Liatris helleri</u>	Heller's Blazing Star	T	Occurs
<u>Narthecium americanum</u>	Bog Asphodel	C1	Extirpated
<u>Orbexilum macrophyllum</u>	Bigleaf Scurfpea	C1	Possibly Extinct
<u>Sagittaria fasciculata</u>	Bunched Arrowhead	E	May Occur
<u>Sarracenia jonesii</u>	Mountain Sweet Pitcher Plant	E	May Occur
<u>Sarracenia oreophila</u>	Green Pitcher Plant	E	May Occur
<u>Sisyrinchium dichotomum</u>	White Irisette	E	May Occur
<u>Solidago spithamea</u>	Blue Ridge Goldenrod	T	Occurs
<u>Spiraea virginiana</u>	Virginia spiraea	T	Occurs

2. Johns Knob and Massey Branch Quarries (about 5 acres each). Two aggregate stone quarries in Graham County, Cheoah Ranger District on the Nantahala National Forest. Management Area Designations 2C and 2A.
3. Hewitt Quarry (about 25 acres). A limestone (really low-grade marble) quarry in Swain County, Cheoah Ranger District on the Nantahala National Forest (private minerals). Total private mineral area = 300 acres. Management Area Designation 2C.
4. O.J. Wilson Quarry (2 acres). A dimension stone quarry near Unicoi, Yancey County, Toecane Ranger District on the Pisgah National Forest. Management Area Designation 1B.
5. A. Taylor Quarry (3 acres). A dimension stone quarry near Linville, Avery County, Grandfather Ranger District in the Pisgah National Forest. Management Area Designation 3B.

The lease, sale, and permitting of mineral activity depends on the type of mineral sought and the mineral ownership.

Exploration of energy minerals has not occurred

There are no oil, gas, geothermal, or other energy mineral on or within the periphery of the Nantahala and Pisgah National Forests. In the early 1980's during the "oil crisis," about 90 percent of both forests were leased for oil and gas after the U.S. Geological Survey (USGS) published a report that indicated hydrocarbon-bearing formations could be underlying the Blue Ridge. This was quickly referred to as the "Eastern Overthrust Belt" because it is geologically similar to the very productive "Western Overthrust Belt" in parts of Montana, Utah, and Wyoming. Oil and gas is produced nearby in Tennessee in formations thought to underlie the Blue Ridge. When oil prices dropped, interest waned because of the cost of doing exploration work. Oil and gas leases expired or were relinquished. The presence of hot springs in the town of Hot Springs and in other areas indicates potential geothermal energy resources. Many of these hot springs are within or near National Forest lands.

Identifying rocks is a recreation activity

A substantial amount of exploration for minerals is done by "rockhounds," who look for rocks and minerals as a dispersed recreation activity. Numerous old mines on National Forest lands and mineralized outcrops are especially attractive to rockhounds. One formal rockhound area is located at the Buck Creek olivine deposit in Clay County. The Wray mine near Burnsville and two old kyanite mines near Barnardsville have a strong potential as rockhounding areas. Panning for gold and gems is another favorite rockhounding activity. Rockhounding is permitted forest-wide except where expressly prohibited, where the mineral estate is privately owned, or where there is a BLM hardrock prospecting permit or lease.

SUMMARY OF MANAGEMENT AREAS 1 THROUGH 5

MANAGEMENT AREAS

Management Areas of the Nantahala and Pisgah National Forests are something like zones of a city plan: management areas are zoned to achieve different desired conditions, emphasize different activities, permit different uses of the forest, emphasize differing wildlife species and landscape features. What activities actually occur on the land will depend on site specific decisions.

There are 18 different Management Areas on the Nantahala and Pisgah National Forests. This forest plan amendment (#5) further clarifies desired conditions for Management Areas 1 through 5 and 18.

MANAGEMENT AREA 1

Emphasizes sustainable supply of timber products and motorized access into the forest for traditional forest uses such as hunting and gathering, firewood cutting, fishing, and recreational activities including ORV use and camping. These areas have open roads, and the visitor is likely to encounter other forest users and vehicles of all types. A sustainable supply of timber is achieved through regulating the growth and removal of trees through time. Although a regulated forest is desired, some natural forest settings will be present. The visitor may encounter forest management activities in progress, including timber harvest, road building, and timber stand improvement. Wildlife compatible with or that benefit from these conditions, such as grouse, deer and songbirds are likely to be present.

MANAGEMENT AREA 2

Emphasizes pleasant scenery for people who experience the forest by driving (or boating) through it. Secondarily, this management area provides an environment of older forests combined with timber management activities sensitive to scenery. Open roads through a scenic forest is the desired condition. Management area 2A allows timber production using methods compatible with scenic values. Forest management activities should not be as apparent as in Management Area 1. Wildlife that are compatible with or that benefit from these conditions, such as squirrels and woodpeckers are likely to be present. Since many of these areas are along well-traveled roads, the visitor is likely to encounter numerous other people and their vehicles.

MANAGEMENT AREA 3

Emphasizes a sustainable supply of timber but with few open roads and without the disturbance associated with motorized vehicles. This Management Area provides the habitat needs of wildlife such as wild turkey, deer, a variety of small mammals, and other species that will benefit from a managed forest with limited motorized access. A sustainable supply of timber is achieved through regulating the growth and removal of trees through time. Access to the forest is desired during the time timber is harvested, though most roads are closed at other times. Although a regulated forest is desired, some natural forest settings will be present. The visitor may encounter forest management activities in progress, including timber harvest, road building and timber stand improvement. Wildlife compatible with or that benefit from these conditions are present. Black bear use these areas, though they do not provide the best black bear habitat. Recreationists use these areas for hiking, mountain biking, horseback riding, hunting, and other activities. The visitor may encounter other forest users, but not as frequently as in areas with open roads.

MANAGEMENT AREA 4

In Management Area 4 most roads are closed to motor vehicles, and a somewhat remote setting is provided, but with timber management in 4A and 4D. In Management Areas 4A and 4C, emphasis is placed on managing for quality scenery. In Management Area 4D emphasis is on providing high quality wildlife habitat, particularly for black bear. The preferred habitat for black bear includes freedom from the disturbance of motorized vehicles, some areas of older forest, a continuous supply of hard mast (such as acorns from oaks) and den trees, and small, widely dispersed openings providing the soft mast (fruits and berries) typically found in very young forest. Timber management activities are designed to provide these conditions. Management Area 4C tends to be fairly steep, rugged, often inaccessible terrain usually seen only from a distance by forest visitors. This land is unsuitable for timber production but can provide a scenic backdrop for people viewing the forest from a distance, while also providing wildlife habitat. The variety of wildlife likely to be present in Management Area 4 include black bear, pileated woodpecker and grey squirrel. The visitor using these areas for recreation may occasionally encounter other people. Forest management activities are less likely to be encountered than in Management Areas 1 or 3.

MANAGEMENT AREA 5

Emphasizes backcountry areas where there is little evidence of other humans or human activities other than recreation use. A large block of land is necessary to ensure relative freedom from the sights and sounds of people. An unroaded forest environment and natural appearing forests with large old trees are desirable. This management area provides large blocks of habitat relatively undisturbed by human developments that some species prefer. Wildlife such as ovenbird, black bear and cerulean warbler are likely to be present. Visitors using these areas for backcountry activities are less likely to encounter other people.

FORMAT OF DIRECTION

Management requirements in the following tables are presented in three columns: Activities, General Direction, and Standards.

Activities are groupings of work processes that are conducted to produce, enhance, or maintain levels of outputs, or to achieve administrative and environmental objectives.

General Direction specifies either the actions, measures or treatments to be done when implementing the management activity, or the condition expected to exist after the direction is implemented.

Standards are quantifications and qualifications of the acceptable limits within which general direction is implemented.

In addition to the standards shown in this document, operating standards are contained in the Forest Service Directives System. The Directives System consists of manuals, handbooks and publications referenced by the directives. Specific technical instructions and standards are included in this material. An example of how the Directives System is used in combination with Plan standards is as follows:

In Forest-wide Direction under the Management Activity Trails Management, general direction states, "Design, build, and maintain trails for their intended use and desired experience level". Forest Service Handbook 2309.18 and "Trails South", a referenced publication, contain numerous pages of specific instructions for the planning and construction of trails by their intended use (horseback riding, hiking, etc.) and desired experience level (easy, difficult, etc.). The standard shown in the Plan could have called for the use of both documents, but would have little meaning to the reader unfamiliar with the Directives System.

Some standards are stated as approximations or desired densities. An example is found in Direction for Management Area 3 in the standard for open road density. The standard calls for "an approximate density of 0.5 miles of open road per square mile". The management intent is to not exceed 0.5 miles per square mile of open road. However, some latitude is given to allow for on-the-ground decisions necessary to implement the standard in an economically and environmentally sound manner. It would not be practical to spend extra dollars to excavate a road turnaround into the hillside to satisfy a strict 0.5 mile density standard when a naturally occurring flat is located a few hundred feet away.

FOREST-WIDE MANAGEMENT REQUIREMENTS

Forest-wide management requirements are the management direction and standards needed to meet the forest-wide goals, desired future conditions and objectives.

Table III-1 Forest-wide Direction

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Heritage Resource Management	<p>1. Protect heritage resources by</p> <ul style="list-style-type: none"> - Completing heritage resource inventories prior to ground disturbing or land transfer projects, - Avoiding disturbance of known heritage resources until evaluated and determined not significant, - Prescribing and implementing necessary mitigation measures if site disturbance is necessary, - Issuing antiquities permits to qualified academic institutions, other organizations, or individuals for the study and research of sites, - Protecting appropriate heritage resource properties for ceremonial and religious purposes by Native Americans, and - Maintaining appropriate confidentiality of sites 	<ul style="list-style-type: none"> a Consult with Native Americans as appropriate to identify and determine the significance of sites Contact the tribal councils of the Cherokee Nation, members of the Native American traditional community, and other interested and knowledgeable parties b Consult with appropriate parties (above) to agree upon measures needed to mitigate potential adverse effects prior to conducting or permitting testing or excavation at identified sites c Allow no activities that would be damaging to identified Native American Religious sites. d Maintain confidentiality of heritage resources, including Native American Religious sites, as exempted from the Freedom of Information Act Do not show locations in public documents unless agreed upon by all parties

Table III-1 Forest-wide Direction

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Heritage Resource Management (continued)	2 Manage to eliminate conflicts between Native American traditional and religious ceremonies and other Forest uses.	a Allow Native Americans access to sites to conduct or practice traditional and religious ceremonies, fasting, sweat lodge ceremonies, and other appropriate activities b Permit Forest use on a case-by-case basis for Native American traditional and religious activity in areas that would otherwise be closed to public use
	3 Foster public use and enjoyment of heritage resources through interpretation or development of suitable sites	
	4 Nominate significant heritage resources to the National Register of Historic Places	
	5 Protect all heritage resources which are listed on or eligible for the National Register of Historic Places or the National Register of Historic Landmarks	
	6 Ensure that all land use permits, contracts, and other Forest use authorizations contain adequate stipulations and provisions for protection of significant heritage resources.	a. Restrict minerals activity at Native American Religious Sites Allow no surface occupancy. Require mitigation of significant archeological sites prior to any impact
	7 Consult with other federal agencies, State Historic Preservation Office, and Native Americans for survey, evaluation, and protection needs.	

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Dispersed Recreation Management (continued)	<p>5. Provide recreational riding opportunities for use by vehicles commonly classified as off-road vehicles (ORV's) on designated routes within established ORV areas. This includes Upper Tellico, Brown Mountain, and Waychutta. Permit no cross-country travel in Management Areas 1 through 18</p> <p>6. When a project includes vegetation management, follow management requirements and mitigation measures according to Amendment #2 in Appendix 1 [Amendment #2]</p>	<p>a. Designate routes that will:</p> <ul style="list-style-type: none"> - provide easy to moderate levels of challenge, and - be compatible with Forest resources and other uses <p>b. Favor "loop" or "spiderweb" systems for ORV routes. Provide parking access at key locations</p> <p>c. Design, construct, and maintain travel surfaces to meet water quality standards.</p> <p>d. Sign routes for the type of vehicle allowed. Determine the vehicle type allowed for each route through site specific analysis, considering the following factors: route characteristics, safety, and compatible uses.</p>
Wild and Scenic River Management	<p>1. Refer to Management Area 15 for direction regarding management of the Chattooga and Horsepasture Rivers</p> <p>2. Provide interim protection for eligible rivers which are recommended for further study by precluding management activities whose effects could foreclose the potential classification shown in General Direction Items 7-10. Continue interim protection through the study period and until the rivers are designated or</p>	<p>a. Protect an area extending the length of the identified river segment and 1/4 mile in width (horizontal distance) from each bank of the river.</p>

Table III-1 Forest-wide Direction

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Visual Resource Management (continued)	<p>4 Enhance viewing opportunities through vegetative manipulation, land form alteration or removal or addition of structures to improve views or block out undesirable scenes. Examples of these include:</p> <ul style="list-style-type: none"> - Removing, cutting back or selectively pruning trees and shrubs to open views, and - Adding an earthen barrier along a travel route to block a view into an undesirable scene, and - Restore an unused fire tower as an observation site <p>5 Recognize and consider wilderness values when planning resource management activities adjacent to Wilderness while meeting the objectives of adjacent management areas</p>	
Dispersed Recreation Management	<p>1 Provide the opportunity for visitors to experience a variety of recreation activities with minimum regulation, manage use through information rather than regulation where possible</p> <p>2 Implement the "no trace" use concept through public education</p> <p>3 Allow recreational collection of minerals where minerals are loose and free on the surface, in federal ownerships, and not restricted by permit</p> <p>4 Allow primitive camping except in areas where such use is in conflict with other Forest uses or creates resource damage. Determine conflict and damage on case-by-case basis</p>	<p>a Allow specialized uses such as hang gliding, mountain bicycling, rock climbing, etc. where not in conflict with other recreation uses or management area requirements</p> <p>a Restrict mineral collection to nonmechanical equipment with no significant ground and stream disturbance</p>

Table III-1 Forest-wide Direction

ACTIVITIES	GENERAL DIRECTION	STANDARDS										
Visual Resource Management	1 Design Forest management activities to meet the Visual Quality Objectives (VQO's) as shown in each Management Area (Refer to Appendix G for descriptions of VQO's)											
	2 Meet the Visual Quality Objectives for a new project by the end of the specified time	<table border="0"> <tr> <td>a VQO</td> <td>FULL GROWING SEASONS</td> </tr> <tr> <td>Retention</td> <td>1</td> </tr> <tr> <td>Partial Retention</td> <td>2</td> </tr> <tr> <td>Modification</td> <td>3</td> </tr> <tr> <td>Maximum Modification</td> <td>5</td> </tr> </table>	a VQO	FULL GROWING SEASONS	Retention	1	Partial Retention	2	Modification	3	Maximum Modification	5
	a VQO	FULL GROWING SEASONS										
Retention	1											
Partial Retention	2											
Modification	3											
Maximum Modification	5											
<p>3 Set priorities for rehabilitation of areas which do not meet the VQO's specified for each management area. Consider the following</p> <ul style="list-style-type: none"> - Relative importance of the area and deviation from the VQO (foreground areas have highest priority), - Length of time it will take natural processes to reduce the visual impacts so that they meet the VQO, - Length of time it will take rehabilitation measures to meet the VQO, and - Benefits to other resource management objectives 												

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Wild and Scenic River Management (continued)	<p>2. (continued) released from consideration These rivers include:</p> <ul style="list-style-type: none"> - Nolichucky River - Wilson Creek - Nantahala River (above and below Nantahala Lake) - Snowbird Creek - Mills River System (North Fork, South Fork, Mills) - Davidson River - East Fork Pigeon River (including Dark Prong and Yellowstone Prong) - Linville River - Tellico River 	
	<p>3. Defer the study of eligible rivers that touch only a small part of National Forest lands to the appropriate State or Federal agency. Provide the interim protection shown in General Direction, Item 2. These rivers include:</p> <ul style="list-style-type: none"> - Big Laurel and Puncheon Fork - French Broad River 	
	<p>4. Use the NEPA process to assess probable effects of proposed management activities occurring within the 1/4 mile corridor.</p>	<ul style="list-style-type: none"> a. Insure proposed activities do not reduce potential classification of the river segments. b. Notify interested parties to allow timely input throughout the analysis and decision making process.

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Wild and Scenic River Management (continued)	5. Maintain all eligible rivers in a free flowing condition.	a. Allow existing improvements to remain in place b. Prohibit new water supply dams, major diversion, hydroelectric power facilities, flood control dams, levees or other major works within river channels. c. Allow construction of new minor fish habitat structures such as log deflectors and random boulder placement
	6. Utilize a full range of land use controls when necessary to protect river area values.	a. Emphasize donation or exchange to acquire private lands within river corridors. Consider scenic easements to protect river values only when acquisition of fee simple title is improbable.
	7. Permit new public utility rights-of-way only in the absence of reasonable alternative routes	a. Use location and construction techniques which will minimize adverse effects on river area values.
	8. Manage East Fork Pigeon River (wilderness boundary to U S Highway 276 crossing) and Linville River (northern boundary of Linville Gorge Wilderness to southern boundary of wilderness) in accordance with management area standards for designated Wilderness (MA 7), manage Snowbird Creek (headwaters to Owl Camp Brand) in accordance with management area standards for Wilderness Study Areas (MA 6); to provide protection for potential classification of wild.	

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Wild and Scenic River Management (continued)	<p>9. Manage Big Laurel Creek (confluence with French Broad River to U S. Highway 25) in accordance with management area standards for special interest areas (MA 13). Provide protection for potential classification of scenic.</p> <p>10. Manage the following eligible river corridors to retain the values that qualify them for the potential classification of wild.</p> <ul style="list-style-type: none"> - South Mills River - Pigeon Branch to forest Boundary - Wilson Creek - Little Wilson Creek to Crusher Branch -Dark Prong - Headwaters to confluence of East Fork Pigeon River 	<p>a Maintain the natural appearance and essentially primitive character of the river areas. Provide special emphasis to visual quality within the visual corridor.</p> <p>b Allow cutting of trees only in association with a primitive ROS experience (such as clearing for trails and protection of users) or to protect the environment (such as control of fires).</p> <p>c. Manage mineral activities to protect river area values. Conduct existing mineral activities to minimize surface disturbance, sedimentation, and visual impairment. Stipulate no surface occupancy in any new leases.</p>

Table III 1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Wild and Scenic River Management (continued)	<p>10. Continued</p> <p>11. Manage the following eligible river corridors on Forest lands to retain the values which qualify them for the potential classification of scenic</p> <ul style="list-style-type: none"> - French Broad River - Barnard, NC to Hot Springs, NC - Linville River - Southern boundary of wilderness downstream to forest boundary. - Nolichucky River - Poplar, NC to Tennessee state line - Snowbird Creek - Owlcamp Branch downstream to Polecat Branch - Wilson Creek - Headwaters to Little Wilson Creek. - Yellowstone Prong - Headwaters to confluence East Fork Pigeon River 	<ul style="list-style-type: none"> d. Limit construction of structures and facilities to minimum developments such as fireplaces and shelters which maintain the essentially primitive nature of the area. e. Limit motorized vehicles to existing open roads and trails f. Consider road construction only outside a narrow incised river valley when the location would not adversely affect the river environment. a. Maintain the river and its immediate environment in a near natural appearance. Provide special emphasis to visual quality within visual corridors outside river area b. Allow silvicultural practices provided that such practices are carried out in such a way that there is no substantial adverse effect on the river and its immediate environment. c. Manage mineral activities to protect river area values. Conduct existing mineral activities to minimize surface disturbance, sedimentation and visual impairment. Stipulate no surface occupancy in any new leases.

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Wild and Scenic River Management (continued)	11 Continued.	<p>d Limit construction of structures and facilities to moderate developments such as moderate size campgrounds, public information centers and administrative centers which are screened from the river and which have no direct and adverse effect on river values.</p> <p>e Limit motorized vehicles to open roads and trails.</p> <p>f. Allow construction of new roads emphasizing locations that are well-screened and not visually evident from the river. Allow occasional bridging of the river. Direct transportation planning toward minimizing road access within the river corridor.</p>
	12 Manage the following eligible river corridors on Forest lands to retain the values which qualify them for the potential classification of recreation.	<p>a. Provide special emphasis to visual quality in the immediate river environment and to protect the outstandingly remarkable scenic values in Cheoah and Snowbird Creek, Nantahala River (below Nantahala Lake) and Wilson Creek.</p> <p>b. Allow silvicultural practices with only those restrictions necessary to protect the immediate river environment and the identified outstandingly remarkable river values.</p>
	<ul style="list-style-type: none"> - Big Laurel and Punchon Fork - Headwaters to U.S. Highway 25. - Snowbird Creek - Polecat Branch downstream to N.C. 1115 bridge. - Davidson River - Headwaters to Forest Boundary. - French Broad River - Hot Springs, N.C. downstream to Tennessee state line - Nantahala River - Above and below Nantahala Lake. - Tellico River - Headwaters to Tennessee state line. - Wilson Creek - Crusher Branch to Johns River. 	

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Wild and Scenic River Management (continued)	<p>12. Continued.</p> <p>Use the Standards presented here as the minimum protection necessary to retain river area values. When the eligible river corridors lay within designated Management Areas whose standards afford greater protection to river area values; apply the more restrictive standards.</p>	<p>c. Conduct only those mineral activities which minimize surface disturbance, sedimentation and pollution, and visual impairment.</p> <p>d. Allow construction of structures and facilities for both habitation and intensive recreation use provided that the identified outstandingly remarkable values are protected.</p> <p>e. Limit motorized vehicles to open roads and trails.</p> <p>f. Allow construction of new roads provided that the identified outstandingly remarkable values are protected.</p>

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Scenic Byway Management	1 Manage the following travel corridors as Scenic Byways On National Forest lands adjacent to the Scenic Byway, emphasize management of roadside vegetation to enhance its scenic values and to provide interpretive opportunities relating to natural resources, forestry practices and/or items of historical interest	
	The Forest Heritage National Scenic Byway (79 miles) is designated as follows	
	Highway 276 beginning at the intersection of Highway 64 and Highway 276 proceeding northwest to the intersection of Highway 276 and Highway 215	
	Highway 215 beginning at the intersection of Highway 276 and Highway 215 and proceeding south to Highway 64 at Rosman	
	Highway 64 beginning at the intersection of Highway 215 and Highway 64 at Rosman and proceeding northeast to the intersection of Highway 64 and Highway 276 [Amendment #3]	
	The Mountain Waters National Scenic Byway (61.3 miles) is designated as follows:	
	Highway 64 beginning at Forest boundary northwest of Highlands proceeding northwest to the intersection of Highway 23/441	
	Highway 23/441 beginning at intersection of Highway 64 proceeding west to intersection of Old Highway 64	

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Scenic Byway Management (continued)	<p>1. Continued</p> <p>Old Highway 64 beginning at intersection of Highway 23/441 and proceeding north to intersection of State Road 1310.</p> <p>State Road 1310 beginning at intersection of old Highway 64 proceeding west then north to intersection Highway 19.</p> <p>Highway 19 beginning at intersection of State Road 1310 proceeding northeast to intersection of State Road 28.</p>	
Trails Management	<p>1 Design and manage the trail system to complement Forest-wide and management area objectives, provide a variety of opportunities, accommodate the intended type and level of use and require minimal maintenance. Coordinate trail management with other resource management to retain usability of trails</p> <p>2 Allow hiking use on all trails. Allow other trail uses only when compatible with management area objectives, design, <u>and physical condition of the trail</u>, and the trail is designated for non-hiking uses</p> <p>3 Manage trail corridors and <u>adjacent</u> lands to all trails, according to the standards of the management area in which they are located</p> <p>4 Emphasize development of existing trails into loop systems with the exception of existing long-distance trails such as the Appalachian, Bartram, and Mountains-to-Sea Trails</p> <p>5 Consider additional long-distance through trails when public need is evident and appropriate planning has been completed.</p>	<p>a Allow llamas on specified hiking trails</p> <p>a Conduct analysis in cooperation with the organization proposing the trail</p>

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Trails Management (Continued)	6 Design, build, and maintain trails for their intended use and desired experience level (maintenance levels of trails are described in Appendix G)	
	7 Provide appropriate maps, brochures, handouts, posters, and signing to facilitate public use of the trail system.	
Recreation Management (Private and Other Public Sector)	1 Require a permit for all commercial recreation use of NFS land	<p>a Limit the number of commercial use permits issued to those that</p> <ul style="list-style-type: none"> - meet a public need, - are compatible with other recreation uses and management area direction, and - are needed to accomplish forest objectives
	2 Allow organized recreational events when they meet management area direction Require a permit	
	3 Issue no new permits for recreation residences An existing recreation residence may be relocated if the current site is needed for a higher public use.	
Botanical, Wildlife, and Fish Resource Management	1 <u>Use Management Indicator Species (MIS) for monitoring populations and habitat conditions for all existing native vertebrates (see Chapter III of the accompanying EIS for a list of species)</u>	a <u>Use additional MIS for project level analysis as necessary in order to respond to specific issues or concerns</u>
	2 Coordinate wildlife and fish management activities with the North Carolina Wildlife Resources Commission (NCWRC) Provide opportunity for early input to proposed projects	

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
<p>Botanical, Wildlife, and Fish Resource Management (continued)</p>	<p>3 <u>Maintain viable populations of existing native and desired non-native vertebrate species in the planning area. Protect the following community types when identified as unique in the botanical or wildlife analysis: caves and rare plant communities including bogs, rocks cliffs, granitic domes, high elevation rocky summits, barrens and glades, boulders, boulder field forests and seeps (Refer to the Supplemental EIS, Appendix I for descriptions of these communities).</u></p> <p><u>Provide site specific analysis of occurrence and effects on proposed endangered, threatened, and sensitive (PITS) species and Forest-listed species at the project level. Provide aquatic, botanical, and wildlife analyses, biological assessment and/or biological evaluation as necessary to comply with the Endangered Species Act and FSM 2670.</u></p> <p>Develop conservation strategies for sensitive species, beginning with those of highest risk. Follow recovery objectives for threatened and endangered species.</p>	<p>a <u>Retain about 2 snags per acre during stand regeneration. Snags should be 15 inch dbh or greater wherever possible. Retain bear dens, standing live and dead den trees of 22 inch dbh or greater, except where human safety is of concern. Favor snags along edge of openings or combined with other leave trees. Coordinate snag retention with scenery management objective in foreground and middleground area with VQO's of retention or partial retention.</u></p> <p>b Provide at least 0.5% of Management Areas 1, 2, 3, 4, and 5 in grass/forb openings at any one time including mowed landings and roads except where desired conditions for forest interior birds or old growth management are specified. Select locations to avoid conflict with recreation uses. Do not include openings which receive heavy recreation use as contributing to this standard.</p> <p>c Manage open road densities according to management area direction (refer to Transportation System Management standards for each management area).</p>

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
<u>Botanical, Wildlife, and Fish Resource Management</u> (continued)	<u>4</u> Use vegetative management practices, including commercial and noncommercial timber harvest, to accomplish fish and wildlife habitat objectives	
	<u>5</u> Initiate animal damage control measures when animal populations threaten public health or safety, cause unacceptable damage to wildlife, <u>timber</u> , other resources, or property	
	<u>6.</u> Introduce exotic, non-native plant or animal species after coordinating with state agencies and with the approval of the Regional Forester.	a. Introduce non-native animal species only with state agency approval
	<u>7.</u> Provide structural habitat improvements. Give priority to use of native materials and mimic naturally occurring structures.	
	<u>8.</u> Identify and manage key wildlife areas such as old homesites and grape slicks	
	<u>9.</u> Provide adequate drainage for linear wildlife openings <u>that will prevent visible sediment from entering intermittent and perennial streams and perennial waterbodies</u>	
	<u>10. Maintain and improve aquatic species diversity</u>	a. Use habitat restoration, improvement, and reintroduction to re-establish or expand native species populations and diversity

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
<u>Botanical, Wildlife, and Fish Resource Management (continued)</u>	<u>11 Protect and improve fisheries habitat for self-sustaining fish populations where appropriate</u>	<u>a Refer to general direction and standards for Management Area 18</u>
	<u>12 Utilize interpretative and educational materials to increase the public's awareness of the importance of habitat quality to fisheries resources</u>	
	<u>13 In all spruce, fir, spruce/fir, hemlock or northern hardwood forest types above 4 000 feet elevation on north-facing slopes and 4 500 feet elevation on all other sites, assume occupied Carolina northern flying squirrel habitat unless site-specific evaluation by a wildlife biologist determines unsuitability of habitat</u>	<u>a Determine the size and configuration of habitat, specify re-design of the project that will avoid the occupied habitat, or consult with the U.S. Fish and Wildlife Service to determine appropriate implementation measures to achieve a determination of "no effect" or "not likely to adversely affect" A wildlife biologist will make the determination.</u> <u>b Use live-trapping for two consecutive years or nest box monitoring for three consecutive years to determine that suitable habitat is unoccupied</u>

Old Growth

1. The desired future condition for old growth across the forest is to have a network of small, medium, and large sized old growth areas, representative of sites, elevation gradients, and landscapes found in the Southern Appalachians and on the Forests, that are well dispersed and interconnected by forested lands.

Areas to be managed for old growth will be selected considering the following criteria

1. Priority consideration for areas currently exhibiting high quality old growth characteristics, including areas in the initial inventory of possible old growth,
 2. Areas with unique species diversity;
 3. Community, soil type, aspect, and elevation;
 4. Other resource concerns and management objectives.
2. LARGE PATCHES Evaluate the 30 large patches identified in Appendix K (Plan Amendment Appendix K) for future old growth management potential. Select 2500 contiguous acres or more within or proximate to each large patch.

Identify two additional patches of at least 2500 acres, one in the combined area of administrative watersheds 2, 3, and 4, and one in the combined area of the northwestern part of administrative watershed 26 and the northeastern part of administrative watershed 23, for old growth management.

The purpose of the large patches is to serve as permanent reservoirs of biological diversity, and to provide preferred habitats for forest interior birds across the landscape. The intent is to allow the restoration of functional old growth ecosystems at the subregional, Forest and landscape scales.

- a. Select the large patches prior to the first ground disturbing project of at least 5 acres proposed in an administrative watershed where any of the 30 large patches occurs.
- b. Select these two additional patches prior to the first ground disturbing project of at least 5 acres proposed in these administrative watersheds

ACTIVITIES

Table III-1 Forest-wide Direction (continued)
GENERAL DIRECTION

STANDARDS

Old
Growth

3. **MEDIUM PATCHES** In each administrative watershed containing more than 2500 acres of national forest land, and not containing a portion of a designated large patch area for old growth management, select a medium patch for future old growth management

The purpose of the medium patches is to serve as permanent reservoirs of biological diversity. The intent is to allow the restoration of functioning old growth ecosystems at the landscape and Forest scales.

4. **SMALL PATCHES:** In each compartment containing more than 250 acres of national forest land, select a small patch for future old growth management. If 5% of the compartment acres are already part of a large or medium patch, an additional small patch is not needed. Whenever possible, areas should incorporate some riparian habitat to enhance old growth values.

The purpose of the small patches is to increase biological diversity and provide structural components of old growth at the stand and landscape levels.

- a. Select the medium patches prior to the first ground disturbing project of at least 5 acres proposed in each administrative watershed needing a medium patch.
- b. Select a contiguous area at least 5% of the size of the national forest land in the administrative watershed. Administrative watersheds containing a large patch do not need an additional medium patch if the portion of the large patch in the watershed is equal to at least 5% of the national forest land in the watershed. If not, EITHER select additional acres contiguous with the large patch to make the watershed patch equal to at least 5%, OR designate a separate medium patch equal to at least 5%.
- a. Select the small patches prior to the first ground disturbing project of at least 5 acres proposed in the compartment.
- b. Select a contiguous area at least 5% the size of the national forest land in the compartment or at least 50 acres, whichever is greater. Management areas 14 and 18 can contribute to old growth acreage when they are included within a selected area. Compartments containing part of a large or medium patch do not need an additional small patch.

ACTIVITIES

Table III-1 Forest-wide Direction (continued)
GENERAL DIRECTION

STANDARDS

Old
Growth

- 5 ACRES IN THE INITIAL INVENTORY OF POSSIBLE OLD GROWTH
Field check for old growth characteristics. Select inventory areas exhibiting high quality old growth characteristics for old growth management whenever possible
- 6 TREATMENTS ALLOWED IN AREAS MANAGED FOR FUTURE OLD GROWTH-
Vegetative manipulation allowed for enhancement of old growth values and characteristics. Characteristics include
downed logs in all stages of decay,
old trees;
standing snags;
undisturbed soils;
uneven-aged structure of canopy species,
single and multiple tree-fall gaps,
abundant fungal component,
large trees,
appropriate density and basal area of canopy trees
- Salvage operations will not be allowed unless needed to protect the integrity of the old growth patch
- When forest health of adjacent lands is threatened from conditions in the old growth patch, treatment activities will be evaluated and selected based on site specific and forestwide analysis and in consultation with Forest Health Staff
- Trails will be allowed in old growth patches.
- Allow new road construction only after all feasible and prudent alternatives have been analyzed and all impacts to old growth characteristics and values minimized

a Field check when project proposals may directly affect areas in the initial inventory

Table III-1 Forest-wide Direction (continued)
GENERAL DIRECTION

ACTIVITIES

STANDARDS

Vegetation
Management

1. Assure a regular and sustained flow of habitats across the Forests through space and time for diversity and viability of plant and animal populations. Assign an interdisciplinary team to conduct project-level and landscape-level analyses for proposed activities. Conduct analysis at the watershed level or topographic areas of about 5,000 to 15,000 acres. Use a watershed boundary as the analysis area, except when the watershed would not be a meaningful analysis area; for example, a dispersed ownership pattern at the intersection of several watershed boundaries. Analysis areas will remain geographically fixed during the planning period. Consider cumulative effect of activities on non-NFS lands within the analysis area.

a. Select MIS for project level analysis based on factors such as management emphasis, community types, special habitats, or limiting biological factors.

b. The amount of 0-10 age class is regulated at 3 geographic scales: the analysis area, management area, and compartment

1. For every analysis area with at least 250 acres in MA's 1B, 2A, 3B, 4A, and/or 4D, the amount of 0-10 year age class allowed in the analysis area is calculated as follows: for MA's 1B, 2A, 3B, 4A, and 4D, multiply the number of acres in each MA by the maximum percent allowed.

1B & 3B acres x 15%;
2A acres x 10%;
4A & 4D acres x 10%

The sum of these is the amount of 0-10 year age class allowed in the analysis area.

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Vegetation Management	1 (cont).	<p>2. For every management area with at least 250 acres in the analysis area, the amount of 0-10 year age class allowed in the management area is calculated as follows: for management areas 1B, 2A, 3B, 4A, and 4D, multiply the number of acres of each MA in the analysis are by the maximum percent allowed.</p> <p style="padding-left: 40px;">1B & 3B acres x 15%. 2A acres x 10%. 4A & 4D acres x 10%.</p> <p>Each answer is the amount of 0-10 year age class allowed in that management area.</p> <p>3 For every component with at least 250 acres in MA 1B, 2A, 3B, 4A, and/or 4D, the amount of 0-10 year age class allowed in each compartment is calculated as follows: for each compartment, determine which of the MA's has the most acres in the compartment - 1B & 3B, 2A, or 4A & 4D.</p> <p style="padding-left: 40px;">If 1B & 3B is the most, then the maximum allowed 0-10 year age class is 15% of all acres in the compartment;</p> <p style="padding-left: 40px;">if 2A is the most, then the maximum allowed 0-10 year age class is 10% of all acres in the compartment;</p>

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS												
Vegetation Management (continued)	1 (cont)	<p>If 4A & 4D is the most, then the maximum allowed 0-10 year age class is 10% of all acres in the compartment.</p> <p>Projects which create 0-10 year age class must meet analysis area, management area, and compartment regulations.</p>												
	<p><u>Management Area 2A</u> <u>Provide habitat conditions for species such as pileated woodpecker, golden-crowned kinglet, bats (roosting and foraging habitats in mature forest), white-breasted nuthatch, gray squirrel, and saw-whet owl</u></p>	<p><u>c Disperse early successional habitat across the landscape according to the following desired conditions</u></p>												
	<p><u>Management Areas 1B and 3B</u> <u>Provide habitat conditions for species such as eastern wild turkey, ruffed grouse, white-tailed deer, and travel corridors and foraging habitat for black bear across the planning area in Management Area 3</u></p>	<table border="1"> <thead> <tr> <th><u>Management Area</u></th> <th><u>Compartment</u></th> <th><u>Analysis Area</u></th> </tr> </thead> <tbody> <tr> <td>2A</td> <td>At least 5% Not to exceed 10%</td> <td>At least 5% Not to exceed 10%</td> </tr> <tr> <td>1B & 3B</td> <td>At least 5% Not to exceed 15%</td> <td>At least 5% Not to exceed 15%</td> </tr> <tr> <td>4A & 4D</td> <td>Not to exceed 10%</td> <td>Not to exceed 10%</td> </tr> </tbody> </table>	<u>Management Area</u>	<u>Compartment</u>	<u>Analysis Area</u>	2A	At least 5% Not to exceed 10%	At least 5% Not to exceed 10%	1B & 3B	At least 5% Not to exceed 15%	At least 5% Not to exceed 15%	4A & 4D	Not to exceed 10%	Not to exceed 10%
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1B & 3B	At least 5% Not to exceed 15%	At least 5% Not to exceed 15%												
4A & 4D	Not to exceed 10%	Not to exceed 10%												
	<p><u>Management Areas 4A and 4D</u> <u>Provide habitat conditions for species such as black bear, eastern wild turkey, pileated woodpecker, golden-crowned kinglet, saw-whet owl, bats (roosting and foraging habitats in mature forests), white-breasted nuthatch and gray squirrel</u></p>													

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Vegetation Management (continued)	1 (cont)	<p>c (cont) <u>The Forest Supervisor must approve proposals which exceed these levels. The proposal must be supported by a site-specific analysis and for reasons such as insect and disease control, fire salvage, other events requiring salvage or other compelling needs such as threatened and endangered species habitat requirements.</u></p>
	<p><u>Management Area 5</u> <u>Provide habitat conditions for species such as black bear, pileated woodpecker, golden-crowned kinglet, saw-whet owl, bats (roosting and foraging in habitats in mature forests), white-breasted nuthatch, eastern wild turkey, and gray squirrel</u></p>	<p>d <u>Provide direct and indirect habitat improvements such as prescribed burning and small openings consistent with semi-primitive, nonmotorized recreational experiences and visual quality objectives</u></p>
	<p>FOREST INTERIOR BIRDS Provide preferred habitat conditions for forest interior breeding birds in selected areas (see Plan Amendment, Appendix F). Habitat conditions include a continuous forest canopy over 2500 acres in one contiguous patch with minimal or no interior edge. The patch configuration shall be 2640 ft (1/2 mi) or more in width. The location of the 2500 acre patch may shift within the compartments as long as the desired habitat conditions are provided. Integrate the long-term management of forest interior bird habitat conditions with old growth designations whenever possible.</p>	

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS														
Vegetation Management (continued)	2 Use rotations appropriate for the objectives of each Management Area	a Use the following as minimum rotations for even-aged management														
		<table border="1"> <thead> <tr> <th>Management Type</th> <th>Years</th> </tr> </thead> <tbody> <tr> <td>Upland Hardwood</td> <td>80</td> </tr> <tr> <td>Cove Hardwood</td> <td>80</td> </tr> <tr> <td>Yellow Pine</td> <td>60</td> </tr> <tr> <td>White Pine</td> <td>60</td> </tr> <tr> <td>Virginia Pine</td> <td>50</td> </tr> <tr> <td>Spruce-Fir</td> <td>80</td> </tr> </tbody> </table>	Management Type	Years	Upland Hardwood	80	Cove Hardwood	80	Yellow Pine	60	White Pine	60	Virginia Pine	50	Spruce-Fir	80
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White Pine	60															
Virginia Pine	50															
Spruce-Fir	80															
		b Use a harvest age less than rotation age, but not less than culmination of mean annual increment (CMAI) if needed to more evenly distribute age classes of trees, provide diversity, or enhance other resources. Damaged stands or stands that do not meet lower level stocking guides may be removed and regenerated before CMAI to restore site production.														
	3 Utilize all forest products from timber sale areas to the extent practicable															
	4 Apply a variety of timber harvest methods which best meet resource management objectives															

Table III-1 Forest wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Vegetation Management (continued)	5 Vary sizes of <u>even-aged and two-aged</u> regeneration openings depending on Management Area direction	<p>a Limit the size of openings created by <u>even-aged</u> and two-aged regeneration harvest to 40 acres regardless of forest cover type with the following exceptions</p> <ul style="list-style-type: none"> -Proposals for larger openings are subject to a 60-day public notification and review by the Regional Forester. -Larger openings are the result of natural catastrophic conditions of fire, insect or disease attack, windstorm, or -The area does not meet the definition of created openings.
	6 Disperse <u>planned</u> regeneration <u>openings</u> to provide for wildlife habitat and vegetative diversity	<p>a Maintain a minimum of a manageable stand (at least 330 feet) between openings created by regeneration harvest except when using selection harvest methods. Classify a regeneration area as an opening until the reestablished stand has reached a height that is approximately 20% of the height of the tallest adjacent stand. Base the stand height on the average of the dominant and codominant trees.</p>
	7 Use specialized logging systems on sustained steep slopes	<p>a <u>Use cable yarding that suspends at least one end of the log on sustained slopes over 40% unless site-specific analysis determines that other logging methods meet soil and water protection standards.</u> Suspend the entire log when yarding across perennial streams.</p> <p>b <u>Determine appropriate logging systems for intermediate (thinning), selection, or shelterwood cuts on sustained slopes over 40% site-specific analysis.</u></p>

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS																								
Vegetation Management (continued)	<p><u>8</u> Establish a satisfactory stand on regeneration areas within 5 years after final harvest. Emphasize natural regeneration for hardwood forest types. Where artificial regeneration is required use genetically improved seeds and seedlings to the maximum extent of their availability.</p>	<p>a. Use the following stocking guide for artificial regeneration</p> <p><u>Number of Stems Per Acre</u></p>																								
		<table border="1"> <thead> <tr> <th>Forest Type</th> <th>Lower Level</th> <th>Target Level</th> <th>Upper Level</th> </tr> </thead> <tbody> <tr> <td>Hardwoods (All species)</td> <td>100</td> <td>250-350</td> <td>500</td> </tr> <tr> <td><u>Mixed Pine-Hardwood</u></td> <td><u>300</u></td> <td><u>400-600</u></td> <td><u>900</u></td> </tr> <tr> <td>Yellow Pine</td> <td>300</td> <td>500-700</td> <td>900</td> </tr> <tr> <td>White Pine</td> <td><u>150</u></td> <td><u>250-350</u></td> <td><u>500</u></td> </tr> <tr> <td>Spruce-Fir</td> <td>300</td> <td>500-700</td> <td>900</td> </tr> </tbody> </table>	Forest Type	Lower Level	Target Level	Upper Level	Hardwoods (All species)	100	250-350	500	<u>Mixed Pine-Hardwood</u>	<u>300</u>	<u>400-600</u>	<u>900</u>	Yellow Pine	300	500-700	900	White Pine	<u>150</u>	<u>250-350</u>	<u>500</u>	Spruce-Fir	300	500-700	900
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White Pine	<u>150</u>	<u>250-350</u>	<u>500</u>																							
Spruce-Fir	300	500-700	900																							
	<p>Utilize Regeneration Potential Surveys, Pre-Harvest Site Preparation and Oak Shelterwood treatments to ensure desired stocking levels of advance growth dependent species, especially northern red oak.</p>	<p>b. Use the following stocking guides for Natural Regeneration in Hardwood Forest Types and mixed hardwood/pine forest types. Stocking level will be based on the percent of 1/100 acre sample plots occupied by at least one desirable stem in a free to grow position.</p>																								
	<p>Where regeneration objectives include regeneration of advance growth dependent species present in the original stand, assure the desired stocking of these species in the new stand. Advance growth dependent species include the Oaks, White Ash, Sugar Maple, Red Maple (single stem), Black Cherry, and the Hickories.</p>	<p><u>Minimum Stocking Levels</u></p> <p>Cove Hardwood, Upland Hardwood, Northern Hardwood, Hardwood/Pine MA's 1B, 3B & 4D 80%</p> <p>MA's 2A & 4A 50%</p>																								

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Vegetation Management (continued)	<p><u>9</u> Accomplish advanced regeneration treatment site preparation and timber stand improvement through use of.</p> <ul style="list-style-type: none"> - Hand or machine treatment, - Prescribed burning, or - Herbicides 	<p>a <u>Select method based on site specific environmental analysis</u></p>
	<p><u>10</u> Provide for stocking <u>control</u> and species variety through timber stand improvement practices</p>	<p>a Use the following characteristics to select stands for timber stand improvement <u>in management areas where timber production is permitted</u></p> <ul style="list-style-type: none"> - overstocked as determined by <u>stocking survey.</u> - <u>when the treatment will produce positive PNV based on economic analysis.</u>

Table III 1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Vegetation Management (continued)	<p><u>10</u> Provide for stocking density and species variety through timber stand improvement practices (continued)</p>	<p>b Encourage reproduction of oak, other hard mast and <u>soft mast</u> producing species by treating those stands where such seedlings or saplings are present to favor growth of these species and limit competition from other species. Consider <u>artificial regeneration of oak, black cherry</u> and other hard mast producing species in conjunction with treatment on cove hardwood sites where such seedlings or saplings are not present.</p>
	<p><u>11</u> Use tree cutting practices on lands not selected for timber production during the 10 to 15-year period of the Plan [lands classified as not suited or not appropriate for timber production based on factors identified in the Regulations to implement NFMA (36 CFR 219.14)] to meet management objectives including the following</p> <ul style="list-style-type: none"> - Salvage or sanitation harvesting of trees or stands that are substantially damaged by fire, windthrow, insect or disease attack, or other catastrophe. - Cutting of trees to provide for safety of Forest users, such as hazard-tree removal. - Cutting of trees to meet habitat objectives for threatened or endangered animals or plants. - Cutting of trees and/or removal of stumps with attached root wad to provide wildlife <u>and fish habitat improvements</u>. - Cutting of trees to improve visual quality by opening scenic vistas or by improving visual variety. - Cutting of trees for the construction and maintenance of roads and trails. - Cutting of trees for auxiliary facilities such as landings, cable yarding corridors, etc., associated with timber harvesting on adjacent acres selected for timber production. 	

Table 111-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Vegetation Management (continued)	<p><u>11</u> Use tree cutting practices on lands not selected for timber production during the 10 to 15-year period of the Plan [lands classified as not suited or not appropriate for timber production based on factors identified in the Regulations to implement NFMA (36 CFR 219.14)] to meet management objectives including the following (continued)</p> <ul style="list-style-type: none"> - Cutting of trees for wildfire management purposes such as firelines. - Cutting of trees for land use permits and mineral leases, and - Cutting of trees for demonstration or education purposes 	
	<p><u>12</u> Consider restoration of balds that have been lost to later stages of vegetative succession</p>	
	<p><u>13.</u> Evaluate all areas identified as potential Research Natural Areas in conjunction with the Station Director, Southeastern Forest Experiment Station</p>	
	<p><u>14</u> When a project is proposed under this plan that includes vegetation management, follow management requirements and mitigation measures according to Amendment #2 in Appendix I. [Amendment #2]</p>	
	<p><u>15</u> <u>Accelerate the reduction in clearcutting as a standard commercial timber harvest practice</u></p>	<p>* <u>Use clearcutting only where it is essential to meet specific forest plan objectives and within the following circumstances</u></p> <p><u>1. To establish, enhance, or maintain habitat for threatened, endangered, or sensitive species.</u></p>

• From Chief's letter to Regional Foresters of June 4, 1992.

