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Forest Service
Southern Region

Revised Land and Resource Management Plan

Sumter National Forest

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Revised Land and Resource Management Plan

Sumter National Forest

Abbeville, Chester, Edgefield, Fairfield, Greenwood, Laurens, McCormick, Newberry, Oconee, Saluda, and Union Counties

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The picnic shelter on the cover was originally named the Charles Suber Recreational Unit and was planned in 1936. The lake and picnic area including a shelter were built in 1938-1939. The original shelter was found inadequate and a modified model B-3500 shelter was constructed probably by the CCC from camp F-6 in 1941. The name of the recreation area was changed in 1956 to Molly's Rock Picnic Area, which was the local unofficial name. The name originates from a sheltered place between and under two huge boulders once inhabited by an African-American woman named Molly.

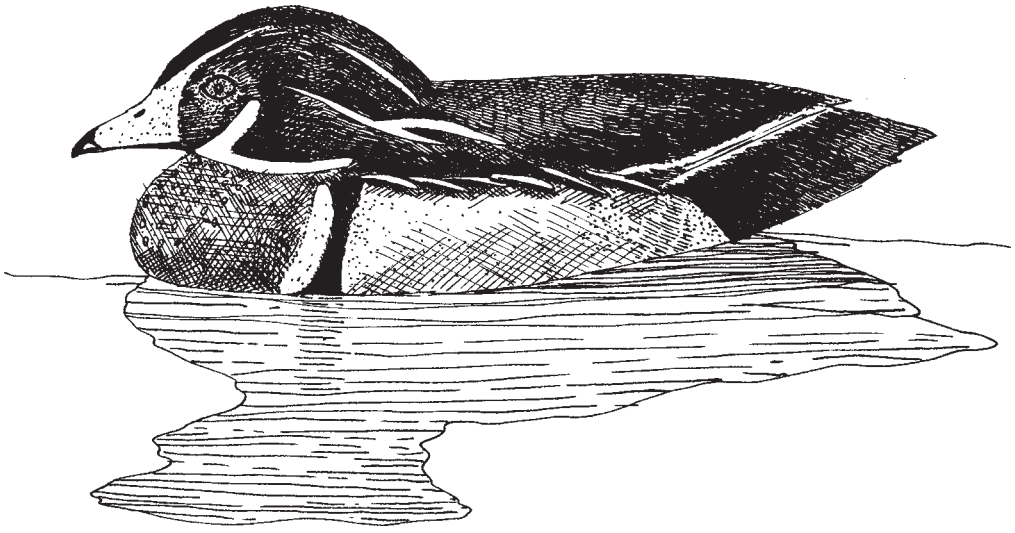
Table of Contents

Chapter 3 – Management Prescriptions

Chapter 4 – Management Areas

Chapter 5 — Implementation

Appendixes



Preface

This *Revised Land and Resource Management Plan* (Forest Plan) has been prepared according to Secretary of Agriculture regulations (36 CFR 219) which are based on the Forest and Rangeland Renewable Resources Planning Act (RPA) as amended by the National Forest Management Act of 1976 (NFMA). The Forest Plan has also been developed in accordance with regulations (40 CFR 1500) for implementing the National Environmental Policy Act of 1969 (NEPA). A detailed statement (Environmental Impact Statement) has been prepared as required by NFMA (36 CFR 219.10). The Forest Plan represents the selected alternative as identified in the *Final Environmental Impact Statement for the Revised Land and Resource Management Plan* (FEIS).

The document is divided into six major parts: the "Introduction to the Forest Plan," "Forest-Wide Direction," "Management Prescriptions," "Management Areas," "Plan Implementation," "Monitoring and Evaluation," and "Appendixes."

The "Introduction to the Forest Plan" provides background information that places the Management Direction into context with other management directives or procedures and trends occurring on the Sumter National Forest. The information includes the purpose of a Forest Plan: the decisions made; the relationship of the Forest Plan to other important documents that also provide management direction; a forest description; a summary of the "Analysis of the Management Situation" and a summary of the significant issues.