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Vegetation Management (continued)	15 <u>Accelerate the reduction in clearcutting as a standard commercial timber harvest practice (continued)</u>	<p>2 <u>To enhance wildlife habitat or water yield values, or to provide for recreation sites, scenic vistas, utility lines, road corridors, facility sites, reservoirs, or similar development</u></p> <p>3 <u>To rehabilitate lands adversely impacted by events such as fires, windstorms, or insect or disease infestations</u></p> <p>4 <u>To preclude or minimize the occurrence of potentially adverse impacts of insect or disease infestations, windthrow, logging damage, or other factors affecting forest health</u></p> <p>5 <u>To provide for the establishment and growth of desired trees or other vegetative species that are shade intolerant</u></p> <p>6 <u>To rehabilitate poorly stocked stands due to past management practices or natural events.</u></p> <p>7. <u>To meet research needs.</u></p>
Gathering Forest Products	<p>1. <u>Require a permit for collection of Forest products for commercial or personal use including moss, plants, shrubs, trees, firewood and other wood products consistent with Management Area direction and National Forest policy [Amendment #3]</u></p> <p>2 <u>Allow recreational gathering of fruits, nuts, ramps, cones, and berries consistent with Management Area direction and National Forest policy. [Amendment #3]</u></p>	

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Soil and Water Management	1 <u>Manage all activities within riparian areas which include perennial streams, lakes, wetlands, and 100-year floodplains and a zone on each side of perennial streams and lakes according to the direction for Management Area 18 (which is embedded in Management Areas 1 through 17).</u>	
	2 <u>Emphasize the protection of all developed stream channels. Protect the integrity of intermittent and ephemeral stream channels, including their banks and beds. Minimize the number of stream crossings</u>	<p>a <u>Prevent visible sediment from reaching perennial and intermittent stream channels and perennial water bodies in accordance with NC Forest Practice Guidelines Related to Water Quality (NC 1PGRWQ) (15 NCAC 11 .0101- 0209)</u></p> <p>b <u>Minimize the visible sediment reaching ephemeral stream channels (NC 1PGRWQ)</u></p> <p>c <u>Do not skid timber or otherwise operate equipment up or down (in) intermittent or ephemeral stream channels</u></p> <p>d <u>Use standard crossings described in Management Area 18 to cross intermittent streams with permanent or temporary roads, skid roads and skid trails, and other vehicular trails.</u></p> <p>e <u>Allow skidding of timber across ephemeral stream channels. Skid trail crossings should minimize the amount of visible sediment that enters the channel</u></p>

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Soil and Water Management (continued)	3 Manage activities occurring in watersheds listed in Appendix B to meet water resource objectives and attain the goals of the Clean Water Act	<p>a Participate with state and federal agencies in promoting high quality water resources</p> <p>b Cooperate with the North Carolina Department of Environment, Health and Natural Resources, Division of Water Resources, to protect watersheds currently identified as unfiltered municipal water supplies until communities have provided necessary water treatment facilities as suggested by the State</p>
	4 Maintain appropriate stream temperatures and protect banks of intermittent streams	<p>a Maintain an adequate covering of shading and erosion controlling vegetation for at least 15 feet on either side of intermittent streams from the head of the perennial stream channel to the upper limit of the intermittent channel in Management Areas 1 through 17.</p>
	5 Protect water quality by applying <u>mitigation measures</u> wherever there is construction requiring earth movement within 300 feet of perennial or intermittent streams or lakes	<p>a Use <u>appropriate erosion control measures</u> (such as brush barriers, silt fences, <u>mulching, seeding, etc)</u> <u>at the construction site such that visible sediment does not enter</u> intermittent or perennial streams or perennial waterbodies.</p>

Table 11-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Soil and Water Management (continued)	6 Set priorities for <u>watershed restoration</u>	a Use the following priorities - health and safety, - water quality, quantity, and aquatic habitat, and - visual quality and site productivity b Examine revegetated areas within 60 days to <u>determine need for additional treatment</u>
	7 Minimize <u>soil damage</u> through the following - <u>Design all facilities</u> to prevent damage, - Construct and maintain all <u>facilities</u> to prevent substantial soil movement, and - Expose the minimum amount of soil practicable at any given time <u>during project execution</u>	a Accomplish revegetation practices or other erosion protection for exposed cut and fill slopes within 30 days of initial soil disturbance b Prevent off-site movement of soil that adversely affects non-facility resources. Permanent vegetation, if used, should be established by end of the first growing season following completion of the activity c <u>On project sites that have the potential for accelerated erosion resulting in concentrated flow directly entering an intermittent or perennial stream or perennial waterbody, provide a ground cover or other means of adequate sedimentation control within 30 working days after ceasing any phase of an operation or beginning a period of inactivity. Treatment and maintenance of these areas shall be sufficient to restrain accelerated erosion and prevent visible sediment from entering intermittent and perennial streams and perennial waterbodies until the site is permanently stabilized. (NC FPGRWQ)</u>

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Minerals Management	1. Utilize mineral resources <u>only when Forest-wide and Management Area direction and cultural resources can be protected</u> . Do not consent to leases for minerals activities that can not meet Management Area objectives including those concerning visual quality soil, water, wildlife and fisheries habitat <u>and plant communities</u>	a If consent is given to mineral leasing, in addition to standard contract stipulations which provide for basic resource protection (soil, water, cultural resources, vegetation, wildlife and fish etc), include additional appropriate stipulations to meet Management Area special objectives. These stipulations include, but are not limited to no surface occupancy, seasonal operating limitations, size limitations and special rehabilitation measures b Require mineral royalty rates to meet fair market value.
	2 <u>Determine</u> the need for special stipulations on all applications for permits, leases, and licenses, <u>based on site-specific analysis</u>	
	3. Require an operating plan before a site is developed	a Authorize only operating and reclamation plans that include at least the following <ul style="list-style-type: none"> - a schedule of activities, - an estimate of the amount of material to be removed, and - measures for stabilizing soil, protecting water quality, restoring vegetation, and protecting visual quality

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Special Uses	<ol style="list-style-type: none"> 1 Respond to special use requests according to the following priorities <ul style="list-style-type: none"> - Those relating to public safety, health and welfare, e.g., highways, powerlines and public service improvements. - Those contributing to the general public benefit associated with National Forest resources and - Those that benefit only private users, e.g., road permits, rights-of-way for powerlines, telephones, waterlines, etc. 2 Approve no special uses that can reasonably be met on private lands unless they are clearly in the public interest 3 Bury electrical utility lines of 33 KV or less and telephone lines except when: <ul style="list-style-type: none"> - Burial within National Forest System lands is obviously incompatible with adjacent overhead lines on private or other public lands, or - Burial is not technically feasible, (or) not feasible due to geologic conditions, (or) cost prohibitive, or greater long term disturbance would result; and management area objectives can be met using an overhead line. 4 Issue no new special use permits for domestic, agricultural, or fish production water uses 	

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Land Adjustment and Rights-of-Way	<ol style="list-style-type: none"> 1 Acquire or exchange lands within proclamation boundaries to provide or improve <ul style="list-style-type: none"> - Protection within Wilderness. - <u>Protection of Wild & Scenic River corridors.</u> - Protection of the Appalachian Trail - Access opportunities (administrative and public). - Recreation management opportunities. - Wildlife and fish management opportunities. - Efficiency of management or - <u>Timber resource management</u> - Protection of ecologically significant areas. 2 Acquire rights-of-way to provide access opportunities to NFS lands for public and administrative needs. 3. Use plan amendments to designate management areas to new land acquisitions. Assure management area designations are compatible with the purposes of acquisitions. 4 Mark Forest property lines so they are visible for public and administrative needs 	<ol style="list-style-type: none"> a Identify and document areas that meet general direction for acquisition or exchange a Perform maintenance on all surveyed property boundary lines at least every 10 years.

Table III-1 Forest-wide Direction. (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Transportation System Management	<p>1. Manage roads, trails and other travelways consistent with Management Area direction. Designate roads as open to motorized public use by</p> <ul style="list-style-type: none"> - Signing for specific uses; or - Surfacing with stone, shale, pavement or other hard surface material and not closing by gate, natural barricade, sign, or other visible closure method or device <p>2. Manage closed forest development roads for a wide range of non-motorized uses. Minimize conflicting uses (example bicycle use vs. linear wildlife opening). Resolve conflicts using an ID team approach and coordinate with other federal, state, and county agencies and user groups.</p> <p>3. Identify temporary roads currently used as linear strip openings. Determine whether to incorporate them into the Forest Development Road system and continue to use them as wildlife opening if water quality standards can be met, or convert to permanent wildlife openings, or restore to forest conditions. Coordinate the decision about long term uses with the North Carolina Wildlife Resources Commission.</p> <p>4. Allow nonmotorized bicycle and horse travel on Forest development roads unless signed as closed to that use</p> <p>5. Limit opportunities outside of established ORV areas for primitive roads suitable for travel only by off-road vehicles. Inventory forest roads currently used by such vehicles. Determine whether to incorporate these roads into the Forest Development Road system (traffic service level D) as designated four-wheel drive ways open for public use or permanently close and restore to forest conditions. Include designated roads in calculations of open road densities specified for different management areas. Identify where existing road conditions do not meet</p>	<p>a. Assure drainage structures will accommodate mowing with motorized equipment without resource damage when areas are converted to permanent wildlife openings.</p>

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
<p>Transportation System Management</p>	<p>water quality standards and develop strategies to bring them into compliance, except where physical conditions preclude complete correction and the road can not be legally closed. Schedule implementation consistent with funding availability. Newly constructed roads designated as four-wheel drive ways will comply with water quality standards. Four-wheel drive ways are exempted from the Highway Standards Act.</p>	
<p>Road Planning Construction and Maintenance</p>	<p>1 Insure road stability and protection of the environment, except, existing four-wheel drive ways may not be in full compliance with water quality standards. Develop strategies to bring these roads into compliance unless physical conditions preclude complete correction and the road cannot be legally closed. Schedule implementation consistent with funding.</p>	<p>a During transportation planning and road location incorporate historic, geologic, physiographic, and soils information to locate potential problem areas and to select road locations least <u>likely to cause damage to National Forest Resources</u></p> <p>b Design broad-based dips and ditch outlets so that runoff water will infiltrate soils and erosion will be deposited before reaching stream channels</p>

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Road Planning Construction and Maintenance (continued)	<p>2 Use Traffic Service Level C or higher construction standards where roads are open to public travel with conventional vehicles or where specialized needs exceed Traffic Service Level D capabilities (Traffic Service Levels are described in Appendix G) <u>In all cases, road grades will not exceed that which, through proper design and maintenance, can not prevent erosion and damage to resources adjacent to the roadbed.</u></p>	<p>c <u>Design and construct access road and skid trail crossings of intermittent streams so as to not obstruct or impede stream flow, provide crossings with effective structures or ground cover to protect the banks and channel from accelerated erosion. Provide crossings with sufficient water control devices to collect and divert surface flow from the access road or skid trail into undisturbed areas or other control structures to restrain accelerated erosion and prevent visible sediment from entering intermittent streams, and provide crossings with ground cover or other means sufficient to prevent visible sediment from entering intermittent streams within 10 working days of initial disturbance and maintain such cover or structures until the site is permanently stabilized (NC FPGRWQ Regulations)</u></p> <p>a Use the following standards for Traffic Service Level C roads:</p> <ul style="list-style-type: none"> Design speed 5-25 mph Width 12-14 ft with turnouts. Surface Gravel as needed to support traffic Max sustained grade 10% Lanes 1 Min curve radius 50 feet Drainage Outslope or ditch Max pitch 12% for 200 feet

Table III-1 Forest-wide Direction (cont. next)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Road Planning Construction and Maintenance (continued)	3 Use Traffic Service level D construction standards where this standard will accommodate the intended use. Except for existing designated four-wheel drive ways, road grades will not exceed that which, through proper design and maintenance, can not prevent erosion and damage to resources adjacent to the roadbed. Develop strategies to correct resource damage adjacent to the roadbed on designated four-wheel drive ways. Schedule implementation consistent with funding availability.	a Use the following standards for Traffic Service Level D roads Design speed 5-10 mph Width 12-14 feet Surface Native or gravel as needed to support traffic Max sustained grade <u>12%</u> lanes 1 Min curve radius 50 feet Drainage Outslope or ditch. Max pitch <u>14%</u> for 200 feet b Use the following standards for Traffic Service Level D, four wheel drive ways Design speed 2-10 mph Width 6-10 feet Surface Native rough, irregular, large rocks or boulders, mud, sand, loose materials, obstacles such as logs, some winching may be required. Max sustained grade 20-30% for 200-300 feet Max Pitch 20-40% up to 100 feet lanes 1 Template Existing

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Road Planning Construction and Maintenance (continued)	<p>4 Construct temporary roads only for non-recurrent use Do not plan or permit purchasers to construct temporary roads in lieu of building specified roads needed for future recurrent management of the area.</p>	<p>a. Use the following standards for temporary roads Width 12-14 feet Surface Native or spot surfacing Max sustained grade 12% Lanes 1 Drainage Outslope or ditch. Max pitch 15% for 200 feet Revegetation of Roadbed Establish vegetative cover in first seeding season after road closure</p>
	<p>5 Approve temporary road and skid road locations prior to construction</p>	<p>b For temporary stream crossings, minimize soil movement through the use of temporary bridges or fords</p>

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Road Planning Construction and Maintenance (continued)	6 Revegetate disturbed areas during the construction process.	a <u>On non-stream crossing areas</u> , accomplish revegetation practices or other erosion protection sufficient to restrain erosion for exposed cut and fill slopes within 30 days of initial soil disturbance
	7 Maintain all roads (open or closed) at a level sufficient to provide appropriate use and protect soil, water, and other resources	a Maintain roads to levels 1-5 according to management area objectives (Maintenance levels are described in Appendix G) b Use temporary closures as needed to minimize damage to road surface and to reduce maintenance
Wildfire Management	1 Wildfire detection and suppression will be commensurate with the <u>resource values protected</u> . Detection and suppression will be planned based on an analysis of probable fire locations, expected fire intensities, potential threat to health, safety, and adjacent properties, and potential threat to resources	a Control wildfire if it is a serious threat to any of these conditions or if control is the most cost-effective, otherwise, confine or contain the fire
	2 Use the <u>current National Fire Management Analysis System (NFMAS) to determine the most efficient level of funding for fire prevention, detection and presuppression</u>	
	3. Maintain cooperative and other agreements with state and federal agencies for fire prevention, detection, and suppression	a Review and update the cooperative agreements annually

Table III-1 Forest-wide Direction (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Prescribed Burning	1 Use prescribed fire (controlled fire) to create and maintain desired vegetative composition, scenic vistas, and wildlife habitat, reduce fire hazards, control forest pests, and accomplish other management objectives including site preparation	a Prepare a prescribed burning plan prior to ignition
	2 Notify appropriate local and state officials and adjacent landowners in advance of planned burns	
	3 Comply with federal, state and local air quality regulations	a Identify Air Quality Related Values and establish acceptable limits of change. b Work with state and local air pollution control agencies to keep impacts on Air Quality Related Values within limits of acceptable change c Use available smoke management guides for prescribed burning activities
Pest Management	1 Use Integrated Pest Management (IPM) as the strategy in managing pest populations to achieve resource management objectives	a Use pesticides after a decision has been made on the basis of a site specific environmental analysis using NEPA procedures
	2 Control southern pine beetle infestations in accordance with the management requirements of Section VI of the Record of Decision/Southern Pine Beetle [Amendment #1] <u>[See Appendix J for management standards]</u>	

SUMMARY OF MANAGEMENT PRESCRIPTIONS

Prescriptions are **combinations of management practices and the expected intensity of the application of management practices**, the Forest Service **may** use to manage the multiple resources of the Forests for the 10 to 15-year life of the Plan. Forest-wide Direction, and the standards for carrying out these practices, have already been described. Management area standards, and the practices to which they apply, are described in the following section. Proposed and probable practices for management areas are displayed in Appendix E.

MANAGEMENT AREAS

The Forests will be administered through a combination of management areas, each of which has unique goals and appropriate management direction and standards to achieve these goals. The management areas represent different physical and biological characteristics, as well as administrative conditions such as types of public access. The distribution of management areas provides a variety of enjoyable public uses and a balance of goods and services from each of the Forests. Management areas are numbered, described, and their acreages displayed for the Forests as follows:

<u>Number</u>	<u>Description</u>	<u>Acreage</u>
1B	Emphasize sustained-yield timber management. Emphasize motorized recreation use. Permit road construction Base method of harvest on site specific analysis. Manage habitats of mixed ages or forests primarily for deer, grouse, and animals requiring similar environments	38,498
2A	Emphasize visually pleasing scenery. Emphasize motorized recreation use. Permit timber production, but modify it to meet visual quality objectives. Permit road construction. Manage habitat of mature forests primarily for squirrel, pileated woodpecker, and animals requiring similar environments.	40,642
2C	Emphasize visually pleasing scenery. Emphasize motorized recreation use. The management area is classed as unsuitable for timber production in order to meet visual quality objectives or lands are not efficient for timber production. Manage habitat of older forests primarily for squirrel, pileated woodpecker, and animals requiring similar environments.	37,680

<u>Number</u>	<u>Description</u>	<u>Acreage</u>
3B	<p>Emphasize sustained yield timber management. Close most roads to motorized vehicles. Permit road construction. Base method of harvest on a site-specific analysis. Manage habitat of mixed ages of forests primarily for turkey, and animals requiring similar environments.</p>	232,873
4A	<p>Emphasize visually pleasing scenery. Emphasize nonmotorized recreation use. Close most roads to motorized vehicles. Permit timber management modified to emphasize visual quality and wildlife benefits. Permit road construction. Manage habitat of mature forests primarily for bear, and animals requiring similar environments.</p>	55,604
4C	<p>Emphasize visually pleasing scenery. Emphasize nonmotorized recreation use Close most roads to motorized vehicles. Classify land as not suitable for timber production in order to meet visual quality objectives and wildlife habitat needs, or lands not cost efficient for timber management over the planning horizon. Manage habitat of older forests primarily for bear, and animals requiring similar environments.</p>	179,992
4D	<p>Emphasize high quality wildlife habitat particularly for black bear. Emphasize nonmotorized recreation use. Close most roads to motorized vehicles. Permit timber production, but modify to emphasize visual quality objectives and wildlife habitat needs. Permit road construction. Base method of harvest on a site-specific analysis. Do not harvest areas larger than 25 acres in size when even-aged regeneration is selected. [Amendment #4] Manage habitat of mature forests primarily for bear, and animals requiring similar environments.</p>	160,080

<u>Number</u>	<u>Description</u>	<u>Acreage</u>
5	Emphasize a semi-primitive recreational setting. Provide nonmotorized recreation use. Close all roads to private motorized vehicles. Classify land as not suitable for timber production in order to qualify for semi-primitive nonmotorized recreational settings and wildlife habitats that require large blocks of undisturbed land. Manage habitat of mature forests for bear, and animals requiring similar environments.	119,685
6	Wilderness Study Areas recommended for inclusion in the National Wilderness Preservation System (NWPS).	15,230
	Wilderness Study Areas not recommended for inclusion in NWPS but managed as wilderness until Congressional action.	8,419
7	Wilderness.	66,550
8	Experimental Forests.	12,520
9	Roan Mountain.	7,900
10	Research Natural Areas.	1,460
11	Cradle of Forestry in America.	6,540
12	Developed recreation areas.	3,030
13	Special interest areas.	10,370
14	Appalachian Trail and corridor.	12,450
15	Wild and Scenic River and corridor.	2,050
16	Administrative facility areas.	1,260
17	Balds.	3,880
18	Riparian areas.	[101,530]

Acreage for Management Area 18 is embedded in other management areas. In addition to the acreage in Management Area 13, 30,540 acres embedded in Management Areas 6, 7, 9, 10, 11, 14, and 15 will be registered with the **NCNHP**.

MANAGEMENT AREA 1B

Emphasize a sustainable supply of timber and providing motorized access into the forest for traditional forest uses such as hunting and gathering, firewood cutting, fishing, and recreational activities including ORV use and camping. These areas have open roads, and the visitor is likely to encounter other forest users and vehicles of all types. A sustainable supply of timber is achieved through regulating the growth and removal of trees through time. Although a regulated forest is desired, natural forest settings will be present. The visitor may encounter forest management activities in progress, including timber harvest, road building, and timber stand improvement. Wildlife compatible with or that benefit from these conditions, such as grouse, deer and songbirds are likely to be present. Timber production is permitted within this management area.

These lands are managed to provide opportunities for public enjoyment of the Forest through motorized recreation--driving for pleasure in conventional and four-wheel-drive vehicles as well as use of machines commonly classified as ORV's. While these uses will be encouraged on appropriate roads and trails, use will not be allowed to damage the Forests' environment.

The land **will produce a sustained yield** of sawtimber and other wood products. Here, management practices such as road construction and selection of harvest areas will be as economically efficient as practicable considering short- and long-term environmental quality, the type and condition of the forest, and the other multiple uses of the land.

While providing opportunities for motorized recreation use and efficient timber harvests, the land will provide many opportunities for hunting and access for fishing. Wildlife that thrive in a diverse, young- to middle-aged forest, and which can tolerate human **and motorized vehicles** disturbance, will be favored through appropriate forest management practices.

Management Area 1B

On these lands, the method of harvest will be selected based on a site specific analysis. **Shelterwood or two-aged system** is the preferred regeneration method in visually sensitive areas [Amendment #4]

Table III-3 Direction for Management Area 1

ACTIVITIES	GENERAL DIRECTION	STANDARDS
<p>GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE.</p>		
<p>Visual Resource Management</p>	<p>1. Manage area to soften visual impacts of management activities</p>	<p>a Manage to meet modification Visual Quality Objective (VQO's) in seen areas with the following exception: manage to meet partial retention VQO for seen areas from the Appalachian Trail or Blue Ridge Parkway as determined by specific analysis.</p> <p>b Use the following techniques for activities occurring in areas that can be seen from trails, open roads, <u>closed roads used for trail opportunities</u>, recreation areas, lakes or rivers</p> <p style="text-align: center;">TECHNIQUE</p> <p>1 Establish irregular shaped openings and avoid straight lines or geometric forms except as necessary along landlines</p> <p>2 Limit linear distance of created openings adjacent to roads and trails to a 500-foot maximum.</p> <p>3 Burn or lop and scatter slash, except brush barriers, to within 4 feet of the ground for 50 feet beyond edge of road or trail</p>

Table III-3 Direction for Management Area 1 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Visual Resource Management (continued)	1 Manage area to soften visual impacts of management activities (continued)	b Use the following techniques for activities occurring in areas that can be seen from trails, open roads, <u>closed roads used for trail opportunities</u> recreation areas, lakes or rivers (continued)
		TECHNIQUE
		4 Scatter residual logging debris around log landing within 4 feet of ground or accomplish through firewood utilization Apply to foreground areas only
		5 Screen or blend in roads and skid roads
		6 locate activity boundaries off ridgeline <u>where indicated by the visual analysis</u>
Dispersed Recreation Management	1 Provide motorized recreation opportunities favoring driving for pleasure Provide some nonmotorized opportunities including viewing wildlife, hunting, and access for fishing	a Manage for Roaded Natural 1 conditions, including a high level of public vehicular access on forest development roads
	2. Provide opportunities for vehicles commonly classified as ORV's on designated routes primarily within established ORV areas. Use Traffic Service Level D roads to enhance or expand these opportunities if such use does not adversely impact other resources.	a Provide opportunities in response to identified needs to an approximate density of 2 miles per square mile in any management area unit

Table III-3 Direction for Management Area 1 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Trails Management	1 Provide trails that emphasize hunting and fishing access Provide some hiking opportunities 2 Maintain trails for the intended use	a Maintain trails to maintenance levels 1-3
Wildlife and Fish Resource Management	1 Provide conditions for the large group of game and non-game animals that benefit from young- to middle-aged forests and tolerate vehicular disturbance Emphasize habitat for specific Management Indicator Species which represent this group 2 Use timber management practices as the primary tool to create desirable habitat.	a Manage habitat primarily for deer and grouse a Manage compartments to maintain at least 70% in hardwood management types except where pine management types presently exceed 30% b Seed temporary logging roads and skid roads with appropriate seed mixtures to provide <u>temporary linear strip openings favoring wildlife</u> Restore temporary and skid roads to forest conditions. c <u>Seed closed maintenance level 1 roads with appropriate seed mixture favoring wildlife.</u>
Vegetation Management	1 <u>Conduct silvicultural examinations as needed to maintain CISC/GIS records and prescribe stand treatments</u>	a <u>Schedule to revisit each stand at least on a 10-year interval.</u>

Table III-3 Direction for Management Area I (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS														
Vegetation Management (continued)	2. Manage to <u>emphasize quality hardwood sawtimber as the primary product. Quality begins to occur when the following range of sizes is reached.</u>	a. Select a harvest method based on a site specific analysis. Clearcutting may be used only when, through site specific analysis, it is determined to be <u>essential for meeting specific forest plan objectives. See Forest-wide standard on clearcutting. [Amendment #4] Use shelterwood or two-aged system as the preferred harvest method in Sensitivity level 1, foreground zone, unless other methods are more appropriate to site-specific conditions.</u>														
	<table border="1"> <thead> <tr> <th><u>Management Type</u></th> <th><u>Product Size Range (Diameter at breast height in inches)</u></th> </tr> </thead> <tbody> <tr> <td>Upland Hardwoods</td> <td>18 - 20</td> </tr> <tr> <td>Cove Hardwoods</td> <td>20 - 22</td> </tr> <tr> <td>Yellow Pine</td> <td>16 - 18</td> </tr> <tr> <td>White Pine</td> <td>18 - 20</td> </tr> <tr> <td>Virginia Pine</td> <td>12 - 16</td> </tr> <tr> <td>Spruce-Fir</td> <td>16 - 18</td> </tr> </tbody> </table>		<u>Management Type</u>	<u>Product Size Range (Diameter at breast height in inches)</u>	Upland Hardwoods	18 - 20	Cove Hardwoods	20 - 22	Yellow Pine	16 - 18	White Pine	18 - 20	Virginia Pine	12 - 16	Spruce-Fir	16 - 18
	<u>Management Type</u>		<u>Product Size Range (Diameter at breast height in inches)</u>													
	Upland Hardwoods		18 - 20													
	Cove Hardwoods		20 - 22													
	Yellow Pine		16 - 18													
White Pine	18 - 20															
Virginia Pine	12 - 16															
Spruce-Fir	16 - 18															
3. Design harvest areas to maximize cost effectiveness and meet management objectives	a. Refer to Forest-wide Direction for appropriate <u>harvest age</u> rotations, harvest unit size and dispersion and <u>age class distribution.</u>															
4. Thin on a schedule that maintains optimum growth and desired mix of tree species for sawtimber production	a. Thin--based on species, site capability, market conditions and cost effectiveness--generally <u>one precommercial thinning before age 20 and one commercial thinning between ages 40-60 on slopes less than 40% may be expected.</u>															
5. Manage for the forest type existing on the site unless a different forest type better meets management area objectives	a. Consider changing only upland hardwood, productivity class IV sites from hardwood to <u>mixed pine-hardwood</u> forest type. Use an economic analysis to justify such a forest type change															

Table III-3 Direction for Management Area 1 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Transportation System Management	1 Manage most arterial collector and Traffic Service Level C local roads as open to public vehicular use except for seasonal closures and closures for resource <u>protection as determined by site-specific analysis</u>	a Manage approximately 2 miles of Traffic Service Level C road per square mile as open to public vehicular use
	2 Close all temporary and Traffic Service Level D roads to public vehicular use when management activities are complete, except those roads designated for vehicles commonly classified as ORV's (Refer to dispersed recreation standards for ORV route management)	a Sign all <u>routes</u> designated for use by vehicles commonly classified as ORV's.
Road Planning Construction and Maintenance	1 Plan and construct the transportation system to provide access for timber and public motorized recreation use	a Plan the road system to progressively access all <u>lands</u> suitable for timber production
	2 Provide four-wheel drive ways that utilize terrain features to provide varying degrees of difficulty and challenge to riders and protect water quality.	b <u>Minimize road placement on unstable sites. Use site specific analysis to determine mitigating measures where unstable soils cannot be avoided</u>
	3 Maintain roads to accommodate the intended use and to protect resources	a Maintain open Traffic Service Level C roads to a minimum maintenance level 3. b Maintain open Traffic Service Level D roads to a minimum maintenance level 2 c Maintain four-wheel drive ways to maintenance level 2 d Maintain all closed system roads to maintenance level 1

MANAGEMENT AREA 2 (2A and 2C)

Emphasis is on providing pleasant scenery for people who experience the forest by driving (or boating) through it. These areas are intended as scenic travelways through the forest. Secondly, this management area provides an environment of older forests combined with timber management activities designed to manage the scenery. Open roads through a scenic forest is the desired condition. Forest management activities should not be as apparent as in Management Area 1. Wildlife that are compatible with or that benefit from these conditions, such as songbirds, grouse and grey squirrel are likely to be present. Since many of these areas are along well-traveled roads, the visitor is likely to encounter numerous other people and their vehicles.

The lands in Management Area 2 provide opportunities for motorized recreational enjoyment of the Forests. The Forests are managed to promote and maintain a high level of scenic quality and provide habitat for animals which prefer a wide variety of forest conditions and can tolerate human disturbance.

The management area is subdivided into two parts -- A and C.

Management Area 2A

Management Area 2A provides visually pleasing scenery for forest visitors. Roads are generally open with the adjacent forest land managed to provide that pleasing visual experience. Timber production is permitted, but modified to meet visual quality objectives.

Management Area 2C

Management Area 2C also provides visually pleasing scenery. Roads are generally open with adjacent forest land managed to provide a quality visual experience. This land is not suitable for timber production because either timber activities could not be conducted in a manner to assure a highly visual experience, or the land is not cost efficient in the long term for timber production. The area, providing for motorized recreation, will favor wildlife species which prefer older forest conditions and yet can tolerate some human disturbance.

Table III-4 Direction for Management Area 2

The majority of this direction is common to Management Areas 2A and 2C
 where direction varies among 2A and 2C specific direction is provided

ACTIVITIES	GENERAL DIRECTION	STANDARDS
GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE		
Visual Resource Management	1 Manage area so that management activities are not generally a dominant feature of the landscape in Management Area 2A In Management Area 2C, emphasize visual quality in all activities	a Manage to meet the following Visual Quality Objectives (VQO's) in all seen areas In Management Area 2A -- Retention (R) in foreground in Sensitivity Level 1 Partial Retention (PR) in all other distance zones and sensitivity levels In Management Area 2C -- Retention (R) in all distance zones and sensitivity levels except for Partial Retention (PR) in Sensitivity Level 3.

Table III-4 Direction to Management Area 2 (continued)

The majority of this direction is common to Management Areas 2A and 2C.
Where direction varies among 2A and 2C specific direction is provided

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Visual Resource Management (continued)	1 Manage area so that management activities are not generally a dominant feature of the landscape in Management Area 2A in Management Area 2C. emphasize visual quality in all activities (continued)	<p>b Use the following techniques for activities occurring in areas that can be seen from trails, open roads <u>closed roads used for trail opportunities, recreation areas, lakes or rivers</u></p> <p>VQO TECHNIQUE</p> <p>R.PR 1 Establish irregular shaped openings and avoid straight lines or geometric forms except as necessary along landlines</p> <p>R.PR 2 Leave flowering and ornamental vegetation where practical to enhance vegetative variety</p> <p>R.PR 3 Feather visible edges where indicated by the visual analysis.</p> <p>PR 4 Burn or lop and scatter slash to within 2 feet of the ground or burn for 100 feet beyond edge of road or trail</p> <p>R PR 5 Screen log landings from view and restore as close to original contour as practical</p> <p>R.PR 6 Screen or blend in roads and skid roads</p> <p>R PR 7 Exclude special uses from view where practical</p>

Table III-4 Direction for Management Area 2 (continued)

The majority of this direction is common to Management Areas 2A and 2C.
Where direction varies among 2A and 2C, specific direction is provided

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Visual Resource Management (continued)	1. (Continued)	R, PR 8 <u>Located activity boundaries off ridgelines where indicated by the visual analysis</u>
	emphasize visual quality in all activities (continued)	b Use the following techniques for activities occurring in areas that can be seen from trails, open roads, <u>closed roads used for trail opportunities</u> , recreation areas, lakes or rivers (continued)
		VQO TECHNIQUE
		R 8 Remove visible slash, except brush barriers for erosion control, from the edge of a road or trail up to a maximum of 150 feet, unless openings do not exceed 3 acres in size. Burn or lop and scatter visible slash to within 2 feet of the ground where openings do not exceed 3 acres in size
		R, PR 9 Scatter residual logging debris around log landing within 4 feet of ground or accomplish through firewood utilization. Apply to foreground areas only
Dispersed Recreation Management	i Provide motorized recreation opportunities, favoring driving for pleasure. Provide some nonmotorized recreation opportunities including day-use hiking, viewing wildlife, and access for fishing	a Manage for Roaded Natural 1 conditions, including public vehicular access on forest development roads.

Table III-4 Direction for Management Area 2 (continued)

The majority of this direction is common to Management Areas 2A and 2C.
Where direction varies among 2A and 2C, specific direction is provided

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Dispersed Recreation Management (continued)	2 Provide opportunities for vehicles commonly classified as ORV's on designated routes primarily within established ORV areas Use Traffic Service Level D roads to enhance or expand these opportunities if such use does not adversely impact other resources	a Provide opportunities in response to identified needs to an approximate density of 2 miles per square mile in any management area unit
	3 Provide some opportunities for horse and bicycle travel on closed roads	
Trails Management	1 Emphasize connectors to other trail systems Provide some trails for day use hiking in areas where no conflict exists with motorized use	
	2 Maintain trails for the intended use	a Maintain trails to maintenance levels 1-5
Wildlife and Fish Resource Management	1 Provide conditions for the large group of game and non-game animals that benefit from older forests and tolerate vehicular disturbance in Management Areas 2A and 2C Emphasize habitat for specific Management Indicator Species which represent these groups	a Manage habitat primarily for squirrel and pileated woodpecker.
	2 Use timber management activities as the primary tool to create desirable habitat in Management Areas 2A	a Manage compartments to maintain at least 70% in hardwood management types except where pine management types presently exceed 30% b Seed temporary logging roads and skid roads with appropriate wildlife seed mixtures to provide <u>temporary</u> linear strip openings. Restore temporary and skid roads to forest conditions.

Table III-4 Direction for Management Area 2. (continued)

The majority of this direction is common to Management Areas 2A and 2C
Where direction varies among 2A and 2C specific direction is provided

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Wildlife and Fish Resource Management (continued)	2 Use timber management activities as the primary tool to create desirable habitat in Management Areas 2A (continued)	<p>c. <u>Seed maintenance level 1 roads with appropriate wildlife seed mixtures to provide linear wildlife openings</u></p> <p>d. <u>Where hard mast producing species are found as a component of pine management types, retain where available at least 30 square feet of basal area per acre (or the amount that exists naturally if less than 30) throughout the rotation. The entire stand may be harvested at regeneration including the hardwood component.</u></p>
Vegetation Management	<p>1 <u>Conduct silvicultural examinations as needed to maintain CISC/GIS records and prescribe needed stand treatments.</u></p> <p>2. <u>Use harvest methods that meet management area objectives. Emphasize visually pleasing scenery in Management Area 2A. In Management Area 2C, manage the area as land not suitable for timber production during the 10 to 15-year period of the Plan.</u></p>	<p>a. <u>Schedule to revisit each compartment at a 10-15 year interval</u></p> <p>a. <u>Determine harvest methods using site-specific analysis. Retain adequate overstory to meet management area objectives based on site specific analysis</u></p> <p>b. <u>Refer to Forest-wide Direction for a list of tree cutting practices appropriate to land not suitable for timber production in Management Area 2C.</u></p>

Table III-4 Direction for Management Area 2 (continued)

The majority of this direction is common to Management Areas 2A and 2C.
Where direction varies among 2A and 2C, specific direction is provided

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Vegetation Management (continued)	4 Disperse regeneration areas to meet wildlife and visual quality objectives in Management Area 2A * <u>For appropriate Directions and Standards for age class distribution, see Forest-wide Direction</u>	a Maintain a minimum spacing of 660 feet between <u>openings created by even-aged regeneration methods</u> in Management Area 2A unless other spacing is more appropriate to site specific conditions.
	5 Use appropriate rotations to favor middle to older aged trees in Management Area 2A	a. Use rotations of 120 years for hardwood, 100 years for white and yellow pines and 60 years for Virginia pine <u>management types</u>
	6 Thin to maintain or improve wildlife habitat, visual conditions, or desired number and mix of tree species in Management Area 2A	
	7 Manage for the forest type existing on the site unless a different forest type better meets management objectives in Management Area 2A.	a Consider changing only upland hardwood, productivity class IV sites from hardwood to <u>mixed pine hardwood</u> forest type. Allow such a change of forest type only to meet visual quality or wildlife habitat needs
Transportation System Management	1 Manage most arterial, collector, and Traffic Service Level C local roads as open to public vehicular use except for seasonal closures and closures for resource <u>protection as determined by site-specific analysis</u>	a Manage approximately 2 miles of Traffic Service Level C road per square mile as open to public vehicular use.
	2 Close all Traffic Service Level D roads to public vehicular use when management activities are complete except those roads designated for vehicles commonly classified as ORV's (Refer to dispersed recreation standards for ORV route management.)	a Sign all <u>routes</u> designated for use by vehicles commonly classified as ORV's.

Table III-4 Direction for Management Area 2 (continued)

The majority of this direction is common to Management Areas 2A and 2C
 Where direction varies among 2A and 2C specific direction is provided

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Road Planning Construction and Maintenance	1 Plan and construct the transportation system to provide access for timber and public motorized recreation use in Management Area 2A In Management Area 2C, plan and construct the transportation system primarily to provide for public motorized recreation use	a Plan the road system to widely disperse harvest units in Management Area 2A b <u>locate all roads on stable locations, to protect adjacent resources and to most effectively serve access needs.</u>
	2 Provide four-wheel-drive ways that utilize terrain features to provide varying degrees of difficulty and challenge to riders and protect water quality	
	3 Maintain roads to accommodate the intended use and to protect resources	a Maintain open Traffic Service Level C roads to a minimum maintenance level 3 b Maintain open Traffic Service Level D roads to a minimum maintenance level 2 c Maintain four-wheel-drive ways to maintenance level 2 d Maintain all closed system roads to maintenance level 1

MANAGEMENT AREA 3B

Emphasize sustainable supply of timber, but with few open roads and limited disturbance associated with motorized vehicles. This management area also provides for the habitat needs of wildlife such as wild turkey, deer, a variety of small mammals, and other species that will benefit from a managed forest with limited motorized access. A sustainable supply of timber is achieved through regulating the growth and removal of trees through time. Access to the forest is desired during the time timber is harvested, though most roads are closed at other times. Although a regulated forest is desired, some natural forest settings will be present. The visitor may encounter forest management activities in progress, including timber harvest, road building and timber stand improvement. Wildlife compatible with or that benefit from these conditions, such as deer, raccoon and other small mammals are likely to be present. Black bear also use these areas, though they do not provide the best black bear habitat. Recreationists use these areas for hiking, mountain biking, horseback riding, hunting and other activities. The visitor may encounter other forest users, but not as frequently as in areas with open roads.

These lands are managed to provide opportunities for nonmotorized recreational uses of the Forests. Yet, some opportunities for motorized use on forest roads and four-wheel-drive ways will be provided.

The land, through appropriate timber harvest, will produce a continuous supply of sawtimber and other wood products. Here, management practices such as road construction and selection of harvest areas will be as economically efficient as practicable considering short- and long-term environmental quality, the type and condition of the forest, and the other multiple uses of the land.

While providing opportunities for nonmotorized recreation use and efficient timber harvests, the land will provide many opportunities for hunting and access for fishing. Wildlife which thrive in a young- to middle-aged forest will be favored through appropriate forest management practices.

Through the restriction of motorized access in this management area, habitat can be provided for wildlife species that are sensitive to human disturbance. Also, the area requires very low-cost road maintenance since most roads are closed to public motorized use.

On these lands, the method of harvest will be selected based on a site specific analysis.
[Amendment #4]

Table III-5 Direction for Management Area 3B

ACTIVITIES	GENERAL DIRECTION	STANDARDS
<p>GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION. REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE.</p>		
<p>Visual Resource Management</p>	<p>1. Manage area to soften visual impacts of management activities.</p>	<p>a Manage to meet modification Visual Quality Objective (VQO's) in seen areas with the following exception: manage to meet partial retention VQO for seen areas from the Appalachian Trail or Blue Ridge Parkway as determined by specific analysis.</p> <p>b Use the following techniques for activities occurring in areas that can be seen from trails, open roads, <u>closed roads used for trail opportunities</u>, recreation areas, lakes or rivers</p>
<p>TECHNIQUE</p>		
<p>1 Establish irregular shaped openings and avoid straight lines or geometric forms except as necessary along landlines</p> <p>2 Limit linear distance of created openings adjacent to roads and trails to a 500-foot maximum.</p> <p>3 Burn or lop and scatter slash to within 4 feet of the ground for 50 feet beyond edge of road or trail</p>		

Table III-5 Direction for Management Area 3B (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Visual Resource Management (continued)	1. Manage area to soften visual impact of management activities. (continued)	b. Use the following techniques for activities occurring in areas that can be seen from trails, open roads, <u>closed roads used for trail opportunities</u> , recreation areas, lakes or rivers (continued)
		TECHNIQUE
		4. Scatter residual logging debris around log landing within 4 feet of ground or accomplish through firewood utilization. Apply to foreground areas only.
		5. Screen or blend in roads and skid roads
		6. Locate activity boundaries off ridgeline <u>where indicated</u> by the visual analysis.
Dispersed Recreation Management	1. Provide nonmotorized recreation opportunities including hunting, access for fishing, wildlife viewing, horseback riding, bicycle riding, and hiking.	a. Manage for Roaded Natural 2 conditions, including a low level of <u>private</u> vehicular access on system roads b. Provide for horseback and bicycle riding on closed system roads

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Table III-5 Direction for Management Area 3B (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Trails Management	1 Provide trails that emphasize hunting and fishing access Provide some hiking opportunities	
	2 Construct new trails for horseback riding or bicycles primarily when needed to connect existing roads or trails	
	3 Maintain trails for the intended use	a Maintain trails to maintenance levels 1-3
Wildlife and Fish Resource Management	1 Provide conditions for the large group of game and non-game animals that benefit from young- to middle-aged forests and can not tolerate <u>motorized</u> vehicular disturbance Emphasize habitat for specific Management Indicator Species which represent this group	a Manage habitat primarily for eastern wild turkey
	2 Use timber management practices as the primary tool to create desirable habitat	b Use a desired density of 3% for permanent grass and forb openings
		a Manage compartments to maintain at least 70% in hardwood management types except where pine management types presently exceed 30%.
		b Seed temporary logging roads and skid roads with appropriate wildlife seed mixtures to provide <u>temporary</u> linear strip openings. Restore temporary and skid roads to forest conditions.
		c <u>Seed closed maintenance level 1 roads with appropriate seed mixtures to provide linear strip openings</u>

Table III-5 Direction for Management Area JB (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS														
Vegetation Management	1 <u>Conduct silvicultural examinations as needed to maintain CISC/GIS records and to prescribe needed stand treatments</u>	a <u>Schedule to revisit each stand at a 10-year interval</u>														
	2 <u>Manage to emphasize quality hardwood sawtimber as the primary product. Quality sawtimber begins to occur when the following range of sizes is reached</u>	a Select a harvest method based on a site specific analysis. Clearcutting may be used only when, through site specific analysis, it is determined to be essential for meeting specific forest plan objectives. See Chief's policy in Forest-wide Direction. Use shelterwood or two-aged system as the preferred harvest method in Sensitivity Level 1, foreground zone, unless other methods are more appropriate to site-specific conditions [Amendment #4]														
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Yellow Pine	16 - 18															
White Pine	18 - 20															
Virginia Pine	12 - 16															
Spruce-Fir	16 - 18															
3 Design harvest areas to maximize cost effectiveness and meet management objectives	a Refer to Forest-wide Direction for <u>harvest age rotations, harvest unit size and dispersion and age class distribution</u>															
4 Thin on a schedule that maintains optimum growth and desired mix of tree species for sawtimber production	a Thin--based on species, site capability, market conditions and cost effectiveness--generally <u>one precommercial thinning before age 20 and one commercial thinning between ages 40-60 on slopes less than 40% may be expected.</u>															
5 Manage for the forest type existing on the site unless a different forest type better meets management area objectives	a Consider changing only upland hardwood productivity class IV sites from hardwood to <u>mixed pine-hardwood forest type</u> . Use an economic analysis to justify such a change															

Table III-5 Direction for Management Area 3B (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Transportation System Management	1 Provide limited access for motorized vehicles.	a. Manage access through an approximate density of 0.5 miles of open road per square mile. Include four-wheel-drive ways in this density. <u>Where existing open road densities exceed 0.5 miles per square mile, and, if closure of existing roads is prohibitive for administrative or legal reasons, then document these exceptions to the standard and investigate strategies to reduce the open road density.</u>
	2 Close all Traffic Service Level D roads to public vehicular use when management activities are complete except those roads designated as four-wheel drive ways	a Sign all <u>routes</u> designated as four-wheel drive ways
Road Planning Construction and Maintenance	1 Plan and construct the transportation system to provide access for timber	a Plan the road system to progressively access all <u>lands</u> suitable for timber production b <u>Locate all roads on stable locations to protect adjacent resources, and to most cost effectively serve access needs.</u>
	2 Maintain roads to accommodate the intended use and to protect resources. Identify where existing designated four-wheel drive ways do not meet water quality standards and develop strategies to bring them into compliance unless physical conditions preclude complete correction and the road cannot be legally closed.	a Maintain open Traffic Service Level C roads to a minimum maintenance level 3 b Maintain open Traffic Service Level D roads to a minimum maintenance level 2. c Maintain four-wheel-drive ways to maintenance level 2. d Maintain all closed <u>FDR</u> roads to maintenance level 1

MANAGEMENT AREA 4 (4A, 4C and 4D)

In Management Area 4 most roads are closed to motor vehicles, and a somewhat remote setting is provided, but with some timber management in 4A and 4D. In Management Areas 4A and 4C, emphasis is placed on managing for quality scenery. In Management Area 4D emphasis is on providing high quality wildlife habitat, particularly for black bear. The preferred habitat for black bear includes freedom from the disturbance of motorized vehicles, some areas of older forest, a sustained supply of hard mast (such as acorns from oaks) and den trees, and small, widely dispersed openings providing the soft mast (fruits and berries) typically found in very young forest. Timber management activities should be designed to provide these conditions. Management Area 4C tends to be fairly steep, rugged, often inaccessible terrain usually seen only from a distance by forest visitors. This land is unsuitable for timber production but can provide a scenic backdrop for people viewing the forest from a distance, while also providing wildlife habitat. The variety of wildlife likely to be present in management area's include ovenbird, black bear and cerulean warbler. The visitor using these areas for recreation may occasionally encounter other people. Forest management activities are less likely to be encountered than in Management Area 1 or 3.

The lands of Management Area 4 are managed to provide high levels of scenic quality, many opportunities for nonmotorized recreational uses and habitat for animals which prefer a predominance of older vegetation and limited disturbance. In the area, few roads are open for driving; however, some opportunities are available for use by conventional and four-wheel drive vehicles. Timber harvest areas are widely dispersed to provide a wide variety of tree ages and wildlife habitat.

This management area is subdivided into **three** parts -- A, C, and D.

Management Area 4A

In Management Area 4A, permit timber production, modified to emphasize visual quality and wildlife habitat.

Management Area 4C

In Management Area 4C, emphasize visually pleasing scenery and habitats for wildlife requiring older forests. This land is not suitable for timber production at this time in order to meet visual quality objectives, or the lands are not cost efficient for timber production.

Management Area 4D

In Management Area 4D, emphasize high quality habitats for wildlife requiring older forests and freedom from disturbance from motorized vehicles. Allow small widely dispersed openings throughout the management area. Close most roads to private motorized vehicles. Early successional habitat is provided in conjunction with managing suitable timber land in these areas.

Table III-6 Direction for Management Area 4

The majority of this direction is common to Management Areas 4A, 4C, and 4D
 Where direction varies among 4A, 4C, and 4D, specific direction is provided

ACTIVITIES	GENERAL DIRECTION	STANDARDS
GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSID HERE		
Visual Resource Management	1 Manage so that activities are not generally a dominant feature of the landscape in Management Area 4A In Management Area 4C, emphasize visual quality in all activities Manage area to soften visual impacts of activities in Management Area 4D	a Manage to meet the following Visual Quality Objectives (VQO's) in all seen areas In Management Area 4A -- Retention (R) in foreground Sensitivity Level 1 Partial Retention (PR) in all other distance zones and sensitivity levels.

Table III-6 Direction for Management Area 4 (continued)

The majority of this direction is common to Management Areas 4A, 4C, and 4D. Where direction varies among 4A, 4C and 4D, specific direction is provided.

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Visual Resource Management (continued)	<p>1 Manage area so that management activities are not generally a dominant feature of the landscape in Management Area 4A. In Management Area 4C, emphasize visual quality in all activities. Manage area to soften visual impacts of activities in Management Area 4D (continued)</p>	<p>a Manage to meet the following Visual Quality Objectives (VQO's) in all seen areas (continued)</p> <p>In Management Area 4C --</p> <p>Retention (R) in all distance zones and sensitivity levels except for Partial Retention (PR) in Sensitivity Level 3.</p> <p>In Management Area 4D --</p> <p><u>Partial Retention (PR) in foreground and middleground</u> Sensitivity Level 1</p> <p>Modification (M) in all other distance zones of Sensitivity Level 1, and in Sensitivity Levels 2 and 3, all distance zones</p>

Table III-6 Direction for Management Area 4 (continued)

The majority of this direction is common to Management Areas 4A, 4C, and 4D. Where direction varies among 4A, 4C, and 4D, specific direction is provided.

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Visual Resource Management (continued)	<p>1 Manage area so that management activities are not generally a dominant feature of the landscape in Management Area 4A. In Management Area 4C, emphasize visual quality in all activities. Manage area to soften visual impacts of activities in Management Area 4D. (continued)</p>	<p>b Use the following techniques for activities occurring in areas that can be seen from trails, open roads, <u>closed roads used for trail opportunities</u>, recreation areas, lakes or rivers</p>
		<p>VQO TECHNIQUE</p>
		<p>R,PR 1 M Establish irregular shaped openings and avoid straight lines or geometric forms except as necessary along landlines</p>
		<p>R,PR 2 Leave flowering and ornamental vegetation where practical to enhance vegetative variety</p>
		<p><u>R,PR 3 Feather all visible edges where indicated by the analysis of scenic resources.</u></p>
		<p>PR 4 Burn or lop and scatter slash to within 2 feet of the ground or burn for 100 feet beyond edge of road or trail</p>
		<p>R,PR 5 Screen log landings from view and restore as close to original contour as practical</p>
		<p>R,PR 6 M Screen or blend in roads and skid roads</p>
		<p>R,PR 7 Exclude special uses from view where practical</p>

Table III-6 Direction for Management Area 4 (continued)

The majority of this direction is common to Management Areas 4A, 4C, and 4D
 Where direction varies among 4A, 4C, and 4D specific direction is provided

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Visual Resource Management (continued)	1 Manage area so that management activities are not generally a dominant feature of the landscape in Management Area 4A In Management Area 4C, emphasize visual quality in all activities Manage area to soften visual impacts of activities in Management Area 4D (continued)	b Use the following techniques for activities occurring in areas that can be seen from trails, open roads, <u>closed roads used for trail opportunities</u> , recreation areas, lakes or rivers. (continued)
		VQO TECHNIQUE
		R 8 Remove visible slash, except brush barriers for erosion control, from the edge of a road or trail up to a maximum of 150 feet, unless openings do not exceed 3 acres in size Burn or lop and scatter visible slash to within 2 feet of the ground where openings do not exceed 3 acres in size
		PR 9 Limit linear distance of opening adjacent to roads and trails to a 250-foot maximum in Management Area 4D
		M 10 Limit linear distance of opening adjacent to roads and trails to a 500-foot maximum in Management Area 4D
		PR 11 Allow no more than 15 acres of an opening to be viewed in the foreground in Management Area 4D.

Table III - Direction for Management Area 4 (continued)

The majority of this direction is common to Management Areas 4A, 4C, and 4D. Where direction varies among 4A, 4C, and 4D, specific direction is provided.

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Visual Resource Management (continued)	1 Manage area so that management activities are not generally a dominant feature of the landscape in Management Area 4A. In Management Area 4C, emphasize visual quality in all activities. Manage area to soften visual impacts of activities in Management Area 4D. (continued)	b Use the following techniques for activities occurring in areas that can be seen from trails, open roads, <u>closed roads used for trail opportunities</u> , recreation areas, lakes or rivers (continued) VQO TECHNIQUE M 12 Burn or lop and scatter slash to within 4 feet of the ground for 50 feet beyond edge of road or trail R,PH 13 Scatter residual logging debris around log landing within 4 feet of ground or accomplish through firewood utilization. Apply to foreground areas only M 14 Locate activity boundaries off ridgelines <u>where indicated by the visual analysis</u>
Dispersed Recreation Management	1 Provide nonmotorized recreation opportunities including hunting, access for fishing, viewing wildlife, horseback riding, bicycle riding, and hiking	a Manage for Roded Natural 2 conditions, including a low level of vehicular access on Forest development roads b Provide for horseback and bicycle riding primarily on closed Forest development roads
Trails Management	1 Provide hiking opportunities and trails for viewing wildlife, hunting, and access for fishing 2. Construct new trails for horseback riding or bicycles primarily when needed to connect existing roads or trails 3 Maintain trails for the intended use.	a Use a desired density level of 2.0 miles of trail per square mile. a Maintain trails to maintenance levels 1-3

Table 1 1-6 Direction for Management Area 4 (continued)

The majority of this direction is common to Management Areas 4A, 4C, and 4D
Where direction varies among 4A, 4C, and 4D, specific direction is provided

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Wildlife and Fish Resource Management	1 Provide conditions for the large group of game and non-game animals that benefit from a variety of <u>mostly mature</u> forest conditions and can not tolerate vehicular disturbance. Emphasis habitat for specific Management Indicator Species which represent this group	<ul style="list-style-type: none"> a Manage habitat primarily for black bear (exceptions are shown in Appendix F). b Use desired density of 3% for permanent grass and forb openings in compartments where habitat is managed primarily for turkey
	2 Use timber management practices as the primary tool to create desirable habitat in Management Areas 4A, and 4D	<ul style="list-style-type: none"> a Manage compartments to maintain at least 70% in hardwood management types except where pine management types presently exceed 30% in Management Areas 4A and 4B. In Management Area 4D, manage compartments to maintain at least 75% in hardwood management types except where pine management types presently exceed 25%. b Seed temporary logging roads and skid roads with appropriate wildlife seed mixtures to provide linear strip openings. c Retain where available at least 30 square feet of basal area per acre of hard mast producing species throughout the rotation in stands where a significant mast producing hardwood component occurs naturally in a pine management type. Manage the entire stand at regeneration, including the hardwood component. d. Retain suitable black bear den trees where they occur.

Table III-6 Direction for Management Area 4 (continued)

The majority of this direction is common to Management Areas 4A, 4C, and 4D. Where direction varies among 4A, 4C, and 4D, specific direction is provided.

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Vegetation Management	<p>1. <u>Conduct silvicultural examinations as needed to maintain CISC/GIS records and prescribe needed stand treatments</u></p> <p>2. Use harvest methods that meet management objectives. Emphasize visually pleasing scenery in Management Area 4A, wildlife habitats in Management Area 4D. In Management Area 4c manage the area as land not suitable for timber production during the 10 to 15 year period of the Plan.</p>	<p>a. <u>Schedule to revisit each compartment at 10 to 15 year intervals</u></p> <p>a. <u>Retain adequate overstory to meet management area objectives based on site specific analysis</u></p> <p>b. Refer to Forest-wide Direction for a list of tree cutting practices appropriate to land not suitable for timber production in Management Area 4c</p> <p>c. In Management Area 4D, select a harvest method based on a site specific analysis. Clearcutting may be used only when, through site specific analysis, it is determined to be the optimum method to meet management area objectives. Use <u>shelterwood or two-aged harvest methods to maintain visual quality in Sensitivity Level 1, foreground and middleground zones unless other methods are more appropriate to site specific conditions.</u> (Amendment #4)</p>

Table III-6 Direction for Management Area 4 (continued)

The majority of this direction is common to Management Areas 4A, 4C, and 4D
Where direction varies among 4A, 4C, and 4D, specific direction is provided

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Vegetation Management (continued)	3 Design harvest areas to meet management objectives in Management Areas 4A, and 4D	a <u>Limit the size of openings created by the even-aged regeneration harvest to 25 acres in Management Area 4D</u>
	4. Disperse regeneration areas to meet wildlife and visual quality objectives in Management Areas 4A and 4D	a Maintain a minimum spacing of 660 feet between <u>even-aged</u> and <u>two-aged</u> harvest areas in Management Areas 4A and 4D <u>See Forest-wide standard for age class distribution</u>
	5 Use appropriate rotations to favor middle to older aged trees in Management Areas 4A and 4D	a Use rotations of 120 years for hardwood, 100 years for white and yellow pine and 60 years for Virginia pine <u>management types</u>
	6 Thin to maintain or improve wildlife habitat, visual conditions, or desired number and mix of tree species in Management Areas 4A, and 4D	
	7. Manage for the forest type existing on the site unless a different forest type better meets management objectives in Management Areas 4A, and 4D	a Consider changing only upland hardwood, productivity class IV sites from hardwood to <u>mixed pine-hardwood</u> forest type Allow such a change of forest type only to meet visual quality or wildlife habitat needs.

Table III-6 Direction for Management Area 4 (continued)

The majority of this direction is common to Management Areas 4A, 4C, and 4D
 Where direction varies among 4A, 4C, and 4D, specific direction is provided

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Transportation System Management	1 Provide limited access for motorized vehicles	a Manage access through an approximate density of 0.25 miles of open road per square mile. Include four-wheel drive ways in this density. <u>Where existing open road densities exceed 0.25 miles per square mile, and, if closure of existing roads is prohibitive for administrative or legal reasons, then document these exceptions to the standard and investigate strategies to reduce the open road density.</u>
	2 Close all Traffic Service Level D roads to public vehicular use when management activities are complete except those roads designated as four-wheel drive ways	a Sign all <u>routes</u> designated as four-wheel drive ways

Table III-6 Direction for Management Area 4 (continued)

The majority of this direction is common to Management Areas 4A, 4C, and 4D
 Where direction varies among 4A, 4C, and 4D, specific direction is provided

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Road Planning Construction and Maintenance	1. Plan and construct the transportation system to provide access for timber in Management Areas 4A, and 4D In Management Area 4C, plan and construct the transportation system to provide access for activities to meet management area objectives	a. Plan the road system to widely disperse harvest units in Management Areas 4A and 4D b. <u>Locate all roads on stable locations, to protect adjacent resources and to most cost effectively serve access needs</u>
	2. Maintain roads to accommodate the intended use and to protect resources Identify where existing designated four-wheel drive ways do not meet water quality standards and develop strategies to bring them into compliance unless physical conditions preclude complete correction and the road cannot be legally closed	a. Maintain open Traffic Service Level C roads to a minimum maintenance level 3 b. Maintain open Traffic Service Level D roads to a minimum maintenance level 2 c. Maintain four-wheel-drive ways to maintenance level 2 d. Maintain all closed system roads to maintenance level 1

MANAGEMENT AREA 5

Emphasis is on providing large blocks of backcountry where there is little evidence of other humans or human activities other than recreation use. A sizable block of land is necessary to ensure relative freedom from the sights and sounds of modern man. An unroaded forest environment and natural appearing forests with large old trees are desirable. This management area also responds to the need for large blocks of wildlife habitat relatively undisturbed by human developments that some species prefer. Wildlife such as ovenbird, black bear and cerulean warbler are likely to be present. Visitors using these areas for backcountry activities are unlikely to encounter other people.

These lands are managed to provide a unique forest environment **where near primitive settings are provided.** Motorized recreational use is not allowed, but forest users can enjoy hiking and hunting or walking. Some opportunities for horseback riding will also be provided.

Wildlife that benefit from old trees and greatly reduced disturbance from **humans and motorized vehicles** are favored on these lands. **Timber production is not appropriate in order to meet resource objectives to provide near primitive recreational settings.**

Grass and forb openings of a few acres widely dispersed about the management area will be developed or maintained to provide suitable areas for wildlife requiring this habitat. Roads in the area will be very few and used only for specific projects such as creating or maintaining wildlife openings, access for short-term projects, or fire suppression.

Table III-7 Direction for Management Area 5

ACTIVITIES	GENERAL DIRECTION	STANDARDS
<p>GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE</p>		
Visual Resource Management	<p>1 Manage area to emphasize visual quality in all activities and maintain a near-natural appearing setting</p>	<p>a Manage to meet the Retention (R) visual quality objective in all seen areas</p> <p>b Use the following techniques for activities occurring in areas that can be seen from trails, <u>open roads, closed roads used for trail opportunities,</u> recreation areas, lakes or rivers, or by <u>individuals traveling cross-country.</u></p> <p>VQO TECHNIQUE</p> <p>R 1 Establish irregular shaped openings and avoid straight lines geometric forms except, as necessary along landlines</p> <p>R 2 Leave flowering and ornamental vegetation where practical to enhance vegetative variety</p> <p>R 3 Screen log landings from view and restore as close to original contour as practical</p> <p>R 4 Screen or blend in roads and skid roads used for project activities.</p> <p>R 5 Exclude special uses from view where practical.</p>

Table III-7 Direction for Management Areas (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Visual Resource Management (continued)	1 Manage area to emphasize visual quality in all activities (continued)	b Use the following techniques for activities occurring in areas that can be seen from trails, <u>open roads closed roads used for trail opportunities</u> , recreation areas, lakes or rivers, or by <u>individuals traveling cross-country</u> (continued) VQO TECHNIQUE R 6 Treat all slash visible from travelways, except brush barriers for erosion control, by removing, burning, or lopping and scattering to within 2 feet of the ground
Dispersed Recreation Management	1 Provide nonmotorized recreation opportunities including hiking, viewing wildlife, hunting, and access for fishing	a Manage for Semi-Primitive Non-Motorized conditions, including no motorized public vehicular access.
Trails Management	1 Provide opportunities for viewing wildlife, hunting access for fishing, hiking and horseback riding	
	2 Construct new trails for horseback riding or bicycles primarily when needed to connect existing roads or trails	
	3 Maintain trails for the intended use.	a Maintain trails to maintenance levels 1-3

Table III-7 Direction for Management Area 5. (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Wildlife and Fish Resource Management	1 Provide conditions for the large group of game and non-game animals that benefit from older forests and can not tolerate vehicular disturbance. Emphasize habitat for specific Management Indicator Species which represent this group.	a Manage habitat primarily for black bear (exceptions are shown in Appendix F) b Use a desired density of 3% for permanent grass and forb openings in compartments where habitat is managed primarily for turkey.
Vegetation Management	1 Manage area as land not <u>suitable</u> for timber production during the 10 to 15-year period of the Plan 2. Design resource activities involving vegetative manipulation to be near-natural in appearance.	a Refer to Forest-wide Direction for a list of tree cutting practices appropriate to land not <u>suitable</u> for timber production a. Achieve near-natural appearing conditions within 1 full growing season.
Transportation System Management	1 Manage all roads as closed to public vehicular use 2. Allow forest development roads not needed for resource activities to revegetate naturally.	
Road Planning Construction and Maintenance	1 Plan and construct the transportation system to provide access for activities to meet management area objectives.	a Maintain roads used for project activities, such as creating and maintaining wildlife openings at Maintenance Level 2.

MANAGEMENT AREA 6

This management area includes Congressionally designated Wilderness Study Areas recommended for inclusion in the National Wilderness Preservation System. All Wilderness Study Areas will continue to be managed to protect wilderness attributes, under the direction for Management Area 6, until Congress determines whether or not to include them in the National Wilderness Preservation System.

Table III-8 Direction for Management Area 6

ACTIVITIES	GENERAL DIRECTION	STANDARDS
GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE		
Visual Resource Management	1 Allow only minor alteration of the existing forest setting	a Manage to meet the Retention Visual Quality Objective in all seen areas
Dispersed Recreation Management	1 Manage for current activities and levels of use 2 Provide no opportunities for vehicles commonly classified as ORV's	a Manage for Semi-Primitive Non-Motorized conditions
Trails Management	1 Maintain trails to current maintenance levels 2 Allow no upgrading of trail design standard	
Wildlife and Fish Resource Management	1 Allow maintenance of existing wildlife habitat improvements provided that potential wilderness quality is not impaired. 2 Provide no new habitat improvements 3 Allow current levels of fish stocking using existing roads only.	

Table III-8 Direction for Management Area 6. (continued)

ACTIVITIES	GENERAL DIRECTION		STANDARDS
Vegetation Management	1	Allow natural processes to determine the composition and distribution of plant species	
	2	Use only native materials to revegetate denuded campsites or areas disturbed by wildfire suppression activities	a Rehabilitate to as near-natural a condition as possible
Gathering Forest Products	1	Allow collection of plant products (nuts, berries, ramps, cones) for personal use	
	2	Allow collection of specimen plants for research with Forest Supervisor approval. Require a permit.	
	3	Allow collection of dead and down wood only for on-site campfire use.	
Minerals Management	1	Manage mineral activities to protect wilderness capability.	a Stipulate no surface occupancy in any new leases.
Special Uses	1	Issue no new special use permits, except for outfitter-guide operations.	
	2	Approve only those military training activities that are compatible with management area objectives.	

Table III-8 Direction for Management Area 6 (continued)

ACTIVITIES		GENERAL DIRECTION	STANDARDS
Land Adjustment and Rights-of-Way	1	Retain all interest in NPS lands	
Transportation System Management	1	Limit motorized vehicles to existing open roads	
Road Planning Construction and Maintenance	1	Construct no new roads	
	2	Maintain existing roads to current levels	
Prescribed Burning	1	Allow no prescribed fires except those necessary for the perpetuation or recovery of a threatened or endangered species	

MANAGEMENT AREA 7

This area includes the Congressionally designated Wildernesses of Linville Gorge, Shining Rock and Middle Prong on the Pisgah National Forest and Joyce Kilmer-Slickrock, Southern Nantahala and Ellicott Rock on the Nantahala National Forest.

Wilderness is managed to perpetuate the naturalness of the area while providing for recreational, scenic, scientific, educational, conservation, and historical use compatible with the wilderness resources and attributes.

Table III-9 Direction for Management Area 7

ACTIVITIES	GENERAL DIRECTION	STANDARDS
GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE		
Cultural Resource Management	1 Manage recreational, scenic, educational, conservation and historic use of cultural resources consistent with wilderness and cultural resource management objectives	a Provide only verbal interpretation of cultural resources within Wilderness b Give low priority to inventorying cultural resources unless specific threatening circumstances exist
	2 Allow scientific study consistent with wilderness management objectives.	a Evaluate suitability of studies. Approve or disapprove on a case-by-case basis b Allow excavation of site or dismantling of structure only if studies can not be conducted elsewhere
	3 Manage historic and prehistoric structures consistent with Wilderness	a Examine structures approaching age 50 for cultural resource value b Retain structures deemed necessary to support public or administrative purposes of Wilderness c Remove structures that do not qualify for National Register or allow to deteriorate naturally d Allow no use of motorized equipment for restoration or maintenance unless essential

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Visual Resource Management	1 Rely upon natural processes to shape the environment	a Meet Preservation VQO, only management activities with low visual impact such as trail construction, maintenance and signing are appropriate
	2 Recognize and consider wilderness values when planning resource management activities adjacent to Wilderness while meeting the objectives of adjacent management areas	a Consider smoke impact on Wilderness when planning prescribed burning activities on areas near or adjacent to the Wilderness
Dispersed Recreation Management	1 Emphasize a primitive recreation experience in a natural forest setting	
	2 Allow recreational activities that conform with wilderness values. In determining appropriate activities for the Wilderness, give highest priority to uses which least alter or are most dependent upon the wilderness environment	a Provide for hiking and backpacking
		b Prohibit use of bicycles and other forms of mechanical transport such as wagons or carts with the exception of wheelchairs
		c Provide for primitive camping and encourage visitors to disperse use and practice "no trace" camping techniques. Discourage camping at trailheads and parking areas.
		d Provide for hunting and fishing consistent with established game laws and wilderness values
		e Prohibit all motorized vehicles.
		f Allow recreational gold panning and mineral collection which does not use mechanized equipment or result in ground disturbance
		g Allow pets on a leash or under control
h Provide for rock climbing in the Linville Gorge Wilderness		

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Dispersed Recreation Management (continued)	3 Provide for use of Wilderness by the handicapped without special provisions or improvements	
	4 Allow visitors to experience a wilderness environment by not reducing or eliminating personal risks associated with adverse weather conditions, isolation, natural physical hazards, and primitive travel and communication	
	5 Provide visitors the opportunity to experience Wilderness with minimum regulation and with minimum impact to the Wilderness	<ul style="list-style-type: none"> a Use the minimum restrictions or controls necessary to protect the Wilderness b Use all reasonable means to manage visitor use before implementing restrictions
	6 Require a visitor permit for camping in Linville Gorge Wilderness	a Establish a permit system based on anticipated use
	7 Disperse use through information, education, and trail design	
	8 Promote "wilderness awareness" and "no trace use" Promote the concept that Wilderness is primitive and rugged and that certain outdoor skills are necessary for using these areas Seek visitor self-monitoring for compliance with guidelines to minimize resource impact	
	9 Encourage visitors not desiring a wilderness experience or lacking in outdoor experience to use other areas of the Forest	
	10 Make information available to all persons requesting it without advertising or promoting wilderness use	

Table III-9 Direction for Management Area 7. (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS												
Dispersed Recreation Management (continued)	<p>ii Manage use to provide a low incidence of contact with other parties recognizing that different areas or zones within a Wilderness have varying degrees of human use. Apply standards to the following zones</p> <p>Zone I - No trails Zone II - Secondary trails Zone III - Primary trails and access points</p>	<p>a Manage use within the specified limits for the following indicators and zones</p> <p>Number of encounters with other parties</p> <table border="1"> <thead> <tr> <th>Zone I</th> <th>Zone II</th> <th>Zone III</th> </tr> </thead> <tbody> <tr> <td>80% probability of 0 per day</td> <td>80% probability of 3 or fewer per day</td> <td>80% probability of 5 or fewer per day</td> </tr> </tbody> </table> <p>Number of other parties camped within sight or continuous sound</p> <table border="1"> <thead> <tr> <th>Zone I</th> <th>Zone II</th> <th>Zone III</th> </tr> </thead> <tbody> <tr> <td>80% probability of 0 per day</td> <td>80% probability of 1 or fewer per day</td> <td>80% probability of 3 or fewer per day</td> </tr> </tbody> </table> <p>Reduce use when it exceeds the limits on more than 10 days during the peak-use season.</p>	Zone I	Zone II	Zone III	80% probability of 0 per day	80% probability of 3 or fewer per day	80% probability of 5 or fewer per day	Zone I	Zone II	Zone III	80% probability of 0 per day	80% probability of 1 or fewer per day	80% probability of 3 or fewer per day
Zone I	Zone II	Zone III												
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Zone I	Zone II	Zone III												
80% probability of 0 per day	80% probability of 1 or fewer per day	80% probability of 3 or fewer per day												

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS																	
Dispersed Recreation Management (continued)	11 Manage use to provide a low incidence of contact with other parties recognizing that different areas or zones within a Wilderness have varying degrees of human use Apply standards to the following zones (continued)	b Allow high density day use of the Joyce Kilmer National Recreation Trail (Joyce Kilmer-Slick Rock Wilderness)																	
	12 Manage campsites and other areas of concentrated use for a low level of change in naturalness recognizing that different areas or zones in Wilderness have varying degrees of human influence Apply standards to the following zones Zone I - No trails Zone II - Secondary trails Zone III - Primary trails and access points	<p>a Manage site impacts within the specified limits for the following indicators and zones</p> <p>Number of campsites identified per mile</p> <table border="1"> <thead> <tr> <th>Zone I</th> <th>Zone II</th> <th>Zone III</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0.5</td> <td>1</td> </tr> </tbody> </table> <p>Bare soil (square feet):</p> <table border="1"> <thead> <tr> <th>Zone I</th> <th>Zone II</th> <th>Zone III</th> </tr> </thead> <tbody> <tr> <td>Near 0</td> <td>100</td> <td>200</td> </tr> </tbody> </table> <p>Number of damaged trees or trees with exposed roots including large shrubs and saplings:</p> <table border="1"> <thead> <tr> <th>Zone I</th> <th>Zone II</th> <th>Zone III</th> </tr> </thead> <tbody> <tr> <td>Near 0</td> <td>2</td> <td>4</td> </tr> </tbody> </table>	Zone I	Zone II	Zone III	0	0.5	1	Zone I	Zone II	Zone III	Near 0	100	200	Zone I	Zone II	Zone III	Near 0	2
Zone I	Zone II	Zone III																	
0	0.5	1																	
Zone I	Zone II	Zone III																	
Near 0	100	200																	
Zone I	Zone II	Zone III																	
Near 0	2	4																	

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Dispersed Recreation Management (continued)	12 Manage campsites and other areas of concentrated use for a low level of change in naturalness recognizing that different areas or zones in Wilderness have varying degrees of human influence (continued)	<ul style="list-style-type: none"> b Naturalize campsites in trail-less areas c Naturalize or rehabilitate appropriate sites. Consider temporary or permanent site closures when other management techniques are not successful d Use the following techniques to naturalize a site <ul style="list-style-type: none"> - Remove fire rings, scatter ashes. - Scatter firewood. - Pick up litter; and - Cover exposed soil with natural litter e Use the following techniques for rehabilitating heavily impacted sites <ul style="list-style-type: none"> - Fill compacted or eroded areas with soil. - Revegetate or mulch the site with native materials; - Remove or relocate fire rings, and - Remove all make-shift structures and non-native materials.

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Trails Management	1 Design and manage the trail system consistent with wilderness objectives for solitude, physical and mental challenge, spirit of adventure, and self-reliance	a. Manage trails for hiking use only, except for designated horse trails in Shining Rock Wilderness and Southern Nantahala Wilderness
		b. Manage section of trails that leave Wilderness and pass through other management areas according to the standards of that management area.
	2 Manage long distance hiking trails, such as Mountain-to-Sea Trail, which pass through Wilderness consistent with wilderness management objectives	a. locate planned and approved long distance trails outside of Wilderness unless there is no other feasible route
	3 Construct and maintain trails to the minimum standard necessary for protection of the soil water vegetation, visual quality, user safety and long-term maintenance. Emphasize a wilderness experience. Use trail design as a method to control levels of public use	a. Favor trails that offer a "more difficult" to "most difficult" experience
		b. Allow trails that were constructed or maintained beyond wilderness standards to return to an appropriate standard through natural actions
		c. Construct and maintain tread width to a maximum of 24 inches
	d. Maintain trails at maintenance level 1 or 2 as described in Appendix G, except maintain the Joyce Kilmer National Trail (Joyce Kilmer - Slickrock Wilderness) to maintenance level 4	

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Trails Management (continued)	3 Construct and maintain trails to the minimum standard necessary for protection of the soil, water, vegetation, visual quality, user safety and long-term maintenance. Emphasize a wilderness experience. Use trail design as a method to control levels of public use (continued)	e Construct and maintain trails with non-motorized equipment unless authorized by the Regional Forester to use mechanized equipment. Request authorization on a case-by-case basis.
	4 Use minimum trail signing and blazing to preserve pathfinding as a skill needed in the wilderness experience.	a Use trail signing only for identifying a trail or for dispersing use. Place all but interior junction signs at Wilderness portals.
		b Use only names on trail signs. Provide no mileages or directional arrows.
		c Blaze trails only if the trail route can not be distinguished on the ground or if needed to avoid a safety hazard. Use axe blazes only. Allow traditional paint blazes on the Appalachian Trail in the Southern Nantahala Wilderness.
	5 Provide visitor information other than trail signs outside the Wilderness boundary.	a Provide bulletin boards at primary access points.
	6 Provide foot logs or bridges only when absolutely necessary for visitor safety or for protection of streambanks. Consider relocating the trail to a suitable natural crossing before constructing a footbridge.	
	7 Locate trailheads outside the Wilderness boundary. Consider effects of location and size on levels and patterns of use within the Wilderness.	

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Recreation Management (Private and Other Public Sector)	1 Issue no commercial recreation permits other than for outfitter-guide services. Require outfitters and guides to use "no-trace" techniques. Allow no permanent camps.	<ul style="list-style-type: none"> a Limit the size of commercial and organized groups to 10. b Redistribute outfitter and guide use to nonwilderness areas when such use conflicts with public enjoyment of the wilderness.
	2. Issue no permits for competitive recreational events.	
Wildlife and Fish Resource Management	1 Rely on natural processes to shape habitat and determine the selection, distribution and population levels of wildlife species.	
	2 Provide no direct habitat improvements for fish and wildlife.	a Allow wildlife openings to grow up naturally.
	3. Allow stocking of wildlife species when wilderness values are not impaired and only to <ul style="list-style-type: none"> - enhance the status of threatened or endangered species, or - reintroduce species native to the wilderness that were removed by human actions. 	a Require forest Supervisor approval of proposed stocking projects.
	4 Provide maximum protection for known populations of threatened and endangered species.	
	5 Allow habitat manipulation essential to the survival of a threatened and endangered species with approval by the Chief of the Forest Service.	
	6 Emphasize quality and naturalness in managing wilderness fisheries.	

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Wildlife and Fish Resource Management (continued)	7 Allow stocking of fish to <ul style="list-style-type: none"> - reestablish or maintain an indigenous species, - restore a threatened or endangered species, or - maintain or enhance recreational values 	a Allow stocking of the West Fork Middle Prong in the Shining Rock Wilderness to continue. Modify program to be consistent with wilderness values b Give preference to native species including species traditionally stocked prior to Wilderness designation
	8 Provide for hunting and fishing consistent with State game laws and wilderness values	
	9 Discourage visitor actions which alter the natural behavior of wildlife, such as dumping food or garbage	
Vegetation Management	1. Allow natural processes to determine the composition and distribution of plant species	
	2. Use only native materials to revegetate denuded campsites or areas disturbed by wildfire suppression activities	a Rehabilitate to as near-natural a condition as possible
	3. Manage to promote the recovery of a threatened or endangered plant species when necessary to its survival	a Minimize the effects of protection and recovery measures on wilderness resources

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Gathering Forest Products	1. Issue no permits for the removal of any forest products	
	2. Allow collection of plant products (nuts, berries, cones) for personal use	
	3. Allow collection of specimen plants for research with Forest Supervisor approval. Require a permit.	
	4. Allow collection of dead and down wood only for on-site campfire use	
Soil and Water Management	1. Maintain soils in a natural undisturbed state except for trail construction, use and maintenance, approved watershed restoration projects, wildfire control measures, and campsite rehabilitation. Favor natural healing of disturbed sites	
	2. Permit emergency rehabilitation of a burned area only if necessary to prevent an unnatural loss of wilderness resources or to protect resources outside the Wilderness.	
	3. Maintain all water resources without developed improvements, impoundments or other modifications	a. Allow existing water system for the Joyce Kilmer Picnic Area (Joyce Kilmer - Slickrock Wilderness) to remain inside the Wilderness.
	4. Inform visitors to purify drinking water	
Minerals Management	1. Allow no mining, all minerals under Federal ownership have been withdrawn from mining	

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Special Uses	1 Issue no permits for new special uses, except for outfitter-guide operations (refer to Recreation Management Private and Other Public Sector)	
	2 Issue no permits for military training activities	
	3 Phase out existing permits in newly designated Wilderness	
Land Adjustment and Rights-of-Way	1 Strive for full public ownership of lands within Wilderness boundaries, including outstanding rights	
	2 Post Wilderness boundary at access points and any points along the boundary where there is the possibility of unauthorized use or encroachment	
Transportation System Management	1 Manage Wilderness as closed to all motorized vehicles and equipment	a Require Forest Supervisor approval for administrative use of motorized vehicles for transport of equipment for emergencies involving inescapable urgency such as
		<ul style="list-style-type: none"> - fire suppression; - health and safety; - law enforcement involving serious crimes or fugitive pursuit, - removal of deceased persons; and - aircraft accident investigation
Road Planning Construction and Maintenance	1. Construct no roads	
	2 Close all existing roads in newly designated areas Evaluate need for rehabilitation	a Favor natural revegetation of closed roads Plant with native species only if the area is not expected to revegetate naturally in a reasonable time.

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Wildfire Management	1 Allow routine aerial detection for wildfire	
	2 Make suppression decisions with consideration for Wilderness and adjacent land, visitor safety, suppression costs, natural barriers, and the anticipated path of fire spread	a Allow lightning caused fires to burn on Shortoff Mountain in the Linville Gorge Wilderness and other areas where of benefit to threatened or endangered species and not a threat to other wilderness resources, public safety or resources outside of Wilderness
	3 Use suppression methods with the least detriment to Wilderness unless the fire is threatening public safety within the Wilderness, or resources and property outside the Wilderness	a Favor indirect attack with hand tools b Use helicopters, airtankers, other aircraft and hand-held motorized devices with approval of the Forest Supervisor on a case-by-case basis c Use tractor-plow units or bulldozers only on fires with an imminent threat to life or private property that can not be controlled by other means Require Regional Forester approval.
Prescribed Burning	1 Allow no prescribed fires except those necessary for the perpetuation or recovery of a threatened or endangered species	

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Pest Management	1 Allow insects and disease to follow their natural course in the wilderness ecosystem	a Consider control measures, with the approval of the Regional Forester only when there is an immediate threat to resources outside the Wilderness or unnatural loss of the wilderness resource due to pests, except for southern pine beetle infestations which may be controlled in accordance with the management requirements of Section VI of the Record of Decision/Southern Pine Beetle as follows [Amendment #1] b <u>Wilderness (General)</u> 1 No SPB control action will be taken in wilderness unless an infestation threatens an essential RCW colony or occurs within 1/4 mile of susceptible host on State and private land or high value forest resources on Federal land and is predicted to spread into that land causing unacceptable damage on that land. Infestations will be allowed to run their natural course unless the aforementioned resources are threatened

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Pest Management (continued)	1 Allow insects and disease to follow their natural course in the wilderness ecosystem. (continued)	<p>2 No SPB control action will be taken in wilderness until a site-specific analysis of the infestation and surrounding site conditions is completed and documented. The site-specific analysis must indicate that successful control can be expected, given (a) the intensity of the infestation, (b) the constraints applied to the control methods for use in wilderness and (c) the resources available to control the spot.</p> <p>3 IPM control methods for SPB are modified for use in wilderness as follows:</p> <ul style="list-style-type: none"> a. Cut and Remove - use helicopter, draft animals or cable skidding from public roads, or access, to remove infested logs. In visually sensitive zones such as along hiking trails, remove entire tree if feasible or otherwise remove slash from visual zone. Helicopter flight lines will avoid trails where possible.

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Pest Management (continued)	1 Allow insects and disease to follow their natural course in the wilderness ecosystem (continued)	<ul style="list-style-type: none"> <li>b Cut and Leave - no modification for use in wilderness except to cut slash to lay close to the ground or remove slash if feasible in visual zones to mitigate visual impact <li>c Cut and hand spray - same modifications as cut-and-leave method <li>d Pile and burn - this method will not be used in wilderness <p>4 Monitoring, ground checking and tree felling crews will travel to infestations by non-motorized methods. Only under conditions in Item 5., following, will vehicles be allowed</p>

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Pest Management (continued)	1 Allow insects and disease to follow their natural course in the wilderness ecosystem (continued)	5 In extenuating circumstances, such as an intense outbreak, or lack of adequate resources to implement the preceding control methods, use of motorized ground vehicles may become necessary to protect essential colony sites or adjacent lands as described under alternative 4. However, use of such to do control work in wilderness would require complete documentation of the extenuating circumstance and approval in advance by the Regional Forester. This deviation would be used only as a last resort when destruction of an essential RCW colony or unacceptable damage on adjacent lands is imminent. When the use of motorized ground vehicles is permitted in wilderness by the Regional Forester, the following management requirements apply

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Pest Management (continued)	1 Allow insects and disease to follow their natural course in the wilderness ecosystem (continued)	<ul style="list-style-type: none"> a Use only the existing roads or access ways limit road improvements to a standard no higher than required for safe passage of equipment and workers, and to protect the soil b Return existing roads to as near their pre-use condition as soon as they have served their purpose c Close all roads and access ways needed for SPB control to motorized public use Only use associated with the control of the SPB and administrative use will be allowed d Use fords (no structure) where possible, but only under conditions that will not visibly change physical stream characteristics These conditions are <ul style="list-style-type: none"> (1) Bedrock stream bottom and lower banks.

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Pest Management (continued)	1 Allow insects and disease to follow their natural course in the wilderness ecosystem (continued)	(2) Rock or gravel stream bottom and lower banks.
		c Install temporary stream crossing structures using the largest fill materials available. Crossings will be removed completely after control operations are completed. Stream banks and bottoms will be reclaimed to approximately the original conditions.
		f To the greatest extent possible, schedule control activities when visitor use will be lowest.
		6 All practical efforts to protect hardwoods will be made when SPB control actions are implemented. No hardwoods will be cut unless to insure the safety of crews or wilderness user.
		7 The affected and interested public will be informed or involved as appropriate in the decision to control in wilderness. (See Exhibit 2.)

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Pest Management (continued)	1 Allow insects and disease to follow their natural course in the wilderness ecosystem (continued)	<p><u>General Forest Area and Wilderness (RCW Colony Site Protection)</u></p> <ol style="list-style-type: none"> <li>1 Trees vacated by the SPB will not be cut or chemically treated unless necessary to insure public safety <li>2. <i>Inactive and relict cavity trees, if infested, or within a designated treatment buffer zone, may be cut to secure RCW colonies (Requires evaluation by a Forest Service wildlife biologist)</i> <li>3 Uninfested trees within a 200-foot buffer around RCW cavity trees would not be cut or chemically treated unless such control efforts would be likely to prevent SPB infestation of cavity trees. <li>4. Disturbance in the colony sites will be kept to a minimum especially during the breeding season. No salvage operations will be conducted in active colony sites from March 1 through the time RCW young have fledged (approximately July-August). Control activities would be necessary to secure the colony site during the breeding season.

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Pest Management (continued)	1 Allow insects and disease to follow their natural course in the wilderness ecosystem (continued)	5 Control activities within 1/2 mile of RCW colonies will conform to the guidelines set forth in the Forest Service Wildlife Habitat Management Handbook (FSH 2609 23R) Where cut and leave and cut-and-remove techniques are not feasible, and cut and hand spray is used, no standing trees will be sprayed Pile and burn will not be used near active RCW colonies
		d <u>General Forest Area and Wilderness (General)</u>
		1 Site-specific analysis must be completed for any proposed SPB control action This analysis will determine if a biological evaluation is necessary to determine if any threatened and endangered species or species being proposed for this status may be affected by the treatment If the proposed treatment may affect one of these species or its habitat, consultation with the Fish & Wildlife Service is required under the Endangered Species Act If sensitive species may be affected, coordination with the appropriate Federal or State agencies will occur If adverse impacts could occur, the site-specific biological evaluation will identify possible mitigation measures.

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Pest Management (continued)] Allow insects and disease to follow their natural course in the wilderness ecosystem (continued)	<p>2 Use control methods that will minimize soil disturbance</p> <p>3 Use of erosion control measures as soon as possible after the ground-disturbing, SPB-suppression activities are completed, to prevent or minimize erosion, sedimentation and long-term site deterioration.</p> <p>4 Cultural resource surveys and coordination before soil-disturbing activities are implemented. Site evaluation and protection will minimize disturbance of significant sites</p> <p>5 The cut-and-hand-spray technique must only be used according to general direction set forth in Forest Service Manual Chapter 2150, Pesticide-Use Management. Label instructions for insecticides registered for beetle control must be followed.</p> <p>6 Standing trees will not be sprayed with insecticides</p> <p>7 Insecticides will not be used in a manner that would adversely affect threatened or endangered species</p>

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Pest Management (continued)	1 Allow insects and disease to follow their natural course in the wilderness ecosystem (continued)	<p>8 The potential risk to humans and the environment will be minimized by applying insecticides only according to label instructions, Forest Service policies and other Federal regulations. Application will be supervised by a certified pesticide applicator. Areas treated with insecticide will be signed and closed to firewood collection. (See Appendix C.)</p> <p>9 Workers who apply insecticides will be trained to ensure minimum impacts and maximum effectiveness. Only those methods that assure proper application of insecticides on the infested tree bole would be used.</p>

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Pest Management (continued)	1 Allow insects and disease to follow their natural course in the wilderness ecosystem (continued)	<p>10 Riparian ecosystems that encompass floodplains and wetlands will receive appropriate protection. As a minimum, riparian areas will extend 100 feet from the edge of all perennial streams and other perennial water bodies, including lakes. Site investigations to identify riparian areas and floodplains will consider the soil and plant characteristics of the site, and will be guided by appropriate Forest Service direction and State requirements. Roads that cross riparian areas will be stabilized with rip-rap, vegetative establishment, or other appropriate methods.</p> <p>11 Logging equipment will be kept out of perennial and intermittent stream channels except on approved, designated crossings. Crossings will be at right angles to the stream or riparian area. [Amendment #1]</p>

Table III-9 Direction for Management Area 7 (continued)

ACTIVITIES		GENERAL DIRECTION	STANDARDS
Pest Management (continued)	2	Allow aerial surveillance for insect or disease infestation	
Research	1	Evaluate research proposals for which use of a Wilderness is essential Allow research which is compatible with wilderness management objectives	<ul style="list-style-type: none"> a Require Forest Supervisor approval of all project activities b Mark test plots in a temporary and inconspicuous manner not visually evident to the average visitor.

MANAGEMENT AREA 8

These lands are experimental forests, and will be managed for forest research. The three designated experimental forests are Coweeta, Bent Creek, and Blue Valley.

Even though many management activities take place on these lands, they are not a part of usual Forest programs. These lands are dedicated to experimentation and education and are designated for special national and international research programs. The Coweeta Hydrologic Laboratory is a Biosphere Ecological Reserve for long-term ecological research. A portion of the Bent Creek Experimental Forest will be developed as a regional center for study of trees and other woody plants, in cooperation with the Western North Carolina Arboretum.

Table III-10 Direction for Management Area 8

ACTIVITIES	GENERAL DIRECTION	STANDARDS
<p>GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE.</p>		
Visual Resource Management	1 Manage the visual resource to be compatible with research and educational objectives	a. Consider visual quality and public desires when developing research or demonstration projects
Dispersed Recreation Management	1 Provide dispersed recreation opportunities which are compatible with research objectives	a Manage for Roaded Natural 2 conditions
	2 Provide no opportunities for vehicles commonly classified as ORV's	
	3 Provide limited dispersed camping opportunities	<p>a Allow no dispersed camping within Coweeta Experimental Forest</p> <p>b Allow dispersed camping only within 200 feet of existing open roads in Blue Valley Experimental Forest</p> <p>c Allow no dispersed camping within the Western North Carolina Arboretum</p>
	4 Provide trail opportunities for hiking only	

Table III-10 Direction for Management Area 8 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Wildlife and Fish Resource Management	1 Allow wildlife habitat improvements only when compatible with research objectives	
Vegetation Management	1 Manage timber to achieve research objectives	
	2 Harvest timber only with concurrence of both the Station Director of Southeastern Forest Experiment Station and the Forest Supervisor	
	3 Require approval of the Station Director and the Regional Forester prior to introducing exotic, non-native plant species in the Western North Carolina Arboretum	
Gathering Forest Products	1 Issue permits for collection of forest products only when compatible with research objectives	
Soil and Water Management	1 Manage soil and water resources to meet research objectives	
Minerals Management	1 Require approval by the Chief of the Forest Service for any new mineral permits or leases in experimental forests	
Special Uses	1 Issue permits for new special uses only when research objectives can be met	a Consult with the Station Director to insure that no ongoing or projected experiments are interrupted

Table III-10 Direction for Management Area 8 (continued)

ACTIVITIES		GENERAL DIRECTION	STANDARDS
Land Adjustment and Rights-of-Way	1	Approve land exchanges and rights-of-way only when research objectives can be met	a Consult with the Station Director to insure that no ongoing or projected experiments are interrupted
Transportation System Management	1	Manage roads to meet research objectives	a Allow motorized vehicle use upon concurrence by both the Station Director and the Forest Supervisor b Close roads when traffic is detrimental to research objectives
Road Planning Construction and Maintenance	1	Construct or reconstruct roads primarily to support research and administrative activities	a Use design standards that are compatible with research objectives.
Wildfire Management	1	Suppress all wildfires promptly	
Prescribed Burning	1.	Use prescribed fire to achieve research objectives	
Pest Management	1.	Manage pests as appropriate to protect or enhance research objectives	a Consult with the Station Director to determine appropriate integrated pest management strategies b Refer to Forest-wide direction when controlling southern pine beetle infestations [Amendment #1]

MANAGEMENT AREA 9

This area is Roan Mountain on the Toecane Ranger District.

This area will be managed to maintain distinctive outstanding scenic qualities, wildlife and plant communities, spruce-fir and northern hardwoods. Balds within this management area will be maintained through appropriate methods. No land is classified as selected for timber production. The area is a major recreation site and an area of high scientific and natural heritage interest.

Table III-II Direction for Management Area 9

ACTIVITIES	GENERAL DIRECTION	STANDARDS
<p>GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE</p>		
General	<p>1 Coordinate management of the area with the Cherokee National Forest</p>	
Visual Resource Management	<p>1 Manage area to achieve a natural appearing forest with Appalachian highland grass, heath and alder balds</p>	<p>a Manage all activities to meet the Retention VQO throughout the area</p> <p>b Apply VQO to all distance zones and sensitivity levels Give priority to foreground. Sensitivity Level 1 areas</p>
Developed Recreation Management	<p>1 Develop no new picnic areas or campgrounds</p>	
Dispersed Recreation Management	<p>1 Emphasize nonmotorized recreation opportunities favoring hiking, viewing wildlife and scenery and nature observation</p> <p>2 Provide no opportunities for vehicles commonly classified as ORV's including four-wheel-drive vehicles and snowmobiles</p> <p>3 Allow cross-country skiing</p> <p>4 Direct recreation use away from special interest biological communities</p>	<p>a Manage Roan Mountain Gardens for rural conditions. Manage the remaining areas for Roaded Natural 2 conditions</p> <p>a Restrict public use of Eagle Cliff to protect threatened and endangered plant species</p>

Table III-11 Direction for Management Area 9 (continued)

ACTIVITIES	GENERAL DIRECTION		STANDARDS
Trails Management	1	Emphasize trail opportunities for hiking Provide some opportunities for horseback riding	a Allow horseback riding on Forest Service Road 130A and Overmountain Victory Trail
Recreation Management (Private and Other Public Sector)	1	Require a permit for all commercial recreation use	a Issue outfitter-guide permits for cross-country skiing only for trails and closed roads west of Carver's Gap
Wildlife and Fish Resource Management	1	Maintain existing habitat diversity to favor unique and diverse wildlife species associated with the area Give special consideration to protection and improvement of habitat of threatened or endangered plant and animal species	a Manage habitat primarily for common raven and Carolina northern flying squirrel
Vegetation Management	1	Manage as not selected for timber production	a Refer to Forest-wide Direction for a list of tree cutting practices appropriate to land not selected for timber production
	2	Maintain existing grassland balds	a Establish specific action plans for the following grass communities: <ul style="list-style-type: none"> - Carver's Gap/Round Bald, - Jane Bald; - Low Gap, - Yellow Mountain/Roaring Creek, - Little Hump; and - Big Hump

Table III-11 Direction for Management Area 9 (continued)

ACTIVITIES	GENERAL DIRECTION		STANDARDS
Vegetation Management (continued)	3	Manage vegetation on heath and alder balds to preserve and perpetuate the desired successional stage	a Maintain Roan Mountain Gardens as a first priority b Establish specific action plans to manage vegetation
	4	Maintain spruce-fir and northern hardwood ecosystems.	
	5	Produce and maintain a viable source of Fraser Fir seed and seedlings	
Gathering Forest Products	1	Issue permits for collection of forest products according to Forest-wide Direction only when compatible with area objectives	
	2	Issue permits for collection of Fraser Fir seed and seedlings	
	3	Provide for free collection of dead and down firewood in designated areas for personal use only	
Soil and Water Management	1	Rehabilitate and stabilize eroding areas	
Minerals Management	1	Manage mineral activities to protect the distinctive scenic qualities	a Stipulate no surface occupancy in all new leases
Special Uses	1	Issue permits for new special uses only when compatible with special values of the area	

Table III-11 Direction for Management Area 9 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Transportation System Management	1 Allow no motorized vehicles except on existing roads open to the public	
	2 Provide no opportunities for vehicles commonly classified as ORV's	
	3 Allow administrative use of motorized vehicles for emergencies and designated project work	
	4 Manage system roads as needed to protect public safety and fragile environments, and enhance recreational experiences	a Recommend that State Road 1348 be closed seasonally, generally Dec 1 - April 1 b Manage Forest Service Road 130 as closed seasonally, generally Nov 1 - May 1 c Manage Balsam Road and Forest Service Road 130A as closed except for administrative use.
Road Planning Construction and Maintenance	1 Allow new road construction only when site-specific analysis justifies need for the activity and visual quality objectives are met	
Prescribed Burning	1 Use prescribed burning as appropriate to maintain openings and for wildlife habitat improvement	
Pest Management	1. Control insects and diseases as needed	a Continue and evaluate balsam woolly aphid control program.

MANAGEMENT AREA 10

These areas are Research Natural Areas, and will be managed for scientific research. The two existing research natural areas are Walker Cove and Black Mountain. They are managed in an undisturbed state as a baseline for comparison with other forest environments.

No planned management actions other than needed fire, insect and disease control are scheduled.

Table III-12 Direction for Management Area 10

ACTIVITIES		GENERAL DIRECTION		STANDARDS
GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION. REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE.				
Visual Resource Management	1	Manage to eliminate evidence of forest alteration	a	Manage to meet the Preservation VQO
Dispersed Recreation Management	1	Manage for limited dispersed use with no developed facilities	a	Manage for Semi-Primitive Non-Motorized conditions
	2	Provide no opportunities for vehicles commonly classified as ORV's, including four-wheel-drive vehicles	b	Prohibit use that would impair research or educational value
Trails Management	1	Provide no new trails		
Recreation Management (Private and Other Public Sector)	1	Allow no commercial recreation use.		
Wildlife and Fish Resource Management	1	Provide no direct habitat improvements for fish or wildlife		
Vegetation Management	1	Allow no tree cutting or vegetation management to take place except to meet pest management objectives	a	Manage as not selected for timber production
Gathering Forest Products	1.	Allow no gathering of forest products		

Table III-12 Direction for Management Area 10 (continued)

ACTIVITIES	GENERAL DIRECTION		STANDARDS
Soil and Water Management	1	Retain soils in a natural undisturbed state except for wildfire control measures favor natural healing of disturbed sites	
	2	Retain all water resources in an unaltered condition	
Minerals Management	1	Restrict mineral activities to retain the characteristics of the area	a Stipulate no surface occupancy for any new lease
Special Uses	1	Issue permits only for scientific study where compatible with management area objectives	a Consult with the Station Director concerning any research proposals.
Transportation System Management	1.	Construct no roads	
Wildfire Management	1	Control wildfires promptly using techniques that will have the least impact on the area	a Control fire with handtools if possible Favor the use of water rather than fire retardants
Prescribed Burning	1.	Allow no prescribed burning	
Pest Management	1	Use integrated pest management practices to control insect and disease only to prevent spread outside the area	

MANAGEMENT AREA 11

This area is the Cradle of Forestry in America, and will be managed for educational, interpretive, and historical purposes.

Development and management activities for this unique area on the Pisgah District are detailed in a complementary document, "The Cradle of Forestry Management Plan", which is available as part of the planning records.

All management activities will be compatible with the interpretive and demonstrative nature of the area.

Table III-13 Direction for Management Area 11

ACTIVITIES	GENERAL DIRECTION	STANDARDS
GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE.		
Interpretive Program Management	1 Assure all planned facilities and programs are within the intent of the Cradle of Forestry in America Act (Public Law 90-398)	
	2 Implement the Cradle of Forestry Management Plan for the administration operation, and development of the area	
	3 Emphasize an increasing role of the Cradle of Forestry Interpretive Association in sustaining operation and maintenance of the Cradle of Forestry	
	4 Develop additional facilities to enhance the educational and interpretive program to include Visitor Orientation/Forest History Center, Forest Resources Center, Forest Resource Management Interpretive Area, Multiple Use Demonstration Area, Food Service Center, and expanded parking	a Design new facilities to be architecturally compatible with existing structures and the historic setting of the area
Cultural Resource Management	1 Protect existing cultural resource properties to enhance interpretation of historical significance to the public	a Maintain existing cultural resources to prevent deterioration of the special values
Visual Resource Management	1 Design management activities to meet the objectives of the interpretive plan for the area	a Determine VQO of projects on a case-by-case basis VQO's may range from Retention to Modification

Table III-13 Direction for Management Area 11 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Dispersed Recreation Management	1 Allow dispersed recreation opportunities which are compatible with the interpretive program of the area, favoring hiking	a Manage the recreation experience level to meet the needs of the interpretive program. experiences may range from Rural to Semi-Primitive Non-Motorized
		b Assure that use does not have a negative impact on interpretation, evidence of use may be noticeable but not dominant
		c Close areas to hunting use where public safety or the quality of the interpretive program is threatened
		d Allow no roadside camping
	2 Provide no opportunities for vehicles commonly classified as ORV's.	
Trails Management	1. Emphasize trails for interpretive use	
	2 Maintain trails for the intended use	a Maintain trails to maintenance levels 3-5
Recreation Management (Private and Other Public Sector)	1 Require a permit for all commercial recreation use, excluding those groups whose sole purpose is to visit the Cradle of Forestry Interpretive and Education Center where a user fee is charged	

Table III-13 Direction for Management Area 11 (continued)

ACTIVITIES		GENERAL DIRECTION	STANDARDS
Wildlife and Fish Resource Management	1	Allow management activities compatible with the interpretive program for the area	
Vegetation Management	1	Design silvicultural practices for demonstration and interpretive purposes, not for timber production	a Manage as not selected for timber production
Minerals Management	1	Permit mineral leasing with special stipulations to protect the historic, educational, and interpretive values of the area	a Stipulate in all new leases no surface occupancy within interpretive areas unless compatible with exhibit objectives
Special Uses	1	Allow special uses that do not interfere with the interpretive scenic and educational objectives of the area	
Transportation System Management	1	Provide no four-wheel drive way opportunities	

Table III-1} Direction for Management Area 1} (continued)

ACTIVITIES	GENERAL DIRECTION		STANDARDS
Road Planning Construction and Maintenance	1	Plan the transportation system to emphasize the interpretive program for the area	
	2	Construct new roads primarily to support interpretive activities and long-term public use	
	3.	Maintain roads to accommodate the intended use and to protect resources.	a Maintain roads to Maintenance levels 1-5 according to interpretive program objectives
Prescribed Burning	1	Use prescribed burning for demonstration and educational purposes	

MANAGEMENT AREA 12

These lands include developed recreation areas providing camping, picnicking, swimming, boating, viewing of wildlife and scenery, and other Forest recreational activities.

Development ranges from an essentially natural environment with minimal facilities to a high standard of development for user comfort and convenience. All resource management activities are tailored to be compatible with a pleasing recreational experience for Forest visitors.

Table III 14 Direction for Management Area 12

ACTIVITIES	GENERAL DIRECTION	STANDARDS
GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE		
Visual Resource Management	1 Manage for a pleasing forest environment and an inviting public perception	a Meet VQO's ranging from Retention to Modification depending upon the characteristics of each site
Recreation Management	1 Manage, maintain and develop sites to enhance activities associated with a forest environment to provide a safe aesthetically pleasing, nonurban atmosphere and to support dispersed recreation opportunities	a Manage for Rural conditions in areas having higher standard facilities Manage for Roaded Natural 1 in the minimally developed areas b Maintain existing recreation facilities if use is 10% or more of practical capability Rehabilitate as needed c Shorten the use season or close a recreation facility if use is less than 10% of practical capacity for three consecutive years d Expand existing areas or designate overflow areas only if use equals practical capacity for five or more days per year, and maintenance and rehabilitation have been accomplished.

Table III-14 Direction for Management Area 12 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Recreation Management (continued)	2 Determine appropriate management levels for patrolling, cleaning, and providing public contact based on amount of use	
Trails Management	1 Provide trail opportunities as appropriate	
	2 Maintain trails for the intended use	a Maintain trails to Maintenance Levels 3-5
Wildlife and Fish Resource Management	1 Enhance opportunities to view wildlife	
Vegetation Management	1 Use silvicultural practices when needed to maintain health of vegetation and desired mix of species Manage as lands not selected for timber production	a Refer to Forest-wide Direction for a list of tree cutting practices appropriate to land not selected for timber production
Gathering Forest Products	1. Issue no permits for gathering forest products	
	2 Allow collection of dead and down fuelwood for on-site use	

Table III-14 Direction for Management Area 12 (continued)

ACTIVITIES	GENERAL DIRECTION		STANDARDS
Soil and Water Management	1	Maintain sanitary water supplies.	
	2	Rehabilitate and stabilize eroding areas	a Use steps, trail surfacing or other techniques to control patterns of use to protect soil and water resources.
Minerals Management	1	Manage mineral activities to be compatible with a pleasing recreational experience	a Stipulate no surface occupancy in all leases
Special Uses	1	Issue permits for special uses only when compatible with management of the developed area	
Road Planning Construction and Maintenance	1	Design all roads for all-weather use and high traffic volumes	
	2	Maintain roads for intended use	
Prescribed Burning	1	Use prescribed burning only to reduce wildfire danger or to enhance desired vegetation	a Accomplish prescribed burning only when facility is closed to the public

MANAGEMENT AREA 13

These lands are special interest areas that are managed to protect, and where appropriate, foster public use and enjoyment of unique scenic, geological, botanical or zoological attributes.