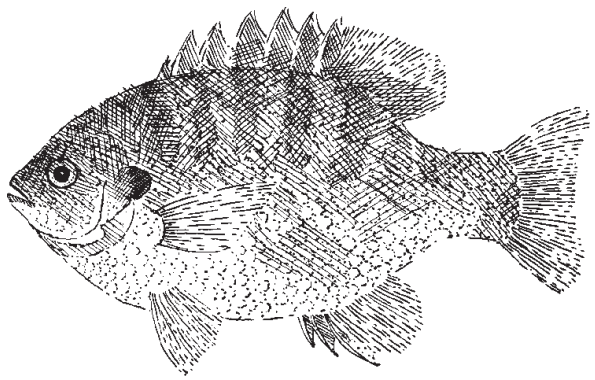
The "Forest-Wide Direction" section provides management direction that applies to the entire Sumter National Forest. This direction includes an introduction that explains how this direction was developed and defines goals, objectives and standards. Followed by the specific goals, objectives and standards.

The " Management Prescriptions" section provides 27 unique land allocations on the Sumter. Within this section, management prescriptions are defined. Each prescription includes an emphasis, desired condition, objectives (if needed) and standards (if needed). At the beginning of this section you will find a map showing the location of each prescription and the acreage.

The "Management Areas" section provides four unique management areas on the Sumter. Within this section, the two types of management areas are defined. Each management area shows existing conditions, desired conditions (if applicable), objectives (if applicable), acreage of each management prescription, and standards (if applicable).

The "Plan Implementation, Monitoring and Evaluation" section includes information on the how the Forest Plan will be implemented and updated through monitoring and evaluation.

The "Appendixes" section contains more detailed information that may be helpful in understanding the Forest Plan. Items such as "Laws, Rules, Regulations, Manuals and Handbooks," "Monitoring Tasks," and "Glossary."



Chapter 1
Introduction to the Forest Plan

This Sumter National Forest *Revised Land and Resource Management Plan* (Forest Plan) will guide all natural resource management activities and set management standards for the Sumter National Forest for the next 10 to 15 years.

The National Forest Management Act (NFMA), implementing regulations, and other documents guided the preparation of this Forest Plan. Land-use determinations, management practices, goals, objectives, standards, and guidelines are statements of the Forest Plan's management direction. Projected yields, services, and rate of implementation depend on the annual budgeting process.

This Forest Plan provides broad program-level direction for management of the land and its resources. Future projects carry out the direction in this Forest Plan. This Forest Plan does not contain a commitment to select any specific project. An environmental analysis is conducted, when required, on these projects as they are proposed.

In addition to direction found in this Forest Plan, projects also are implemented through direction found in the Forest Service directive system (manuals and handbooks) and other guides. (See Chapter 5, "Monitoring, Evaluation, Research, and Implementation.")

Purpose of the Forest Plan

The decisions made in the Forest Plan include:

- Forest-wide multiple-use goals, objectives, and standards for the forest, including estimates of the goods and services expected;
- Multiple-use management prescriptions and management areas containing desired conditions, objectives and standards;
- Land that is suitable for timber production;
- The allowable sale quantity for timber and the associated sale schedule;
- Recommended wilderness areas;
- Recommended wild and scenic river status;
- Monitoring and evaluation requirements;
- Lands administratively available for mineral development (including oil and gas).

Relationship of the Forest Plan to Other Documents

In addition to direction found in this Forest Plan, projects are also implemented by direction found in laws, rules, regulations, the Forest Service directive system (A listing is available in "Appendix A."); and the following programmatic decision documents.

- Record of Decision, *Final Environmental Impact Statement for the Suppression of Southern Pine Beetles* (USDA Forest Service, Southern Region, April 1987)
- Record of Decision, *Final Environmental Statement for Gypsy Moth Management in the United States: A Cooperative*

Approach (USDA, Forest Service and APHIS, Washington DC, January 1995).