No land is classified as selected for timber production, and all other resource management activities are modified to be compatible with the special attributes of each area.

Management Area 13 includes 5 Forest Service administratively designated Scenic Areas--Looking Glass Rock, Glen Falls, John Rock, Whitewater Falls and Craggy Mountain (Craggy Mountain is also a designated Wilderness Study Area). This management area includes special interest areas identified for registration by the **NCNHP** of the State of North Carolina. These areas include significant examples of the diverse natural communities of the Southern Appalachians which may also include unique scenic, botanical, zoological or geological features. Specific management direction for each of these areas is presented in last section of this chapter which lists all areas that will be registered with the **NCNHP**.

Table III-15 Direction for Management Area 13

ACTIVITIES	GENERAL DIRECTION	STANDARDS
GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE		
Visual Resource Management	1 Manage area to emphasize special characteristics	a Manage for a Retention VQO in administratively designated scenic areas
Dispersed Recreation Management	1 Emphasize nonmotorized recreation opportunities favoring hiking Allow motorized recreation opportunities where areas are accessed by open roads and special characteristics can be maintained	a Manage to meet the recreation experience of adjoining management areas, experience can vary from Roaded Natural I to Semi-Primitive Non-Motorized
	2 Provide no opportunities for vehicles commonly classified as ORV's	
	3 Provide facilities as needed to promote public enjoyment of the area or to protect unique characteristics	
	4 Manage for low site impacts from human use	a Allow evidence of use to be noticeable, but not dominant
Trails Management	1 Provide trail opportunities as appropriate for use enjoyment, and protection of the area	
	2 Manage existing trails to protect the sensitive features of each area	
	3 Maintain trails for the intended use	

Table III-15 Direction for Management Area 13 (continued)

ACTIVITIES	GENERAL DIRECTION		STANDARDS
Wildlife and Fish Resource Management	1	Implement management activities compatible with the special needs of the area	
Vegetation Management	1	Manage area as land not selected for timber production.	a. Refer to Forest-wide Direction for a list of tree cutting practices appropriate to land not selected for timber production
Gathering Forest Products	1	Issue permits for collection of forest products according to Forest-wide Direction as long as special values of the area are protected	
Minerals Management	1	Manage mineral activities to protect the unique characteristics of the area	a Stipulate no surface occupancy in new leases
Special Uses	1	Issue permits for new special uses only when the character of the area can be protected	
Land Adjustment and Rights-of-Way	1.	Determine appropriateness of public ownership prior to land exchange or boundary adjustment projects	

Table III-15 Direction for Management Area 13 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Road Planning Construction and Maintenance	1 Allow new road construction only when justified by site-specific analysis and when special values of the area can be protected	
Wildfire Management	1 Suppress wildfires using techniques which will have the least impact on special features	a Emphasize handtool construction of firelines Permit machine use only when a fireline constructed with handtools would be ineffective for fire control.
Prescribed Burning	1 Allow prescribed burning where necessary to promote individual plant species	

MANAGEMENT AREA 14

This management area consists of the Appalachian National Scenic Trail and its foreground zone as mapped through the Visual Management System. The Trail generally follows the crest of the Appalachian Mountains and is characterized by a predominantly natural appearing environment. The total trail distance in North Carolina is approximately 223 miles and encompasses parts of 5 of the 8 Ranger Districts (Toecane, French Broad, Cheoah, Wayah and Tusquitee). The Trail passes through the Southern Nantahala Wilderness and several balds.

The Appalachian Trail is an internationally renowned footpath that extends 2,150 miles from Maine to Georgia. The Trail is administered by the Secretary of Interior, in consultation with the Secretary of Agriculture, and managed in partnership among the Forest Service, local Appalachian Trail Clubs and Appalachian Trail Conference.

Management emphasis for this area is in accordance with the National Trails System Act (Public Law 90-543) and carried out through the Cooperative Management System as defined in the Appalachian Trail Comprehensive Plan. Management practices will strengthen the role of the volunteer and protect the Trail for the conservation and enjoyment of the nationally significant scenic, historic, natural, and cultural qualities of the land through which the Trail passes.

Table III-16 Direction for Management Area 14

ACTIVITIES	GENERAL DIRECTION	STANDARDS
<p>GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION RELER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE</p>		
<p>Management Area Delineation</p>	<p>1 Use the foreground of the Trail as mapped according to the Forest Service Visual Management System in consultation with the Appalachian Trail (AT) Clubs and Appalachian Trail Conference (ATC) Field Office as the management area boundary</p>	<p>a Delineate the foreground with a minimum width of 100 feet in slope distance on each side of the Trail or to a greater width if necessary</p> <p>b Consider variations in terrain, land cover, land management, scenic and historic points of interest natural features, cultural qualities, recreational values, including shelters, associated viewpoints, water sources, and access trails to these features, and other factors that shape the Trail environment or that may affect operation development, and maintenance of the Trail when determining the width of the Trail zone</p> <p>c Map the boundary on-the-ground during leaf-off season</p> <p>d Review boundary periodically for adjustments needed to reflect Trail relocations or to enhance the Trail environment</p>

Table III-16 Direction for Management Area 14 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Administration	<p>1 Prior to evaluating management actions associated with the Trail, review direction found in the following laws, memorandums of agreement, guidelines and Forest Service directives</p> <p>Legislation</p> <ul style="list-style-type: none"> - National Trails System Act, October 2, 1968 - National Trails System Act Amendment, March 21, 1978 - Amendment to National Trails System Act in the National Parks and Recreation Act of 1978 - Amendment to National Trails System Act, March 15, 1983 <p>Memorandums of Agreement.</p> <ul style="list-style-type: none"> - Memorandum of Agreement between the National Park Service and the U S Forest Service concerning the Appalachian National Scenic Trail, October 6, 1970 - Memorandum of Understanding between the Forest Service and the Appalachian Trail Conference concerning the Appalachian National Scenic Trail. May 18, 1980 - Memorandum of Agreement between the Department of Agriculture and the Department of Interior for the Development and Operation of the National Trails System, May 1969. 	

Table III-16 Direction for Management Area 14 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Administration (continued)	<p>1 Prior to evaluating management actions associated with the Trail, review direction found in the following laws, memorandums of agreement, guidelines and forest Service directives. (continued)</p> <p>Guidelines</p> <ul style="list-style-type: none"> - Comprehensive Plan for the Protection, Management, Development, and Use of the Appalachian National Scenic Trail, signed by the Chief of the Forest Service, August 10, 1981. - Appalachian Trail Conference Stewardship Manual Trail Design, Construction and Maintenance, 1981 - Overnight-Use Management Principles, approved by Appalachian National Scenic Advisory Council 1977 - Forest Service <u>Regional Guide for the South</u>, 1983 - Appalachian National Scenic Trail Relocation Procedures, signed by Chief of the Forest Service, June 24, 1976 <p>Forest Service Directives</p> <ul style="list-style-type: none"> - Forest Service Manual 2353, Region 8 Supplement Number 42, September 1983 	<p>a Maintain an Agreement for Sponsored Voluntary Services between each Ranger District and their partner Trail Club</p> <p>b Review or revise Agreement annually.</p>
	<p>2. Preserve and strengthen the role of the volunteer in the management of the Trail.</p>	

Table III-16 Direction for Management Area 14 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Administration (continued)	3 Participate in the ATC local management planning process carried out by the Clubs	a Coordinate work projects for the Trail at the District level with partner Trail Clubs and conduct a work planning session at least once annually
	4 Initiate coordination at the District level for resource management activities adjacent to the Trail	a. Initiate at the earliest stage of planning possible b Consult on annual basis with partner Trail Club and ATC Field Representative on proposed projects that occur adjacent to the Trail management area
	5 Follow the 1981 planning, development, maintenance and administration responsibility agreement among the National Forests in North Carolina the Cherokee National Forest, the Carolina Mountain Club and the Tennessee Eastman Hiking Club for sections of the Trail on shared boundaries between Ranger Districts and National Forests or where the Trail meanders between Ranger Districts and National Forests	a Update agreement as necessary
Cultural Resource Management	1 Interpret interesting cultural resources through Trail maps, guidebooks, and signs where appropriate.	
Visual Resource Management	1 Manage area to achieve a natural appearing forest, management activities may create subtle modifications that would be noticeable but not draw the attention of an observer wandering through the area	a Manage all activities to meet the Retention VQO throughout the area

Table III-16 Direction for Management Area 14 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Visual Resource Management (continued)	2 Use the Forest Service Visual Management System to evaluate the visual impact of proposed management activities visible from the Trail and to identify areas where the visual experience or landscape character of the Trail could be enhanced	a Comply with the VQO of the management area in which the activity seen from the Trail occurs
	3 Emphasize management activities needed within the management area to preserve vistas, balds, meadows, and other open areas, so long as such activities reflect sensitivity to other Trail values	a Allow management activities to meet a short-term VQO of Modification when reestablishing or rehabilitating an opening.
Dispersed Recreation Management	1 Manage for a hiking trail experience emphasizing traditional Appalachian Trail values Give special concern to lands currently retaining a sense of the wild	a Manage as a simple footpath that lies lightly on the land b Manage to maximize Semi-Primitive Non-Motorized recreation opportunities Manage as Roaded Natural 2 where the Trail crosses an open road Analyze each road crossing to determine the length of Trail influenced
	2 Foster an unregimented atmosphere Encourage self-reliance and respect for Trail values by users	a Keep hiker regulations as unrestrictive as possible. Restrict use only to the extent proven necessary to protect the Trail, its environment, and the interests of adjacent landowners.
	3 Allow primitive camping except in areas posted with special restrictions	

Table III-16 Direction for Management Area 14 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Dispersed Recreation Management (continued)	4 Limit facilities to shelters, privies, stiles, spring boxes, registers, trailheads, and other facilities agreed to by the ATC and AT Clubs	a Construct facilities further than 100 feet from the Trail <ul style="list-style-type: none"> - Make decisions about constructing, removing, or relocating shelters on a case-by-case basis considering protection of the resource and hiker needs. Coordinate with the maintaining club - locate shelters reasonably accessible to the Trail (1/4 mile). - Locate shelters no closer than 2 miles from open roads and other access points where possible. - Provide toilets, tables, and fire rings at shelters when necessary.
	5 Manage for low to moderate site impacts from human use	a Allow evidence of use to be noticeable, but not dominant
	6 Communicate with hikers primarily through guidebooks and other literature distributed at Trail access points and administrative stations, and secondarily through signs and person contact along the Trail	a Cooperate with the ATC and clubs in providing effective public user information for the Trail
	7. Direct educational efforts toward making the public aware of the Trail's purpose and ways to enjoy it with the least environmental impact	

Table III-16 Direction for Management Area 14 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Dispersed Recreation Management (continued)	8 Manage the Trail within Wilderness in accordance to the appropriate legislation and direction for Management Area 7 (Wilderness)	a Consider user restrictions or trail relocation if trail use depreciates Wilderness b Retain and maintain existing facilities, but do not construct new facilities
	9 Allow hunting in accordance with State game laws	a Inform hikers of hunting seasons Advise hikers to wear international orange during big game season Post warning signs in heavy use areas
Trails Management	1. Base relocation decisions on the Optimal Trail Location Review for the Appalachian Trail	a Use the guidelines in the "Optimal Location Review, An Explanation of the Process" - Relocate the Trail, wherever desirable, when lying on lands within one mile of paralleling roads open to motor vehicles Give consideration to leaving the Trail in place and closing roads to vehicle use if they are no longer needed for resource management or their continued use is not in the public interest - Exercise care that Trail relocations and improvements not be a progressive loss of the primitive quality or simplicity of the footpath. - Insure that all relocations provide a Trail environment that is equal to or better than that of the existing location

Table III-16 Direction for Management Area 14 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Trail Management (continued)	1 Base relocation decisions on the Optimal Trail Location Review for the Appalachian Trail (continued)	b Include representatives from the responsible District, Club and the ATC Field Office in the optimal location review
	2 Manage trail for hiking use only Allow no motorized travel except where the Trail is on an open road or where an open road crosses the Trail	a. Prohibit ORV's, bicycles, horses, and pack stock including llamas b Sign Trail to indicate hiker use only
	3 Follow the relocation documentation procedures agreed to by the Appalachian Trail Conference, National Park Service and Forest Service in 1976	a Follow these relocation documentation procedures. Class I - Trivial (Deviations of less than 1,000 feet in length and less than 75 feet laterally from the approved location of the Trail) - Require verbal consultation and written notification between the District and Club making the relocation. Require no written approval. - Notify ATC of any changes to the guidebook. - Consider a trivial change a Class II relocation if the relocation results in a change in landownership

Table III-16 Direction for Management Area 14 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Trails Management (continued)	3 Follow the relocation documentation procedures agreed to by the Appalachian Trail Conference, National Park Service, and Forest Service in 1976. (continued)	<p>a Follow these relocation documentation procedures (continued)</p> <p>Class II - Minor (Deviations of more than 1,000 feet in length or more than 75 feet laterally from the last approved location, provided that the relocation does not affect the verbal description or maps published in the Federal Register)</p> <ul style="list-style-type: none"> - Forward relocation approval request to the designated representative of the Secretary of Interior and the Appalachian Trail Conference. Include signatures indicating that the relocation proposal has been agreed upon by the District and Club. - Consider a minor change a Class III relocation if the maintaining Club does not concur with the relocation proposal

Table III-16 Direction for Management Area 14 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Trails Management (continued)	3 Follow the relocation documentation procedures agreed to by the Appalachian Trail Conference, National Park Service, and Forest Service in 1976 (continued)	<p>a Follow these relocation documentation procedures (continued)</p> <p>Class III - Major (Deviations which require change in the last approved verbal description or maps published in the Federal Register)</p> <ul style="list-style-type: none"> - Forward the relocation agreed upon by Forest Service and Club to the designated representative of the Secretary of Interior and the Appalachian Trail Conference - Include a copy of the current map and description from the Federal Register showing the proposed relocation and amended language - Include a Class III relocation checklist in all relocation requests - Include letters showing explanation of differences of opinion when concurrence with managing Club is not attainable

Table III-16 Direction for Management Area 14 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Trails Management (continued)	4. Construct and maintain the Trail according to The Appalachian Trail Stewardship Series Trail Design, Construction, and Maintenance	a Design the treadway according to the soils, drainage, vegetation and topography. Incorporate features to mitigate impacts on the environment and provide a stable trail location.
		b Allow a diversity in the appearance of the Trail and facilities within established standards.
		c Consider safety in Trail design, construction, and maintenance without sacrificing the aspect of the Trail which challenges a hiker's skill and stamina.
	5 Identify the Trail through signs and blazes according to Forest Service and Appalachian Trail Conference Standards.	a Assure appropriate marking of the Trail with the standard white blaze (2 x 6 inch vertical rectangle).
		b Give preference to routed wood signs. Consider stenciled metal or engraved rock where vandalism is a problem.

Table III-16. Direction for Management Area 14 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Trails Management (continued)	5 Identify the Trail through signs and blazes according to Forest Service and Appalachian Trail Conference Standards (continued)	<p>c Give preference to use of the AI diamond over the National Scenic Trail triangle</p> <p>d Inform hikers of potential hazards which may not be obvious or expected Sign at trailheads and on the Trail where warranted</p> <p>e Give priority to signing trail and road intersections</p> <p>f Provide sufficient signing to inform hikers of significant features and distances to major road crossings.</p> <p>g Show mileages to important features to the nearest tenth of a mile</p>
	6 Retain blue blazed side trails to provide access to the Trail and to connect to points of interest, do not consider blue blazed side trails outside of the Management Area as part of the Trail	

Table III-16 Direction for Management Area 14 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Wildlife and Fish Resource Management	1 Recognize wildlife sightings as a desirable recreation experience and provide for opportunities to enhance this value	a Encourage the development of habitat improvements that are complementary to the Trail and promote opportunities to view a variety of wildlife species b Prescribe maintenance for habitat improvements that will be visually acceptable
Vegetation Management	1. Manage vegetation to maintain or improve the Trail environment	
	2 Manage area as land not selected for timber production	a Refer to Forest-wide Direction for a list of tree cutting practices appropriate to land not selected for timber production
	3 Layout timber skidding in adjacent management areas to avoid entering the Trail management area to the extent possible	a Analyze any skidding proposal Allow if it is the only alternative feasible and prudent. b Prohibit any skidding along the Trail itself or using the Trail for landings
	4. Use vegetative management practices to enhance and complement the visual resource.	

Table III-16 Direction for Management Area 14 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Soil and Water Management	1 Protect all sources of drinking water	a Locate trail tread, shelters, toilets, and primitive camps in such a way that they can not pollute drinking water sources
		b Maintain identified water sources in an essentially undeveloped condition Allow minor modifications to improve the collection of water
	2 Identify natural water sources that can be considered safe for drinking after boiling or other disinfection Emphasize the need to treat water before drinking	a Indicate location of water sources approximately every 3 miles with signs or blue blazed trails
		b Sign identified sources with warning sign at the point of collection Sign should say "Water should be boiled before use " Include warning statement in trail brochures and guides.
Minerals Management	1 Manage mineral activities to protect the character of trail corridor	a Stipulate in all new leases no surface occupancy
Special Uses	1 Issue new special uses only where there is an over-riding demonstrated public need or benefit	a Apply full mitigating measures to protect the Trail values and environment
	2 Permit access to privately owned property only when other access is impractical or infeasible	

Table III-16 Direction for Management Area 14 (continued)

ACTIVITIES		GENERAL DIRECTION		STANDARDS
Land Adjustment and Rights-of-Way	1	Acquire sufficient lands to protect the Trail values and provide an unbroken public right-of-way	a	Acquire lands or interests in lands inventoried in the <u>Appalachian National Scenic Trail Land Acquisition Inventory - Regions 8 and 9, April 1984</u> Adjust the inventory through the Optimal Trail Location Review
Transportation System Management	1	Manage all roads as closed to public vehicular use <i>except for open roads which cross the Trail</i>	a	Prohibit all motorized vehicles <i>except in emergencies, where the Trail is on an open road, where specific crossings for landowners have been arranged, or for special administrative needs</i>
	2	Provide parking facilities for convenience and to disperse hikers	a	Provide parking ideally at locations where the Trail can be accessed by a short spur trail rather than at locations where the Trail crosses a road
Road Planning Construction and Maintenance	1	Direct transportation planning toward minimizing road access	a	Minimize number of paralleling roads and crossings

Table III-16 Direction for Management Area 14 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Road Planning Construction and Maintenance (continued)	2 Evaluate proposed roads paralleling or crossing the Trail for potential undesirable impacts on the Trail and the hiker	<p>a Analyze all new roads crossing or paralleling the Trail within one mile. Consider</p> <ul style="list-style-type: none"> - noise levels which would occur at points along the Trail. - character of the Trail in proximity to the proposed road; - standards and management of the road, - Trail use in the area. - experience level Recreation Opportunity Spectrum (ROS class) established for the Trail in this area. - cost of alternatives; - potential for uncontrolled and unlawful motorized access, and, - mitigation measures. <p>b Minimize number of roads within 1/2 mile of the Trail.</p> <p>c Allow road locations that are the only feasible and prudent alternative and after all impacts have been minimized.</p>

Table III-16 Direction for Management Area 14 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Wildfire Management	1. Control all fires at the smallest practical size at all fire intensity levels	
Prescribed Burning	1 Allow prescribed burning to accomplish resource objectives when compatible with the trail	a Construct fire lines to the smallest effective clearing necessary to control the fire Allow use of Trail as a fire line

MANAGEMENT AREA 15

These are existing Wild and Scenic Rivers and the adjacent lands that make up the river corridors. They include the Congressionally designated Chattooga and Horsepasture Wild and Scenic Rivers.

Wild and Scenic Rivers are managed to maintain and enhance the wild, scenic, and riparian features of the river and to provide water-oriented opportunities in a natural setting. All lands are managed as not selected for timber production, and other resource management activities are restricted or modified to be compatible with the river resource.

Table III-17 Direction for Management Area 15

ACTIVITIES	GENERAL DIRECTION	STANDARDS
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GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE

General	1 Manage rivers according to experience classifications	a Manage for the following classifications - Chattooga River - Scenic for entire section in North Carolina; and - Horsepasture River - Scenic from base of Rainbow Falls to the National Forest boundary, Recreation from National Forest boundary below Drift Falls to the National Forest boundary below Rainbow Falls
Visual Resource Management	1 Manage to maintain the unique characteristics and scenic values of the river corridor	a. For the Chattooga River Meet a VQO of Retention. Meet a VQO of Preservation where the Ellicott Rock Wilderness overlaps the wild and scenic river corridor (from Iron Bridge to the border between North Carolina and South Carolina)

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Table III-17 Direction for Management Area 15 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Visual Resource Management (continued)	1 Manage to maintain the unique characteristics and scenic values of the river corridor (continued)	b For the Horsepasture River Meet a VQO of Partial Retention from the National Forest boundary below Drift Falls to Rainbow Falls. Meet a VQO of Retention from base of Rainbow Falls to the National Forest boundary
Dispersed Recreation Management	1 Emphasize river oriented nonmotorized recreation opportunities favoring hiking, fishing, viewing wildlife and scenery, and nature observation	a Manage the entire Chattooga River corridor for a Semi-Primitive Non-Motorized recreation experience. b. Manage the Horsepasture River corridor - from the National Forest boundary below Drift Falls to Rainbow Falls as Roaded Natural 2; and - from the base of Rainbow Falls to the National Forest boundary for a Semi-Primitive Non-Motorized recreation experience
	2 Provide no opportunities for vehicles commonly classed as ORV's	

Table III-17 Direction for Management Area 15 (continued)

ACTIVITIES	GENERAL DIRECTION		STANDARDS	
Dispersed Recreation Management (continued)	3	Provide facilities as needed for public safety, resource protection and enhancement of the recreational experience	a	Consider a viewing platform located above Rainbow Falls on the Horsepasture River
			b	Provide parking and trailhead facilities at Grimshaws and the Iron Bridge on the Chattooga River
	4	Allow primitive camping when compatible with river values	a	Allow evidence of use to be noticeable, but not dominant
Trails Management	1	Manage trails for hiking use only.		
	2	Manage trails for a variety of difficulty levels dependent on the desired recreation experience	a	Manage Chattooga River trails for the "More" to "Most Difficult" levels
			b	Manage Horsepasture River trails for the following difficulty levels "Easiest" from the National Forest boundary below Drift Falls to Rainbow Falls; and "Easiest" to "Most Difficult" from the base of Rainbow Falls to the National Forest boundary

Table III-17 Direction for Management Area 15 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Trails Management (continued)	3 Provide access for use and enjoyment of the rivers consistent with the river classification	a Favor access that provides viewing opportunities in scenic sections. Design trails for resource protection and some user comfort. b Manage for more concentrated use in recreation sections. Provide for user comfort, safety and resource protection.
	4 Maintain trails consistent with river classification	a Maintain trails to the following standards: Scenic - Levels 2-3 Recreation - Levels 3-5
Recreation Management (Private and Other Public Sector)	1 Issue commercial recreation use permits consistent with capabilities of the area	a Issue no commercial permits for floating, canoeing, rafting, or kayaking
Wildlife and Fish Resource Management	1 Refer to direction for Management Area 18.	
Vegetation Management	1 Manage as not selected for timber production	a Refer to Forest-wide Direction for a list of tree cutting practices appropriate to land not selected for timber production
Minerals Management	1 Allow no mineral activities	

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Table III-17. Direction for Management Area 15 (continued)

ACTIVITIES	GENERAL DIRECTION		STANDARDS
Special Uses	1	Issue permits for new special uses only when compatible with special values of the area or as specified in acquisition agreements	
Land Adjustment and Rights-of-Way	1	Emphasize acquisition of private lands within river corridors by donation or exchange	a Consider scenic easements to protect river values only when acquisition of fee simple title is improbable
Transportation System Management	1	Manage most roads closed to public motorized traffic	a Allow Bull Pen Road, the Bohaynee Beach road system, and the existing access road to the lower portion of Horsepasture River to remain open to motorized vehicles
	2	Allow administrative use of closed roads for emergency purposes and for facility or trail construction and maintenance.	

Table III-17 Direction for Management Area 15 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Road Planning Construction and Maintenance	1 Allow no new road construction which would be open to public motorized vehicles	a Consider reconstruction and relocation of existing open roads b Allow construction of a road to access the middle reaches of the Horsepasture River to aid in search and rescue operations.
Wildfire Management	1 Suppress wildfires using techniques which will have the least impact on special features	a Emphasize handtool construction of fire lines Permit machine use only when a fire line constructed with handtools would be ineffective for fire control.
Prescribed Burning	1 Use prescribed burning as necessary to maintain or enhance the unique resource values of the area.	

MANAGEMENT AREA 16

This land provides support facilities for the Forests and the public. It includes District offices and workcenters, Job Corps Centers, the Beech Creek Seed Orchard and other facilities.

Table III-18 Direction for Management Area 16

ACTIVITIES	GENERAL DIRECTION	STANDARDS
GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSID HERE		
Visual Resource Management	1 Manage all administrative sites to provide an inviting public perception.	a Meet VQO's ranging from Retention to Maximum Modification consistent with the setting where the facility is located.
Dispersed Recreation Management	1 Provide information services for visitors at Ranger District offices to enhance their recreation experience 2 Manage sites as closed to hunting Close surrounding areas to hunting use where public safety is threatened	a Manage for a recreation experience ranging from Rural to Roaded Natural 1.
Trails Management	1 Provide trail opportunities as appropriate 2 Maintain trails for the intended use	a Maintain trails to maintenance levels 3-5
Wildlife and Fish Resource Management	1 Allow management activities to enhance opportunities to view wildlife	
Vegetation Management	1 Manage as not selected for timber production	a Refer to Forest-wide Direction for a list of tree cutting practices appropriate to land not selected for timber production. b Manage the seed orchard for the production of seed and progeny test seedlings.

Table III-18 Direction for Management Area 16 (continued)

ACTIVITIES		GENERAL DIRECTION	STANDARDS
Gathering Forest Products	1	Issue no permits for gathering forest products	
Soil and Water Management	1	Use municipal water and sewage systems when suitable	
	2	Maintain sanitary water supplies	
Minerals Management	1	Issue permits for minerals only when stipulations in leases will be compatible with administrative needs and public use of administrative sites	
Special Uses	f.	Issue special use permits only when administrative use is not impaired	
Road Planning Construction and Maintenance	1	Design all roads for all-weather use and appropriate traffic volumes	
	2	Maintain roads for intended use	
Wildfire Management	1.	Control wildfires promptly	
Prescribed Burning	1.	Use prescribed burning to reduce wildfire danger, enhance desirable vegetation, or benefit administrative needs	
Pest Management	1	Allow routine commercial treatments to control pests in buildings.	

MANAGEMENT AREA 17

These lands are natural appearing mountain balds that are, or were historically, generally treeless openings of grasses or shrubs. They are usually found on the crest of mountains and ridges.

Balds are managed to perpetuate their unique vegetative communities and scenic qualities, and to provide compatible nonmotorized recreation opportunities.

Table III-19 Direction for Management Area 17

ACTIVITIES	GENERAL DIRECTION	STANDARDS
<p>GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE</p>		
General	<p>1 Evaluate each bald for specific actions needed to maintain or improve its unique characteristics</p>	
Visual Resource Management	<p>1 Maintain the distinctive visual character of grass and heath balds</p>	<p>a Manage for the Retention VQO</p> <p>b Allow management activities to meet the Modification VQO when reestablishing or rehabilitating a bald</p>
Dispersed Recreation Management	<p>1 Emphasize non-motorized recreation opportunities favoring hiking, viewing scenery, and nature observation</p>	<p>a Manage for Semi-Primitive Non-Motorized or Roaded Natural 2 conditions depending on the type of recreation opportunity in adjacent management areas</p>
Trails Management	<p>1 Emphasize trail opportunities for hiking Provide some opportunities for horseback riding where suitable</p>	
Wildlife and Fish Resource Management	<p>1 Maintain habitat conditions for the large group of animals that benefit from young vegetation Emphasize habitat for specific Management Indicator Species that represent this group</p>	<p>a Manage habitat primarily for deer and grouse.</p>

Table III-19 Direction for Management Area 17 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Vegetation Management	1 Manage as not selected for timber production	a Refer to Forest-wide Direction for a list of tree cutting practices appropriate to land not selected for timber production
	2. Manage vegetation to preserve and perpetuate the desired successional stage and to reclaim desired plant communities	a Consider the following methods for reducing or eliminating undesirable vegetation - Grazing, - Prescribed burning, - Hand or machine clearing, - Mowing, and - Herbicides
Minerals Management	1 Restrict mineral activities where necessary to protect area resources	a Stipulate no surface occupancy in any new lease.
		b Issue no permits for common variety minerals
Transportation System Management	1 Provide limited seasonal access for motorized vehicles	a Allow use of Investor Gap Road on a seasonal basis.
	Road Planning Construction and Maintenance	1 Allow new road construction only when site-specific analysis justifies need for the activity and visual quality objectives are met
Prescribed Burning	1 Use prescribed burning to maintain balds where appropriate.	

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MANAGEMENT AREA 18

The Riparian Management Area, embedded in other management areas, consists of the aquatic ecosystem, riparian ecosystem and closely associated plant and animal communities. This area includes at a minimum: perennial streams and perennial waterbodies, wetlands, 100-year floodplains and a zone on each side of all perennial streams and lakes.

The area will be actively managed to protect and enhance, where possible, the distinctive resource values and characteristics dependent on or associated with these systems. For example, timber management can only occur in this area if needed to maintain or enhance riparian habitat values.

The area may provide animal travel corridors between disjunct habitat units. Where management includes the establishment of early successional stage plots such as wildlife openings, the riparian area boundary will be expanded to still ensure an adequate travel corridor. Values and characteristics of the area include, but are not limited to:

- Riparian-dependent plant and animal communities;
- Fish populations, including both wild and hatchery supported;
- Aquatic organisms;
- Stream channels, including banks, pools, riffles and bottom materials;
- Stream flow quantity, quality and timing of flows;
- Ground water resources;
- Water-based and water-oriented recreation;
- Water-based cultural resources; and
- Scenery

Riparian areas determine the nature, quality, and health of many components of a forest ecosystem because they represent the transition zone between aquatic and terrestrial communities. They are a primary influence on whether water quality is poor or excellent, whether stream fisheries habitat is rich with an abundance of large woody debris, whether high quality food and cover are available for terrestrial animals, and whether stream associated plant communities are maintained.

A high quality riparian area is one that maintains natural hydrologic functioning. It optimizes precipitation infiltration and runoff so as to enhance stream stability and minimize erosion. Instream flow is maintained at levels necessary to perpetuate diverse communities of aquatic organisms in a healthy state. A high quality riparian area has a diverse assemblage of mature trees which can provide large woody debris for fisheries habitat and suitable conditions for late successional terrestrial plant and animal communities.

Because diverse vegetation conditions may favor both aquatic and terrestrial trophic cycles, riparian vegetation may need to be actively managed to favor grasses, forbs, and succulents in selected near stream areas to increase terrestrial insect production available to fish and turkeys, for example, and to provide food for other early successional species of wildlife, thereby increasing biological diversity and productivity in the riparian area. Such vegetation management may involve the creation of near stream wildlife openings or restoration to a more diverse assemblage of species and stand structure. However, the dominant characteristic of riparian areas is predominately undisturbed, natural conditions strongly influenced by the accumulation of woody materials from mature trees. Where species or stand structure is manipulated, silvicultural treatments will be used to favor the diversification of riparian area plant and animal communities without negatively influencing stream temperature, natural hydrologic functioning, or travel corridor quality.

Table III-20 Direction for Management Area 18

ACTIVITIES	GENERAL DIRECTION	STANDARDS
<p>GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE</p>		
<p>Management Emphasis</p>	<p>1. Enhance Riparian Values. (See discussion for riparian area description).</p> <p>2. Use an interdisciplinary team to identify and map riparian management area based on field observation of riparian characteristics such as floodplains and vegetation, and riparian related values discussed in the riparian area description. Until identified consider riparian areas as 100 feet (horizontal distance) on each side of a perennial stream or around a lake</p>	<p>a Identify the riparian area using a minimum of 30 feet each side of a perennial stream and/or wider as needed to enhance riparian values</p>

Table III-20 Direction for Management Area 18

ACTIVITIES	GENERAL DIRECTION	STANDARDS				
GENERAL DIRECTION AND STANDARDS SHOWN FOR THIS MANAGEMENT AREA ARE ONLY THOSE ADDITIONAL TO OR MORE SPECIFIC THAN FOREST-WIDE DIRECTION REFER TO FOREST-WIDE DIRECTION FOR ALL ACTIVITIES AND PRACTICES NOT ADDRESSED HERE						
Visual Resource Management	1. Manage area so that management activities are not generally a dominant feature of the landscape.	a. Manage to meet the following Visual Quality Objectives (VQO's) in seen areas: Partial Retention if the VQO for the adjacent management area is Partial Retention, Modification, or Maximum Modification. Retention if the VQO for the adjacent management area is Retention. b. Use the following techniques for activities occurring in areas that can be seen from trails, open roads, recreation areas, lakes or rivers: <table border="0"> <thead> <tr> <th>VQO</th> <th>TECHNIQUE</th> </tr> </thead> <tbody> <tr> <td>R.PR 1</td> <td>Establish irregular shaped openings and avoid straight lines or geometric forms except as necessary along landlines.</td> </tr> </tbody> </table>	VQO	TECHNIQUE	R.PR 1	Establish irregular shaped openings and avoid straight lines or geometric forms except as necessary along landlines.
VQO	TECHNIQUE					
R.PR 1	Establish irregular shaped openings and avoid straight lines or geometric forms except as necessary along landlines.					

Table III-20 Direction for Management Area 18 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Visual Resource Management (continued)	1 Manage area so that management activities are not generally a dominant feature of the landscape (continued)	<p>6 Use the following techniques for activities occurring in areas that can be seen from trails, open roads, recreation areas, lakes or rivers (continued)</p> <p>VQO TECHNIQUE</p> <p>R,PR 2 Leave flowering and ornamental vegetation where practical to enhance vegetative variety.</p> <p>R 3 Remove visible slash, except brush barriers for erosion control, from the edge of a road or trail up to a maximum of 150 feet. Burn or lop and scatter slash to within 2 feet of the ground in the rest of the seen area.</p> <p>PR 4 Burn or lop and scatter slash to within 2 feet of the ground or burn for 100 feet beyond edge of road or trail.</p> <p>R,PR 5. Screen or blend in roads and skid roads.</p> <p>R,PR 6. Exclude special uses from view where practical.</p>

Table III-20 Direction for Management Area 18 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Developed Recreation Management	1 Make any necessary new recreation facility construction compatible with management area objectives. Generally locate developments outside this area	
	2 Manage existing developed sites to be compatible with management area objectives	
Dispersed Recreation Management	1. Emphasize nonmotorized recreation opportunities	a Manage for Roaded Natural 1, Roaded Natural 2 or Semi-Primitive Non-Motorized conditions depending on the type of recreation opportunity in adjacent management areas
	2 Allow vehicular parking in designated areas only.	
	3 Manage for low to moderate site impacts from human use	<p>a <u>Permanently close and rehabilitate sites that cannot accommodate use without unacceptable impacts to riparian area resources.</u></p> <p>b <u>Rehabilitate active sites that are contributing visible sediment to the stream channel. Use site specific analysis to determine rehabilitation needs that will prevent or minimize sediment from reaching the stream channel.</u></p>

Table III-20 Direction for Management Area 18 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Trails Management	1 <u>Manage all trails to minimize adverse effects on riparian area resources</u>	<p>a <u>Allow trail construction, reconstruction or redesignation of use only when a site specific analysis indicates that adverse effects will be avoided or effectively mitigated</u></p> <p>b <u>Design and maintain all types of trails so no visible sediment reaches the stream channel, except at crossings where visible sediments and surface runoff entering the channel will be minimized as directed by the NC PPGRWQ for silviculture.</u></p>
Wildlife and Fish Resource Management	<p>1 Manage streams for self-sustaining fish populations where conditions are favorable. Provide conditions for the large group of game and non-game animals that are dependent on aquatic and riparian systems. Emphasize habitat for specific Management Indicator Species which represent this group</p> <p>2 Manage streams for wild trout where conditions are favorable. Identify trout streams using designations by the North Carolina Wildlife Resources Commission or where population inventories indicate self sustaining populations.</p> <p>3 Retain suitable cavity trees, well dispersed throughout the area</p>	<p>Manage habitat primarily for raccoon, pileated woodpecker, trout, and smallmouth bass</p> <p>a Improve habitat of wild trout streams as a first priority</p>

Table III-20 Direction for Management Area 18 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Vegetation Management	<p>1. Manage for a desired condition of approximately 100 pieces per stream mile of large woody debris 9 inches minimum width by 6 feet minimum length, reasonably distributed.</p> <p>Retain all large woody debris unless condition exceeds that desired (see #1 above)</p> <p>2. Manage riparian areas as unsuitable for timber production during the 10-15 year period of the plan. Use vegetation management methods appropriate for land not suited for timber production.</p> <p>3. Design and apply activities to prevent the compaction, erosion, and reduction of infiltration capacity of the soil</p>	<p>a. Base decisions regarding retention, addition or removal of large woody debris on site-specific analysis. Coordinate with scenery and recreation objectives</p> <p>a. <u>Ground (soil) disturbing activities are allowed only when site specific analysis and design indicates the activity can be satisfactorily mitigated to protect the riparian dependent resources. These activities include, but are not limited to: skidding of logs; developed skid roads and skid trails, temporary and permanent roads, log landings and loading areas, site preparation with hand tools or chainsaws, and the depositing of waste materials</u></p>

Table III-20 Direction for Management Area 18 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Vegetation Management (continued)	4 Maintain appropriate stream temperatures and stream environment, and protect stream banks	<p>a Maintain a near continuous cover using a combination of overstory and understory forest vegetation for 30 feet on either side of a perennial stream. Refer to Forest-wide Direction for a list of tree cutting practices appropriate to land not selected for timber production. In cable logging units, near continuous cover may sometimes be provided by understory vegetation only. <u>When needed, create skyline corridors not to exceed 20 feet in width through riparian areas by cutting the overstory to prevent uprooting of trees along streambanks.</u></p> <p>b Minimize the use of mechanical equipment that would disturb the stream environment.</p>
<u>Soil and Water Management</u>	1 <u>Maintain the natural hydraulic and hydrologic functioning of the stream channel and protect the integrity of the stream system including channel, banks and stream bottom.</u>	<p>a <u>Allow changes in stream flow timing, channel banks, and channel bed only when the adverse effects to the riparian dependent or closely associated resources can be avoided, mitigated or are within acceptable limits as determined by site specific analysis.</u></p> <p>b <u>Emphasize protection of perennial and intermittent streams in compliance with NC FPGRWQ.</u></p> <p>c <u>Do not skid timber or otherwise operate equipment up or down (in) intermittent or ephemeral stream channels.</u></p>

Table III-20 Direction for Management Area 18 (continued)

ACTIVITIES	GENERAL DIRECTION		STANDARDS
Minerals Management	1	Restrict mineral activities where necessary to maintain riparian values	a Stipulate no surface occupancy in any new lease except for needed roads
Transportation System Management	1	Manage roads according to management area direction for the adjacent management area	
Road Planning Construction and Maintenance	1	Plan new roads to minimize the amount of roadbed that occurs within the riparian area dependent on site conditions and resource protection needs	a Provide for fish passage in all stream crossings, <u>except where fish management objective is to prevent passage</u>
	2	Construct and maintain roads to management standards for the adjacent management area.	
	3	Emphasize stream crossing structures that protect the stream bank and disrupt the stream channel only one time	a Use either permanent or temporary bridges, fords, or culverts for all road, motorized trail, and four-wheel-drive way crossings. Do not use brush-, log-, or dirt-filled crossings Use fords only when physical conditions of approaches and streambed allow fords to be designed and maintained to prevent visible siltation.
			b <u>Cross channels at right angles where possible.</u>
			c <u>Where possible, do not allow "grade sag" over the crossings</u>
			d <u>Design and construct stream crossings to comply with the NC FPGRWQ</u>

Table III-20 Direction for Management Area 18 (continued)

ACTIVITIES	GENERAL DIRECTION	STANDARDS
Wildfire Management	1 Construct fire lines to minimize ground disturbance	a Construct fire line with hand-tools unless ineffective for fire control b Rehabilitate machine constructed fire lines within 2 weeks after use
Prescribed Burning	1. Use only prescribed fire that does not kill the shade provided by a forest canopy or expose mineral soil by consuming the duff and humus layers	

SPECIAL INTEREST AREAS

The following describes management direction for special interest areas which are identified for registration by the NCNHP of the State of North Carolina. All of these special interest areas are classified as not selected for timber production and not available for use by vehicles commonly classified as "off-road vehicles".

NANTAHALA NATIONAL FOREST

CHEOAH RANGER DISTRICT

Joyce Kilmer Memorial Forest

Joyce Kilmer Memorial Forest is situated approximately 7 air miles west of Robbinsville, N.C. and may be accessed by State Road 1127 and Forest Service Road 416. The Memorial Forest encompasses 3,840 acres of the Little Santeetlah Creek watershed, extends from 2,400 to 5,300 feet in elevation, and is part of the 15,000-acre Joyce Kilmer-Slickrock Wilderness which stretches westwardly into Tennessee.

Significance:

The Memorial Forest was established in 1936, before designation as Wilderness, as an outstanding example of a southern appalachian virgin forest. Features of the Forest are the association of cove and hemlock forest types with many trees over 300 years old, some over 20 feet in circumference and 100 or more feet in height. Above the cove-hemlock forest are good examples of a mixed mesic hardwood forest on moderate slopes and more xeric forest types on dry slopes and ridges.

Management Direction:

Maintain the natural condition of the area and plant succession. Maintain Stratton Bald Ridge in a condition suitable for Smoky Mountain manna grass. Apply management direction for Management Area 7. Register 3,840 acres with the NCNHP.

Santeetlah Creek Bluffs

Santeetlah Creek Bluffs is located approximately 10 air miles west of Robbinsville, N.C. and may be accessed from State Road 1127 and Forest Service Road 81. The area encompasses an estimated 495 acres of steep north and northwest facing slopes between Doc Stewart Ridge and Santeetlah Creek and ranges from 2,800 to 4,400 feet in elevation.

Significance:

The area is an undisturbed stand of large, old growth Canadian hemlock and yellow birch on steep, north-facing bluffs. Remoteness and lack of disturbance make it extremely valuable for scientific research.

Management Direction:

Manage the area to maintain the natural condition. Apply management direction for Management Area 13. Consider classification of the Bluffs as a Research Natural Area (RNA), Management Area (10). Register 495 acres with the NCNHP.

HIGHLANDS RANGER DISTRICT

Bonas Defeat Gorge

Bonas Defeat Gorge is part of the Tuckasegee River Gorge and is located 16 air miles southeast of Sylva. It may be accessed by a gravel road off State Highway 281. The area includes approximately 305 acres of NFS lands, of which 205 acres is in the Bonas Defeat - Wolf Creek Gorge area and 100 acres in the Flat Creek Falls area.

Significance:

The Gorge consists of steep, gneissic rock cliffs and exposed stream bed with features illustrating hydraulic action and geologic forces: potholes, cascades, and large boulders. The 250-foot high waterfall at Flat Creek is particularly scenic.

Management Direction:

Management directed at protection of geologic and scenic features is a primary consideration. Allow compatible, low impact, recreational use such as hunting, fishing, and nature study. Apply management direction for Management Area 13. Register 305 acres with the NCNHP.

Bryson Branch

Bryson Branch, also known as Joe Bryson Branch, is situated some 10 air miles northeast of Franklin. It is accessible from Forest Route 90 and includes 44 acres of NFS land along Joe Bryson Branch.

Significance

The area consists of a cove hardwood forest with a diversity of understory species, many of them calciphytes (calcium-loving). Plants considered uncommon in North Carolina are found among the understory species. In addition, there are rare bryophytes (mosses and lichens) in the area.

Management Direction:

Management will be directed at protection of vegetative diversity including rare and uncommon species. Allow low impact, recreational use such as nature study. Apply management direction for Management Area 13. Register 44 acres with the NCNHP.

Cole Mountain - Shortoff Mountain

Cole Mountain is located approximately 4 air miles north of Highlands and is accessible by State Road 1538 and Forest Service Trail #5 from Cole Gap. The area includes an estimated 56 acres of north and northeast slopes of NFS land at the summit of Cole Mountain, 4,500 feet in elevation.

Significance

The area supports good quality examples of several southern Appalachian plant communities including cove hardwoods, mixed oak and pine forests and rocky cliff flora of mosses and lichens.

Management Direction.

Maintain the natural plant community. Allow compatible low impact, recreation such as hiking, hunting, and nature study. Apply management direction for Management Area 13. Register 56 acres with the NCNHP.

Cullasaja Gorge

The Cullasaja Gorge area is located approximately 3 miles northwest of Highlands along the Cullasaja River. It is accessed by Highway 64 and encompasses 1,425 acres. Included in the area are: Dry Falls, Lower Cullasaja Falls; Clifftop Vista - Van Hook White Oak Stand; Stephens Creek, and a portion of Turtle Pond Creek.

Significance:

The Gorge has long been recognized as botanically diverse, scenically beautiful, and geologically unique in the Southern Blue Ridge. Numerous rare plants occur within the Gorge, and a fine example of a white oak dominated forest occurs on an east facing slope below Clifftop Vista at Van Hook Glade. This type of natural community is rarely encountered in the Southern Appalachians.

Management Direction

Maintain natural features of the area--scenic, botanical and geological. Allow low impact recreation for viewing scenery, scientific study, and photography. Apply management direction for Management Area 13. Register 1,425 acres with the NCNHP.

Ellicott Rock-Chattooga River

The area is situated at the border of North Carolina, Georgia, and South Carolina with Ellicott Rock a prominent point over the Chattooga River approximately 6 air miles southeast of Highlands. Access to the area is off State Road 107 by Forest Road 441 and foot trail 431. The area includes the Ellicott Rock Wilderness and Chattooga Wild and Scenic River for a total of 1,997 acres.

Significance

The area contains fine representative examples of natural communities in the Blue Ridge Escarpment of the Southern Appalachians with value for research and environmental education; some of these communities include plants and animals considered to be rare in North Carolina.

Management Direction.

Maintain the natural community and protect its features including flora and fauna. Apply management direction for Management Areas 7 and 15. Register 1,997 acres with the NCNHP.

Kelsey Tract

The Kelsey Tract is located approximately 2 air miles northeast of Highlands and may be accessed by foot trail off U S Highway 64. An estimated 256 acres of the tract are in a condition suitable for a natural area and extend from 3,600 to 4,200 feet in elevation.

Significance.

The Kelsey natural area is adjacent to the Nature Conservancy's Henry Wright Preserve. It consists of an old-growth mesic forest containing Canadian hemlock, Carolina hemlock, and table mountain pine. This climax hemlock forest is considered one of the best remnants of a forest that once extended over a thousand acres northeast of Highlands. Fauna in the area include the lemming vole and masked shrew, occurring at the southern limits of their ranges.

Management Direction:

Manage the area in its natural ecological condition as a climax forest. Provide for low impact use such as hiking, environmental education, and scientific study. Apply management direction for Management Area 13. Register 256 acres with the NCNHP.

Piney Knob Fork

Piney Knob Fork is located about 5 air miles west of Highlands and is accessed by State Road 1621. The area is 32 acres and ranges from 3,600 to 4,000 feet in elevation.

Significance:

As a relatively undisturbed natural community of white pine and Canadian hemlock, the area has been designated by the Society of American Foresters as a natural area for scientific and educational purposes.

Management Direction:

Manage the area as a natural community for scientific and educational purposes. Apply management direction for Management Area 13. Register 32 acres with the NCNHP.

Scaly Mountain and Catstairs

Scaly Mountain is located approximately 5 air miles southwest of Highlands and may be accessed by State Road 1621. The Catstairs are adjacent to State Road 106. The area encompasses 130 acres ranging in elevation from 3,800 feet at Catstairs to 4,800 feet at the summit of Scaly Mountain.

Significance

Scaly Mountain summit and slopes are fine examples of heath, outcrop, boggy seep, and dwarfed oak forest communities. The Bartram Trail skirts Scaly Mountain providing excellent views of nearby peaks including Rabun Bald in Georgia.

Management Direction

Manage the area to maintain the variety of plant communities and rare species and for its scenic attributes. Allow low impact uses such as hiking, hunting, scientific study, and environmental education. Apply management direction for Management Area 13. Register 130 acres with the NCNHP.

Slick Rock

Slick Rock is located approximately 4 air miles southeast of Highlands and may be accessed over Forest Service Road 1178 and State Road 1603 from Highlands. The area covers 11 acres and may be entered from Forest Service Road 1178 by a short foot trail.

Significance

This small rocky outcrop with sparse xerophytic (dry site) vegetation limited to shallow soils and rocky crevices provides an environment for unusual species and plant communities. Unusual plant and animal species also occur here.

Management Direction:

Manage Slick Rock as a natural plant community for environmental education and scientific study. Allow compatible low impact recreation such as nature study, photography, and hunting. Apply management direction for Management Area 13. Register 11 acres with the NCNHP.

Walking Fern Cove

Walking Fern Cove is located 6 air miles north and northwest of Highlands and is along State Road 1635
It consists of 19 acres

Significance.

Walking Fern Cove is an old growth cove forest that has attained a mature stage of development. The walking fern, an uncommon species, grows in the cove in unusually large numbers. The area is used for study by the Highlands Biological Station. In 1983, the Society of American Foresters recognized Walking Fern Cove as an "outstanding example of a vegetative community in a near natural condition" and registered it as a natural area.

Management Direction:

Manage the area in its natural condition. Allow only low impact uses such as environmental education and scientific study. Apply management direction for Management Area 13. Register 19 acres with the NCNHP.

Whiteside Mountain

Whiteside Mountain is situated approximately 4 air miles northeast of Highlands and may be accessed from U S Highway 64 and State Road 1600 where a foot trail from a parking lot leads to the 4,900 foot summit. The area includes 220 acres of NFS land.

Significance:

As a massive rock outcrop rising 2,100 feet from its base with sheer cliffs rising vertically 400 to 750 feet, Whiteside Mountain is a major scenic attraction in western North Carolina. The summit affords a panoramic view of the Blue Ridge south to Georgia and South Carolina, attracting thousands of visitors annually.

Climate, elevation and geology have resulted in an atypical association of plants and plant communities. Along with rock outcrop communities and xeric mixed oak forest on the slopes, a northern red oak forest community exists at the summit. Several plants recognized as rare occur within the area.

Management Direction

Continue to manage the area as a scenic attraction and for scientific and environmental education purposes. Allow low impact, nonmotorized recreation use. Apply management direction for Management Area 13. Register 220 acres with the NCNHP.

Whitewater Falls

Whitewater Falls is located 10 air miles east of Highlands and may be reached via State Highway 281. The area encompasses 315 acres.

Significance

The Upper Falls in North Carolina, perhaps the highest in eastern America, were designated as a scenic area in 1951 (boundaries were revised in 1966) and feature falls that cascade over 400 feet in elevation. The lower falls also tumble 400 feet and are located in South Carolina.

In addition to being a scenic attraction, the area harbors a number of unusual plants including some tropical mosses (bryophytes) and ferns.

Management Direction:

Manage the area for protection and enhancement of scenic attributes and protection of unusual flora. Allow low impact, nonmotorized recreation such as viewing scenery and photography, and activities such as environmental education and scientific study. Apply management direction for Management Area 13. Register 315 acres with the NCNHP.

TUSQUITEE RANGER DISTRICT

Buck Creek

Buck Creek Olivine Pine Barrens are located approximately 14 air miles southwest of Franklin and may be accessed by Forest Service Road 71. Of the 346 acres, 103 acres have been proposed as a botanical area.

Significance:

The Buck Creek Serpentine Olivine Barrens contain the largest single outcrop of dunite in the entire Georgia/North Carolina olivine belt. Vegetation in the barrens consists of oak-shrub and pitch pine-grass communities over the central olivine deposit. Three plant communities unique to the Buck Creek area are: pitch pine/witherod, the only location of pitch pine/bluestem-prairie dropseed south of Pennsylvania; and one of two locations of pitch pine/little bluestem in North Carolina. Also of significance is the presence of unusual plant forms or varieties: wild ginger, an aster; a pubescent (hairy) form of golden ragwort, an unusually small form of meadow rue, and a low stoloniferous (rooting from prostrate stems or branches) form of swamp azalea. In addition, soil characteristics of the Barrens are most unusual by resembling Mollisols, fertile soils which develop under prairie conditions, found nowhere else in North Carolina.

Management Direction:

Manage the area for protection of botanical and geological features. Allow low impact uses such as hunting, scientific study, environmental education, and photography. Apply management direction for Management Area 13. Register 103 acres with the NCNHP.

Riley Knob/Chunky Gal Mountain

Riley Knob of the Chunky Gal Mountain area is located approximately 23 air miles east of Murphy and lies adjacent to U.S. Highway 64. It may be accessed by woods roads or Trail 71. The Knob area ranges in elevation from 3,600 to 4,400 feet and covers 215 acres.

Significance:

The area contains an outstanding example of an extensive, old growth montane white oak forest natural community, portions of which have remained in a relatively undisturbed condition. Additional associated natural communities include cove forest and high elevation red oak forest. These cover types occur over amphibolite, an unusual rock type in the Southern Appalachians. Species of special concern to the NCNHP occurring here include a vigorous and extensive population of glade spurge, the Blue Ridge bindweed, and Core's starwort.

Management Direction:

Manage the area as a natural community for recreation and environmental education. Allow low impact use such as hiking, hunting, and scientific study. Apply management direction for Management Area 13. Register 215 acres with the NCNHP.

White Oak Stamp

White Oak Stamp is located 26 air miles east/southeast of Murphy. Access to the area is via U.S. Highway 64, Forest Roads 71 and 71D, Trail 77 and the Appalachian Trail (which borders the area). White Oak Stamp includes the headwaters of Muskrat Branch. The area encompasses 450 acres.

Significance

White Oak Stamp is a unique high elevation example of a Southern Appalachian Bog--a rare palustrine (wetland) natural community. On ridgetops and slopes surrounding the bog are relatively undisturbed red oak and northern hardwood forest communities.

Management Direction:

Maintain the area in a natural condition for protection of natural communities, particularly wetlands, and manage for recreation, aesthetics and scientific study. Allow low impact, nonmotorized activities such as nature study, hunting, fishing, and hiking. Apply management direction for Management Area 13. Register 450 acres with the NCNHP.

WAYAH RANGER DISTRICT

Camp Branch Falls

Camp Branch Falls is located 16 air miles northwest of Franklin and is accessible from State Road 1310, 2 miles east of U.S. Highway 19. The area contains 2 acres situated at the 2,600-foot contour.

Significance

Camp Branch Falls is the habitat for populations of rare and unusual plants.

Management Direction:

Management will aim at maintaining a natural environment around the falls area. Allow low impact, nonmotorized use such as environmental education, scientific study, hiking, and hunting. Apply management direction for Management Area 13. Register 2 acres with the NCNHP.

Nantahala Gorge Blowing Springs

The Nantahala Gorge Blowing Springs area is located approximately 16 air miles northwest of Franklin and is accessible from U.S. Highways 19 and 129. Elevation ranges from 1,800 to 2,900 feet and the area encompasses 190 acres.

Significance

The Nantahala Gorge Blowing Springs is considered to be nationally and regionally significant for zoological, botanical and geologic attributes. The Gorge area is the most extensive formation in southwestern North Carolina of limestone and Murphy marble, which form a narrow band through the Gorge with coves having formations of flowstone drapery (deposits of calcium carbonate). This geomorphic character makes the Gorge a unique landform in the Southern Appalachians and results in unusual soils and rock types. These create conditions for the rare and endemic plant species that thrive in the cove at Blowing Springs and present a potential for study of oak-heath, hemlock and cove hardwood communities in an exceptional natural area.

Management Direction

Manage the Blowing Springs area in a natural condition for environmental education and scientific study. Allow low impact, nonmotorized use such as nature study, hunting, and viewing scenery. Apply management direction for Management Area 13. Register 190 acres with the NCNHP.

Nantahala River Bogs (Wetlands)

The Nantahala River Bogs area is located approximately 10 air miles southwest of Franklin in the Standing Indian Basin. Access to the area is by U S Highway 64, State Road 1448, and Forest Service Road 67. These bogs are situated from 3,400 to 3,500 feet in elevation and total 60 acres. They are: Whiteoak Bottoms, 20 acres, Nantahala Forest Gap Bogs, 28 acres; Hurricane Creek Bog, 5 acres; and Big Indian Creek Bog, 7 acres. Because of their similarity and proximity, the bogs are described together.

Significance.

Mountain region wetlands have become rare as a result of drainage and development. These are especially important refuges for wetland plant and animal species and as study sites for ecological and geomorphological research.

The Nantahala Forest Gap Bog complex represents a mosaic of wetland habitats representing six different micro-communities. This is a high level of diversity for an area of such small size.

Whiteoak Bottoms is the second largest open bog in western North Carolina and is the subject of paleobotanical studies. The Bottoms provide habitat for some wetland animals and unusual flora.

Hurricane Creek Bog is a well developed, open, exceptionally deep, sphagnum bog, and represents one of the major, but rare, palustrine wetland types in the Southern Blue Ridge Mountain region. Two notable plant species occur in the bog: bog goldenrod and marsh fern (the latter is relatively uncommon in the mountain region of North Carolina).

Big Indian Creek Bog occupies a floodplain terrace and is similar, though smaller, to the Nantahala Forest Gap Bog complex.

Management Direction

Manage the bogs to maintain natural wetland-bog plant communities and retain current levels of the vegetative diversity. Allow low impact, nonmotorized uses such as nature and scientific study, photography, hunting, and fishing. Prescribed burning is a tried, allowable management practice. Apply management direction for Management Area 13. Register 60 acres with the NCNHP.

Runaway Knob

Runaway Knob is located approximately 8 air miles southwest of Franklin and is accessible from U S Highway 64 via State Road 1448 and Forest Service Road 67. The area encompasses 140 acres and varies in elevation from 3,200 to 4,400 feet.

Significance

This area of middle-aged cove forest has one of the largest reproducing populations of yellowwood on public land in North Carolina. This tree is considered a rare species, though not listed. At higher elevations, the area extends to the Appalachian Trail making Runaway Knob a significant recreational resource as well as scientific study area.

Management Direction:

Manage the area to maintain the diverse cove forest and the yellowwood population. Allow low impact, nonmotorized uses such as hiking, hunting, and nature study. Apply management direction for Management Area 13. Register 140 acres with the NCNHP.

Standing Indian

Standing Indian is located approximately 14 air miles southwest of Franklin and is accessible via U.S Highway 64 to Forest Service Road 71-1 to Deep Gap, then on foot via the Appalachian National Scenic Trail. The area encompasses 2,190 acres and varies in elevation from 4,000 to 5,500 feet.

Significance:

This area is unique in that so many mature and relatively undisturbed tracts of Southern Appalachian natural community types occur together. Nine different natural communities exist in this area including heath bald and montane white oak forest and all show considerable range of variation related to the high diversity of abiotic factors. The present Wilderness designation and proximity to the Appalachian Trail make the area an important recreational and educational resource.

Management Direction:

Maintain the area in a natural condition for protection of the natural communities. Apply management direction for Management Areas 7 and 14. Register 2,190 acres with the NCNHP.

Wildes Cove

Wildes Cove consists of 2 sites totaling 9 acres.

Significance

Wildes Cove is an important area for the maintenance and protection of plants which are rare or uncommon.

Management Direction:

Management is directed at protecting the site for its present diversity of plant species. Allow activity related to study of the plants and protection of the site. Apply management direction specified for protection. Apply management direction for Management Area 13. Register 9 acres with the NCNHP.

PISGAH NATIONAL FOREST

FRENCH BROAD RANGER DISTRICT

Big Laurel Creek

Big Laurel Creek area is located 4 miles east of Hot Springs and is accessible from U.S. Highways 25 and 70, and Big Laurel Trail. The area encompasses 550 acres of NFS land and 100 acres of adjoining private land of the Big Laurel Creek Gorge just upstream of the confluence with the French Broad River and varies in elevation from 1,600 to 2,600 feet.

Significance

Relatively undisturbed, this scenic area is an excellent example of a small river gorge in the Southern Appalachians with a high floral diversity. Over 250 species of vascular plants are present.

Management Direction:

Management is directed at maintaining the scenic attributes of the Big Laurel Creek Gorge area, providing for vegetative diversity and enhancing conditions for protection of plant and animal species. Allow low impact use of the area such as nonmotorized recreation, hiking, fishing, hunting, nature study, whitewater floating, and viewing scenery. Apply management direction for Management Area 13. Register 550 acres with the NCNHP.

Paint Rock

Paint Rock is located 5 air miles northwest of Hot Springs and may be accessed by State Road 1304. The two sites on NFS land total 96 acres.

Significance

The geology of faulted and folded formations in this area expose limestone, dolomite, siltstone, slate and quartzite rocks resulting in an associated assemblage of unique plants.

Management Direction:

Maintain the natural vegetative community for enhancement of unusual plant species and associations. Allow low impact, nonmotorized use such as nature study and hunting. Apply management direction for Management Area 13. Register 96 acres with the NCNHP.

GRANDFATHER RANGER DISTRICT

John's Creek

John's Creek is located 4 air miles north of Marion and may be accessed from U.S. Highway 221 and State Road 1501 adjacent to the Marion Fish Hatchery. The area encompasses 8 acres.

Significance:

This site contains a variety of vegetation, some of which is considered unusual.

Management Direction:

Manage the area to maintain the existing plant species. Allow low impact, nonmotorized uses such as nature study, fishing, and hunting. Apply management direction for Management Area 13. Register 8 acres with the NCNHP.

Linville Gorge

Linville Gorge is located approximately 11 air miles northeast of Marion and is accessible via the Kistler Memorial Highway. The area encompasses 10,975 acres.

Significance

Linville Gorge contains eight distinct attributes (three of which have national significance) unique to the area. The gorge has the best exposure of one of the largest thrust faults in the United States and is one of the few primeval gorge areas in the Appalachians. The influence of the Erwin Quartzite on the Linville River is the best example of the headwaters of a stream being held up by a flat-lying resistant stratum in the Blue Ridge and Piedmont physiographic provinces. Linville River is one of only two streams which rise on the Blue Ridge Uplands and descend the scarp to the Piedmont. In addition, it is the best example in the Blue Ridge province of the headward retreat of a structurally-controlled knick point (point of abrupt change in the longitudinal profile of a stream valley).

Several plant species recognized in North Carolina as rare or uncommon exist in the area. A unique example of a stunted pitch pine/heath community occurs on Hawksbill Mountain. The steep eastern side of the gorge contains the only known example in North Carolina of the Carolina hemlock-white pine cover type, which grades downslope to more mesic Canadian hemlock.

Management Direction

Manage to protect rare and uncommon plant species from collection by visitors and maintain the gorge in an unaltered natural condition. Apply Management direction for Management Area 7. Register 10,975 acres with the NCNHP.

PISGAH RANGER DISTRICT

Dismal Falls

Dismal Falls is located approximately 17 air miles southwest of Pisgah Forest and is accessible by foot trail from State Road 1309. The Falls is situated on Dismal Creek at 3,200 feet in elevation. The area extends over 206 acres.

Significance

Dismal Falls is recognized for its scenic and botanical attributes--an unspoiled character and variety of plant species.

Management Direction

Management is directed at maintaining scenic quality and diversity of native plant species. Allow low impact use including viewing scenery, nature study, hiking, and hunting. Apply management direction for Management Area 13. Register 206 acres with the NCNHP.

Fork Ridge - Mount Hardy

Fork Ridge - Mount Hardy is located 13 air miles west-northwest of Pisgah Forest and is accessible from the Blue Ridge Parkway, one mile west of State Highway 215. This area of 800 acres is part of the Middle Prong Wilderness and occupies the upper elevations from 5,400 to 6,100 feet of Mount Hardy and Fork Ridge.

Significance:

The Fork Ridge - Mount Hardy area is significant in North Carolina for its high elevation plant communities and species: bog and seepage communities; red oak forest; spruce-fir forest; shrub communities; and grass and heath balds. Palustrine wetlands found here are unusual at such high elevations in the Southern Blue Ridge. The area contains one of the best quality mature beech-buckeye forests in the Southern Appalachians and several rare plant species.

Management Direction:

This area was designated as Wilderness by the 1984 North Carolina Wilderness Act. Plant species and plant communities will be adequately protected by management direction which allows low impact, nonmotorized use such as hiking, backpacking, and nature study. Apply management direction for Management Area 7, Wilderness. Register 800 acres with the NCNHP.

John Rock

John Rock is located 4 air miles northwest of Pisgah Forest and is accessible from U.S. Highway 276, Forest Service Road 475, and by foot from the Davidson River Fish Hatchery by Forest Service Trail 151. The Art Loeb Trail (Forest Service Trail 146) borders John Rock at Cat Gap. This area of 435 acres ranges in elevation from 2,400 to 3,200 feet.

Significance:

John Rock is a monolith which affords outstanding views of the Davidson River Basin. It has been designated a scenic area and proposed for the National Register of Natural Landmarks.

Management Direction:

Maintain the scenic attributes of the area. Allow low impact, nonmotorized uses such as hiking, viewing scenery, photography, and nature study. Apply management direction for Management Area 13. Register 435 acres with the NCNHP.

Looking Glass Rock

Looking Glass Rock is located 5 air miles northwest of Pisgah Forest and may be accessed from U.S. Highway 276 via Forest Service Road 475 and foot trail 114. This area of 1,600 acres ranges in elevation from 2,400 to 3,900 feet.

Significance:

Looking Glass Rock is a regionally known scenic and geologic landmark. An outstanding monolith, it may be viewed and photographed from several observation points along the Blue Ridge Parkway. Looking Glass Rock affords outstanding views of the upper Davidson River Basin as well as the surrounding mountain area. It has been designated a scenic area and proposed for the National Registry of Natural Landmarks. The granite dome supports good examples of a variety of plant communities.

Management Direction:

Maintain the scenic attributes of the area. Allow low impact, nonmotorized uses such as hiking, viewing scenery, photography, and nature study. Apply management direction for Management Area 13. Register 1,600 acres with the NCNHP.

Mount Pisgah

Mount Pisgah is located 13 air miles north of Pisgah Forest and may be accessed by foot trail from the Blue Ridge Parkway. The area ranges in elevation from 5,000 to 5,700 feet and encompasses 325 acres of NFS land, plus a lesser area of the adjacent Blue Ridge Parkway.

Significance.

Mount Pisgah is significant in western North Carolina, having fine examples of high elevation bald and forest plant communities. These include a deciduous heath bald with black huckleberry and blueberry; a mountain laurel dominated bald community; a stunted beech-galax community on a histosol soil; a plant community in transition from stunted red oak to deciduous heath bald; and representatives of northern red oak cover types including such unique communities as northern red oak/minnie-bush and northern red oak/interrupted fern. An observation platform at the summit provides outstanding views of surrounding mountains, the Blue Ridge Parkway and picturesque valleys.

The lower slopes, administered by the National Park Service, are registered as protected by the NCNHP.

Management Direction

Maintain the natural plant communities for their scenic and botanical attributes. Allow low impact, nonmotorized uses such as hiking, viewing scenery, nature study, and photography. Apply management direction for Management Area 13. Register NFS land (325 acres) with the NCNHP. Coordinate NCNHP registration with the Blue Ridge Parkway.

Pink Bed Bogs

Pink Bed Bogs are located 8 air miles north of Pisgah Forest and are a part of the Cradle of Forestry in America (CFA). They can be accessed from U.S. Highway 276 or Forest Service Road 1206. These bogs are situated along the South Fork Mills River and its tributaries at approximately the 3,200-foot level and extend over 205 acres of the 6,800-acre CFA area.

Significance:

As the birthplace of forestry in America, the CFA was Congressionally dedicated to historical, educational and forestry demonstration purposes. The Pink Bed Bogs are the most extensive upland valley bog and marsh system in the mountains of North Carolina and are the best quality and southernmost example of bogs in the Southern Appalachians.

Management Direction

Management is directed at maintaining the natural wetlands along South Fork Mills River by maintaining an unaltered ground water level. Allow low impact, nonmotorized use such as nature study, viewing, and photography, but limit access into the bog area. Apply management direction for Management Area 11. Register 205 acres with the NCNHP.

Scarlet Oak - South Mills River

The Scarlet Oak - South Mills River area is situated 9 air miles north of Pisgah Forest and is accessible from State Highway 280 via Forest Service Road 297 and Forest Trail 324. The area, at Buttermilk Mountain above Bradley Creek, encompasses 140 acres and ranges from 2,600 to 3,000 feet in elevation

Significance

This area contains an extensive, good quality example of mature, relatively undisturbed scarlet oak forest cover type and is of regional significance. The area has been under consideration as a scarlet oak research natural area

Management Direction.

Management is directed at maintaining the area in a natural condition for study of the scarlet oak forest cover type. Allow low impact, nonmotorized use such as hunting and nature study. Apply management direction for Management Area 13. Register 140 acres with the NCNHP

TOECANE RANGER DISTRICT

Big Bald Mountain

Big Bald Mountain is located 12 air miles northwest of Burnsville and is accessible from the Appalachian Trail which bisects the area. Elevations range from 4,800 to 5,500 feet and the area encompasses a total of 600 acres of NFS land (115 acres are in North Carolina and 485 acres on the Cherokee National Forest in Tennessee)

Significance:

Big Bald is significant in the state and in the Southern Appalachian Region for the rare plants, plant communities, and uncommon geologic phenomena found there. It is an outstanding example of a large grassy bald community with an old growth red oak community (having trees over 250 years old) on lower slopes.

Geologic features uncommon to the Southern Appalachians include periglacial creep-solifluction terraces as well as prominent nivation cirques caused by frost action and mass-wasting beneath a snowbank. The crest of Big Bald provides an unparalleled 360-degree view of Mount Mitchell, the Asheville Basin and the Great Smoky Mountains.

Management Direction

Manage Big Bald to maintain the geologic features and protect the natural plant communities and species. Allow low impact, nonmotorized use such as hiking, viewing scenery, and nature study. Apply management direction for Management Area 14 in coordination with the Cherokee National Forest. Register 115 acres with the NCNHP. Coordinate registry with the state of Tennessee.

Black Mountains (including Celo Knob & Colbert Ridge)

The Black Mountains are situated 11 air miles south of Burnsville and the core area is most easily accessible from Mount Mitchell State Park off the Blue Ridge Parkway. Several foot trails provide access into the area; two of these are Forest Trail 179 which follows the ridge crest from Mount Mitchell and Forest Trail 190 which ascends from the Black Mountain Campground on Forest Service Road 472 to follow a tram grade at the 5,600 to 5,800-foot contour. Elevation ranges dramatically from 3,500 feet at Middle Creek to 6,300 at Celo Knob. The area extends over 3,800 acres with a major portion being the Black Mountain Research Natural Area (1,263 acres) and a smaller portion located to the south at Bald Knob Ridge.

Significance:

The Black Mountain range is of national significance for botanical, zoological and geomorphic features. This area of the Black Mountains is one of the most extensive remaining virgin forests of red spruce-fraser fir. In addition, it is one of the best quality composites of high elevation forests in the Southern Appalachians consisting of old-growth boreal forest, northern hardwood and cove forests, xeric (dry) ridge communities and heath balds. Mountain paper birch, disjunct from its normal range in Canada and Northern Appalachians, is found here.

Additional plant species considered rare in North Carolina occur in the Black Mountains. Animal species found here which are considered rare or uncommon in North Carolina include common raven, New England cottontail, rock vole, saw-whet owl, scorpion fly, Mt. Mitchell spider, small carrion beetle, and four species of fine varieties of ground beetle. This area provides an extensive "macro" refuge (large area of diverse conditions) for animal species inhabiting the high elevations of the Blue Ridge Mountains.

In addition, the Black Mountains are significant in relationship to Mount Mitchell (the highest point in eastern North America, 6,684 feet), the adjacent Mount Mitchell State Park (a National Natural Landmark); and the Blue Ridge Parkway.

Management Direction.

Management is directed at maintaining the natural plant and animal communities. Allow low impact, nonmotorized use such as hiking, backpacking, hunting, fishing, horseback riding, viewing scenery, and nature study including scientific investigations. Apply management direction for Management Areas 10 and 13. Register 3,800 acres with the NCNHP.

Craggy Mountain

Craggy Mountain is located 15 air miles southwest of Burnsville and may be accessed from the Blue Ridge Parkway or Forest Service Roads 63 and 74. The area consists of a Wilderness Study Area and a portion of Peach Orchard Creek. An extension to the west includes Big Fork Creek to Forest Service Road 63, along Mineral Creek. Elevation ranges from 2,600 to 5,600 feet and the area encompasses a total of 1,840 acres.

Significance.

The area is significant nationally as a natural, scenic area viewed from the Blue Ridge Parkway and for the plant and animal species and plant communities which occur there. Douglas Falls is a major scenic attraction of the area.

A diversity of plant communities occurs which includes heath and grass balds, dwarf beech and yellow birch forests; old-growth and virgin northern hardwoods and hemlock communities; and a number of plant species which are uncommon in North Carolina.

Several animal species occurring in the area are considered unusual and include cooper's hawk; common raven, least weasel, hairy-tailed mole, and the long-tailed shrew.

Management Direction.

Management is directed at protecting scenic features of the area and maintaining the plant communities and plant and animal species which occur there. Allow low impact, nonmotorized use such as hiking, dispersed camping, viewing scenery, nature study, hunting, fishing, and controlled gathering of forest products (ramps, blueberries, etc.) Apply management direction for Management Area 6. Register 1,840 acres with the NCNHP. Coordinate registration with the Blue Ridge Parkway.

North Fork Ivy Creek

North Fork Ivy Creek is located 9 air miles southwest of Burnsville and lies along State Road 197, 5 miles east of Barnardsville. The area encompasses 15 acres and ranges in elevation from 3,400 to 3,600 feet.

Significance

This area is an example of an old growth cove forest natural community in excellent condition with many trees 30 to 40 inches in diameter. It is unusual in that soils are developed from basic rock, with higher than usual pH (alkalinity), and this influences species composition and diversity. The area is of value for research and education.

Management Direction

The area is currently under contract for timber harvesting. After completion of harvest, register 15 acres with the NCNHP. Manage as Management Area 13 as soon as practicable.

Roan Mountain (Massif)

Roan Mountain is located 15 air miles northeast of Burnsville and accessible from N C State Highway 261 at Carver's Gap. Portions of the area may be accessed by foot from the Appalachian Trail, which follows the ridge crest along the border between North Carolina and Tennessee. The NCNHP proposed delineation of all lands above the 4,600-foot contour and includes approximately 10,000 acres of public and private lands. The Roan Mountain Massif extends from 3,600 to 6,200 feet in elevation and encompasses 7,900 acres of the Pisgah National Forest.

Significance

Roan Mountain is of national significance for its natural communities, geomorphic features, and plant and animal species. It is one of the most botanically diverse, higher elevation mountain complexes in the Southern Appalachians with vegetation cover types that include Fraser fir-red spruce, northern hardwood forest; beech bald or dwarf beech, shrub or heath balds; and grass balds. Five grassy bald plant communities occur on the Roan Mountain Massif: three-tooth cinquefoil; brownish sedge-sheep sorrel, mountain oat grass; angelica and hairy cap moss, and Roan rattlesnakeroot and hairy cap moss. Shrub balds are of two types, those dominated by green alder (at its southernmost range limit) and those dominated by purple rhododendron.

Rock outcrops of the Roan Mountain Highlands support a number of rare plant species.

A number of rare plants occur at the Roan Mountain Massif. Some of these plants are restricted or endemic to the Southern Appalachians; others are species with northern distributions--characteristic of the Canadian tundra, boreal forests, or New England--and have reached the southern limits of their ranges here.

Eagle Cliff, a 690-acre portion of the Massif, is an area with primary successional plant communities, making it suitable as a research natural area.

Vegetative diversity along with climatic conditions, topography and geologic conditions provide habitat for an exceptional diversity of animal species, including mammals, birds and amphibians many at or near the southern extent of their ranges. Mammals include the least weasel, northern flying squirrel, New England cottontail, spotted skunk, black bear, bobcat, and various shrews and mice. The spruce-fir forests support bird species that are restricted breeding species in North Carolina, including the golden-crowned kinglet and red-breasted nuthatch. Other higher elevation bird species include olive-sided flycatchers, black-capped chickadee, hermit thrush, and yellow-bellied sapsuckers. A large number of salamander species with limited distributions have also been found within the Roan Mountain Massif area.

As one of the higher summits in the Appalachians, the Roan Mountain Massif possesses several geological features of national significance. The variety of Precambrian rocks found in this area makes the area very important in attempts to reconstruct the Precambrian geologic history of the Southern Appalachians. These gneisses are intruded by dikes of the Bakersville Gabbro, a younger igneous material unique to this area. Geomorphic features include extensive and relatively sheer west-facing cliffs among the highest (up to 600 feet) and most prominent in the Blue Ridge region. The large segregated boulders on Roan High Bluff, as well as the presence of a possible periglacial stone ring and stripes and relict solifluction terraces attest to a vigorous Pleistocene environment on the Roan Mountain Massif.

In general, the ecological and geological attributes of the Roan Mountain Massif are of great scientific interest, the aesthetic and recreational popularity of the natural area are unsurpassed; and the research and environmental education resources are unexcelled in the Southern Appalachians.

Management Direction:

Manage the area for the natural flora and fauna found there. Allow scientific and nature study, viewing scenery, hiking, hunting, and collection of Fraser fir seeds and seedlings. Continue study of the balds and Eagle Cliff as a potential Research Natural Area. Apply management direction for Management Area 9 to the Roan Mountain Massif in coordination with the state of Tennessee. Register 7,900 acres with the NCNHP.

Walker Cove

Walker Cove is located 12 air miles southwest of Burnsville and may be accessed by State Road 2173 and Forest Service Road 74. The area ranges in elevation from 3,800 to 4,500 feet and encompasses 53 acres.

Significance

Walker Cove is of national significance as an old growth forest, intermediate between an upper cove hardwood and a northern hardwood forest in the Southern Appalachians. It was designated as a research natural area in 1965 and is used for forest research purposes.

Management Direction

Direct management at maintaining a natural forest community. Allow low impact uses primarily for research, scientific study, and complementary nonmotorized use for nature study and hunting. Apply management direction for Management Area 10. Register 53 acres with the NCNHP.

MANAGEMENT AREA DISTRIBUTION OF SPECIAL INTEREST AREAS

Special Interest Areas that will be registered with the NCNHP are distributed within Management Areas as follows.

<u>Special Interest Area</u>	<u>Management Area</u>	
	<u>Number</u>	<u>Acreege</u>
<u>NANTAHALA NATIONAL FOREST</u>		
<u>Cheoah Ranger District</u>		
Joyce Kilmer Memorial Forest	7	(3,840)
Santeetlah Creek Bluffs	13	495
<u>Highlands Ranger District</u>		
Bonas Defeat Gorge	13	305
Bryson Branch	13	44
Cole Mountain-Shortoff Mountain	13	56
Cullasaja Gorge	13	1,425
Ellicott Rock-Chattooga River	7 and 15	(1,997)
Kelsey Tract	13	256
Piney Knob Fork	13	32
Scaly Mountain and Catstairs	13	130
Slick Rock	13	11
Walking Fern Cove	13	19
Whiteside Mountain	13	220
Whitewater Falls	13	315
<u>Tusquitee Ranger District</u>		
Buck Creek	13	103
Riley Knob/Chunky Gal Mountain	13	215
White Oak Stamp	13	450
<u>Wayah Ranger District</u>		
Camp Branch Falls	13	2
Nantahala Gorge Blowing Springs	13	190
Nantahala River Bogs (Wetlands)	13	60
Runaway Knob	13	140
Standing Indian	7 and 14	(2,190)
Wildes Cove	13	9

<u>Special Interest Area</u>	<u>Management Area</u>	
	<u>Number</u>	<u>Acreege</u>
<u>PISGAH NATIONAL FOREST</u>		
<u>French Broad Ranger District</u>		
Big Laurel Creek	13	550
Paint Rock	13	96
<u>Grandfather Ranger District</u>		
John's Creek	13	8
Linville Gorge	7	(10,195)
<u>Pisgah Ranger District</u>		
Dismal Falls	13	206
Fork Ridge - Mount Hardy	7	(800)
John Rock	13	435
Looking Glass Rock	13	1,600
Mount Pisgah	13	325
Pink Bed Bogs	11	(205)
Scarlet Oak-South Mills River	13	140
<u>Toecane Ranger District</u>		
Big Bald Mountain	14	(115)
Black Mountains	10 and 13	(1,405)/(2,395)
Craggy Mountains	6	(1,840)
North Fork Ivy Creek	13	15
Roan Mountain (Massif)	9	(7,900)
Walker Cove	10	(53)
Total acreage of Management Area 13 recommended for registration with the State of NCNHP		10,247
Total acreage recommended for registration with the State of NCNHP		40,787

CHAPTER IV

IMPLEMENTATION OF THE FOREST PLAN

This chapter discusses implementation of the Plan, monitoring and evaluation, and research needs for future Forest management.

IMPLEMENTATION DIRECTION

This Forest Plan provides management direction for the Forests for the next 10 to 15 years. Implementation of this direction is the key to translating goals, objectives, and standards into on-the-ground results. The Forest Plan is implemented through Budgeting and Annual Work Planning processes. These processes supplement the Forest Plan by making annual adjustments and changes needed to reflect current priorities.

BUDGET PROPOSALS

The Forest Plan provides the management direction for developing multi-year implementation programs. The Plan's scheduled practices, grouped as projects, are multi-year program budget proposals which identify needed expenditures. The Forests' proposed annual program budget is the basis for the requested funding. Upon approval of a final budget for the Forests, the Annual Program of Work is finalized. The accomplishment of the Annual Program is a step in implementing the management direction of the Forest Plan.

ENVIRONMENTAL ANALYSIS

Projects and activities identified in the Forest Plan will undergo environmental analysis as they are planned for implementation. If the environmental analysis for the project shows: (1) that the management area prescriptions and standards can be met, (2) that no extraordinary circumstances exist, and (3) there will be no significant site specific environmental effects; the analysis may result in a categorical exclusion from National Environmental Policy Act (NEPA) documentation. Interested and affected publics will be notified of decisions to proceed with a project in a manner appropriate to the situation. An analysis or project file will be available for public review.

MONITORING AND EVALUATION

Monitoring is observing or measuring results for a specific purpose, such as meeting our legal requirements or addressing issues. Monitoring measures progress in Forest Plan implementation; determines how well Forest Plan objectives are being met; and determines if management standards and guidelines are appropriate for meeting the forest's outputs, environmental protection, and desired conditions. Monitoring is used to determine if assumptions used in developing the Forest Plan reflect actual conditions, new information, and/ or legal requirements.

Evaluation is assessing the significance of the observations or checks resulting from monitoring by careful analysis or study to determine changes needed in the LRMP. Evaluation determines if planned conditions or results are being attained and when they are within Plan direction. When a situation is identified as being outside the limits of acceptable variability, changes may need to occur. Therefore, evaluation serves two major functions: It initiates a change in management practices, and provides a means to adjust the Forest Plan to keep it dynamic and responsive to changing conditions.

This Chapter will not display the specific details of monitoring methodologies, technique and design, but will provide the framework and programmatic decisions for the Forests' annual monitoring and evaluation program.

The purpose and objectives of monitoring include:

- Maintaining viable and supportable Forest Plans through timely amendments when monitoring identifies a need for change.
- Assessing decisions made in the Forest Plan.
- Determining whether or not we are effectively achieving resource production, enhancement and protection goals.
- Determining whether or not we are effectively responding to the public needs and issues.
- Meeting our legal and ethical responsibility as a public agency.
- Increasing and improving upon our scientific knowledge of effects of our management in sustaining ecological types and ecosystems
- Obtaining needed information for RPA assessments, as well as assessing needed skills, organization structure and funding.

How Issues help drive the Monitoring Program

Issues help with the development of Desired Future Conditions (Plan Amendment III-4), along with their associated Goals, Directions, and Standards. By monitoring the achievement of these Goals, Directions, and Standards, we are also monitoring how effectively public and management issues and concerns are being addressed.

As new issues arise during Plan implementation, additional monitoring items which address these new issues may be added to the annual monitoring program.

The monitoring framework

The "Monitoring Questions" described in this Chapter (Table IV-1), along with the identification of the level of monitoring associated with each monitoring question, comprise the "Monitoring Plan Decisions"; and any changes to these "decisions" will require an amendment to the Forest Plan.

Monitoring Task Sheets which detail how the information will be acquired to answer the "Monitoring Questions", and are summarized in Appendix D to the Forest Plan, are planning process documents. These documents can be changed without a Plan amendment, but these documents will be updated annually, as a part of the Annual Monitoring and Evaluation Report. This will provide a means for the public to track the process and be notified of all changes.

The rationale for determining the different levels of monitoring that will be done.

Implementation Monitoring answers the questions about whether or not we are following our own project plan designs and adhering to Directions and Standards and NEPA decision document commitments, in essence "doing what we said we would do."

Project monitoring ties to Forest Plan Implementation Monitoring; by monitoring the implementation of all projects, we are, at the same time, monitoring the implementation of the Forest Plan's Directions and Standards. Implementation monitoring is a "given" for all projects and therefore will not be explicitly identified as a monitoring activity.

Effectiveness Monitoring is done when we need to determine whether or not our Directions and Standards are effective and if we meeting the Plan's DFCs, Goals, and Objectives.

Validation Monitoring is done when we need to determine whether data, assumptions, and coefficients used to predict outcomes and effects in the development of the Forest Plan are correct. "Were the planning assumptions valid and/or are there better ways to meet Plan Goals and Objectives?"

Monitoring encompasses many activities and administrative processes, and the monitoring items identified in this chapter are not all inclusive.

Inventory and data collection efforts on the Forests are a part of the "monitoring" program.

The preparation of annual reports for the public and the Regional Office/ Washington Office (e g., the "MARs" Reporting System) are forms of monitoring.

Internal reviews by the Regional Office or the Supervisor's Office constitute another form of monitoring.

Quality assurance expectations for statistical data collection and analysis.

Quality assurance is a process whereby data quality is defined, not a process that forces data to meet a particular standard. The data quality needs to be sufficient to meet the purposes defined for its collection. Quality assurance is simply a process of establishing and documenting what that quality is.

Any time quantitative data is collected, its validity is a potential issue, especially when monitoring controversial Forest Plan issues is involved. Data validity and statistical design are extremely important. Research can help determine the best things to measure and furnish statistical help in designing measurement procedures.

The Evaluation responsibilities, techniques, and uses in decisionmaking

Line officers will be personally involved in the evaluation of monitoring results with interdisciplinary staffs.

The value, effects, and impacts of accomplishments on other resources; the appropriateness of current implementation practices; alternative implementation activities; and the significance of any "need for change" to the Forest Plan (including changes to the M&E Chapter or to Plan implementation activities) that are indicated by monitoring results will be evaluated.

Evaluation of monitoring findings and results will be an ongoing activity throughout the year, so that timely responses to changed conditions and new information can be made. Evaluation will include management and integrated resource review findings as well as the formal, end-of-the year evaluation conducted as part of the Annual M&E Report

The Reporting procedures

Monitoring activities, findings, and results will be formally reported to the public in monitoring and evaluation reports at least annually to demonstrate that the Forest Plan remains relevant and up-to-date. The Reports will include timeframes and action plans for implementing recommendations, and the current status of previous annual recommendations. Annual reporting will be timely, no later than the second quarter of the following fiscal year, and appropriately distributed, both internally and externally.

M&E reports will contain a Forest Plan adequacy statement signed by the Forest Supervisor which indicates that he/she has evaluated the monitoring results and recommendations in the Report, and directed that the Action Plans developed to respond to these recommendations be implemented. Any amendments or revisions to the Forest Plan will meet National Environmental Policy Act public involvement requirements."

*** indicates direction or standard is new to Amendment #5.

MONITORING CHAPTER, TABLE 1: MONITORING QUESTIONS

DFCs/Goals/Objectives/ Directions or Standards	IMPLEMENTATION QUESTIONS	EFFECTIVENESS QUESTIONS	VALIDATION QUESTIONS
DFC = Desired Future Condition. Forest-wide DFC's are located on page III-4.	1. Are projects implemented according to project design, Forest Plan S&Gs, and associated NEPA decision documents?	1. Are Plan Objectives being achieved? 2. Are S&Gs & other mitigation measures effective?	1. Will Plan Objectives accomplish Plan DFCs? 2. Are Plan assumptions and predictions valid or appropriate?
FORESTWIDE DFC/GOALS AND OBJECTIVES			
DFC/Goal 1: There is increased consideration for visually sensitive areas.			
IV-5 Direction: Design Forest management activities to meet the VQO(s) as shown in each management area.	VQO's met? See Plan Amendment III-11 (Task #1)	Is the forest moving toward a more continuous, natural-appearing canopy in visually sensitive areas? (Task #2)	
Direction: Set priorities for scenery rehabilitation. Consider enhancement of landscapes.		Is the scenery being maintained or enhanced? (Task #3)	
DFC/Goal 2: A wide variety of recreational opportunities are provided with increased opportunities for nonmotorized recreation. Activities, facilities, and programs are accessible to the extent practicable.			
Direction: Provide the type of recreational setting and activities that are desired for each management area.		Are management activities appropriate for moving areas of the Forest toward the desired condition? (Task #4)	

DFCs/Goals/Objectives/ Directions or Standards	IMPLEMENTATION QUESTIONS	EFFECTIVENESS QUESTIONS	VALIDATION QUESTIONS
Direction: Provide a safe, esthetically pleasing, nonurban atmosphere.		Are health and safety hazards corrected? Has accessibility improved? (Task #5)	
DFC/Goal 3: A variety of silvicultural treatments are used to provide a continuous supply of wood products with emphasis on high quality hardwoods.			
Direction: Establish a satisfactory stand on regeneration areas within 5 years after final harvest.		Are silvicultural treatments and other management activities effective in providing for stand regeneration? (Task #6)	
IV-6 Direction: Manage MA 1B and MA 3B to emphasize high quality hardwood*** sawtimber as the primary product.	Is emphasis on producing high quality hardwood*** sawtimber in MA 1B and 3B? III-54, #2. (Task #8)	Is a continuous supply of this product available for harvest? (Task #7)	
DFC/Goal 4: Maintain, and where possible, enhance the diversity of plant and animal communities. Maintain viable populations of existing native wildlife, fish, and plants.			
Direction: Use Management Indicator Species (MIS) for monitoring populations and habitat conditions.	MIS and/or habitat monitored? See Plan Amendment III-22 to III-25 (Task #9)	What MIS population trends are apparent, and what is the condition of the MIS habitat? (Task #10)	What are the relationships between MIS populations, habitat conditions, and management activities? (Task #11)

DFCs/Goals/Objectives/ Directions or Standards	IMPLEMENTATION QUESTIONS	EFFECTIVENESS QUESTIONS	VALIDATION QUESTIONS
Direction: Assure a regular and sustained flow of habitats across the Forests through space and time.***	Is early successional dispersion within standard? See Plan Amendment III-29 to III-32. (Task #12)		
Direction: Manage to assure a network of forest interior areas across the Forests.***	Are forest interior areas managed to provide blocks of continuous canopy ? (Task #13)		Are blocks of forest without internal edge of more benefit to forest interior birds than forest with internal edge? (Task #14)
Direction: Establish a network of small, medium, and large patches for future old growth management. ***	Are directions and standards being met for old growth? See Plan Amendment III-26 to III-28 (Task #15)	Are old growth ecosystems being restored? (Task #16)	
DFC/Goal 5: Riparian areas, floodplains, wetlands, and their existing ecosystems are perpetuated and enhanced.			
Direction: Enhance Riparian Values. Assure proposed management activities are consistent with enhancement of riparian values.***	Are direction and standards being met for riparian areas? Are riparian areas being mapped? (Task #17)		
Direction: Manage for a desired condition of approximately 100 pieces per stream mile of large woody debris. ***		Are management activities effectively achieving the the desired condition? Are they being coordinated with scenery and recreation? (Task #18)	

IV-7

DFCs/Goals/Objectives/ Directions or Standards	IMPLEMENTATION QUESTIONS	EFFECTIVENESS QUESTIONS	VALIDATION QUESTIONS
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DFC/Goal 6: Water quality and soil productivity are maintained.

Standard: Prevent visible sediment from reaching stream channels in accordance with NC Forest Practices Guidelines Related to Water Quality.	Are management practices in compliance with NC FPGRWQ? (Task #19)		
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DFC/Goal 7: Attributes and resources of special interest areas including wilderness, research natural areas, and areas registered by the North Carolina Natural Heritage Program are maintained.

IV-8

Direction: For Special Interest Areas, follow management direction outlined for each special interest area	See Plan Amendment III-175 to III-191 (Task #20)	Are management activities maintaining the special attributes of these areas? (Task #20)	
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Direction: For Wilderness, manage to perpetuate the naturalness of the area while providing for recreational, scientific, educational, conservation, and historical use compatible with the wilderness resource and attributes.	Plan direction being followed? See Plan Amendment III-97 to III-122. (Task #21)	Are management activities effectively maintaining the special attributes and resources of wilderness. (Task #21)	
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Direction: For Research Natural Areas, manage in undisturbed state as a baseline for comparison with other forest environments	Plan direction being followed? See Plan Amendment III-132 to III-134 (Task #22)		
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DFCs/Goals/Objectives/ Directions or Standards	IMPLEMENTATION QUESTIONS	EFFECTIVENESS QUESTIONS	VALIDATION QUESTIONS
<p>DFC/Goal 8: Threatened and endangered plant and animal species are protected, managed or recovered consistent with the Endangered Species Act; and sensitive species are conserved.</p>			
<p>Direction: Develop conservation strategies for sensitive species. Follow recovery objectives for T & E species.***</p>	<p>Are directions for T & E and sensitive species being met? (Task #23)</p>		
<p>DFC/Goal 9: Utilization of mineral resources is provided in an environmentally sound manner.</p>			
<p>Direction: Do not consent to leases for minerals activities that cannot meet management area objectives.</p>	<p>Are new minerals leases limited to those where the minerals activity can occur and still maintain the other resource objectives for the area? (Task #24)</p>		

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Other forest-wide monitoring needs not related to a particular desired future condition .

	IMPLEMENTATION MONITORING NEEDS		
Task #25	Are the predicted activities, costs, and outputs occurring as estimated in the Plan?		
Task #26	Are constructed roads designed according to standards appropriate for the planned use?		
Task #27	Are silvicultural treatments in compliance with the forest plan?		
Task #28	Are prescribed burns performed within the parameters of the prescribed burn plan?		

	EFFECTIVENESS MONITORING NEEDS
Task #29	What emerging issues need to be addressed to ensure the continued effectiveness of the Forest Plan?
Task #30	Are heritage resources being protected?
Task #31	Are prescribed burn objectives being met?
Task #32	Are there significant changes in land productivity?
Task #33	Have lands identified as not suitable for timber production become suitable?
Task #34	What are the effects of national forest management on adjacent land, resources, and communities?

	VALIDATION MONITORING NEEDS
Task #35	How valid were the unit cost and price assumptions used in developing the Forest Plan?
Task #36	Are insects, diseases or noxious weeds increasing to damaging levels as a result of management activities?
Task #37	What are research needs to support or improve national forest management?
Task #38	Are maximum size limits for openings being met and should they be continued?

APPENDIX A
FOREST SERVICE RECOVERY OBJECTIVES
PROPOSED, ENDANGERED, THREATENED, AND SELECTED CANDIDATE SPECIES
NANTAHALA AND PISGAH NATIONAL FORESTS
February 15, 1994

Recovery objectives include all items specific to the Forests listed in the Recovery Plans of each Proposed, Endangered and Threatened species. Recovery objectives may change as new Recovery Plans are developed and existing Plans are revised. Listed below are the priority recovery objectives for Proposed, Endangered and Threatened species and conservation objectives for Sensitive species at this time. Conservation strategies are being developed to address management needs of all Forest-listed species.

Alasmodonta raveneliana - The Appalachian elktoe mussel does not have a recovery plan. Conservation objectives are:

- 1) Document species occurrence on NFsNC lands;
- 2) Cooperate with FWS in developing the species' Recovery Plan.
- 3) Cooperate with FWS and NCWRC to identify and protect occupied suitable habitat;
- 4) Document feasibility of reintroduction into suitable unoccupied habitat.

Canis rufus - The red wolf has an approved recovery plan. Priority recovery objectives are:

- 1) Document quantity, quality, and contiguity of suitable habitat on NFsNC lands.
- 2) Document feasibility of reintroducing red wolf on NFsNC lands.
- 3) If possible, and with concurrence of FWS, reintroduce the red wolf on the NFsNC.

Cyprinella monacha - The spotfin chub has an approved recovery plan. No recovery objectives for the spotfin chub are detailed in the Recovery Plan. The species exists within the proclamation boundary of the Forests, but among private lands. The Forests coordinate with the FWS, TVA, NCNHP, and NCWRC in monitoring and protecting the species.

Falco peregrinus anatum - The peregrine falcon has an approved recovery plan. Priority recovery objectives are:

- 1) Continue to monitor known nest sites to determine reproductive status, suitability of available sites, effectiveness of protection and monitoring measures, nesting success;
- 2) Develop site specific management plans.
- 3) Develop FS personnel to adequately search all suitable nesting habitat for occupancy; effectively monitor critical dates for courtship, nesting, and fledging; and to collect prey remains and eggshells for analysis.
- 4) Initiate a study to determine adequacy of existing nest sites and reasons for nesting failure.
- 5) If necessary, improve current nest sites or create additional one

to increase nesting success.

Felis concolor coguar - The eastern cougar has an approved recovery plan.

Priority recovery objectives are:

- 1) Continue to support the cooperative project at Clemson University to determine the species continued existence.
- 2) Document if there are additional opportunities to assist in documenting the presence or absence of the species.
- 3) If the species is documented on or near NFsNC lands, cooperate with the FWS and the NCWRC to determine necessary recovery actions.

Glauconys sabrinus coloratus - The Carolina northern flying squirrel has an approved recovery plan. Priority recovery objectives are:

- 1) Document distribution of the G.sabrinus populations in the Southern Appalachians. (On-going with Cherokee National Forest.)
Determine occupied and potential habitat.
Survey potential habitat to locate additional populations.
Monitor known populations.
- 2) Cooperate in the development of management guidelines.
Develop and refine habitat management guidelines for the agencies and private landowners involved in the habitat-altering activities within the range of the species.
Implement appropriate management and protection procedures.
Implement habitat management guidelines on public lands and encourage their use on private lands.
Protect occupied habitat through land acquisition or other means as appropriate.
Protect individual squirrels and their habitat through vigorous enforcement of the Endangered Species Act and other applicable Federal and State laws.
- 3) Complete suitable habitat surveys.

Mesodon clarki nantahala - The noonday snail has an approved recovery plan.

Priority recovery objectives are:

- 1) Protect, evaluate, and manage the known populations of the species within the Nantahala Gorge.
Protect the species' essential habitat on the northwest facing cliffs within the Nantahala Gorge by cooperative agreements with the FS and State Authorities.
- 2) Document present and foreseeable threats to the taxon.
Evaluate potential for overuse of the area. Assess other threats.
- 3) Cooperate with any studies on the status of the noonday snail.
Contact research scientists such as those at the Invertebrate Section of the Chicago Field Museum of Natural History for results of taxonomic studies. Evaluate impact of findings on the current status of the taxon.

Microhexura montivaga - The spruce-fir moss spider does not have a recovery plan. Conservation objectives are:

- 1) Identify, on a site specific basis, current and potential threats to all existing populations of Microhexura montivaga on the Nantahala and Pisgah Forests.

- 2) Cooperate with the Fish and Wildlife Service in developing a management plan, with specific Forest Service tasks in support of conservation, or assist in developing a Recovery Plan when the species is listed.
- 3) Manage recreational use and small products permits such that the species is protected.

Myotis sodali - The Indian bat has an approved recovery plan.

No hibernacula for the Indian Bat are known on the Forests. If one or more are found, the appropriate recovery objectives will be implemented.

- 1) Maintain, protect, and restore foraging and nursery habitat.
Prevent adverse modification to foraging areas and nursery roost habitat.
Determine habitat requirements.
Preserve water quality.
Restore and preserve forest cover along rivers and streams.
Monitor habitat.
- 2) Implement the snag and den standard for areas considered suitable for commercial timber harvest in all project areas;
- 3) Maintain not less than 50% of the Forests in unsuitable timber management areas or in timber management areas where rotations are not less than 100 years, old growth, and/or riparian areas;
- 4) Maintain the integrity of mature and old growth habitats within riparian areas;
- 5) Where hibernacula are found, implement protection and monitoring programs.

Pegias fabula - The little-wing pearly mussel has an approved recovery plan.

Priority recovery objective is:

- 1) Preserve present populations and occupied habitat.

Plecotus townsendii virginianus - The Virginia big-eared bat has an approved recovery plan. Priority recovery objectives are:

- 1) Document species occurrence on NFsNC lands;
- 2) Maintain and protect integrity of all cave communities on the Forests;

Aster avitus - The Alexander's rock aster is not Federally listed and therefore does not have an approved recovery plan. Conservation objectives are:

- 1) Document species occurrence on NFsNC through cooperative PETS plant inventories with NHP.
- 2) If the species is confirmed on or near the NFs NC, cooperate with the FWS in developing a management plan which identifies tasks specific to NFsNC.

Brachymenium andersonii - Anderson's rock aster is not Federally listed and therefore does not have an approved recovery plan. Conservation objectives are:

- 1) Document species occurrence on NFsNC lands through continuing cooperative PETS plant surveys with NHP.
- 2) If the species is documented on or near NFsNC lands, cooperate with FWS in developing NFsNC specific tasks in an approved recovery plan.

Geum radiatum - Mountain (spreading) avens does not have an approved recovery plan. Conservation objectives are:

- 1) Cooperate with FWS in developing a recovery plan with tasks specific to NFsNC.
- 2) Manage and monitor recreational use such that the species is protected.

Gymnoderma lineare - The rock gnome lichen does not have a recovery plan. Conservation objectives are:

- 1) Document species occurrence on NFsNC lands through continuing surveys.
- 2) Identify, on a site specific basis, current and potential threats to all existing populations on the Nantahala and Pisgah Forests.
- 3) Cooperate with Fish and Wildlife Service in developing a management plan, with specific Forest Service tasks in support of conservation, or assist in developing a Recovery Plan with the species is listed.
- 4) Monitor population trends for all populations of Gymnoderma lineare on the Nantahala and Pisgah National Forests. Incorporate results in management plans.
- 5) Manage recreation use such that the species is protected.

Helonias bullata - Swamp pink has an approved recovery plan. Priority recovery objectives are:

- 1) Develop and implement conservation strategies.
- 2) Maintain the hydrologic and vegetative integrity of the bog communities where the species exists.
- 3) Monitor threats at the site to ensure a continued 'no effect' determination.
- 4) Investigate management requirements and hydrologic relationships.

Hexastylis naniflora - Dwarf-flowered heartleaf does not have a recovery plan.

Conservation objectives are:

- 1) Document species occurrence on NFsNC lands through continuing surveys.
- 2) IF species is found on or near NFsNC lands cooperate with the FWS in developing a recovery plan with NFsNC-specific tasks.

Houstonia montana - Mountain bluet does not have an approved recovery plan.

Conservation objectives are:

- 1) Cooperate with the FWS in developing a recovery plan with tasks specific to NFsNC.
- 2) Manage and monitor recreational use such that the species is protected.

Hudsonia montana - Mountain golden heather has an approved recovery plan.

Priority recovery objectives are:

- 1) Conduct searches for new colonies.
Identify potential habitat.
Train personnel on species identification.
Conduct ground investigations of potential habitat.
- 2) Monitor populations and their habitats. (With NCDA, on-going.)
Monitor population trends..(With NCDA, on-going>)

- Check sites periodically for evidence of problems. (On-going).
- 3) Develop a management plan for conservation of the species.
(Accomplished with NCDA, FWS).
 - Do experimental burning to remove the competition. (accomplished with NCDA and FWS).
 - Do experimental removal of competition mechanically.
(Accomplished with NCDA and FWS).
 - Consider altering visitor use patterns. (Accomplished and on-going with NCDA and FWS).
 - Develop a means of controlling predation.
 - Determine appropriate means of public education.
 - 4) Continue prescribed burning and clipping in support of recovery.
 - 5) Continue monitoring in cooperation with the North Carolina Plan Conservation Program.

Isotria medeoloides - Small whorled pogonia has an approved recovery plan.

Priority recovery objectives are:

- 1) Protect existing populations;
- 2) Survey for species through continuing cooperative PETS plant surveys with NCNHP.

Liatris helleri - Heller's blazing star has an approved recovery plan.

Priority recovery objectives are:

- 1) Protect existing populations and essential habitat.
Manage and monitor recreational uses such that the species is protected.
- 2) Search for additional populations.
- 3) Document and implement management necessary for long-term reproduction, establishment, maintenance, and vigor.
- 4) Document population size and stage class distribution for all populations.
- 5) Annually assess success of recovery efforts for the species.

Narthecium americanum - Bog Asphodel is not Federally listed and therefore does not have an approved recovery plan. Conservation objectives are:

- 1) Document occurrence on NFsNC lands through continuing cooperative surveys with NHP.
- 2) If the species is found on or near NFsNC, cooperate with the FWS to develop a recovery plan with NFsNC-specific tasks.

Orbexilum macrophyllum - Bigleaf scurf-pea is not Federally listed and therefore does not have an approved recovery plan. Conservation objectives are:

- 1) Document species existence on NFsNC through continuing cooperative surveys with NHP.
- 2) If the species is found on or near NFsNC, then cooperate with the FWS in developing a management plan with NFsNC-specific tasks.

Sagittaria fasciculata - Bunched arrowhead does have an approved recovery plan.

There are no specific recovery objectives for bunched arrowhead in the Recovery Plan. Priority recovery objectives are:

- 1) Document species occurrence on NFsNC lands through continuing cooperative surveys with the NHP;
- 2) If the species is found on or near NFsNC, develop NFsNC-specific tasks in support of recovery.
- 3) Protect suitable wetland habitats and determine potential for reintroduction.

Sarracenia jonesii - Mountain sweet pitcher plan has an approved recovery plan. There are no specific recovery objective assigned for the Forests in the Recovery Plan. Priority recovery objectives are:

- 1) Document species occurrence on NFsNC lands through continuing cooperative surveys with NHP;
- 2) If the species is found on or near NFsNC, develop NFsNC-specific tasks in support of recovery.
- 3) Protect suitable wetland habitats and determine potential for reintroduction.

Sarracenia oreophila - Green pitcher plant has an approved recovery plan.

The only specific recovery objective assigned to the FS is to collect and preserve seed. Priority recovery objectives are:

- 1) Document species occurrence on NFsNC lands through continuing cooperative surveys with NHP.
- 2) If the species is found on or near NFsNC, develop NFsNC-specific tasks in support of recovery.
- 3) Protect suitable wetland habitats and determine potential for reintroduction.

Sisyrinchium dichotomum - White irisette does not have a recovery plan.

Conservation objectives are:

- 1) Document species occurrence on NFsNC lands through continuing surveys.
- 2) If species is found on or near NFsNC lands cooperate with the FWS in developing a recovery plan with tasks specific to NFsNC.

Solidago spithamea - Blue ridge goldenrod has an approved recovery plan.

Priority recovery objectives are:

- 1) Protect existing populations and essential habitat.
Monitor response to management for recovery and protection from recreational impacts.
- 2) Search for additional populations
- 3) Document and implement management necessary for long-term reproduction, establishment, maintenance, and vigor.
- 4) Document population size and stage class distribution for all populations.
- 5) Annually assess success of recovery efforts for the species.

APPENDIX B

HIGH QUALITY AND OUTSTANDING RESOURCE WATERS

Stream classifications are those assigned by the North Carolina Department of Environment, Health and Natural Resources, Division of Environmental Management. The stream classifications for fresh water are listed below.

High Quality Waters (HQW)	Waters with quality higher than the standards (EPA's Tier II waters; the minimum standards for Class C and SC define Tier I); see Standards and Stream Classifications Rules (15A MCAC 2B.0100) for detailed description (15A NCAC 2B.0101(e)(5)).
Outstanding Resource Waters (ORW)	Unique and special waters having exceptional water quality and being of exceptional state or national ecological or recreational significance; must meet other certain conditions and have 1 or more of 5 outstanding resource value criteria as described in Rule 2B.0216.
Trout Waters (TR)	Protected for natural trout propagation and survival of stocked trout.
Nutrient Sensitive Waters(NSW)	Waters needing additional nutrient management due to their being subject to excessive growth of microscopic or macroscopic vegetation.
Swamp Waters (SW)	Waters with low velocities and other characteristics different from other waterbodies (generally low pH, DO, high organic content).
Water Supply (WS-I)	Water supplies in natural and undeveloped watersheds.
Water Supply (WS-II)	Water supplies in predominantly undeveloped watersheds.
Water Supply (WS-III)	Water supplies in low to moderately developed watersheds.
Water Supply (WS-IV)	Water supplies in moderately to highly developed watersheds.
Water Supply (WS-V)	River segment.
Class C	Secondary recreation (including swimming on an unorganized or infrequent basis); fish and other aquatic life propagation and survival; agriculture

and other uses, except for primary recreation, water supply or other food-related uses.

Class B

Primary recreation (swimming on an organized or frequent basis) and all uses specified for Class C (and not water supply or food-related uses).

The water quality standards applicable to each classification are established in "Classifications and Water Quality Standards Applicable to those Surface Waters of North Carolina (15A NCAC 2B.0200)

Table B-1 displays waters classified as Outstanding Resource Waters or High Quality Waters. Names of waters are listed in alphabetical order for convenience. The classification of each water is listed. The stream index number is assigned to each water segment by the NC Division of Environmental Management. Contact the Forest Service hydrologist for more information on the stream index number.

Table B-1--List of outstanding resource waters or high quality waters

HQW OR ORW WATERS

Name	Class	Stream Index No.			
ABES CREEK	C TR ORW	3	10	2	2
ADEN BRANCH	C TR HQW	2	79	55	2
ALARKA CREEK	C TR HQW	2	69	(0.	
ALARKA CREEK	C TR HQW #	2	69	(0.	
AMOS CREEK	C HQW	11	38	32	4
ANDERSON CREEK	C HQW	11	38	32	16
ANDREWS CREEK	B TR ORW	11	38	34	5
ANDY BRANCH	C ORW	5	41	10	1
ARMSTRONG CREEK	WS-II TR HQW	11	24	14	(1)
ASH COVE CREEK	C ORW	1	52	23	2
BAILEY FORK	C HQW	11	34	8	(1)
BALD KNOB BRANCH	C TR HQW	6	3	4	1
BALD SPRINGS BRANCH	C TR ORW	1	27	3	
BARNARDS CREEK	C ORW	2	57	21	7
BARNES BRANCH	C HQW	5	59	13	
BARNETT BRANCH	WS-II TR ORW	6	54	3	3
BAXTER CREEK	C TR HQW	5	59	19	
BEAR CREEK	C TR ORW	5	41	1	1
BEARPEN BRANCH	C HQW	2	190	9	1
BEARPEN BRANCH	C TR HQW	6	3	2	1
BEARPEN BRANCH	WS-II TR ORW	6	54	3	10
BEARPEN CREEK	C TR ORW	2	57	3	
BEARWALLOW BROOK	WS-II TR ORW	6	54	3	2
BEARWALLOW CREEK	C TR HQW	4	7	(2)	
BEARWALLOW CREEK	C Tr HQW	7	2	69	1
BEARWALLOW CREEK	WS-III HQW	2	79	28	1
BEE BRANCH	B TR ORW	11	38	34	4
BEE BRANCH	WS-IV TR ORW	1	27	10	
BEE CREEK	C TR ORW	11	38	34	17
BEECH CREEK	C TR ORW	5	41	2	2
BEECH FLATS PRONG	C TR HQW	2	79	55	2
BEETREE FORK	C TR HQW	6	3	4	
BELDING HOUSE BRANCH	C HQW	2	190	9	11
BENNETT BRANCH	C TR ORW	5	41	9	
BENNETT BRANCH	WS-III TR HQW	5	3	4	
BETTIS BRANCH	C TR HQW	5	59	18	
BIG BALD BRANCH	C TR ORW	5	41	4	4
BIG BEARPEN BRANCH	C TR HQW	6	34	12	3
BIG BEARTRAP BRANCH	WS-III TR HQW	5	2	7	5
BIG BRANCH	C TR HQW	5	59	20	
BIG BRANCH	C TR HQW	6	6	2	
BIG BRANCH	WS-III TR HQW	5	2	12	5
BIG COVE BRANCH	C TR ORW	11	38	34	11
BIG CREEK	C TR HQW	5	59		
BIG CREEK	C TR HQW	7	3	40	(0.5)
BIG CREEK	C TR ORW	3	10	3	

HQW OR ORW WATERS

Name	Class	Stream Index No.			
BIG FLAT BRANCH	C HQW	2	194	7	
BIG INDIAN CREEK	C TR ORW	2	57	4	
BIG LAUREL BRANCH	C ORW	2	57	1	1
BIG SHOAL BRANCH	C ORW	2	57	4	1
BIG TUNI CREEK	C TR HQW	1	21	5	
BILLS BRANCH	C HQW	11	38	32	4
BILLY BRANCH	WS-II TR ORW	6	54	3	6
BIRCH RIDGE CR	WS-III HQW	2	79	28	1
BLACK BRANCH	C ORW	2	57	21	3
BLACK CREEK	C ORW	2	57	16	
BLACKROCK BRANCH	C ORW	3	10	3	2
BOARDTREE BRANCH	C HQW	1	21	13	4
BOGUE SOUND	SA ORW	20	36	(0.	
BOOMER INN BRANCH	WS-III TR HQW	5	2	7	7
BOONE BRANCH	C HQW	1	21	5	2
BOONE BRANCH (FORK)	B HQW	11	38	32	12
BORING CREEK	C TR HQW	6	6	13	
BOWLENS CREEK	C HQW	7	3	14	(2.5)
BRADLEY CREEK	C TR HQW	6	6	5	
BRADLEY CREEK	WS-I ORW	6	54	3	17
BRISTOL BRANCH	WS-IV TR HQW	1	21	18	
BRITTON CREEK	C HQW	1	52	29	(1)
BROKELEG BRANCH	C ORW	1	52	23	1
BROWN BRANCH	B HQW	11	38	32	13
BRUSHY BRANCH	WS-II TR ORW	6	54	3	13
BRUSHY RIDGE BRANCH	WS-III TR HQW	6	16	4	
BRYSON BRANCH	C TR ORW	2	57	18	
BRYSON BRANCH	C TR ORW	3	7	1	
BUCK CREEK	C TR ORW	2	57	21	
BUCKEYE BRANCH	C HQW	2	194	6	
BUCKEYE CREEK	WS-III TR HQW	5	2	7	2
BUCKNER BRANCH	WS-IV HQW	1	21	17	
BUCKS TIMBER CREEK	C TR ORW	11	38	34	6
BUFFEYS BRANCH	C TR HQW	6	6	12	
BULLSCRAPE BRANCH	C ORW	2	57	21	3
BURNTHOUSE BRANCH	WS-III TR ORW	11	35	2	5
BURSTED ROCK CREEK	C TR HQW	6	6	3	
CAESAR AUSTIN BRANCH	C HQW	1	21	16	
CALDWELL FORK	C TR ORW	5	41	4	
CAMP CREEK	C TR HQW	6	32	2	
CAMP CREEK	WS-III TR HQW	2	79	6	2
CAMP TWO BRANCH	WS-III TR HQW	5	2	7	4
CANE BRANCH	C HQW	11	38	32	6
CANEY BOTTOM CREEK	C TR HQW	6	34	6	1
CANEY FORK	WS-III TR HQW	2	79	28	(0.5)
CANTRELL CREEK	WS-II TR ORW	6	54	3	14
CARROLL MILL CK	C TR ORW	11	38	34	18

HQW OR ORW WATERS

Name	Class	Stream Index No.			
CARY FLAT BRANCH	C TR ORW	11	38	34	6
CASCADE BRANCH	C HQW	6	117	(2)	
CASE BRANCH	WS-I ORW	6	54	3	17
CATALOOCHEE CREEK	C TR ORW	5	41		
CATHEY COVE BRANCH	WS-III TR HQW	5	2	12	3
CATHEYS CREEK	C TR HQW	6	16	(10)	
CATHEYS CREEK	WS-III TR HQW	6	16	(0.	
CATHEYS CREEK	WS-III TR HQW CA	6	16	(8.	
CEDAR ROCK CREEK	C TR HQW	6	34	9	
CEDAR ROCK CREEK	WS-III TR HQW	6	16	6	
CHARLES CREEK	WS-III TR HQW	6	16	1	
CHARLEY CREEK	WS-III HQW	2	79	9	5
CHATTOOGA RIVER	B TR ORW	3			
CHESTNUT BRANCH	C ORW	2	57	21	4
CHESTNUT BRANCH	C ORW	2	57	21	7
CHESTNUT BRANCH	C TR HQW	1	21	5	1
CHESTNUT BRANCH	C TR HQW	5	59	22	
CHESTNUT COVE BRANCH	C TR ORW	11	38	34	14
CHESTNUT COVE CREEK	C TR HQW	5	59	11	
CHESTNUT CREEK	C TR HQW	6	3	1	2
CHESTNUT CREEK	C TR HQW	6	34	10	
CHESTNUT FLAT BRANCH	C HQW	2	190	9	14
CHESTNUT RIDGE CREEK	WS-III HQW	2	79	28	1
CLARK BRANCH	C TR HQW	11	38	32	10
CLAWHAMMER CREEK	WS-II TR ORW	6	54	3	8
CLEAR CREEK	C HQW	11	34	6	(1)
CLEAR SPRING BRANCH	C ORW	2	57	21	8
CLIFF BRANCH	C HQW	2	79	55	6
CLINGMANS CREEK	C TR HQW	2	90	1	(1)
CLONTZ BRANCH	C TR ORW	5	41	4	6
COALNEY BRANCH	C TR HQW	6	3	1	1
COGGINS BRANCH	C ORW	5	41	10	3
COLD CREEK	WS-III HQW	2	79	6	4
COLD CREEK	WS-III HQW	2	79	9	4
COLD MOUNTAIN BRANCH	C TR HQW	6	6	4	
COLD SPRING BRANCH	C HQW	2	69	1	
COLDSRING BRANCH	C ORW	1	27	4	3
COLLETT CAMP BRANCH	C ORW	1	27	4	2
COLLINS CREEK	C TR HQW	2	79	55	10
COMPASS CREEK	C TR HQW	1	21	7	
CONRAD BRANCH	C ORW	5	41	10	2
COOKS CREEK	C ORW	5	41	2	4
COON BRANCH	C TR HQW	2	79	55	3
COONTREE CREEK	WS-V&B TR HQW	6	34	13	
CORBIN CREEK	C TR HQW	4	14	5	
CORRELL BRANCH	C ORW	5	41	10	4
COUCHES CREEK	C TR HQW	2	79	55	15

HQW OR ORW WATERS

Name	Class	Stream Index No.			
COURTHOUSE CREEK	C TR HQW	6	3	1	
COVE CREEK	C TR HQW	6	34	6	
CRAB CREEK	C TR HQW	6	38	23	
CRAIG CREEK	C TR ORW	11	38	34	16
CRANBERRY CREEK	WS-III TR ORW	11	35	2	4
CRUSHER BRANCH	C TR ORW	11	38	34	9
CUB BRANCH	WS-III HQW	2	79	9	5
CURTIS CREEK	C TR ORW	2	57	9	
DANIEL RIDGE CREEK	C TR HQW	6	34	3	
DARB BRANCH	WS-I ORW	6	54	3	17
DARK PRONG	WS-III TR HQW	5	3	2	
DAVENPORT BRANCH	C ORW	2	57	21	6
DAVIDSON BRANCH	C TR ORW	5	41	2	5
DAVIDSON RIVER	WS-V TR HQW	6	34	(1)	
DAVIDSON RIVER	WS-V&B TR HQW	6	34	(11)	
DEDNAN BRANCH	C TR HQW	2	176	1	(1)
DEER BRANCH	C TR HQW	7	3	40	1
DEER CREEK	C TR HQW	5	59	2	
DEERLICK BRANCH	C HQW	2	190	9	13
DEMOCRAT CREEK	C TR HQW	4	14	3	
DEN BRANCH	C TR ORW	5	41	4	11
DEVILS PRONG	C ORW	2	57	10	2
DICK BRANCH	C TR HQW	1	21	14	
DINA BRANCH	WS-III TR HQW	5	3	5	2
DISMAL CREEK	C HQW	6	38	23	1
DOUBLE GAP BRANCH	C TR ORW	5	41	4	5
DRY BRANCH	WS-III TR HQW	5	3	6	
DUDE BRANCH	C ORW	5	41	10	4
DUNNS CREEK	WS-III TR HQW	6	16	2	
E. FK FRENCH BROAD R	C TR HQW	6	6		
E. FK PIGEON RIVER	WS-III TR HQW	5	3	(0.	
E. FORK LAUREL CREEK	C TR HQW	6	38	17	1
E. FORK OVERFLOW CR	C TR ORW	3	10	2	1
EARLY CREEK	C TR ORW	5	41	11	
EDWARDS CREEK	C TR ORW	3	10	3	1
ESTES MILL CREEK	C TR ORW	11	38	34	12
EVANS BRANCH	C HQW	1	21	13	3
FACTORY BRANCH	C TR ORW	2	57	20	
FALL BRANCH	C HQW	2	190	9	8
FALLING ROCK CREEK	C TR ORW	5	41	2	1
FAR BALD SPRING BR	C TR ORW	1	27	1	
FIRES CREEK	C TR ORW	1	27	0.5	
FIRES CREEK	WS-IV TR ORW	1	27	5.5	
FISHPRONG BRANCH	C ORW	2	57	21	7
FLAT BRANCH	C HQW	2	190	9	5
FLAT CREEK	WS-III TR HQW	2	79	11	
FLAT LAND BRANCH	C TR ORW	11	38	34	6

HQW OR ORW WATERS

Name	Class	Stream Index No.			
FLINTSPRING BRANCH	C TR ORW	1	27	5	
FORK TIMBER BRANCH	C TR ORW	11	38	34	11
FRANKUM CREEK	C HQW	11	38	32	9
FRIDDLE CREEK	C HQW	11	38	32	5
FROLICTOWN CREEK	WS-III HQW	2	79	1	1
GAGE CREEK	WS-III HQW	2	79	9	3
GAME BRANCH	WS-IV TR ORW	1	27	11	1
GEORGE IRA CREEK	C TR ORW	5	41	1	3
GEORGES CREEK	C HQW	11	38	32	9
GERREN CREEK	C TR HQW	6	6	14	
GIPP CREEK	C TR ORW	1	52	23	
GLADE BRANCH	C TR ORW	2	57	21	5
GLADY BRANCH	C HQW	6	16	11	1
GLADY BRANCH	WS-II TR ORW	6	54	3	9
GLADY FORK	WS-III TR HQW	6	16	3	
GLEN GAP BRANCH	C HQW	2	194	2	
GOLDSRING BRANCH	WS-III HQW	2	79	1	1
GOOD SPRINGS BRANCH	C TR ORW	5	41	2	4
GRAGG PRONG	C TR ORW	11	38	34	11
GRAPEVINE BRANCH	C HQW	2	194	5	
GRASSY RIDGE BRANCH	WS-III TR HQW	5	2	7	3
GRAY CAMP BRANCH	C HQW	5	59	15	
GREASY COVE PRONG	WS-III TR HQW	5	3	3	
GRIFFITH BRANCH	WS-III TR ORW	11	35	2	8
GROGAN CREEK	C TR HQW	6	34	9	1
GULF BRANCH	C ORW	2	57	1	1
GULF FORK	C ORW	2	57	1	1
GUMSTAND BRANCH	C TR HQW	6	34	12	5
GUNTER FORK	C TR HQW	5	59	9	
HAIGLER CAMP BRANCH	WS-IV TR ORW	1	27	11	2
HALL BRANCH	C TR ORW	5	41	8	
HAMMETT BRANCH	WS-I ORW	6	54	3	17
HANGOVER CREEK	C HQW	2	194	4	
HARPER CREEK	C TR ORW	11	38	34	14
HAYWOOD GAP STREAM	WS-III TR HQW	5	2	7	1
HEMLOCK BRANCH	WS-III TR HQW	5	2	12	2
HICKORY COVE CREEK	WS-IV TR ORW	1	27	11	2
HICKORY FLAT CREEK	C TR HQW	6	6	1	
HICKORY MOUNTAIN BR	WS-III TR HQW	6	16	9	1
HOGAN BRANCH	C ORW	2	57	21	2
HOGLEN BRANCH	C TR ORW	5	41	7	1
HOLLANDER BRANCH	C TR ORW	11	38	34	14
HOLLY SPRINGS BR	WS-III TR HQW	11	35	2	11
HORSE CREEK	C TR ORW	5	41	1	2
HORSEPEN CREEK	C TR ORW	11	38	34	16
HOUSE BRANCH	WS-I ORW	6	54	3	17
HUGHES RIDGE BRANCH	C TR ORW	11	38	34	11

HQW OR ORW WATERS

Name	Class	Stream Index No.			
HULL BRANCH	C TR ORW	11	38	34	14
HUNTER CREEK	C TR HQW	2	79	55	3
HURRICANE CREEK	C TR ORW	2	57	7	
HURRICANE CREEK	C TR ORW	5	41	1	4
HUSKEY CREEK	C TR HQW	2	79	55	2
HUSKINS BRANCH	WS-IV TR ORW	1	27	13	
INDIAN CAMP BRANCH	C HQW	2	190	9	9
INDIAN CAMP BRANCH	WS-III TR HQW CA	6	16	9	2
INDIAN CREEK	C TR HQW	6	3	6	
INTAKE BRANCH	C HQW	4	13	4	(1)
JACK BRADLEY BRANCH	C TR HQW	2	79	55	2
JARRETT CREEK	C HQW	11	7	10	(1)
JENKINS BRANCH	C TR HQW	2	79	68	(1)
JIM BRANCH	C TR ORW	5	41	1	6
JIM MAC BRANCH	C TR HQW	2	79	55	5
JOE BRANCH	WS-III TR ORW	11	35	2	2
JOHN BRANCH	C ORW	2	57	8	1
JOHN MACK CREEK	C TR HQW	5	59	10	1
JOHN ROCK BRANCH	C TR HQW	6	34	9	2
JOHNS RIVER	C HQW	11	38	(34	
JOHNS RIVER	WS-IV HQW	11	38	(35	
JOHNS RIVER	WS-IV HQW CA	11	38	(36	
JOHNSON BRANCH	C ORW	2	57	21	6
JOHNSON CREEK	C HQW	1	21	13	
JOSHUA BRANCH	C TR HQW	6	6	15	
JULIE BRANCH	C HQW	1	21	8	1
JUMPING BRANCH	WS-II TR ORW	6	54	3	15
KAGLE CREEK	WS-III TR HQW	6	16	7	
KANATI FORK	C TR HQW	2	79	55	2
KEPHART PRONG	C TR HQW	2	79	55	3
KETRON CAMP BRANCH	C TR ORW	1	27	5	1
KIESEE CREEK	C TR HQW	6	3	2	
KILBY BRANCH	C HQW	5	59	17	
KILBY CREEK	C ORW	2	57	1	
KIMSEY CREEK	C TR ORW	2	57	10	
KNOB BRANCH	C TR HQW	6	32	1	
KUYKENDALL CREEK	WS-III TR HQW	6	16	9	(1)
KUYKENDALL CREEK	WS-III TR HQW CA	6	16	9	(2)
L.FORK MULBERRY CK	C TR HQW	11	38	32	2
LANNING BRANCH	C TR HQW	6	34	2	1
LAUREL BRANCH	C ORW	2	57	12	
LAUREL BRANCH	C TR HQW	6	6	6	
LAUREL BROOK	WS-II TR ORW	6	54	3	11
LAUREL CREEK	C HQW	5	59	23	
LAUREL CREEK	C TR HQW	6	38	17	
LAUREL CREEK	C TR ORW	11	38	34	10
LAUREL CREEK	WS-I ORW	6	54	3	17

HQW OR ORW WATERS

Name	Class	Stream Index No.			
LAUREL CREEK	WS-IV TR ORW	1	27	11	2
LAUREL FORK	B HQW	11	38	32	12
LAUREL FORK	C TR HQW	6	34	4	
LAUREL FORK CREEK	C TR HQW	11	15	3	
LAUREL MTN BRANCH	C TR ORW	11	38	34	8
LEATHERWOOD BRANCH	C HQW	5	59	21	
LEATHERWOOD BRANCH	WS-IV TR ORW	1	27	12	
LEDFORD BRANCH	WS-IV TR ORW	1	27	14	
LEFT PRONG JOHNSON C	C TR HQW	1	21	13	1
LING BRANCH	C TR ORW	11	38	34	11
LINN COVE BRANCH	B TR ORW	11	38	34	2
LINVILLE RIVER	B HQW	11	29	(19	
LINVILLE RIVER	B TR HQW	11	29	(16	
LINVILLE RIVER	WS-IV&B HQW	11	29	(23	
LITTLE BALD BRANCH	C TR ORW	5	41	4	2
LITTLE BUCK CREEK	C TR ORW	2	57	21	1
LITTLE CREEK	C TR ORW	3	10	3	3
LITTLE DARB BRANCH	WS-I ORW	6	54	3	17
LITTLE DAVIDSON BR	C ORW	5	41	2	5
LITTLE FIRES CREEK	WS-IV TR ORW	1	27	7	
LITTLE INDIAN CREEK	C TR ORW	2	57	8	
LITTLE LAUREL CK	C TR ORW	11	38	34	7
LITTLE LOST COVE CK	C TR ORW	11	38	34	11
LITTLE LYMAN PRONG	C ORW	2	57	10	1
LITTLE NETTLE BRANCH	C TR HQW	5	59	7	
LITTLE ROCK BRANCH	C TR ORW	2	57	13	
LITTLE TARKILN BR	WS-III TR HQW	6	16	8	1
LITTLE TUNI CREEK	C HQW	1	21	5	5
LITTLE WILSON CREEK	B TR ORW	11	38	34	3
LITTLEFLAT BRANCH	C HQW	2	190	9	6
LOG HOLLOW BRANCH	C TR HQW	6	34	12	3
LONG BRANCH	C HQW	1	21	5	4
LONG BRANCH	C HQW	4	13	5	2
LONG BRANCH	C ORW	1	27	4	
LONG BRANCH	C TR HQW	6	3	5	
LONG BRANCH	C TR HQW	6	34	5	
LONG BRANCH	C TR ORW	2	57	11	
LONG BRANCH	WS-I ORW	6	54	3	17
LONG BRANCH	WS-III HQW	2	79	9	6
LOOKING GLASS CREEK	B TR HQW	6	34	12	(1)
LOOKING GLASS CREEK	C TR HQW	6	34	12	(4)
LOST BOTTOM CREEK	C TR ORW	5	41	2	3
LOST COVE CK	C TR ORW	11	38	34	11
LOST COVE CREEK	C HQW	11	7	10	2
LOW GAP BRANCH	C HQW	5	59	12	
LOWER CREEK	C TR HQW	6	6	10	
LOWER DOUBLE BRANCH	C TR ORW	5	41	6	

HQW OR ORW WATERS

Name	Class	Stream Index No.			
LOWER GRASSY BRANCH	C TR HQW	2	79	55	3
LTL. BEARTRAP BRANCH	WS-III TR HQW	5	2	7	6
LTL. CATALOOCHEE CR	C TR ORW	5	41	10	
LTL. E. FK PIGEON RI	WS-III TR HQW	5	2	12	(0.5)
LTL. WHITEWATER CR	C TR HQW	4	14	2	
LYON BRANCH	WS-IV HQW	1	21	19	
MACKEY CREEK	C HQW	11	15	(2)	
MAGGOT SPRING BRANCH	C TR ORW	5	41	4	2
MAJOR BRANCH	C TR ORW	11	38	34	11
MAPLE TREE BRANCH	C TR ORW	11	38	34	11
MARKS MTN BRANCH	C TR ORW	11	38	34	11
MATHEWS BRANCH	C ORW	5	41	3	1
MATHEYS BR	C TR HQW	6	16	10	
MATLOCK CREEK	C TR HQW	1	21	8	
MEADOW BRANCH	C HQW	2	190	9	3
MESSER BRANCH	WS-IV TR ORW	1	27	11	2
MESSER FORK	C TR ORW	5	41	1	5
MIDDLE CREEK	C TR HQW	6	6	9	
MIDDLE PRONG W. FORK	WS-III TR HQW	5	2	7	
MILL STATION CREEK	C TR HQW	6	3	1	3
MILLS CREEK	C HQW	11	38	32	5
MINE BRANCH	C TR HQW	2	79	55	2
MINNIE BALL BRANCH	C TR HQW	2	79	55	2
MOONEY BRANCH	C ORW	2	57	2	1
MOONEY CREEK (HEMP	C TR ORW	2	57	2	
MOORE BRANCH	B HQW	11	38	32	14
MOORE CREEK	C TR ORW	2	57	17	
MOORE SPRING BRANCH	C TR HQW	2	178	6	(2)
MOSSY BRANCH	C TR ORW	5	41	3	
MOUNTAIN TEA BRANCH	C HQW	6	6	11	
MOUNTAINSIDE BRANCH	C ORW	2	57	2	3
MOUSE CREEK	C TR HQW	5	59	16	
MOUSE KNOB BRANCH	C HQW	2	190	9	7
MULBERRY CREEK	B HQW	11	38	32	(11)
MULBERRY CREEK	C TR HQW	11	38	32	(1)
MCGINTY CREEK	C TR HQW	5	59	10	2
MCKEE BRANCH	C TR ORW	5	41	4	7
N. FK FRENCH BROAD	C TR HQW	6	3	(0.	
N. PRONG SHINING CR	WS-III TR HQW	5	3	5	2
NAKED GROUND BRANCH	C HQW	2	194	1	
NANTAHALA RIVER	B TR ORW	2	57	(0.	
NEGRO PRONG	WS-III TR HQW	6	16	8	
NETTLE BRANCH	C TR HQW	5	59	6	
NEWTON BRANCH	C TR HQW	2	79	55	10
NICHOLS BRANCH	C ORW	2	57	5	
NICHOLS COVE BRANCH	C HQW	2	194	8	
NORTH HARPER CREEK	C TR ORW	11	38	34	14

HQW OR ORW WATERS

Name	Class	Stream Index No.			
NORTON BRANCH	C ORW	3	10	3	4
NOVA SCOTIA BRANCH	C ORW	2	57	19	
OCONALUFTEE RIVER	B TR HQW	2	79	55	(9)
OCONALUFTEE RIVER	C TR HQW	2	79	55	(1)
OCONALUFTEE RIVER	C TR HQW	2	79	55	(11)
OCONALUFTEE RIVER	C TR HQW	2	79	55	(26.5)
ONION BED BRANCH	C TR ORW	5	41	2	4
OSKODAH BRANCH	C TR HQW	5	59	3	
OVERFLOW CREEK	C TR ORW	3	10	2	
OWLCAMP BRANCH	C HQW	2	190	9	10
PALMER BRANCH	C TR ORW	5	41	4	10
PALMER CREEK	C TR ORW	5	41	2	
PANTHER BRANCH	C TR HQW	6	3	3	
PANTHERFLAT BRANCH	C HQW	2	190	9	4
PANTHERTOWN CREEK	WS-III HQW	2	79	1	
PARK CREEK	C TR ORW	2	57	14	
PAT STABLE BRANCH	C ORW	2	57	16	1
PEA BRANCH	WS-I ORW	6	54	3	17
PENDERGRASS BRANCH	WS-IV TR ORW	1	27	13	1
PERUVIAN BRANCH	C TR HQW	2	79	55	2
PHILLIPS BRANCH	C TR ORW	11	38	34	15
PIGEON BRANCH	WS-II TR ORW	6	54	3	1
PIGPEN BR (LTL SHEAR	C HQW	1	21	13	4
PINEY MOUNTAIN CREEK	WS-III HQW	2	79	28	1
PINHOOK CREEK	WS-III TR HQW	2	79	6	3
PIT BRANCH	C TR HQW	7	3	40	2
POLECAT BRANCH	C HQW	2	190	9	15
POPLAR CREEK	WS-II TR ORW	6	54	3	4
POPLAR SPRINGS BR	C TR ORW	11	38	34	10
POTROCK BRANCH	C TR ORW	1	27	2	
POUNDINGMILL BRANCH	C TR HQW	6	34	12	2
POUNDINGMILL BRANCH	WS-II TR ORW	6	54	3	16
PRETTY HOLLOW CREEK	C TR ORW	5	41	2	4
PROPHET BRANCH	C HQW	5	59	14	
R.FORK MULBERRY CK	C TR HQW	11	38	32	3
RAIDER CAMP CREEK	C TR ORW	11	38	34	14
RIGHT FORK DAVIDSON	C TR HQW	6	34	2	
RIGHT HAND PRONG	WS-III TR HQW	5	2	7	7
RIPSKIN BRANCH	WS-III TR ORW	11	35	2	6
ROARING CREEK	C TR HQW	11	38	32	8
ROARING FORK	C TR ORW	2	57	22	
ROCKBAR BRANCH	C HQW	2	190	9	2
ROCKBROOK CAMP	C HQW	6	22	(1)	
ROCKHOUSE BRANCH	C TR ORW	11	38	34	11
ROCKHOUSE CREEK	C TR HQW	6	34	8	
ROCKHOUSE CREEK	C TR ORW	11	38	34	11
ROCKHOUSE CREEK	WS-IV TR ORW	1	27	11	

HQW OR ORW WATERS

Name	Class	Stream Index No.			
ROCKY BRANCH	C TR HQW	5	59	8	
ROCKY COVE BRANCH	WS-IV TR ORWR	1	27	6	
ROCKY CREEK	C TR HQW	1	21	13	4
ROGUES BRANCH	WS-IV TR ORW	1	27	11	2
ROOSEVELT NAT AREA	C SW ORW	20	36	9.5	(1)
ROOSEVELT NAT AREA	SA SW ORW	20	36	9.5	(2)
ROUGH BUTT CREEK	WS-III HQW	2	79	28	2
ROUGH FORK	C TR ORW	5	41	1	
RUSH BRANCH	C HQW	11	38	32	7
RUST BRANCH	C HQW	2	194	3	
S. FORK MILLS RIVER	WS-II TR ORW	6	54	3	
S. PRONG SHINING CR	WS-III TR HQW	5	3	5	1
SAG BRANCH	C TR ORW	5	41	4	9
SANDY BRANCH	C TR ORW	11	38	34	11
SASSAFRAS CREEK	C HQW	2	190	9	8
SASSAFRAS CREEK	C TR ORW	11	38	34	11
SASSAFRAS CREEK	WS-III TR HQW	2	79	6	1
SCAPECAT BRANCH	WS-III TR HQW	5	2	12	4
SCHOOLHOUSE BRANCH	C HQW	1	21	15	
SCOTSMAN CREEK	C TR ORW	3	7		
SEARCY CREEK	C TR HQW	6	34	7	
SHANTY BRANCH	C TR ORW	5	41	1	7
SHEARER CREEK	C TR HQW	1	21	13	4
SHELL BARK (HICKORY	C TR HQW	2	79	55	7
SHINING CREEK	WS-III TR HQW	5	3	5	
SHINING ROCK CREEK	WS-III TR HQW	5	2	12	1
SHOAL BRANCH	C HQW	1	21	13	2
SHORT BRANCH	C ORW	1	27	4	1
SHUCK RIDGE CREEK	C TR HQW	6	34	3	1
SHUTIN BRANCH	C TR HQW	6	34	15	
SILER BALD BRANCH	C ORW	2	57	18	1
SINKING CREEK	C TR HQW	5	59	5	
SLATE ROCK CREEK	WS-I ORW	6	54	3	17
SLICKROCK CREEK	C TR HQW	2	194		
SLIDE BRANCH	C TR HQW	5	59	1	
SMITH BRANCH	C HQW	2	79	55	4
SNAKE BRANCH	C HQW	1	21	13	1
SNAKE BRANCH	C TR ORW	5	41	4	8
SNOWBIRD CREEK	C TR HQW	2	190	9	(0.5)
SPANISH OAK BRANCH	C TR HQW	6	16	11	
STABLE BRANCH	C HQW	1	21	15	1
STACK ROCK CREEK	C TR ORW	11	38	34	5
STEVE BRANCH	C HQW	1	21	5	3
STILL BRANCH	C TR ORW	11	38	34	11
STILLWATER BRANCH	C TR HQW	6	34	14	
STRAIGHT CREEK	C TR ORW	5	41	4	3
SWALLOW FORK	C TR HQW	5	59	10	

HQW OR ORW WATERS

Name	Class	Stream Index No.			
SWEAT HEIFER CREEK	C TR HQW	2	79	55	3
SWEETWATER BRANCH	WS-II TR ORW	6	54	3	12
TALLEY MILL CREEK	C ORW	3	10	3	5
TARKILN BRANCH	WS-III TR HQW	6	16	5	
TATHAM CABIN BRANCH	C ORW	1	27	4	3
TAYLOR BAY	SA ORW	20	36	3	
TENNESSEE CR (TANASE	WS-III TR HQW	2	79	6	
THAD BRANCH	WS-I ORW	6	54	3	17
THOMAS BRANCH	C ORW	2	57	6	
THOMPSON CREEK	WS-II TR ORW	6	54	3	5
THORPS CREEK	C TR ORW	11	38	34	12
THROUGH BRANCH	C ORW	2	57	15	
THUNDERSTRUCK BRANCH	C ORW	2	57	21	9
TIMBERED BRANCH	WS-III TR HQW	11	35	2	9
TRAYS ISLAND CREEK	C HQW	4	13	5	(1)
TUCKASEGEE RI (E.FOR	WS-III&B TR HQW	2	79	(0.	
TURKEY BRANCH	C TR ORW	11	38	34	7
TUSQUITEE CREEK	C TR HQW	1	21	4.5	
TUSQUITEE CREEK	WS-IV TR HQW	1	21	16.	
TWENTYMILE CREEK	C TR HQW	2	178	(4)	
UPPER CREEK	C TR HQW	6	6	8	
UPPER CREEK	WS-III TR HQW	11	35	2	(13)
UPPER CREEK	WS-III TR ORW	11	35	2	(1)
UPPER CREEK	WS-III TR ORW	11	35	2	(8.5)
UPPER CREEK (LAKE)	WS-III&B TR HQW	11	35	2	(10)
UPPER DOUBLE BRANCH	C TR ORW	5	41	5	
UPPER GRASSY BRANCH	C TR HQW	2	79	55	3
UPPER LONG CREEK	C HQW	2	69	2	
W. FK FRENCH BROAD R	C TR HQW	6	2	(7.	
W. FORK OVERFLOW CR	C TR ORW	3	10	2	2
WADDLE BRANCH	C TR HQW	4	14	4	
WARM CAVE BRANCH	C TR ORW	5	41	4	1
WEBB BRANCH	C ORW	3	10	2	2
WEBB CREEK	C TR ORW	11	38	34	11
WEBB PRONG	C TR ORW	11	38	34	11
WEST RIDGE BRANCH	WS-II TR ORW	6	54	3	7
WHALEY BRANCH	C HQW	5	59	24	
WHEELER BRANCH	WS-IV TR ORW	1	27	8	
WHITE OAK RIVER	C HQW	20	(14		
WHITewater RIVER	C TR HQW	4	14	(1.	
WILDCAT BRANCH	C HQW	2	190	9	12
WILL BRANCH	C TR HQW	2	79	55	8
WILLIAMSON CREEK	C TR HQW	6	32		
WILSON CREEK	B TR ORW	11	38	34	
WILSON MILL CREEK	C HQW	6	16	12	
WINDING STAIR BRANCH	C TR ORW	5	41	7	
WOLF COVE CREEK	C TR ORW	5	41	1	3

HQW OR ORW WATERS

Name	Class	Stream Index No.			
WOLF CREEK	WS-III TR HQW	2	79	9	7
WOLF CREEK (WOLF CR	WS-III&B TR HQW	2	79	9	(1)
WOLFPEN BRANCH	WS-IV TR ORW	1	27	9	
WOODY BRANCH	C ORW	5	41	10	1
WOODY CREEK	C TR ORW	5	41	1	3
WYANT BRANCH	C ORW	2	57	11	1
YELLOW CREEK	C TR HQW	5	59	4	
YELLOW GAP CREEK	WS-I ORW	6	54	3	17
YELLOW PATCH BRANCH	C ORW	2	57	2	2
YELLOW PATCH BRANCH	WS-III HQW	2	79	9	2
YELLOWSTONE PRONG	WS-III TR HQW	5	3	1	

APPENDIX D
NANTAHALA/PISGAH PLAN AMENDMENT #5
MONITORING TASK SUMMARY

APPENDIX D

TABLE D-1 MONITORING TASK SUMMARY TABLE

MONITORING TASK NO	MONITORING QUESTION	Monitoring Item	Method of Collection	Duration/Frequency	Precision	Reliability	Responsibility	Cost
1	VQO's for management areas being met	NEPA documentation, Field Review	Sample of projects	Annually	High	High	Monitoring Team, Integrated Resource Review Team, Forest LA	
2	Visually Sensitive areas moving towards a more continuous, natural appearing canopy	Field Review	Sample of areas	Annually	Moderate	High	Integrated Resource Review Team, Forest Landscape Architects	
3	Is scenery being maintained or enhanced?	Report to Monitoring Team, Field Review	Ask District Rangers, Sample of Projects	Annually	High	High	Monitoring Team, District Forest LA IRR Team	
4	Management activities moving MAs towards providing the desired recreational setting	Field Review, reports to Recreation unit	Sample of areas, survey Resource Assistants	Annually	Moderate	High	Integrated Resource Review Team, Monitoring Team	
5	Are health and safety hazards corrected? Has accessibility improved?	Review of projects	Summary report	Annually	High	High	Forest accessibility coordinator IRR Team	
6	Silvicultural treatments effective for producing desired regeneration	Report to Forest Silviculturist	4-year regeneration check	Annually	High	High	Forest Silviculturist IRR Team	
7	Is a continuous supply of high quality hardwood sawtimber available for harvest in MA 1B and MA 3B?	Bid monitoring records	Check 2400-17 forms	Annually	High	High	Forest Timber Sale Administrator IRR Team	
8	Is emphasis on producing high quality hardwood sawtimber in MA 1B and MA 3B?	Silvicultural Prescriptions	Sample prescriptions	Annually	High	High	Forest Silviculturist IRR Team	
9	Monitor Management Indicator Species populations and habitat	Permanent point surveys, project surveys, trout surveys, game harvest reports, CISC, habitat surveys NEPA documents	Sample points and streams, ask NCWRC, query CISC, collate reports	Annually	Moderate	Moderate	Forest Botanist, Forest Wildlife Biologist, Forest Fisheries Biologist	

MONITORING TASK NO	MONITORING QUESTION	Monitoring Item	Method of Collection	Duration/Frequency	Precision	Reliability	Responsibility	Cost
10	Evaluate MIS population trends and habitat conditions	Review monitoring information collected for Task 11		Annually	Moderate	Moderate	Forest Botanist Forest Wildlife Biologist, Forest Fisheries Biologist	
11	Determine relationships between populations, habitat conditions, and management activities	Literature review, review of research results		As new information becomes available			Forest Botanist, Forest Wildlife Biologist, Forest Fisheries Biologist	
12	Is dispersion of early successional habitat within standards	CISC, area evaluation form NEPA documents	Sample CISC, Sample landscape areas	Annually	High	High	Monitoring Team, IRR Team, District Monitoring Contacts	
13	Are directions and standards being met for managing forest interior areas ?	Documentation on maps, and in CISC, Field inspection, Planning records	Ask District Planner, Biologist, or ID Team Leader	Annually	High	High	Monitoring Team, District Monitoring Contacts IRR Team	
14	Are blocks of forest without internal edge of more benefit than forest with internal edge?	Review of literature		As new information becomes available	Moderate	Moderate	Forest Wildlife, Biologists	
15	Are directions and standards being met for designating future old growth areas?	Documentation on maps, and in CISC, Field inspection, Planning records	Ask District Planner or ID Team Leader, query CISC	Annually	High	High	Monitoring Team, District Monitoring Contacts IRR Team	
16	Are old growth eco-systems being restored?	Field Review	Sample of patches,	When Plans are revised	Moderate	Moderate	IRR Team Forest ID Team	
17	Are directions and standards being met for riparian areas?	Project review, documentation on maps, field inspection NEPA documents	Sample riparian areas	Annually	High	High	Forest Hydrologist, Forest Fisheries Biologist IRR Team	

MONITORING TASK NO	MONITORING QUESTION	Monitoring Item	Method of Collection	Duration/ Frequency	Precision	Reliability	Responsibility	Cost
18	Management activities moving riparian areas toward their desired condition Is coordination taking place	Field review	Sample of areas	Annually	Moderate	High	IRR Team Monitoring contacts	
19	Management practices in compliance with the NC Forest Practices Guidelines Related to Water Quality	Field Review	Sample of Areas	Annually	High	High	Forest hydrologist	
20	Speical Interest Area management direction is met and attributes and resources maintained	Project review, area evaluation form	Sample areas	When an SIA is within a landscape area being evaluated that year	Moderate	Moderate	District Ranger, IRR Team	
21	Wilderness management direction is met and attributes and resources maintained	Level of use, campsite and trail conditions, project review	Survey by Wilderness Rangers, RAs or technicians	Annually	High	High	Wilderness Program Manager IRR Team	
22	RNA's managed as undisturbed	Project review	Ask District Ranger	Every five years			RNA program manager IRR Team	
23	Are directions for T&E and sensitive species being met?	Project Review Conservation Strategy Review	Ask Disrtict Planner, Biologist, or ID Team Leader	Annually	High	High	Monitoring Team, Forest Biologists, IRR Team	
24	Are new minerals leases limited to those where the minerals activity can occur and still maintain other resource objectives?	New Leases/ NEPA documentation	Review new leases	At Plan Revision	Moderate	Moderate	Forest Geologist IRR Team	
25	How valid were the per unit cost and price assumptions used in developing the Forest	See Table D-2	See Table D-2	Annually	High	High	See Table D-2	
26	Are constructed roads designed according to standards appropriate for the planned use?	Project Review	Sample of roads	Annually	High	High	Engineering IRR Team	

MONITORING TASK NO	MONITORING QUESTION	Monitoring Item	Method of Collection	Duration/Frequency	Precision	Reliability	Responsibility	Cost
27	Are silvicultural treatments in compliance with the forest plan?	Annual Reports Field Review	District reporting Sample of projects	Annually	High	High	Forest Silviculturist IRR Team	
28	Are prescribed burns performed within the parameters of the prescribed burn plan?	Field review Evaluation form	Sample of projects, all forms	Annually	High	High	Fire Management Officer IRR Team	
29	What emerging issues need to be addressed to ensure the continued effectiveness of the Forest Plan?	As new issues are defined during plan implementation, new monitoring activities may need to be identified to address these issues. New monitoring activities addressing issues can be added to the Forest Monitoring Program by completing a new Monitoring Task Sheet and summarizing it in this table. Any updates and/or additions to this table will be identified in the Forest's Annual Monitoring and Evaluation Report.						
30	Are heritage resources being protected?	Field review NEPA Documents	Sample of sites	Annually	High	High	Forest Archeologist IRR TEAM	
31	Are prescribed burn objectives met?	Field review	Sample of projects samples	Monitoring schedule set in burn plan	Moderate	Moderate	Fire Management Officer IRR Team	
32	Are there significant changes in land productivity?	Changes in land use, changes in soil productivity	Plan Amendments, site surveys	Annually, if infor- mation has changed	Moderate	Moderate	Monitoring Team, Forest Soil Scientist IRR Team	
33	Have lands identified as not suitable for timber production become suitable?	Plan Amendments or Revisions	Review	Every 10 years, or as amend- ments are made	High	High	Forest ID Team	
34	What are the effects of national forest management on adjacent land, resources, and communities?	Employment records, County income records, news articles, letters	Review	Annually	Moderate	Moderate	Monitoring Team, Public Affairs Staff IRR Team	
35	How valid were the unit cost and price assumptions used in developing the forest plan?	See Table D-2	See Table D-2	Annually	High	High	Monitoring Team	

MONITORING TASK NO	MONITORING QUESTION	Monitoring Item	Method of Collection	Duration/Frequency	Precision	Reliability	Responsibility	Cost
36	Are insects diseases or noxious weeds increasing to damaging levels as a result of management activities?	Field sensing	Collection, traps, samples	Annually	High	High	Forest Health IRR Team	
37	What are research needs to support or improve national forest management?	Environmental Analysis	Ask rangers, specialists, planners	Annually	Moderate	Moderate	Monitoring Team Physiographic Core Team Representative IRR Team	
38	Are maximum size limits for openings being met and should they be continued?	Plan Amendment or Revision	Review for change	When Plan is revised or amended			Forest ID Team	

TABLE D-2. MONITORING PREDICTED ACTIVITIES, COSTS, AND OUTPUTS

Activity/Output/Cost	Unit of Measure	Plan Estimate	Responsibility	Source of Data
Recreation Developed Use	1000 RVD's*/year	1,227	Recreation	RIM
Recreation Dispersed Use	1000 RVD's*/year	3,219	Recreation	RIM
Trail Construction/Reconstruction	Miles/year	24	Recreation	MAR
Wilderness	Acres	81,780	Recreation	Forest Plan
Wildlife Habitat Improvement	Acres/year	2,180	Wildlife	MAR
Timber Allowable Sale Quantity	Million board feet/year	36.9	Timber	TSPIRS
Reforestation	Acres/year	7,340	Timber	MAR
Timber Stand Improvement	Acres/year	1,504	Timber	MAR
Water meeting water quality goals	Acre-feet/year	3,297,000	Water	MAR
Minerals Leases and Permits	# Operating Plans/year	277	Minerals	MAR
Youth Conservation Corps	Enrollee years/year	31	Human Resources	MAR
Older Workers	Enrollee years/year	172	Human Resources	MAR
Volunteers	Enrollee years/year	105	Human Resources	MAR
Job Corps	Enrollee years/year	440	Human Resources	MAR
Fire Protection Capability	Dollars/year	1,003,000 *	Fire	MAR
Fuel Breaks & Treatment	Acres/year	933	Fire	MAR
Land Purchase and Acquisition	Acres/year	800	Lands	MAR
Land Exchange	Acres/Year	400	Lands	MAR
Property Boundary Line Location	Miles/year	107	Lands	MAR
Soil and Water Improvement	Acres/year	39	Soil & Water	MAR
Road Construction/Reconstruction	Miles/year	31	Engineering	MAR
Annual Budget	M\$	9,460	B&F	Forest Budget Package

* Total for Nantahala, Pisgah, Croatan, and Uwharrie National Forests and NFSCNC Supervisor's Office

Table D-3. Monitoring MIS populations trends and amount and quality of habitat.

Over the next five years, a system of permanent points will be established across the forest representing all land type associations on Pisgah and Nantahala National Forests. These permanent points will be used to survey for the following plants and animals:

- Breeding birds
(including cowbirds)
- Salamanders
- Aquatic invertebrates
- Invasive exotic plants
- Rich cove plants

The following species will be monitored: bait station or game data:

- Black bear
- Eastern wild turkey
- White-tail deer

Species and habitat components may be added or subtracted from this list as the system is established and feasibility questions are answered. Any changes to this list will be described in the Annual Monitoring and Evaluation Report.

APPENDIX E

Additional Management Practices for Amendment #5

There are 2 management practices added to the Forest Plan through Amendment #5. These practices relate to methods of timber harvest, specifically the selection regeneration method and the two-aged regeneration method.

Selection Regeneration Method

Using the selection method, regeneration occurs in small openings, a minimum of 0.2 of an acre in size up to a diameter equal to 1.5 to 2 times the height of the adjacent dominant and co-dominant trees. For example, openings would be from 0.2 to 0.4 acres in stands with an average height of 65 feet. A stand that has an average height of 120 feet would have openings from 0.6 to 1.0 acres in size. A minimum size opening is specified to ensure lateral crown closure does not take place, thus ensuring some amount of sunlight to the opening. This will provide for the regeneration of intermediate and shade intolerant species.

In Management Areas 1 and 3, entries would be made every 20 years with approximately 1/4 of the stand being regenerated each entry. In Management Areas 2 and 4, entries would be made every 30 years with approximately 1/6 of the stand being regenerated each entry.

Criteria for locating opening include areas with acceptable regeneration potential, areas of damaged trees, areas of poor stocking and areas with mature trees. To provide for regeneration all of not all stems would be removed. When trees are designated to be left, residual basal area should not exceed 10-15 square feet (acre equivalent) in trees with a dbh of less than 12 inches. This will provide for the establishment and long term growth and development of planned regeneration.

Leave trees should have an intermediate or co-dominant crown class. This will ensure good development of the residuals while providing light to the regenerated stems. In addition, leave trees should be selected that will contribute to wildlife habitats, esthetics and forest products. Selected trees should be long lived species if left till mid rotation or later.

Intermediate harvest removing larger trees between groups to release pole sized material and small sawtimber may be done when needed. Wildlife habitat needs such as snag and den tree requirements, outlined in the standard, must be followed in all phases of the selection regeneration method.

The selection system of regeneration is likely to occur in upland hardwood, cove hardwood, and mixed hardwood/pine stands. regeneration by the selection system is less likely to be implemented in the southern yellow pine forest types.

Two-Aged Regeneration Method

In the two-aged regeneration method, the mature stand is partially cut. A new age class is established either by natural or artificial methods, with residual overstory left in place for an indefinite period.

The two-aged regeneration method allows flexibility in the timing of the final overstory removal. With this method of regeneration, the residual overstory will remain in place until mid rotation or later (40 years+). In many cases it would remain until a new age class reaches rotation. With the development and growth of a new age class in the understory along with the continued growth of the overstory, the stand takes on a two-aged structure.

When the two-aged regeneration method is selected to help meet visual quality, wildlife or high quality sawtimber objectives, careful consideration should be given to selecting leave trees. In many cases, the selected leave trees can contribute to all three objectives. For example, leave trees with a wildlife objective should be mast producers, or provide den habitat. In order to provide for quality sawtimber, selected leave trees should have commercial value, be relatively long lived, and be able to respond well to release. These same characteristics can also help maintain visual quality. In many cases, these characteristics are common to a particular tree species and will help meet all three management objectives. Leave trees should have intermediate, co-dominant or dominant crown classes.

In order to ensure the growth and development of a new age class, the amount and size of residual basal area becomes very important. To provide for regeneration of desired tree species, enough light must be available over a period of time for the newly developing stand. If only one entry is planned, optimum regeneration would be achieved by establishing a residual basal area as low as 15 to 20 square feet per acre, depending on the average diameter of the residual trees. In order to meet wildlife or visual quality objectives, residual basal area will be higher, as much as 50 square feet per acre. When this is the case, the regenerated area should be periodically visited to determine the effect of the residual overstory on the growth and development of regeneration. Additional stems may need to be removed as the regenerated stand develops, either by commercial or non commercial methods, in order to assure adequate growth and development of the new stand. In all cases, care should be taken to provide sufficient leave trees to account for likely damage to trees during logging and post harvest mortality.

APPENDIX E

OUTPUTS AND ACTIVITIES, PROPOSED AND PROBABLE MANAGEMENT PRACTICES,
AND TIMBER SALE SCHEDULES

Table E-1. Annual Average Outputs and Activities.

Output/Activity	Present (Annual Average 1981-1985)	Planned (Annual Average 1986-2000)
RECREATION		
Developed use.....Thousand Recreation Visitor Days Per Year..... (Including Information Services)	1,040	1,227
Dispersed Use.....Thousand Recreation Visitor Days Per Year..... (Including use in Wilderness and Use Related to Wildlife and Fish)	2,698	3,219
Trail Construction/.....Miles Per Year..... Reconstruction (Including ORV Trails)	4	24
WILDERNESS.....Thousand Acres.....		
Existing and Recommended	66,550	81,780
WILDLIFE AND FISH.....Thousand Acres.....		
Wildlife Habitat Improvement	1,100	2,180
RANGE.....Animal Unit Months.....		
Grazing Use (Livestock)	0	0
TIMBER		
Allowable Sale Quantity.....Million Cubic Feet Per Year.....	10.67	6.6
ReforestationThousand Acres Per Year.....	4.897	3.30

APPENDIX E

OUTPUTS AND ACTIVITIES, PROPOSED AND PROBABLE MANAGEMENT PRACTICES,
AND TIMBER SALE SCHEDULES

Table E-1. Annual Average Outputs and Activities.

Output/Activity	Present (Annual Average 1981-1985)	Planned (Annual Average 1986-2000)
Timber Stand Improvement.....Thousand Acres Per Year.....	2.207	1.504
WATER		
Meeting Water.....Thousand Acre-Foot Per Year		
Quality Goals	3,294	3,297
MINERALS		
Mineral Leases.....Number of Operating Plans Per Year..... and Permits	300	277
HUMAN AND COMMUNITY DEVELOPMENT		
Human Resource.....Enrollee Years Per Year..... Programs		
Youth Conservation Corps (YCC)	12	31
Older Workers (OW)	185	172
Volunteers	66	105
Job Corps Conservations Center (JCCC)	429	440
PROTECTION		
Fire Management.....Dollars Per Thousand Acres..... Effectiveness Index	859	1006
Fuel Breaks and.....Thousand Acres Per Year..... Fuel Treatment	516	933

APPENDIX E

OUTPUTS AND ACTIVITIES, PROPOSED AND PROBABLE MANAGEMENT PRACTICES,
AND TIMBER SALE SCHEDULES

Table E-1. Annual Average Outputs and Activities.

Output/Activity	Present (Annual Average 1981-1985)	Planned (Annual Average 1986-2000)
LANDS		
Land Purchase.....Acres Per Year..... and Acquisitions (Excludes Exchange)	900	800
Land Exchange.....Acres Per Year.....	400	400
Property Boundary.....Miles Per Year..... Line Location	162	107
SOILS		
Soil and Water Resource Improvement.....Acres Per Year..... (Improved Watershed Condition)	20	39
FACILITIES		
Local Road.....Miles Per Year..... Construction/ Reconstruction	92.6	41.0
Arterial and Collector.....Miles Per Year..... Construction/ Reconstruction	33.1	0

APPENDIX E

TIMBER SALE OUTPUTS AND ACTIVITIES

Replace Appendix E, Tables E-24 through E-32 with the following tables.

Table E-2--Timber sale outputs and activities

Allowable Sale Quantity - First 10 year period (MMCF)	
Allowable Sale Quantity (1987-1993)	= 67.48 MMCF
Allowable Sale Quantity (1994-1997)	= 26.40 MMCF
Total	= 93.88 MMCF

The projected amount of sawtimber and roundwood.

Year	Sawtimber* (MMCF)	Roundwood* (MMCF)
1987 - 1993	37.86	29.28
1994 - 1997	15.77	10.97
Total	53.63	40.25

Table E-3--Projected annual timber outputs by product for 1994-1997.

Sawtimber output	(MMCF/yr.)
Hi-value hardwood	1.85
Lo-value hardwood and pine	2.05
Roundwood output	2.69
Total	6.59

Table E-4--Projected annual regeneration acreage by method for 1994-1997.

Even-Aged (Ac)*	235
Two-Aged (Ac)**	2,532
Uneven-Aged (Ac)***	500
Total Annual Acres Regenerated	3,267

* includes clearcut and shelterwood

** includes shelterwood without the overstory removal

*** includes selection method

Table E-5 Land Classification.

Stage I classification from NFMA Regulations at 36 CFR 219 14(a).		
1	Non-Forest land (includes water)	7,968 acres
2	Forest land	1,016,934 acres
3	Forest land withdrawn from timber production	144,652 acres
4	Forest land not capable of producing crops of industrial wood	0 acres
5	Forest land physically unsuitable	67,326 acres
	a Technology is not available to ensure timber production from the land without irreversible resource damage to soil productivity, or watershed conditions	9,579 acres
	b Lands that cannot be adequately restocked	9,274 acres
	c Land withdrawn due to infeasible access	48,473 acres
6	Forest land - inadequate information	8,926 acres
7	Tentatively suitable forest land (Item 2 minus items 3, 4, 5 and 6)	796,030 acres
<u>Stage II classification</u> from NFMA Regulations at 36 CFR 219 14(b)		
	Lands with a positive present net value (w/ price trends)	415,300 acres
	Lands with a positive present net value (w/o price trends)	281,500 acres
<u>Stage III classification</u> from NFMA Regulations at 36 CFR 219 14(c)		
8	Forest land not appropriate for timber production	501,456 acres
	a Based upon consideration of multiple-use objectives, lands proposed for resource uses that preclude timber production (36 CFR 219 14(c)(1))	285,031 acres
	b. Other management objectives limit timber production activities to point where management requirements of 36 CFR 219 27 cannot be met	235,201 acres
9	Unsuitable forest land (items 3, 4, 5, 6 and 8)	730,328 acres
10	Total suitable forest land (item 2 minus item 9)	275,798 acres
11	Total national forest land (items 1 and 2)	1,024,902 acres

Table E-6--Projected inventory, harvest, and growth on lands scheduled for timber production*

10-year period (1992-2002)	Inventory	Harvest	Growth
	----- <i>Million cubic feet</i> -----		
1	179	66	97
2	210	73	99
3	236	80	96
4	253	88	102
5	267	97	110
6	281	104	109
7	286	106	104
8	284	106	104
9	283	106	105
10	280	106	104
11	277	106	103
12	274	106	105
13	272	109	105
14	268	109	103
15	262	109	

*Inventory on 275,798 - acres (Table E-5, category 10)

Table E-7--Timber rotation ages by management area

Rotations * (years)				
Management area	Hardwood	White Pine	Yellow Pine	Va Pine
1B	80	60	60	50
2A	120	100	100	60
3B	80	60	60	50
4A, 4D	120	100	100	60

* The ranging rotations after management intensities that are intended to meet multiple use objectives of specific areas of the Forest

Table E-8--Present and future age class distribution of all Nantahala and Pisgah National Forests lands

Age Class	Present Forest*	Future Forest**
	-----acres-----	
0-10	33,322	31,069
11-20	30,016	32,703
21-60	235,646	90,440
61-80	423,528	29,262
80-100	171,117	3,704
100+	194,864	828,798

* Present acreage using CISC 1994

** Future forest using age classes from Forplan analysis for year 2095

Table E-9--Present and future age class distribution of lands scheduled for Timber Production in Forplan

Age Class	Present Forest*	Future Forest**
	-----acres-----	
0-10	33,107	31,069
11-20	28,606	32,703
21-60	86,303	113,380
61-80	99,788	9,016
80-100	19,737	3,627
100+	8,256	86,002

* Age class distribution used in Forplan (1991) on acres scheduled over the planning horizon (275,798 acres)

** Future Forest using Forplan analysis for year 2095

Identification of Lands Unsuitable for Timber Production

In accordance with 36 CFR 219.14(d), the following lands are unsuitable for timber production:

<u>Management Areas</u>	<u>Description</u>	<u>Acreage</u>
2C	Scenic, motorized, recreational emphasis	37,680
4C	Scenic, non-motorized recreational emphasis	179,992
5	Backcountry recreational emphasis	119,685
6	Wilderness Study Areas	8,419
7	Wilderness Areas	66,550
8	Experimental Forest	12,520
9	Roan Mountain	7,900
10	Research Natural Areas	1,460
11	Cradle of Forestry in America	6,540
12	Developed Recreation Areas	3,030
13	Special Interest Areas	10,370
14	Appalachian Trail and corridor	12,450
15	Wild and Scenic Rivers and Corridors	2,050
16	Administrative Facility Areas	1,260
17	Balds	3,880

Lands unsuitable for timber production are mixed with suitable lands in management areas 1B, 2A, 3B, 4A, and 4D. Of the 527,705 acres in these management areas, approximately 252,000 acres are unsuitable for timber production. The unsuitable lands have the following characteristics:

Sites with threatened, endangered, or sensitive species where site impacts may affect species viability.

Physically unsuited due to unavailable logging technology, or sites that cannot be adequately restocked.

Access is infeasible due to terrain and/or ownership patterns.

Special habitats, such as seeps, bogs, or rock outcrops.

Other special uses, such as powerline corridors, rights of way.

Riparian Management Areas.

CHARACTERISTICS OF LANDS SUITABLE FOR TIMBER PRODUCTION

Lands suitable for timber production are located in Management Areas 1B, 2A, 2B, 3B, 4A, 4B, and 4D. These management areas contain both suitable and unsuitable lands. Lands within these management areas that are suitable for timber production have these characteristics:

1. On lands with sustained slopes greater than 40 percent:
 - a. All Forest types with the exception of Spruce fir.
 - b. Site index should be 70 or greater for upland oak on all hardwood sites and 70 or greater for white pine and yellow pine, using a base age of 50 years.
 - c. Adequate stocking levels and individual tree quality should support shelterwood regeneration methods utilizing skyline logging systems.

2. On lands with sustained slopes less than 40 percent:
 - a. All forest types with the exception of Spruce fir.
 - b. Site index should be 70 or greater for upland oak on all hardwood sites, 70 or great for white pine and 60 for yellow pine using a base age of 50 years.
 - c. Adequate stocking levels and individual tree quality should support shelterwood and selection regeneration methods utilizing conventional ground skidding systems.

APPENDIX F

EXCEPTIONS TO MANAGEMENT INDICATOR SPECIES

INTRODUCTION

Forest management direction is provided in Chapter III of this Plan. Included in the direction for Management Areas (MA) 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B, 4C, and 5 are standards which identify animals described as Management Indicator Species (MIS). These represent the large group of game and nongame animals that will benefit from the forest conditions which will result from implementation of the Direction for the Management Area.

The need for exceptions to managing habitat for the MIS shown in Management Areas 1-5 is a result of several important existing situation. These include: habitat improvements; cooperative stocking programs with the North Carolina Wildlife Resources Commission; fragmented National Forest land ownership; and proximity to large acreages of management areas where primary habitat management is for other species.

The following table lists the areas by management area, where the MIS are different than what is shown in Chapter III.

Table F-1. Exceptions to Management Indicator Species Shown in Chapter III. (Note: All directions and standards listed for the management area apply).

<u>Ranger District</u>	<u>Management Area</u>	<u>Compartment</u>	<u>Primary Habitat Management</u>
Cheoah	4A	123, 132, 133, 134, 152, 153, 154, 155, 156	Turkey
	4C	28, 99, 114, 125, 132, 146, 149, 150, 155, 156	Turkey
	4D	140, 141, 147, 148	
Highlands	4A	8, 9, 10, 11, 18, 20, 21, 22, 84	Turkey
	4C	6, 7, 11, 21, 23, 25, 27, 29, 65, 66, 67, 68, 70, 71, 72, 84	Turkey
	4D	40, 54, 58, 60, 70, 71, 72, 74, 90, 104	Turkey
	5	1, 2, 13, 14, 84, 85, 86	Turkey
Tusquitee	4A	31, 33, 39, 40, 42	Turkey

Table F-1. Exceptions to Mangement Indicator Species Shown in Chapter III.
(continued)

<u>Ranger District</u>	<u>Management Area</u>	<u>Compartment</u>	<u>Primary Habitat Management</u>
Tusquitee	4C	7, 13, 14, 15, 16, 25, 46, 86, 87, 88	Turkey
	4D	6, 26, 108, 109, 110, 111, 112, 113, 114	Turkey
Wayah	4A	1, 18, 24, 25, 26, 38, 49, 50, 71, 121	Turkey
	4C	1, 2, 18, 19, 49, 68, 88, 124, 125, 130, 133	Turkey
	4D	7, 65, 66, 67, 88, 99, 100, 101, 118, 119, 120, 125, 126, 134, 141, 151,	Turkey
	5	43, 63, 135, 144	Turkey
French Broad	4A	64	Turkey
	4C	25, 33, 34, 35, 36, 37, 41, 42	Turkey
	4D	18, 19	Turkey
Grandfather	4C	2, 5, 97, 98, 99, 243 244, 257, 268, 269, 295, 297, 298, 304, 305, 307 309	Turkey
	4D	105, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 240, 241, 242, 243, 244, 309	Turkey
	5	217, 218, 219, 220, 221, 222, 223	Turkey
Pisgah	4A	38, 105	Turkey
	4C	38, 64, 66, 67, 73, 74 98, 99, 101,	Turkey
	4D	45, 50, 73, 74, 75, 80, 81	Turkey

Table F-1. Exceptions to Mangement Indicator Species Shown in Chapter III.
(continued)

<u>Ranger District</u>	<u>Management Area</u>	<u>Compartment</u>	<u>Primary Habitat Management</u>
Toecane	4C	47, 48, 49, 51	Turkey
Cheoah	4A	24, 44, 119, 120, 123, 133	Squirrel/Pileated Woodpecker
	4C	61, 62, 79, 85, 88, 99, 119, 121, 132, 135, 141, 143, 150, 156, 158	Squirrel/Pileated Woodpecker
Highlands	4A	20, 22, 34, 46, 47	Squirrel/Pileated Woodpecker
	4C	3, 8, 12, 16, 17, 21, 23, 25, 27, 28, 39, 42, 43, 48, 50, 51, 57, 60, 63, 65, 66, 67, 69, 70, 71, 72, 73, 77, 79, 107, 108, 112	Squirrel/Pileated Woodpecker
Tusquitee	4A	31	Squirrel/Pileated Woodpecker
	4C	21, 31, 98	Squirrel/Pileated Woodpecker
Wayah	4C	8, 9, 24, 39, 42, 49, 50, 130, 133	Squirrel/Pileated Woodpecker
French Broad	4A	78	Squirrel/Pileated Woodpecker
	4C	11, 17, 24, 47, 49, 50, 72, 65, 66, 67, 75.	Squirrel/Pileated Woodpecker
Grandfather	4A	75	Squirrel/Pileated Woodpecker
	4C	2, 3, 5, 23, 26, 29, 45, 46, 47, 54, 87, 257, 268, 269, 272, 274, 287, 288, 305	Squirrel/Pileated Woodpecker
	4D	99, 104, 105	Squirrel/Pileated Woodpecker

Table F-1. Exceptions to Mangement Indicator Species Shown in Chapter III.
(continued)

<u>Ranger District</u>	<u>Management Area</u>	<u>Compartment</u>	<u>Primary Habitat Management</u>
Pisgah	4A	5	Squirrel/Pileated Woodpecker
	4C	1, 3, 4, 5, 6, 7, 29, 34, 35, 36, 37, 109	Squirrel/Pileated Woodpecker
	5	29	Squirrel/Pileated Woodpecker
Toecane	4C	22, 50, 75, 76, 78, 80, 82, 83, 84, 85, 86, 105, 107	Squirrel/Pileated Woodpecker
	4D	50	Squirrel/Pileated Woodpecker

Table F-2 Forest Interior Breeding Bird Habitat Areas

Habitat objectives are to provide an area of continuous forest canopy of 2500 acres or more within or immediately adjacent to the compartment clusters listed below. Habitat objectives for the starred areas are larger patches of 7500 acres or more. Where conflicts exist with Table F-1, Table F-2 takes precedence.

<u>Ranger District</u>	<u>Compartment</u>	<u>Area Number</u>
Tusquitee	6, 7, 13, 14, 15, 16, 17, 24, 25, 26	1
	67, 68, 69, 70, 74, 75, 76, 77, 78	2
	64, 65, 80, 81, 86, 87, 88, 89, 90, 91, 92	3*
	54, 55, 56	4
	95, 96, 97, 100, 101, 102, 103, 104	5
Cheoah	49, 72, 71, 70, 64, 73, 69, 74	6*
	1, 2, 3, 4, 5, 6, 7, 8, 13, 10, 12, 13, 39, 40	7*
	23, 24, 26, 27, 28, 119	8
	100, 114, 140, 141, 147, 146, 148, 149, 150, 159, 160, 161, 162, 163	9
Wayah	10, 13, 22, 30, 31	10
	33, 43, 44, 45, 46,	11
	134, 135, 138, 144, 145, 147, 148, 149, 120, 117, 118, 119	12*
	7, 114, 115, 116	13
Highlands	6, 5, 65, 66, 68, 70, 71, 72	14
	1, 2, 13, 16, 85, 86	15
	30, 36, 37, 75	16

Table F-2 Forest Interior Breeding Bird Habitat Areas (continued)

<u>Ranger District</u>	<u>Compartment</u>	<u>Area Number</u>
Highlands	77, 45, 42, 47	17
	Not inventoried	18
	93, 94, 95, 96, 97, 98, 100, 101, 102, 103, 107	19*
Pisgah	18, 19, 20, 21, 22, 23 25, 27, 28	20
	9, 8, 10, 11, 24, 26, 31	21*
	42, 43, 47, 48	22
	57, 56, 54, 55, 58, 59, 60, 61, 62, 52	23*
French Broad	73, 74, 70, 71, 72, 60	24
	34, 35, 44, 43	25
	36, 37, 25, 24	26
	2, 3, 4, 5, 6, 7, 8	27
	66, 67, 69, 63, 61, 59	28
Toecane	87, 88, 89, 90, 91, 94, 93, 95, 96	29
	16, 17, 18, 19	30
	30, 32, 33, 35, 36, 37, 38, 31, 39, 40, 41, 34	31*
	205, 204, 203, 202	32
Grandfather	216, 221, 236, 235, 234, 255, 256, 231, 232, 217, 233, 224, 226, 228, 229, 230, 227, 225	33

Table F-2 Forest Interior Breeding Bird Habitat Areas (continued)

<u>Ranger District</u>	<u>Compartment</u>	<u>Area Number</u>
Grandfather	244, 243, 242, 241, 240, 248, 239, 249, 250, 251, 252, 253, 246, 261, 260, 258, 254	34*
	290, 291, 292, 293, 297, 298, 304, 305, 306, 310, 311	35*
	80, 70, 102, 103, 104	36
	82, 83, 84, 85, 86, 101	37
	7, 8, 9, 10, 11, 30, 34	38

FUNCTIONAL CRITERIA USED IN MANAGLMENT DIRECTION

Table G-1 Description and Duration of Visual Impact for Visual Quality Objectives (VQO)

Visual Quality Objectives				
Preservation(P)	Retention(R)	Partial Retention(PR)	Modification(M)	Maximum Modification(MM)
<u>Description</u>				
<p>This visual quality objective allows ecological changes only. Management activities, except for very low visual-impact recreation facilities, are prohibited.</p> <p>This objective applies to Wilderness, primitive areas, other special and unique classified areas.</p>	<p>This visual quality objective provides for management activities which are not visually evident.</p> <p>Activities only repeat form, line, color, and texture which are frequently found in the characteristic landscape. Changes in size, amount, intensity, direction, pattern, etc., should not be evident.</p>	<p>Management activities remain visually subordinate to the characteristic landscape.</p> <p>Activities may repeat form, line, color, or texture common to the characteristic landscape but changes in size, amount, intensity, direction, pattern, etc., remain visually subordinate to the characteristic landscape.</p>	<p>Management activities may visually dominate the original characteristic landscape. However, activities of vegetative and landform alteration must borrow from naturally established form, line, color, or texture so completely and at such a scale that its visual characteristics are those of natural occurrences within the surrounding area or character type.</p> <p>Additional parts of these activities such as structures, roads, slash, root wads, etc., must remain visually subordinate.</p>	<p>Management activities of vegetative and landform alterations may dominate the characteristic landscape. However, when viewed as background, the visual characteristics must be those of natural occurrences within the surrounding area or character type. When viewed as foreground or middleground, they may not appear to completely borrow from naturally established form, line, color, or texture. Alterations may also be out of scale or contain detail which is incongruent with natural occurrences as seen in foreground or middleground.</p>

Table G-1 Description and Duration of Visual Impact for Visual Quality Objectives (VQO) (continued)

<u>Visual Quality Objectives</u>				
<u>Preservation(P)</u>	<u>Retention(R)</u>	<u>Partial Retention(PR)</u>	<u>Modification(M)</u>	<u>Maximum Modification(MM)</u>
<u>Description (cont)</u>				
		Activities may also introduce form, line color, or texture which are found infrequently or not at all in the characteristic landscape, but they should remain subordinate to the visual strength of the characteristic landscape	Activities which are predominantly introduction of facilities such as building, signs, roads, etc , should borrow naturally established form, line, color and texture so completely and at such scale that its visual characteristics are compatible with the natural surroundings	Introduction of additional parts of these activities such as structures, roads, slash, and root wads must remain visually subordinate as viewed in background
<u>Duration of Visual Impact</u>				
Immediate	1 full growing season to meet VQO	2 full growing seasons to meet VQO	3 full growing seasons to meet VQO	5 full growing seasons to meet VQO

Table G-2 Criteria for Visual Sensitivity Levels

Public Use	Visual Sensitivity Levels		
	1	2	3
Primary travel routes, use areas, and water bodies.	At least 1/4 of users have major concern for scenic qualities	Less than 1/4 of users have major concern for scenic qualities	Not applicable
Secondary travel routes, use areas, and water bodies	At least 3/4 of users have major concern for scenic qualities	At least 1/4 and not more than 3/4 of users have major concern for scenic qualities	Less than 1/4 of users have major concern for scenic qualities.

Table G-3 Characteristics of Visual Distance Zones.

Distance Zones		
Foreground	Middleground	Background
The detailed landscape between the viewer and 1/4 to 1/2 mile in distance.	The landscape between the foreground and background located between 1/4 and 1/2 mile and 3 to 5 miles from the viewer	The distant part of the landscape located greater than 3 to 5 miles from the viewer

Table G-4 Characterization and Criteria for Recreation Opportunity Classes

Criteria/ Character	Recreation Opportunity Spectrum Class			
	Semi-Primitive Non-Motorized	Roaded Natural 2	Roaded Natural 1	Rural
<u>Setting</u>	Area is characterized by a natural or natural-appearing environment of moderate-to-large size. Interaction between users is usually low, but there is usually evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Motorized use is not permitted.	Area is characterized by predominantly natural-appearing environments with moderate evidences of the sights and sounds of people. Such evidences usually harmonize with the natural environment, interaction between users may be low, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment.	Area is characterized by a predominantly natural-appearing environment with evidence of the sights and sounds of people. Such evidence usually harmonize with the natural environment. Interaction between users is moderate. Evidence of other users is prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and facility design.	Area is characterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Facilities for intensified motorized use and parking area available.

Table G-4 Characterization and Criteria for Recreation Opportunity Classes (continued)

Criteria/ Character	Recreation Opportunity Spectrum Class			
	Semi-Primitive Non-Motorized	Roaded Natural 2	Roaded Natural 1	Rural
<u>Experience</u>	Moderate to high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk	About equal probability to experience affiliation with other user groups and for isolation from sights and sounds of humans Opportunity to have a high degree of interaction with the natural environment Challenge and risk opportunities with more primitive type of recreation are very important Practice and testing of outdoor skills might be important Opportunities for both motorized and nonmotorized forms of recreation are possible, but nonmotorized opportunities predominate	Same as Roaded Natural 2 except motorized recreation opportunities predominate	Probability for experiencing affiliation with individuals and groups is prevalent as is the convenience of sites and opportunities. These factors are generally more important than the setting of the physical environment Opportunities for wildland challenges, risk-taking, and testing of outdoor skills are generally unimportant
<u>Remoteness</u>	An area generally farther than 1/2 mile from all roads, railroads or trails with motorized use, can include the existence of primitive roads and trails if usually closed to motorized use	An area within 1/2 mile of improved roads generally closed to motorized use, or 1/2 mile or more from improved roads with motorized use Can include the existence of other improved roads if usually closed to motorized use	An area within 1/2 mile of improved roads, railroads, and trails with motorized use	No distance criteria
<u>Size</u>	2,500 acres or more	Generally 2,000 acres or more to adjacent to remote areas	No size criteria	No size criteria

Table G-4 Characterization and Criteria for Recreation Opportunity Classes (continued)

Criteria/ Character	Recreation Opportunity Spectrum Class			
	Semi-Primitive Non-Motorized	Roaded Natural 2	Roaded Natural 1	Rural
<u>Evidence of Humans</u>	<p>Natural-appearing setting may have subtle modifications that would be noticed but not draw the attention of an observer wandering through the area</p> <p>Little or no evidence of primitive roads, the motorized use of trails, and primitive roads</p> <p>Structures are rare and isolated</p>	<p>Natural-appearing setting may have modifications which range from being easily noticed to strongly dominant to observers within the area. However, from sensitive travel routes and use areas, these alterations generally remain unnoticed or visually subordinate</p> <p>There is strong evidence of designated roads and/or highways</p> <p>Structures are generally scattered, remaining visually subordinate or unnoticed to the travel route observer</p>	<p>Same as Roaded Natural 2</p>	<p>Setting is culturally modified to the point that it is dominant to the travel route observer. May include pastoral, agricultural, intensively managed wildland resource landscapes, or utility corridors. Pedestrian or other slow moving observers are constantly within view of culturally changed landscape</p> <p>There is strong evidence of designed roads and/or highways</p> <p>Structures are readily apparent and may range from scattered to small dominant clusters</p>
<u>Social Setting</u>	<p>Frequency of contact is generally low</p>	<p>Frequency of contact is Moderate on roads, Low to Moderate on trails and away from roads</p>	<p>Frequency of contact is Moderate to High on roads, Moderate to High on trails and away from roads</p>	<p>Frequency of contact is Moderate to High in developed sites on roads, trails, and water surfaces; Moderate away from developed sites.</p>
<u>Managerial Setting</u>	<p>On-site controls present but subtle</p>	<p>On-site controls are noticeable, but harmonize with the natural environment</p>	<p>Same as Roaded Natural 2</p>	<p>On-site controls are obvious and numerous, but largely in harmony with the man-made environment</p>

Table G-5 ROS MANAGEMENT OBJECTIVES BY MANAGEMENT AREAS

MANAGEMENT AREAS	ROS	ACCEPTABLE ENVIRONMENTAL MODIFICATIONS		MOTORIZED ACCESS		FAVORED RECREATION ACTIVITIES	DESIRED RECREATION EXPERIENCE					
		Type	Degree of Evidence	Open Roads	ORV		Isolation From Sight Sounds-Man	Contact w/Other Users	Evidence Other Users	Challenge Risk	Interact with Nature	Use-Test Skills
1B	RN1	Roads Structures Resource Management	Evident-dominant Evident-subordinate Evident to dominant but harmonize	High level	Yes-all types	Motorized recreation-ORV, driving for pleasure View WL, Hunt, fish	Low to Moderate probability	Moderate to High incidence	Prevalent	May or may not be important	Low to High level	May or may not be important
2-A,C	RN1	Roads Structures Resource Management	Not evident to evident, but harmonize	High level	Yes-all types	Motorized recreation-ORV, Driving for pleasure Hike-day use Horse-some Bicycle-some View WL,Fish	Low to Moderate probability	Moderate to High incidence	Prevalent	May or may not be important	Low to High level	May or may not be important
3B	RN2	Roads Structures Resource Management	Obvious-harmonize Evident-harmonize May dominate, but harmonize	Low level	Some-4WD only	Non-motorized Hunt, Fish, View WL Horse riding Bicycle Hike-some	Low to Moderate probability	Low to Moderate incidence	Moderate	May or may not be important	Moderate to High level	Important
4-A,C,D	RN2	Roads Structures Resource Management	Evident to dominant Evident-subordinate Evident to dominant but harmonize	Low level	Some-4WD only	Non-motorized Hike, Horse, Hunt, Fish, View WL,Bike	Low to Moderate probability	Low to Moderate incidence	Moderate	May or may not be important	Moderate to High level	Important
5	SPNM	Roads Structures Resource Management	Little or none Rare, isolated Subtle, not evident	None	None	Non-motorized Backpack, Hike, Hunt, Fish,View WL Horse	High probability	Low incidence	Present-not dominant	Important - High level	Important level	Important

Table G-5 ROS MANAGEMENT OBJECTIVES BY MANAGEMENT AREAS (continued)

MANAGEMENT AREAS	ROS	ACCEPTABLE ENVIRONMENTAL MODIFICATIONS		MOTORIZED ACCESS		FAVORED RECREATION ACTIVITIES	DESIRED RECREATION EXPERIENCE					
		Type	Degree of Evidence	Open Roads	ORV		Isolation From Sight Sounds-Man	Contact w/Other Users	Evidence Other Users	Challenge Risk	Interact with Nature	Test Skills
6-WSA	SPNM	Roads Structures Resource Management	Little or none Rare, isolated Subtle, not evident (restricted)	Exist- ing open roads only	None	Current activities and levels of use	High proba- bility	Low to Moderate incidence	Present- not dominant	Important	Important - High Level	Impor- tant
7-Wilderness	P	Roads Structures Resource Management	None permitted None permitted Restricted, subtle	None	None	Primitive- Backpack, Hike, Hunt, Fish, Nature study	High proba- bility	Low incidence	Low level of change	Important - High level	Important - High level	Impor- tant -High level
8-Ex Forests	RN2	Roads Structures Resource Management	Evident to dominant but harmonize	Low- Mod level	None	Hike, Others compatible with research Limit dispersed camping	Low to Moderate proba- bility	Low to High incidence	Moderate	Not important	Important	May not be impor- tant
9-Roan Mtn	RURAL garden RN2	Roads Structures Resource Management	Not evident Few, harmonize Not evident	Low level	None	Non-motorized View scenery Hike, Picnic CC-Ski	Low to High proba- bility	Low to High incidence	Present, not dominant	May or may not be important	Important - High level	Impor- tant for some activiti
10-RNA	SPNM	Roads Structures Resource Management	None permitted None permitted None permitted	None	None	Rec use discouraged- primitive type only	High proba- bility	Low incidence	Low level of change	May not be important	Important - High level	May or may not be impor- tant

Table G-5 ROS MANAGEMENT OBJECTIVES BY MANAGEMENT AREAS (continued)

MANAGEMENT AREAS	ROS	ACCEPTABLE ENVIRONMENTAL MODIFICATIONS		MOTORIZED ACCESS		FAVORED RECREATION ACTIVITIES	DESIRED RECREATION EXPERIENCE					
		Type	Degree of Evidence	Open Roads	ORV		Isolation From Sight	Contact w/Other Users	Evidence Other Users	Challenge Risk	Interact with Nature	Test Skills
11-Cradle	RURAL RN1-2 SPNM	Roads Structures Resource Management	May be evident Dominant-harmonize Subtle to dominant, but harmonize	Low level	None	Those compatible with interpretive program	Low to moderate probability	Moderate to High incidence	Low to High	Not important	May or may not be important	Not important
12-Developed Rec Sites	RN1 RURAL	Roads Structures Resource Management	Obvious-harmonize Obvious-harmonize Subtle to obvious, but harmonize	High level	In/out only	Camp, Picnic View scenery Swim, Boat	Low probability	High incidence	Prevalent	Not important	May or may not be important	Not important
13-Special	SPNM RN2 RN1	Roads Structures Resource Management	Not evident Rare, isolated Subtle-not evident	Existing open roads only	None	Hike Nature study View scenery	Low to High probability	Low to High incidence	Low level of change	Not important	Important - High level	Not important
14-AT	SPNM RN2 @ open road crossings	Roads Structures Resource Management	Not evident Few harmonize Subtle and to enhance trail corridor only	None except open road crossings	None	Hikers only, Backpack, Primitive camping, View scenery	Moderate to High probability	Low to Moderate incidence	Low to Moderate	Somewhat important	Important - high level	Somewhat important
15-W&S Rivers	SPNM-wild & scenic	Roads Structures Resource Management	None to low Rare, isolated Subtle, not evident	None to low level	Open roads only	Non-motorized Water Oriented-Canoe, Swim, Wade, Tube, Fish, Hike, View scenery	Moderate to High probability	Low to Moderate incidence	Low to Moderate	Important	Important - high level	Important
	RN2 - recreational	Roads Structures Resource Management	Moderate to high May exist Evident-subordinate	Low to high level	Open roads only	Hike, View scenery Hunt, Picnic	Low to Moderate probability	Moderate to High incidence	Moderate to High	Somewhat important	Important	Important

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Table G-5 ROS MANAGEMENT OBJECTIVES BY MANAGEMENT AREAS (continued)

MANAGEMENT AREAS	ROS	ACCEPTABLE ENVIRONMENTAL MODIFICATIONS		MOTORIZED ACCESS		FAVORED RECREATION ACTIVITIES	DESIRED RECREATION EXPERIENCE					
		Type	Degree of Evidence	Open Roads	ORV		Isolation From Sight	Contact w/Other Users	Evidence Other Users	Challenge Risk	Interact with Nature	Test Skills
							Man					
16-Admin Sites	RN1 or RURAL	Roads Structures Resource Management	Obvious Obvious, dominant Obvious, harmonize	High level	None	Visitor information, Hike, No Hunting	Low probability	High incidence	Prevalent	Not important	Not important	Not important
17-Balds	SPNM or RN2	Roads Structures Resource Management	Not evident Rare, isolated Subtle, not evident	Low level	Open roads only	Non-motorized View scenery Hike, Hunt, Pick berries	Low to High probability	Low to High incidence	Low to High	Not important	Important - high level	Not important
18-Riparian	SPNM RN2 RN1	Roads Structures Resource Management	Not evident to evident, but subordinate	Same as adjacent MA	Low level- No New	Non-motorized water-oriented Fish, Swim, Wade, Tube, Hike, Hunt, View scenery	Low to High probability	Low to High incidence	Low to Moderate	May or may not be important	Important	May or may not be important

Table G-6 Trail Maintenance Guidelines

Maintenance Activities	Maintenance Levels		
	1 & 2	3	4 & 5
CONDITION SURVEY			
Field survey to identify and document conditions, and deficiencies which require correction	FREQUENCY Walk-through every 2 years	FREQUENCY Walk-through every year	FREQUENCY Walk-through twice a year or more
BRUSHING			
Selective removal of limbs, brush, other vegetative growth which hinders travel Gives direction to trail travel by providing a visible corridor	Keep tread free of vegetation that blocks travel At a minimum, the trail corridor should be discernible Permissible for pathfinding to be a challenge Dispose of debris locally FREQUENCY 2 years or less depending on vegetation type GUIDELINES Width hiker-2-4', horse-4-6', and ORV-6-7' Height hiker-6-8', horse-8-10', and ORV-8'	Trail corridor through vegetation should be easily recognized Pathfinding should not be a challenge Provide for easy passage of intended user (hiker, horse, etc) Vary clearing limits for visual variety using existing vegetative patterns as a guide Dispose of debris away from trail FREQUENCY 1 year GUIDELINES (Varies with width of tread allowing for trails that follow old roads, railroads) Width hiker-3-8', horse-6-8', and ORV-7-8' Height hiker-8', horse-10', and ORV-8-9'	Maintain for high degree of visual attractiveness Trail corridor through vegetation should be easily recognized Pathfinding should not be a challenge Provide for easy passage for intended user Vary clearing limits for visual variety using existing vegetative patterns as a guide Dispose of debris out-of-sight FREQUENCY 1 year or less GUIDELINES (Varies with width of tread allowing for trails that follow old roads, railroads) Width hiker-4-8', horse-6-8', and ORV-8' Height hiker-8', horse-10'; and ORV-8-9'

Table G-6 Trail Maintenance Guidelines (continued)

Maintenance Activities	Maintenance Levels		
	1 & 2	3	4 & 5
DOWNED TREES			
Removal of all or a portion of a fallen tree lying on or over a trail or otherwise interfering with travel	Remove or notch section of log affecting surface drainage patterns Leave logs that are easily crossed over or under if not a safety hazard Remove any impassable obstructions Dispose of log locally FREQUENCY 2 years	Remove or notch section of log within tread Dispose of away from trail Permissible to leave logs easily crossed over (notch) or under if not a safety hazard, if useful as a barrier to unwanted uses, or if not causing drainage problems Remove slash from corridor FREQUENCY 1 year.	Remove section of log or entire tree if possible within clearing limits and dispose of debris out-of-sight of trail
HAZARD TREE REMOVAL			
Removal of tree that could fall across the trail	Fell only trees likely to fall on or across trail Fell away from trail Remove any slash from corridor No hazard tree removal in wilderness FREQUENCY 1 year	Fell all trees likely to fall on trail Permissible to leave non-threatening snags Prune dead or dangerous branches overhanging trail Dispose of slash and logs away from trail FREQUENCY 1 year	Fell all dead or dying trees within trail corridor Prune dead or dangerous branches overhanging trail Dispose of slash out-of-sight of trail FREQUENCY 1 year or less

Table G 6 Trail Maintenance Guidelines (continued)

Maintenance Activities	Maintenance Levels		
	1 & 2	3	4 & 5
TREAD MAINTENANCE			
Repair or reconditioning of the travel surface Priority for maintenance 1- user safety 2- resource protection 3- user comfort/convenience investment protection	Maintain for user safety/resource protection only - remove slides, obstacles obstructing drainage patterns - correct active erosion of "cupped" tread by breaking berm at intervals - reinforce or rebuild unsuitable or sloughed side-hill tread - drain wet spots, diver water flowing onto trail - reinforce bank at stream crossings FREQUENCY 2 years	Maintain for user safety resource protection, user convenience - remove general debris, surface obstacles such as loose rocks, tree roots, slides - fill holes and smooth tread - drain wet spots, divert water flowing onto trail - reshape "cupped" tread to standards - grub out rocks, roots, stumps - reinforce bank at stream crossings, stabilize stepping stones FREQUENCY 1 year	Maintain for high degree of user comfort/convenience - remove general debris surface obstacles such as loose rocks, tree roots, slides - fill holes and smooth tread - drain or bridge wet spots - reshape "cupped" tread to original standards - provide dry, stable footing at stream crossings - repair, replace surfacing materials where needed FREQUENCY 1 year or less
DRAINAGE MAINTENANCE			
Repair, replacement or installation of drainage structures including waterbars, drainage dips, check dams, culverts and ditches Priority for maintenance 1- correct active erosion 2- prevent erosion	Clean-out clogged structures Repair or replace non-functioning structures Correct erosion at drainage outlets Install additional structures needed to stop erosion FREQUENCY 2 years or less depending on steepness of trail, amount of use, soil stability	Clean-out clogged structures Repair or replace non-functioning structures or those creating an obstacle to travel Correct erosion at drainage outlets Install additional structures needed to stop or prevent erosion FREQUENCY 1 year	Drainage structures should be functional and attractive Structures should not hinder travel Install additional structures needed to correct or prevent erosion FREQUENCY 1 year or less

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Table G-6 Trail Maintenance Guidelines (continued)

Maintenance Activities	Maintenance Levels		
	1 & 2	3	4 & 5
STRUCTURE MAINTENANCE			
Repair, replacement or removal of structures including foot-logs, bridges, steps, cribbing, retaining walls, barriers, handrails, guardrails, fences, gates, stiles, shelters, fire rings, boardwalks Priority for maintenance 1- user safety 2- investment protection 3- structure appearance	Repair or replace all or part of structure deteriorated beyond safe or functional condition Remove if not critical to trail travel (shelters, fire rings, etc) Appearance not critical FREQUENCY 2 years	Repair or replace all or part of structure to safe, functional and attractive condition Remove non-critical structures (shelters, fire rings, etc), deteriorated beyond repair until replacement is possible FREQUENCY 1 year	Repair or replace to original design standards Maintain for user comfort, convenience Keep structures, surroundings neat and attractive Frequency: 1 year or less
SIGN MAINTENANCE			
Repair, replacement or removal trail markers including signs, blazes, cairns and trailhead bulletin boards Priority for maintenance 1- safety signs 2- trail identification signs 3- regulatory signs 4- directional signs/blazes 5- informative/interpretive signs	Repair, replace or remove signs if unreadable Permissible to defer replacement of missing or deteriorated signs if not a safety hazard Repainting or recutting of blazes not critical Keep information on bulletin boards up-to-date. FREQUENCY. 2 years	Signs and blazes should be recognizable and readable Replace missing safety, identification or regulatory signs Permissible to defer replacement of missing/deteriorated directional, information or interpretive signs Attractive appearance of signs, blazes, cairns, bulletin boards desirable, but not critical Keep information on bulletin boards up-to-date FREQUENCY 1 year	Repair or replace all signs, blazes, etc. to design standards Maintain for high degree of visual quality Tighten signs on posts, align posts, prune surrounding vegetation, repaint or stain, remove graffiti, repaint blazes, restack cairns Bulletin boards should be neat, attractive, information up-to-date FREQUENCY 1 year or less

Table G-6 Trail Maintenance Guidelines (continued)

Maintenance Activities	Maintenance Levels		
	1 & 2	3	4 & 5
VISTA MAINTENANCE			
Selective removal of vegetative growth obstructing natural or constructed views Do simultaneoulsy with brushing	Permissable for natural or constructed openings to grow-up Selectively clear limbs, shrubs, brush and obstructing the view (No vista maintenance in wilderness) Dispose of slash locally FREQUENCY 2 years	Desireable to retain natural openings Maintain by hand cutting prescribed burning, mowing and herbicides Selectively clear limbs, shrubs, brush, small trees obstructing the view Dispose of slash away from the trail Desirable to develop new vistas (No vistas maintenance in wildnerness) FREQUENCY 1 year	Desirable to retain natural openings Maintain vistas to high degree of visual quality Selectively clear vegetation Dispose of slash out-of-sight of trail Desirable to develop new openings. FREQUENCY 1 year or less

Table G-7 Road Maintenance Guidelines

Maintenance Activities	Maintenance Levels				
	1	2	3	4	5
General	<p>This level is assigned to intermittent service roads during the time management direction requires the road be closed or otherwise blocked to traffic. Basic custodial maintenance is performed to protect the road investment and to keep damage to adjacent resources to an acceptable level. Drainage facilities and runoff patterns are maintained.</p>	<p>This level is assigned where management direction requires the road be open for limited passage of traffic. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation or specialized uses, such as four-wheel drive ways.</p>	<p>This level is assigned where management direction requires the road to be open and maintained for safe travel by a prudent driver in a passenger car. Traffic volumes are minor to moderate, however, user comfort and convenience is not considered a priority.</p>	<p>This level is assigned where management direction requires the road to provide a moderate degree of user comfort and convenience at moderate travel speeds. Traffic volumes are normally sufficient to require a double land aggregate surfaced road. Some roads may be single lane and some may be paved and/or dust abated. The functional classification of these roads is normally collector or minor arterial.</p>	<p>This level is assigned where management direction requires the road to provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate surfaced and dust abated. Functional classification of these roads is normally arterial.</p>

Table G-7 Road Maintenance Guidelines (continued)

Maintenance Activities	Maintenance Levels				
	1	2	3	4	5
Surface	Generally no maintenance required (may need blading to remove ruts which trap water)	Surface blading, as necessary, to provide for planned, limited traffic and maintain adequate drainage, except on four-wheel drive ways where very low maintenance can be expected	Surface blading, as necessary, to provide for safe travel by a prudent driver in a passenger car. Some surface roughness is tolerated. Traveled-way crown or cross slope is maintained to provide adequate drainage. Replace base course material as necessary, to provide adequate structural support. If surfaced, maintain and replace surfacing to provide minimum depth for economical blading.	Surfacing replacement to depth required for economical blade maintenance and to prevent wear of the base course or to protect subgrade where there is no base course. Repair chuck holes and washborading in spot locations as they develop. Accomplish traveled-way maintenance of the entire facility at frequencies dictated by road condition, use, and travel speeds, as necessary, for safety, comfort of user, prevention of excessive loss of fines, and protection of other resources.	Surface maintained to provide for a high degree of user comfort and convenience at design speed.
Shoulder Maintenance	No maintenance required	Maintain only as necessary to provide passage to planned traffic	Existing shoulders maintained during blading operation. Stable material pulled into travelway and boulders and debris removed and deposited in designated areas.	Same as level 3.	Maintained to the same standard as the travelway.

Table G-7 Road Maintenance Guidelines (continued)

Maintenance Activities	Maintenance Levels				
	1	2	3	4	5
Drainage	Maintain all drainage structures so that they function properly	Same as Level 1	Same as Level 1	Same as Level 3	Same as Level 1
Roadway	Routine or intermittent removal of brush and trees from the roadway is not included in this level. Vehicle traffic is not a consideration. A slide may block vehicle traffic, but be allowed to remain in place if it does not interfere with drainage along or across the roadbed. Vegetation cover must be maintained as needed to alleviate erosion or sedimentation on or from roadway or roadsides	Same as Level 1, except that slides must be removed, unless material does not block traffic or cause resource damage	Maintain existing vegetative cover. Control brush, as required, to provide safe sight distance. Repair slides and slumps, as necessary, to provide safe passage by a prudent driver in a passenger car	Brush control accomplished on scheduled basis for safe sight distance and appearances. Vegetative cover maintained.	Same as Level 4

Maintenance Activities	Maintenance Levels				
	1	2	3	4	5
Roadside	Generally no maintenance required	Generally no maintenance required	Remove hazard trees and unsightly material on a current basis	Litter cleaned up on a scheduled basis, frequency depends on previous experience Hazard trees removed and any required landscape treatments performed on a current basis	Same as level 4
Structure	Inspect and repair only those items which cannot be deferred, and that are necessary to protect investment, to preserve structural integrity, and to keep damage to adjacent resources to an acceptable level	All structures are adequately maintained to provide for the safe passage of planned traffic	All structures currently repaired and maintained as needed for safe passage of the road users. Normal wear and tear items may be deferred to some later date or a more economical project. Example: Bridges would be maintained currently for such items as defective bridge rails, running plank, and bridge guide posts. Painting of bridge rails may be deferred to a logical project cycle. Structures that present potential safety hazard or loss of investment shall be maintained currently.	More consideration is given to the appearance of a structure. Paint on a scheduled basis. Bridges, bridge rails, cattleguards, fences, and trash racks maintained to their originally constructed condition.	Same as Level 4

Table G.7 Road Maintenance Guidelines (continued)

Maintenance Activities	Maintenance Levels				
	1	2	3	4	5
Traffic Services	Physical closure devices and appropriate signing are in place and functional	All route markers, regulatory and warning signs and devices are in place and usable	Route markers and warning, directional, informational, and regulatory signs and traffic control devices are in place neat in appearance, and functional	Same as Level 3	Signs-Same as Level 3 Markings, centerlines, edge striping, and similar types of markings painted on pavement and curbs shall be repainted as needed for effectiveness in periods of poor visibility

Table G-8 Traffic Service Level Characteristics

Characteristic	Traffic Service Levels				
	A	B	C	D	D/Four-wheel Drive way
Traffic Flow	Free Flowing with adequate passing facilities	Congested during heavy traffic such as during peak logging or recreation activities	Interrupted by limited passing facilities, or slowed by the road condition	Flow is slow or may be blocked by an activity Two-way traffic is difficult and may require backing to pass	Flow generally slow Two-way traffic difficult and requires backing to pass May encounter short-radius turns
Traffic Volume	Uncontrolled, will accommodate the expected traffic volumes	Occasionally controlled during heavy use period	Erractic, frequently controlled as the capacity is reached	Intermittent and usually controlled Volume is limited to that associated with the single purpose	Uncontrolled volume is limited to ORV use
Vehicle Types	Mixed, include all vehicles normally found on public roads Clearances are adequate to allow free travel overload permits are required	Mixed, includes all vehicles normally found on public roads Traffic controls needed where clearances are marginal Overload permits are required	Controlled mix, accommodates all vehicle types Some use may be controlled to minimize conflicts between vehicle types Special provisions may be needed Some vehicles will have difficulty negotiating some segments	Single use, not designed for mixed traffic Some vehicles may not be able to negotiate Concurrent use between commercial and other traffic is restricted	Includes street legal motorcycles and four-wheel drive high-clearance vehicles wider than 50 inches All-terrain-vehicles (ATV) permitted on designated four-wheel drive ways
Safety	Safety features are a part of the design	High priority in design Some protection is accomplished by traffic management	Most protection is provided by traffic management	The need for protection is minimized by low speeds and strict traffic controls	Low speed Risk expected by users Hazards will be encountered

Table G-8 Traffic Service Level Characteristics

Characteristic	Traffic Service Levels				
	A	B	C	D	D/Four-Wheel Drive way
Traffic Management	Normally limited to regulatory, warning, and guide signs and permits	Employed to reduce traffic volume and conflicts	Traffic controls are frequently needed during periods of high use by the dominant resource activity	Used to discourage or prohibit traffic other than that associated with the single purpose	Normally limited to regulatory and guide signs
User Costs	Minimize, transportation efficiency is important	Generally higher than "A" because of slower speeds and increased delays	Not important, efficiency of travel may be traded for lower construction costs	Not considered	Not considered
Alignment	Design speed is the predominant factor within feasible topographic limitations	Influenced more strongly by topography than by speed and efficiency	Generally dictated by topographic features and environmental factors Design speeds are generally low	Dictated by topography, environmental factors, and the design and critical vehicle limitations Speed is not important.	Dictated by topography, environmental factors and experience desired by ORV users Speeds usually 2-10 mph
Road Surface	Stable and smooth with little or no dust, considering the normal season of use	Stable for the predominant traffic for the normal use season Periodic dust control for heavy use or environmental reasons Smoothness is commensurate with the design speed	May not be stable under all traffic or weather conditions during the normal use season Surface rutting, roughness, and dust may be present, but controlled for environmental or investment protection	Rough and irregular Travel with low clearance vehicles is difficult Stable during dry conditions Rutting and dusting controlled only for soil and water protection	Rough and irregular Travel with low-clearance vehicles not suitable. Stable during dry conditions Rutting and erosion will occur Some sections very rough Large rocks, mud holes, loose material, logs, sand, some stream crossings May require winching

APPENDIX I

REQUIREMENTS FOR VEGETATION MANAGEMENT IN THE APPALACHIAN MOUNTAINS

(Amendment #2 - 7/89)

This amendment incorporates the methods and tools available for use in the Final EIS on Vegetation Management in the Appalachian Mountains. Biological methods are not allowed except for maintenance of mountain balds. All tools specified for prescribed fire and manual methods are available for use. For mechanical methods, all tools are available except raking and heavy disking. For herbicide methods, all tools are available except aerial application.

Chapter III FOREST-WIDE MANAGEMENT REQUIREMENTS

Add the following from Exhibit A - Management Requirements and Mitigation Measures of the Record of Decision for Vegetation Management in the Appalachian Mountains:

- The Management Requirements and Mitigation Measures below are in addition to or expand on those presently in the Forest Plan:

I General

- A. Site-Specific Analysis, (1) through (4)
- B. Timber Stand Improvement, (5) through (10)
- C. Soil, Water, and Aquatic Life, (11)
- D. Cultural, (12) and (13)
- E. Safety, (14)
- F. Visual Quality, (15) and (16)
- G. Wildlife, (17) through (20)
- H. Corridors, (21) through (25)
- I. Bald Maintenance, (26) and (27)
- J. Recreation Site Maintenance, (28)
- K. Review and Reporting Requirements, (29) and (30)

II. Method-Specific

- A. Prescribed Fire
 - 1. Site-Specific Planning, (31)
 - 2. Vegetation Protection, (32) through (36)
 - 3. Soil and Water Protection, (37) through (41)
 - 4. Wetland Protection, (42) and (43)
 - 5. Air Quality Protection, (44) and (45)
 - 6. Wildlife Protection, (46)
 - 7. Bald Maintenance, (47) and (48)
 - 8. Safety, (49)
 - 9. General Resource Protection, (50)
- B. Mechanical Method
 - 1. Soil and Water Protection, (52) through (58)
 - 2. Corridors, (59)
 - 3. Bald Maintenance, (60)
 - 4. Safety, (61)
- C. Herbicide Method
 - 1. Labeling, (62)
 - 2. Choice of Herbicide, (63) and (64)
 - 5. Prescribed Burning of Treated Areas, (67)
 - 6. Drift Control, (69)

- 7. Supervision and Training, (70) and (71)
- 8. Protection of Workers, (72) through (76)
- 9. Protection of the General Public and Private Land, (78)
- 10. Protection of Non-Target Vegetation, (80)
- 11. Protection of Threatened, Endangered, Proposed, and Sensitive Species, (81)
- 12. Protection of Water and Soil, (83) through (85)
- 14. Control of Spills, (88) through (93)

D Biological Method, (94) through (97)

E Manual Method

- 1 Safety, (98) and (99)

- The Management Requirements and Mitigation Measures below are in addition to those presently in the Forest Plan, except that all references to aerial herbicide application are to be removed:

II Method-Specific

C Herbicide Method

- 3 Application Rate, (65)
- 4 Application Method, (66)
- 6 Drift Control, (68)
- 9 Protection of the General Public and Private Land, (77)
- 11 Protection of Threatened, Endangered, Proposed, and Sensitive Species, (82)
- 12 Protection of Water and Soil, (86)

- The Management Requirements and Mitigation Measures below are further defined in the Forest Plan (page numbers are indicated).

II Method-Specific

B Mechanical Method

- 1 Soil and Water Protection, (51) on page III-21

- The Management Requirements and Mitigation Measures below do not apply to the Nantahala-Pisgah Forest Plan.

II Method-Specific

C Herbicide Method

- 9 Protection of the General Public and Private Land, (79)
- 13. Aerial Application Operations Plan, (87)

This amendment is not a significant change in the Nantahala-Pisgah LRMP. The determination that this is a nonsignificant amendment is made in accordance with 36 CFR 219.10 (f) and Forest Service Manual Chapter 1920 (53 Fed Reg, 26807, July 15, 1988). This amendment does not alter the multiple-use goals and objectives for long-term land and resource management. This amendment adds more specific direction and standards and guidelines for vegetation management in the general Forest area and wilderness. The amendment does not involve an increase or decrease in resource demands. In summary, this direction for vegetation management does not alter the long-term relationship between levels of multiple-use goods and services projected by the LRMP.

The NEPA analysis for this change of direction has been documented in the Draft and Final EIS for Vegetation Management in the Appalachian Mountains. The EIS is available for review at the Forest Supervisor's office.

This amendment and all application Management Requirements and Mitigation Measures referred to herein will be found in Appendix I of the Nantahala-Pisgah Forest Plan.

MANAGEMENT REQUIREMENTS AND MITIGATION MEASURES

This exhibit describes management requirements and mitigation measures required by the Record of Decision for **Vegetation Management in the Appalachian Mountains**. Management requirements set direction on how resources are managed (such as timber stocking standards) Mitigation measures are actions taken to lessen adverse impacts or enhance beneficial effects (such as streamside protection) **This exhibit has been revised to remove all references to aerial herbicide application.**

GENERAL MANAGEMENT REQUIREMENTS AND MITIGATION MEASURES

Site-Specific Analysis

- (1) Projects must have site-specific analysis in compliance with the National Environmental Policy Act (NEPA) This environmental analysis considers site-specific techniques, intensity of application methods, and potential environmental effects of any method considered. A reasonable range of alternatives, including one which does not use herbicides and a "no action" alternative, is examined.

Potential direct, indirect, and cumulative effects are evaluated Effects to be considered include long-term soil productivity, water quality, air quality, visual quality, vegetation diversity, wildlife, fish, cultural resources, civil rights (including those of minorities and women), and threatened, endangered, proposed, and sensitive species

- (2) A biological evaluation of how a project may affect any species Federally listed as threatened, endangered, or proposed, or identified by the Forest Service as sensitive, is done as part of the site-specific environmental analysis This evaluation considers all available inventories of threatened, endangered, proposed, and sensitive species populations and their habitat for the proposed treatment area. When adequate population inventory information is unavailable, it must be collected when the site has high potential for occupancy by a threatened, endangered, proposed, or sensitive species. Appendix D identifies potential adverse effects from vegetation management by species When adverse effects are projected, mitigation measures specified in appendix D and this chapter are used to prevent them

Requirements and measures for activities affecting threatened, endangered, or proposed species are detailed in species recovery plans and FSH 2609 23R Recovery plans have been prepared for the eastern cougar, southern bald eagle, American peregrine falcon, red-cockaded woodpecker, Virginia roundleaf birch, mountain golden heather, small whorled pogonia, gray bat, Indiana bat, Virginia big-eared bat, conasauga perch, slender chub, spotfin chub, smoky madtom, yellowfin madtom, noonday snail, birdwing pearly mussel, shiny pigtoe pearly mussel, Appalachian monkey-face pearly mussel, fine-rayed pigtoe pearly mussel, dromedary pearly mussel, yellow-blossom pearly mussel, green-blossom pearly mussel, and tan riffle shell pearly mussel. Chapters in FSH 2609.23R have been prepared for red-cockaded woodpecker and southern bald eagle. Requirements and measures for actions affecting sensitive species are detailed in Forest Land and Resource Management Plans

If it is determined that the project may positively or negatively affect threatened, endangered, or proposed species, consultation is initiated with the Fish and Wildlife Service If, during informal consultation, it is determined that the project is not likely to adversely affect listed species and the Fish and Wildlife Service so concurs in writing, consultation is terminated. However, if it is determined that the project is likely to adversely affect listed species, formal consultation is initiated. Figure D-1 outlines this process.

When the evaluation indicates that a project may have an adverse effect on a sensitive species or its habitat, appropriate State wildlife agencies, natural heritage commissions, and other cooperators or species authorities are contacted to identify coordination measures. These measures are directed towards ensuring species viability and preventing negative population trends that would result in Federal listing

- (3) Integrated Pest Management (IPM) principles are used during site-specific analysis. IPM is a decision-making and action process which includes biological, economic, and environmental evaluation of pest-host systems to manage pest populations.

IPM strategies involve a comprehensive systems approach to silvicultural, wildlife, fuel treatment, recreation and corridor management practices that emphasizes prevention of pest problems. These strategies consist of a range of practices that include prescribed fire, manual, mechanical, biological, and chemical tools that may be used alone or in combination. Risk rating systems and pest incidence surveys are used during site-specific analysis. Further IPM direction is provided in FSM 3400, FSH 3409.11, and Forest Land and Resource Management Plans.

- (4) In each project, water quality is protected from nonpoint-source pollution through use of preventive "best management practices" (BMP's). Implementation of BMP's, monitoring and evaluation of their application and effectiveness, and adjustment of practices as needed are done to protect beneficial water uses.

BMP's are applied to all activities. Some BMP's required to protect water quality appear in this section as mitigation measures for soil and water. BMP's applied in projects may be more stringent and more effective in protecting water quality than those in this section, but not less. In each project, site-specific conditions must be assessed, and the BMP's needed to comply with State water quality management plans and pertinent Federal regulations must be employed.

TIMBER STAND IMPROVEMENT (TSI)

- (5) For evenaged timber management, methods that maintain stocking levels (stems per acre) and improve growth rates are used (Table II-2)

Table II-2-- *Southern Region restocking standards: number of desirable stems per acre.

Forest Type	Lower Level	Target Level	Upper Level
Loblolly pine	300	500-700	900
Shortleaf pine	300	500-700	900
Longleaf pine	400	600-900	1,200
White pine	150	250-350	500
Virginia pine	300	500-700	900
Mixed pine-hardwood	300	400-600	900
Hardwoods (all species)	150	250-350	500

* Stocking levels shown are guides, and must be used in conjunction with professional judgment to determine restocking levels for a specific site

- (6) Pine stands receive release and weeding necessary to meet growth rates and stocking levels established in Forest Land and Resource Management Plans. Stands are considered for release when the desired seedlings are not free to grow, when competing growth threatens to overtop and compete directly for sunlight, moisture, and nutrients, or when competition results in less-than-average growth for comparable sites.
- (7) Precommercial thinning of pine (usually done before age 10 to 15 years) is considered when stem density exceeds the upper level of restocking standards.
- (8) Hardwood stands are generally not released. Clumps of competing stems are removed, however, where they may interfere with desired trees.

- (9) Hardwood stands where codominant trees of seedling (not sprout) origin are 25 feet or taller, are considered for precommercial thinning.
- (10) Where a mixed pine/hardwood type is the management objective, release or precommercial thinning is designed to favor best quality stems of desired species, which includes both hardwood and pine. Best quality includes consideration of origin, form, etc. Desired species are those that best achieve the Forest Land and Resource Management Plan's management objectives.

SOIL, WATER, AND AQUATIC LIFE

- (11) Channel stability of perennial and intermittent streams is protected by retaining all woody understory vegetation within at least 5 feet of the bank and by keeping slash accumulations out of the stream. This measure is in addition to filter strips required by items 41 and 58.

CULTURAL RESOURCES

- (12) When any soil disturbing activity is planned, an archaeologist performs a field survey to locate cultural resource sites and assess their significance and protection needs. Sites meeting criteria for significance are nominated to the National Register of Historic Places. All archaeological reports (surveys, site evaluations, site nominations, site protection measures) are submitted to the State Historic Preservation Officer for review.
- (13) If archaeological or historic resources are encountered during soil disturbing activities, work stops until an archaeologist evaluates the site's significance and the results and recommendations are reviewed by the State Historic Preservation Officer.

SAFETY

- (14) Safety equipment for Forest Service workers (such as hard hats, eye and ear protection, chaps, and fire retardant clothes) is worn as determined by a Job Hazard Analysis specified in the Health and Safety Code Handbook (FSH 6709.11). This analysis estimates risks to specific body parts and prescribes needed protection.

VISUAL QUALITY

- (15) Visual Quality Objectives (VQO's) are met by corridor maintenance, site preparation, timber stand and wildlife habitat improvement, bald and recreation site maintenance, and fuels treatment projects. These VQO's are:

Preservation allows only for change not caused by humans. Generally, no treatments are permitted.

Retention ensures that human activities are not evident to the casual forest visitor. Concern for visual quality is primary. Visual impacts should be eliminated during or promptly after treatment. Many treatments are allowed, but raking, piling, disking, and broadcast herbicide methods are usually not appropriate.

Partial Retention means that human activities may be evident but remain subordinate to the characteristic landscape. Concern for visual quality is high. Visual impacts should be eliminated at a minimum within the first year. Most treatments are allowed, but disking and broadcast herbicides are limited. In corridors, all methods and tools are available.

Modification indicates that human activity may dominate the characteristic landscape. Treatments should borrow established line, form, color, and texture so completely that visual characteristics are compatible with natural surroundings. All methods and tools are available for use.

Maximum Modification means that human activity may dominate the landscape, but should appear as a natural occurrence when viewed as background. All methods and tools are used, and at a greater intensity than in modification VQO.

- (16) Treatments are scheduled as much as possible for the season that best meets VQO's. Rehabilitation and enhancement work may be needed to meet short-term VQO's. Visual diversity along active travelways (such as canopy layering, flowering trees) is protected from treatments where feasible and needed to meet VQO's. Tool selection and coordination requirements are determined by a site-specific project analysis.

WILDLIFE

- (17) Wildlife stand improvement (WSI) seeks to improve vegetation species composition in timber stands and to develop wildlife habitat areas for game and nongame species. A variety of woody and herbaceous species suited to site conditions and burning regime are maintained to assure year-round quality habitat. Exceptions that may reduce plant species variety include treatments to improve habitat for species such as red-cockaded woodpeckers.
- (18) For understory species WSI, proper management allows full sunlight on 30 percent of the forest floor. For hardwood overstory WSI, thinning encourages full crown development, vigorous growth, and soft or hard mast production. When thinning stands older than 30 years, stems are favored which show positive indication of bearing soft or hard mast.
- (19) During TSI, WSI, and site preparation, selected groups of overstory and understory vegetation are protected and managed to assure a variety of softmast, hardmast, and cover species. During site preparation, active and potential den trees are retained in clumps (at least 1/2 acre per 20 acres) if they are not provided in adjacent stands not suitable for timber production, inclusions, or streamside management zones. During TSI and WSI, all recognized den trees are protected. In addition, during TSI, WSI, and site preparation, an average of at least 2 standing dead snags are retained per acre, in the form of large hardwood trees (greater than 12 inches) when possible. Appropriate treatments are used to create snags where natural snags are lacking.
- (20) When thinning or conducting site preparation, grapevine control is usually considered only in stands with site index of 60 or more. Generally, stands are treated only when grapevines exceed 40 stems per acre or occur in at least 5 percent of tree crowns. Based on site conditions, other considerations include retaining some existing arbors and felling trees of low commercial value to create additional arbors.

CORRIDORS

- (21) Each forest works with utility special-use permittees to establish vegetation management objectives (such as wildlife, watershed, recreation, visual quality) for location of new utility lines and maintenance of existing ones. These objectives determine maintenance techniques and strategies.
- (22) Where feasible, low-growing shrubs and grasses are established and maintained along utility lines where wildlife and aesthetic objectives are dominant.

- (23) Where feasible, permanent vegetation is established and maintained on the roadbed of intermittent service roads when they are closed, and on the cut and fill slopes of all roads
- (24) Where practical, native flowering species are established, maintained, and enhanced on intermittent service roads when they are closed and on cut and fill slopes of all roads
- (25) Vegetation along trails is treated to maintenance levels identified in the publication "Trails South." Priority is given to correcting unsafe conditions, preventing resource damage, and providing for intended recreation experience level.

BALD MAINTENANCE

- (26) A detailed management and action plan is prepared for each bald to be maintained. It contains the following elements: inventory of existing and past boundaries; flora and fauna; history of past use, management objectives; and specific guides for types and timing of treatments to use, areas of vegetation to treat and protect, coordination with public and other uses, and monitoring requirements
- (27) Species not native nor established by pioneer uses are not introduced on balds.

RECREATION SITE MAINTENANCE

- (28) Specific procedures for vegetation management in recreation sites are established on each forest and included in the district operation and maintenance plan. These procedures include timing of treatments, target and non-target vegetation, coordination with visitor use, and monitoring requirements to ensure visitor safety and enjoyment.

REVIEW AND REPORTING REQUIREMENTS

- (29) Each national forest must include vegetation management in its management review process. At a minimum, reviews must evaluate adequacy of vegetation management mitigations and monitoring.
- (30) Using existing reporting systems, each national forest must report implementation of its vegetation management program annually. Every 3 to 5 years, Regional Office staff must assess these reports to be sure that the vegetation management program in the Appalachians approximates the acre distribution of methods and tools estimated for the selected alternative

METHOD-SPECIFIC MANAGEMENT REQUIREMENTS AND MITIGATION MEASURES

These requirements and measures are in addition to general requirements and measures in the preceding section. Each forest may be more restrictive, but not less.

PRESCRIBED FIRE

Site-Specific Planning

- (31) A written site-specific plan for all prescribed burns is prepared by trained resource specialists and approved by the appropriate Forest Service line officer prior to project implementation. This plan includes description of treatment area, burn objectives, weather factors and fuel moisture conditions, and resource coordination requirements. Coordination requirements include provisions for public and worker safety, burn day notification of appropriate agencies and persons, smoke management to comply with air quality regulations and protect visibility in smoke-sensitive areas, protection of sensitive features, as well as fireline placement, specific firing patterns, ignition methods, and mop-up and patrol procedures. A post-burn evaluation compares treatment results with plan objectives.

Vegetation Protection

- (32) Underburns in loblolly, shortleaf, pitch, and table mountain pine stands are not done until pines are 10 to 15 feet tall or 3 to 4 inches in diameter at ground level. In longleaf pine stands, burns can be used prior to height growth for brownspot disease control when root collars of grass stage seedlings are at least 0.3 to 0.5 inch in diameter. After height growth begins, burns can be used once seedlings are 3 to 5 feet tall.
- (33) Underburns are not done in commercial pine-hardwood stands and inclusions until hardwood stems reach 5 to 6 inches in diameter at ground level. Only low intensity, dormant season fires with flame lengths of 2 feet or less are allowed.
- (34) Underburns are not done in commercial hardwood-pine or hardwood stands and inclusions until hardwood stems reach 8 to 10 inches in diameter at ground level. Only low intensity, dormant season backing fires with flame lengths of 2 feet or less are allowed. Underburns to improve wildlife habitat occur only if habitat is limiting and threatens species viability.
- (35) Underburns are not done in commercial white or Virginia pine stands until they have formed a thick, corky bark. Only low intensity, dormant season backing fires with flame lengths of 2 feet or less are allowed.
- (36) Underburns are not done in commercial spruce-fir stands.

Soil and Water Protection

- (37) Slash burns are done so they do not consume all litter and duff and alter structure and color of mineral soil on more than 20 percent of the area. Steps taken to control soil heating include use of backing fires on steep slopes, scattering slash piles, and burning heavy fuel pockets separately.
- (38) On severely eroded forest soils, any area with an average litter-duff depth of less than 1/2 inch is not burned.
- (39) Growing season underburns are not allowed on the same site more than twice in succession without an intervening dormant season burn.
- (40) Where needed to prevent erosion, water diversions are installed on firelines during their construction, and the firelines are revegetated promptly after the burn.
- (41) Firelines which expose mineral soil are not located in filter strips along lakes, perennial or intermittent springs and streams, wetlands, or water-source seeps, unless tying into lakes, streams, or wetlands as firebreaks at designated points with minimal soil disturbance. Low-intensity fires with less than 2 foot flame lengths may be allowed to back into the strip along water bodies, as long as they do not kill trees and shrubs that shade the stream. The strip's width in feet is at least 30 plus 1.5 times the percent slope.

Wetland Protection

- (42) When wetlands need to be protected from fire, firelines are used around them only when the water table is so low that the prescribed fire might otherwise damage wetland vegetation or organic matter. Where practical, previous firelines are reused, and firelines must cause minimal soil disturbance.
- (43) If a fireline is required next to a wetland, it is not located in the transition zone between upland and wetland vegetation except to tie into a natural firebreak, and it must cause as little soil disturbance as practicable.

Air Quality Protection

- (44) Smoke management guidelines are used to reduce smoke emissions. When feasible, backing and flanking fires are used instead of heading fires, and burning is done when duff and large fuels are moist and small fuels are dry. Slash piles are not burned unless relatively free of soil. All burns are completed during the active burning period and mopped up as soon as practicable after completion.
- (45) Smoke management guidelines are also used to enhance smoke dispersion. Burning is done when the atmosphere is thermally neutral to slightly unstable, not during pollution alerts, stagnant or humid weather, or inversions. Burning is done only when
 - air quality or visibility standards in smoke-sensitive areas (see "A Guide for Prescribed Fire in Southern Forests" (Wade and Lunsford 1989) pages 31-32) such as highways, airports, populated areas, and Class I areas will not be violated by smoke from the fire
 - atmospheric mixing height is at least 1,650 feet, transport windspeed is at least 9 mph, and background visibility downwind is at least 5 miles.

Wildlife Protection

- (46) Generally, underburns are not scheduled during the nesting season to avoid disrupting reproductive activities. Forest managers may, however, use burns to meet specific objectives, such as protecting threatened and endangered species (e.g. red-cockaded woodpecker), reestablishing natural ecosystems, controlling brownspot disease and promoting longleaf height growth, and site preparation. Burns are planned and executed to avoid damage to habitat of any threatened, endangered, proposed, or sensitive species (such as destruction of bald eagle nest trees).

Bald Maintenance

- (47) Except for alternative H, prescribed fire is not used more frequently than every 3 years except when needed to establish grasses or control encroachment by woody species.
- (48) Firelines are plowed only when needed and are located at least 30 feet outside bald perimeters. Foam or wet lines only may be used for interior holding lines.

Safety

- (49) Prescribed fires are conducted under the direct supervision of a burning boss with fire behavior expertise consistent with the project's complexity. All workers must meet health, age, physical and training requirements in FSM 5140, and use protective clothing and equipment.

General Resource Protection

- (50) Critical values of the Keetch-Byram Drought Code (Cumulative Severity Index) are developed for all major vegetation-soil-landform types on which prescribed fires are conducted. Burning is allowed only on days when the Drought Code is less than this critical value.

Mechanical Method

Soil and Water Protection

- (51) Prompt revegetation is done if treatments leave insufficient ground cover to control erosion by the end of the first growing season.
- (52) Only mowing, chopping, shearing, ripping, and scarifying are used on sustained slopes over 15 percent. No mechanical equipment is used on sustained slopes over 35 percent.

- (53) Mechanical site preparation is not done on sustained slopes over 20 percent with erodible or failure-prone soils.
- (54) To limit soil compaction, no mechanical equipment is used on plastic soils when the water table is within 12 inches of the surface, or when soil moisture exceeds the plastic limit. Soil moisture exceeds the plastic limit if the soil can be rolled to pencil size without breaking or crumbling.
- (55) Mechanical equipment is operated so that furrows and soil indentations are aligned on the contour (with grades under 5 percent).
- (56) Windrows and piles are spaced no more than 200 feet apart to limit soil exposure, soil compaction, and nutrient loss from piling and raking. Windrows are aligned on the contour.
- (57) When piling, at least 80 percent of the area must retain some ground cover of litter and duff, and soil must not be displaced with dozer blades.
- (58) Mechanical equipment is not allowed in any defined stream channel except to cross at designated points, and may not expose more than 10 percent mineral soil in filter strips along lakes, perennial or intermittent springs and streams, wetlands, or water-source seeps. The strip's width in feet is at least 30 plus 1.5 times the percent slope. Soil and debris are not deposited in lakes, streams, wetlands, springs, or seeps.

Corridors

- (59) All trails, roads, ditches, and other improvements in the project area are kept free of logs, slash, and debris. Any road, trail, ditch, or other improvement damaged by operations is promptly repaired.

Bald Maintenance

- (60) Scarifying, ripping, raking, and disking tools are not used except to restore balds through seedbed preparation.

Safety

- (61) Forest Service equipment operators must demonstrate proficiency with the equipment and be licensed to operate it. A helper must direct the operator where safety is compromised by terrain or limited sight distance.

Herbicide Method

Labeling

- (62) Herbicides are applied according to labeling information and the site-specific analysis done for projects. This labeling and analysis are used to choose the herbicide, rate, and application method for the site. They are also used to select measures to protect human and wildlife health, non-target vegetation, water, soil, and threatened, endangered, proposed, and sensitive species. Site conditions may require stricter constraints than those on the label, but labeling standards are never relaxed.

Choice of Herbicide

- (63) Only herbicide formulations (active and inert ingredients) and additives registered by EPA and approved by the Forest Service for use on national forests are applied.

- (64) Herbicides and application methods are chosen to minimize risk to human and wildlife health and the environment. No class B, C, or D chemical (table II-1) may be used on any project, except with Regional Forester approval. Approval will be granted only if a site-specific analysis shows that no other treatment would be effective and that all adverse health and environmental effects will be fully mitigated. Whenever possible and effective, class 4 or 5 mineral oil is used in place of diesel oil in mixtures for application.

Application Rate

- (65) Herbicides are applied at the lowest rate effective in meeting project objectives and according to guidelines for protecting human (NRC 1983) and wildlife health (EPA 1986a). Application rate and work time must not exceed typical levels (appendix A, tables 4-4 to 4-6) unless a supplementary risk assessment shows that proposed rates do not increase risk to human or wildlife health or the environment beyond standards discussed in Chapter IV. Typical application rates (lb/ac) of active ingredients are:

	2,4D/a*	2,4-D/e*	2,4DP*	DICAMBA	FOSAMINE	GLYPOS	HEXAZ	IMAZAPYR
ML	25	40	40	20	78	15	4.0	0.75
MG							4.0	
HG							4.0	
HF	20	20	10	20		10	4.0	0.75
HB		17	12					
HS							4.0	
HC	20			15		13		0.75

	FUEL OIL	LIMONENE	PICLORAM	SULFOMET	TEBUT*	TRICLOPYR/a	TRICLOPYR/e
ML	20	0.9	0.7	0.17	10	4.0	4.0
MG					10		
HG							
HF	15	0.9	0.4	0.06	4.0	2.0	2.0
HB	10	0.9					4.0
HS					4.0		
HC			0.3			1.0	

KEY. ML = mechanical liquid treatment
 MG = mechanical granular treatment
 HG = manual (hand) granular treatment
 HF = manual foliar broadcast treatment
 HB = manual basal treatment
 HS = manual soil-spot treatment
 HC = manual cut-surface treatment

GLYPHOS = glyphosate
 HEXAZ = hexazinone
 SULFOMET = sulfometuron methyl
 TEBUT = tebuthiuron
 /a = amine formulation
 /e = ester formulation
 * Requires Regional Forester Approval

Application Method

(66) Public safety during such uses as viewing, hiking, berry picking, and fuelwood gathering is a priority concern. Method and timing of application are chosen to achieve project objectives while minimizing effects on non-target vegetation and other environmental elements. Selective treatment is preferred over broadcast treatment. Application methods from most to least selective are:

- 1) Cut surface treatments
- 2) Basal stem treatments
- 3) Directed foliar treatments
- 4) Soil spot (spot around) treatments
- 5) Soil spot (spot grid) treatments
- 6) Manual granular treatments
- 7) Manual/mechanical broadcast treatments
- 8) Helicopter treatments

Prescribed Burning of Treated Areas

(67) Areas are not prescribed burned for at least 30 days after herbicide treatment

Drift Control

(68) Weather is monitored and the project is suspended if temperature, humidity, or wind become unfavorable as follows:

	Temperatures higher than	Humidity less than	Wind (at target) greater than
Ground			
Hand (cut surface)	N A	N A.	N A.
Hand (other)	98F	20%	15 mph
Mechanical (liquid)	95F	30%	10 mph
Mechanical (granular)	N.A	N A	10 mph
Aerial Liquid	90F	50%	5 mph
Granular	N A	N A	8 mph

(69) Nozzles that produce large droplets or streams of herbicide are used. Nozzles that produce fine droplets are used only for hand treatment where distance from nozzle to target does not exceed 8 feet.

Supervision and Training

- (70) A certified pesticide applicator supervises each Forest Service application crew and trains crew members in personal safety, proper handling and application of herbicides, and proper disposal of empty containers.
- (71) Each Contracting Officer's Representative (COR), who must ensure compliance on contracted herbicide projects, is a certified pesticide applicator. Contract inspectors are trained in herbicide use, handling, and application.

Protection of Workers

- (72) Forest Service workers who handle herbicides must wear a long-sleeved shirt and long pants made of tightly woven cloth that must be cleaned daily. They must wear a hard hat with plastic liner, waterproofed boots and gloves, and other safety clothing and equipment required by labeling. They must bring a change of clothes to the field in case their clothes become contaminated.
- (73) Each Forest Service crew must take soap, wash water separate from drinking water, eyewash bottles, and first aid equipment to the field.
- (74) Contractors ensure that their workers use proper protective clothing and safety equipment required by labeling for the herbicide and application method.
- (75) Workers must not walk through areas treated by broadcast foliar methods on the day of application.
- (76) Supervisors must ensure that monitoring is adequate to prevent adverse health effects. Workers displaying unusual sensitivity to the herbicide in use are medically evaluated and, if tested as sensitive to the herbicide in use, are reassigned to other activities. Female workers will not be used in backpack spray operations using tebuthiuron and formulations with 2,4-D.

Protection of the General Public and Private Land

- (77) Notice signs (FSH 7109 11) are clearly posted, with special care taken in areas of anticipated visitor use. People living within one-fourth mile of an area to be treated aurally are notified during project planning and shortly before treatment.
- (78) No herbicide is broadcast within 100 feet of private land or 300 feet of a private residence, unless the landowner agrees to closer treatment. Buffers are clearly marked before treatment so applicators can easily see and avoid them.
- (79) No herbicide is aurally applied within 200 horizontal feet of an open road or a designated trail. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

Protection of Non-Target Vegetation

- (80) No soil-active herbicide is applied within 30 feet of the drip line of non-target vegetation (e.g., den trees, hardwood inclusions, adjacent stands) within or next to the treated area. Side pruning is allowed, but movement of herbicide to the root systems of non-target plants must be avoided. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

Protection of Threatened, Endangered, Proposed, and Sensitive Species

- (81) 2,4-D, 2,4-DP, and triclopyr are not aurally applied within 300 feet, nor ground-applied within 60 feet, of known occupied gray, Virginia big-eared, or Indiana bat habitat. The same buffers are used with 2,4-D around habitat of these sensitive animals: star-nosed mole, old-field mouse, masked shrew, southeastern shrew, southern pygmy shrew, long-tail shrew, southern water shrew, southern rock vole, red-backed vole, Keen's myotis eastern small-footed bat, and Rafinesque's big-eared bat. The same buffers are used with any formulation containing kerosene or diesel oil around habitat of any threatened, endangered, proposed, or sensitive bird during its nesting season. Buffers are clearly marked before treatment so applicators can easily see and avoid them.
- (82) No herbicide is aurally applied within 300 feet, nor ground-applied within 60 feet, of any known threatened, endangered, proposed, or sensitive plant. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

Protection of Water and Soil

- (83) Application equipment, empty herbicide containers, clothes worn during treatment, and skin are not cleaned in open water or wells. Mixing and cleaning water must come from a public water supply and be transported in separate labeled containers
- (84) Aquifers and public water sources are identified and protected by consulting with States to ensure compliance with their ground water protection strategies
- (85) No herbicide is broadcast on rock outcrops or sinkholes. No soil-active herbicide with a half-life longer than 3 months is broadcast on slopes over 45 percent, erodible soils, or aquifer recharge zones. Such areas are clearly marked before treatment so applicators can easily see and avoid them
- (86) (Note: Aerial applications are not permitted)

Aerial Application Operations Plan

- (87) (Note: Aerial applications are not permitted).

Control of Spills

- (88) During transport, herbicides, additives, and application equipment are secured to prevent tipping or excess jarring and are carried in a part of the vehicle totally isolated from people, food, clothing, and livestock feed
- (89) Only the amount of herbicide needed for the day's use is brought to the site. At day's end, all leftover herbicide is returned to storage
- (90) Herbicide mixing, loading, or cleaning areas in the field are not located within 200 feet of private land, open water or wells, or other sensitive areas.
- (91) During use, equipment to store, transport, mix, or apply herbicides is inspected daily for leaks.
- (92) Containers are reused only for their designated purpose. Empty herbicide containers are disposed of according to 40 CFR 165.9 Group I & II Containers
- (93) Accident preplanning is done in each site-specific analysis. Emergency spill plans (FSM 2109.12, chapter 30) are prepared. In the unlikely event of a spill, the spill is quickly contained and cleaned up, and appropriate agencies and persons are promptly notified

Biological Method

- (94) A site-specific analysis determines how livestock are managed to prevent soil compaction, water contamination, and damage to riparian vegetation and streambanks
- (95) Livestock may not expose mineral soil or displace soil by trampling on more than 10 percent of the area
- (96) Combined forage use by wildlife and livestock may not exceed 70 percent of total forage production. This allows 45 percent utilization of grasses and forbs for livestock and 25 percent of wildlife.
- (97) When restoring balds, grazing is deferred until forage is firmly reestablished and adequate to control erosion

Manual Method

Safety

- (98) Forest Service chain saw operators must be periodically certified and demonstrate proficiency with chain saws
- (99) Forest Service workers must comply with dress and safety standards specified in the Health and Safety Code Handbook (FSH 6709.11).

APPENDIX J

MANAGEMENT REQUIREMENTS FOR CONTROL OF SOUTHERN PINE BEETLE

Pest Management

Control southern pine beetle infestations in accordance with the management requirements of Section VI of the Record of Decision/Southern Pine Beetle. [Amendment #1]

a. General Forest Area

1. IPM will be used to reduce timber losses caused by Southern Pine Beetle (SPB)
2. In pine stands adjacent to wilderness, where spot spread from wilderness is possible, priority will be given to reducing or eliminating potential losses to SPB. For example, stand densities would be lowered and rotation ages shortened to maintain or increase tree vigor
3. Control activities within 1/2 mile of Red Cockaded Woodpecker (RCW) colonies will conform to the guide-lines set forth in the Forest Service Wildlife Habitat Management Handbook (FSH 2609.23R). Where cut and leave and cut-and-remove techniques are not feasible, and cut and hand spray is used, no standing trees will be sprayed. Pile and burn will not be used near active RCW colonies.
4. Mitigation of adverse impacts from the cut-and-remove method will be similar to mitigation measures employed during a commercial timber harvest on a national forest. The guidelines and general mitigating measures for this activity are found in the Forest Service Manual - 2430 Commercial Timber Sales. Specific guidelines and mitigating measures are found in forest plan standards and guidelines and timber sale contract clauses. Direction pertinent to similar activities on State, private, and other Federal lands may also apply.
5. When pile and burn is used to control SPB, the work will comply with the Forest Service Manual directions on air quality management for prescribed fire (Chapters 2120, Air Resource Management, 5140, Prescribed Fire; and 5150, Fuel Management). All Federal and State air pollution laws must be followed.
6. Weather conditions will be closely monitored before prescribed burning activities occur to ensure that atmospheric conditions allow for quick smoke dispersal to maintain air quality. Air quality values for Class I Wilderness and National Forest lands will be protected by conducting prescribed burning under a smoke management plan.
7. Existing landscape form, line, color and texture will be used to mitigate effects on visually-sensitive areas that result from SPB control. This is accomplished by adjusting the shape of managed sites to be more natural and by feathering edge lines between disturbed and undisturbed areas. Visual effects are further mitigated by debris disposal, and by reducing the apparent size of the work site.
8. Use existing roads or access ways whenever possible for control activities.
9. Retain selected hardwoods in an uncut or untreated state for wildlife and plant diversity.

b. General Forest Area and Wilderness (RCW Colony Site Protection)

1. Trees vacated by the SPB will not be cut or chemically treated unless necessary to insure public safety
2. Inactive and relict cavity trees, if infested, or within a designated treatment buffer zone, may be cut to secure RCW colonies. (Requires evaluation by a Forest Service wildlife biologist.)

3. Uninfested trees within a 200-foot buffer around RCW cavity trees would not be cut or chemically treated unless such control efforts would be likely to prevent SPB infestation of cavity trees
 4. Disturbance in the colony sites will be kept to a minimum especially during the breeding season. No salvage operations will be conducted in active colony sites from March 1 through the time RCW young have fledged (approximately July-August). Control activities would be limited to the felling of trees or chemical treatment, or both, if necessary to secure the colony site during the breeding season.
 5. Control activities within 1/2 mile of RCW colonies will conform to the guidelines set forth in the Forest Service Wildlife Habitat Management Handbook (FSH 2609 23R). Where cut and leave and cut-and-remove techniques are not feasible, and cut and hand spray is used, no standing trees will be sprayed. Pile and burn will not be used near active RCW colonies.
- c. General Forest Area and Wilderness (General)
1. Site-specific analysis must be completed for any proposed SPB control action. This analysis will determine if a biological evaluation is necessary to determine if any threatened and endangered species or species being proposed for this status may be affected by the treatment. If the proposed treatment may affect one of these species or its habitat, consultation with the U.S. Fish and Wildlife Service is required under the Endangered Species Act. If sensitive species may be affected, coordination with the appropriate Federal or State agencies will occur. If adverse impacts could occur, the site-specific biological evaluation will identify possible mitigation measures.
 2. Use control methods that will minimize soil disturbance.
 3. Use of erosion control measures as soon as possible after the ground-disturbing, SPB-suppression activities are completed, to prevent or minimize erosion, sedimentation and long-term site deterioration.
 4. Cultural resource surveys and coordination before soil-disturbing activities are implemented. Site evaluation and protection will minimize disturbance of significant sites.
 5. The cut-and-hand-spray technique must only be used according to general direction set forth in Forest Service Manual Chapter 2150, Pesticide-Use Management. Label instructions for insecticides registered for beetle control must be followed.
 6. Standing trees will not be sprayed with insecticides.
 7. Insecticides will not be used in a manner that would adversely affect threatened or endangered species.
 8. The potential risk to humans and the environment will be minimized by applying insecticides only according to label instructions, Forest Service policies and other Federal regulations. Application will be supervised by a certified pesticide applicator. Areas treated with insecticide will be signed and closed to firewood collection. (See Appendix C.)
 9. Workers who apply insecticides will be trained to ensure minimum impacts and maximum effectiveness. Only those methods that assure proper application of insecticides on the infested tree bole would be used.
 10. Riparian ecosystems that encompass floodplains and wetlands will receive appropriate protection. As a minimum, riparian areas will extend 100 feet from the edge of all perennial streams and other perennial water bodies, including lakes. Site investigations to identify riparian areas and floodplains will consider the soil and plant characteristics of the site, and will be guided by appropriate Forest Service direction and State requirements. Roads that cross riparian areas will be stabilized with rip-rap, vegetative establishment, or other appropriate methods.

11. Logging equipment will be kept out of perennial and intermittent stream channels except on approved, designated crossings. Crossings will be at right angles to the stream or riparian area.

APPENDIX K

30 LARGE PATCHES FROM WHICH
AREAS WILL BE DESIGNATED FOR OLD GROWTH MANAGEMENT

afa = approximate forested acres

a11a = approximate initial inventory acres (from Initial Inventory of Possible
Old Growth, FS-FEIS III-41)

CH = acres cove hardwood

NH = acres northern hardwood

SF = acres spruce/fir

UH = acres upland hardwood

WP = acres white pine

YP = yellow pine

FIP = forest interior patch suitable for forest interior birds

1. Joyce Kilmer-Slickrock-Santeelah; in and around Joyce Kilmer-Slickrock
Wilderness Area

afa = 14,800

a11a = 7,400

CH = 6,900

NH = 1,500

SF = 1,000

UH = 4,300

WP = 300

YP = 800

1 possible FIP

2. West Buffalo-Snowbird-Upper Tellico; in and around Snowbird Wilderness
Study Area

afa = 11,700

a11a = 2,600

CH = 5,200

NH = 4,200

UH = 2,300

1 possible FIP

3. Valley River: in and around Ash Cove SPNM area

afa = 4,600

a11a = 10

CH = 1,200

NH = 100

UH = 2,200

YP = 1,100

1 possible FIP

4. Fires Creek-Tusquitee Creek-Hayesville; in and around Fires Creek and the Tusquitee Bald SPNM area

afa = 28,800
aiaa = 3,200

CH = 10,900
NH = 1,600
UH = 13,300
WP = 1,900
YP = 1,100

2 possible FIPs

5. Fontana-Robbinsville-Nantahala Gorge; in and around Cheoah Bald SPNM area

afa = 9,100
aiaa = 1,300

CH = 3,000
NH = 500
UH = 5,300
WP = 100
YP = 200

1 possible FIP

6. Nantahala Gorge; in and around Piercy Bald and Piercy Creek

afa = 3,600
aiaa = 600

CH = 1,000
UH = 2,400
WP = 200

no FIP

7. Nantahala Gorge-Valley River; in and around Piercy Bald SPNM

afa = 2,500
aiaa = 400

CH = 700
NH = 200
UH = 1,500
WP = 100

no FIP

8. Nantahala Lake; Wine Springs area

afa = 2,500

aiia = 900

CH = 800

NH = 200

UH = 1,500

no FIP

9. Shooting Creek; in and around Boteler Peak SPNM area

afa = 4,600

aiia = 1,500

CH = 1,400

NH = 100

UH = 2,900

WP = 100

YP = 100

1 possible FIP

10. Nantahala Gorge-Little Tennessee; in and around Wesser Bald SPNM and
Tellico Bald SPNM

afa = 9,900

aiia = 4,900

CH = 2,700

NH = 300

UH = 5,800

WP = 300

YP = 800

1 possible FIP

11. Tallulah River-Upper Nantahala-Little Tennessee; in and around Southern
Nantahala SPNM area

afa = 14,700

aiia = 5,400

CH = 5,000

NH = 600

SF = 200

UH = 8,900

1 possible FIP

12. West Fork Chattooga-Cullasaja River-Little Tennessee; in and around
Overflow Wilderness Study Area and Fishhawk Mountain

afa = 11,800
aiaa = 2,600

CH = 3,000
NH = 100
SF = 200
UH = 6,000
WP = 2,500

2 possible FIPs

13. Chattooga River-West Fork Chattooga; in around Whiteside Mountain area

afa = 2,500
aiaa = 200

CH = 500
UH = 1,700
WP = 300

no FIP

14. Chattooga River; in and around Chattooga River and Ellicott Rock areas

afa = 6,100
aiaa = 1,100

CH = 1,700
SF = 100
UH = 2,800
WP = 1,500

1 possible FIP

15. Whitewater River; in and around Sassafras Mountain and Whitewater River
areas

afa = 3,300
aiaa = 400

CH = 500
UH = 2,600
WP = 200

1 possible FIP

16. Middle Tuckaseegee-Upper French Broad-Brevard-Davidson River-Mills River-Enka-East Pigeon River-West Pigeon River; in and around Roy Taylor Forest, Middle Prong and Shining Rock Wilderness Areas, South Mills River and Laurel Mountain areas

afa = 57,400
aiaa = 12,500

CH = 16,200
NH = 4,100
SF = 3,500
UH = 33,300
WP = 200
YP = 100

5 possible FIPs

17 Lower Pigeon River; in and around Pigeon River Gorge

afa = 6,500
aiaa = 1,800

CH = 1,400
NH = 100
UH = 4,500
WP = 100
YP = 400

no FIP

18. Spring Creek-Rich Knob; in and around the Deer Park Mountain area

afa = 5,700
aiaa = 1,100

CH = 1,000
UH = 3,200
WP = 800
YP = 700

no FIP

19. Rich Knob; in and around Hot Springs municipal watershed

afa = 4,400
aiaa = 1,100

CH = 900
UH = 2,800
WP = 200
YP = 500

no FIP

20. Laurel Creek; in and around Big Creek and Seng Ridge SPNM areas

afa = 12,200

aiaa = 1,200

CH = 3,800

NH = 300

UH = 7,600

WP = 400

YP = 100

1 possible FIP

21. Nolichucky; in and around Nolichucky River near the NC/TN border

afa = 2,800

aiaa = 200

CH = 1,300

NH = 300

UH = 1,100

WP = 100

1 possible FIP

22. North Toe River; in and around Roan Mountain area

afa = 3,700

aiaa = 100

NH = 2,800

SF = 900

1 possible FIP

23. North Toe; vicinity of the Appalachian Trail section in Avery County, NC

afa = 2,500

aiaa = 500

NH = 2,400

SF = 100

no FIP

24. John's River; John's River watershed north of Globe, NC

afa = 5,900

aiaa = 1,100

CH = 2,200

UH = 3,300

WP = 300

YP = 100

no FIP

25. Ivy River; in and around Craggy Wilderness Study Area

afa = 2,500
aiia = 500

CH = 600
NH = 1,000
SF = 300
UH = 600

1 possible FIP

26. South Toe-Catawba River; in and around Black Mountain and Jarrett Creek
SPNM area

afa = 25,700
aiia = 5,800

CH = 6,200
NH = 5,000
SF = 4,200
UH = 9,400
YP = 900

1 possible FIP

27. Catawba-North Fork Catawba; in and around Mackey Mountain and Woods
Mountain SPNM areas

afa = 16,500
aiia = 5,000

UH = 14,900
YP = 1,600

2 possible FIPs

28. North Fork Catawba-Linville River-Lake James-Tablerock; in and around
Linville Gorge and Dobson Knob SPNM areas

afa = 23,800
aiia = 11,500

CH = 5,000
UH = 5,900
WP = 1,600
YP = 11,300

1 possible FIP

29. Steels Creek-Upper Creek-Wilson Creek; in and around Lost Cove and Harper's Creek SPNM areas

afa = 17,100
aia = 500

CH = 6,900
UH = 8,100
WP = 1,500
YP = 600

1 possible FIP

30. Mulberry Creek; in and around northeast part of Mulberry Creek

afa = 3,500
aia = 300

CH = 1,900
UH = 1,100
WP = 500

1 possible FIP