Plan Structure

The Forest Plan consists of five chapters, and several appendixes.

Chapter 1 introduces the Forest Plan; explains its purpose, structure, and relationship to other documents; includes a brief description of the forest; and summarizes the issues and analysis of the management situation for the revision.

Chapter 2 contains the forest-wide management direction, including, desired conditions, goals, objectives, and standards.

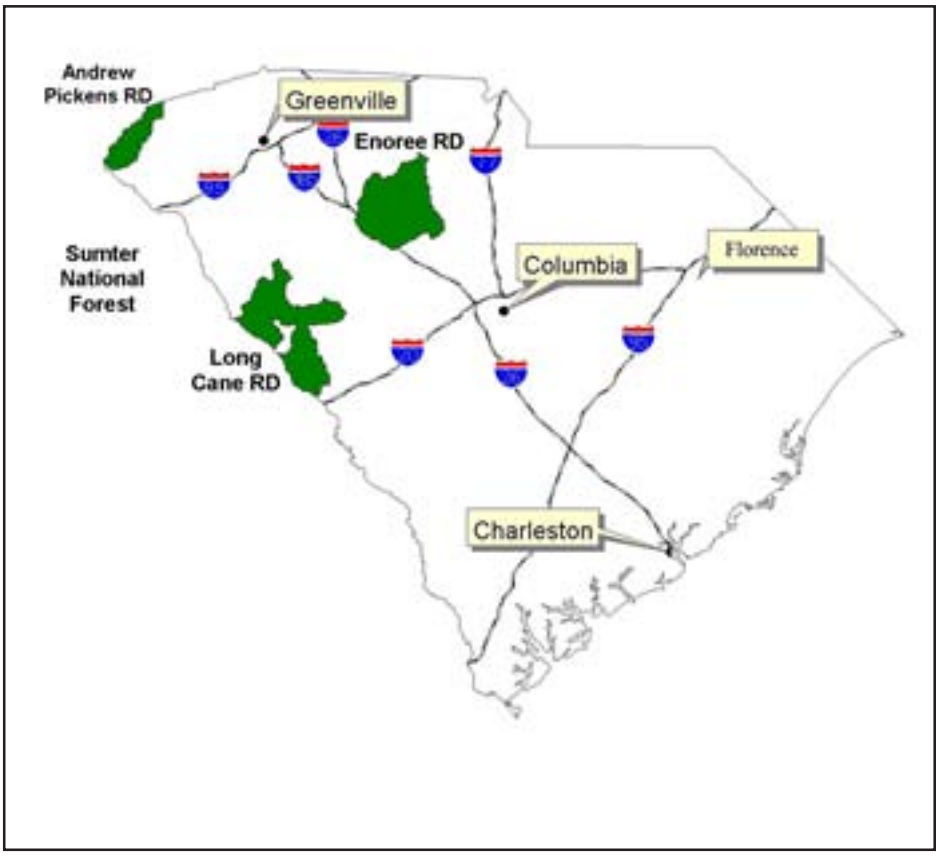
Chapter 3 contains the management prescriptions and the specific management direction applied at that level, including, desired conditions, goals, objectives, and standards.

Chapter 4 contains the management area direction, including, desired conditions, goals, objectives, and standards.

Chapter 5 gives direction on Forest Plan implementation, monitoring, and evaluation. Appendixes provide supplemental information about the Forest Plan.

Forest Description

The Sumter National Forest includes about 360,000 acres of National Forest System land in the mountains and piedmont of South Carolina. The forest is divided into three ranger districts located in 11 counties. The Andrew Pickens District is located in northern Oconee County. The Enoree District is located east of Interstate 26 in Chester, Fairfield, Laurens, Newberry, and Union Counties. The Long Cane District lies east of the Savannah River and J. Strom Thurmond Lake in Abbeville, Edgefield, Greenwood, McCormick, and Saluda Counties.



Summary of the "Analysis of the Management Situation" (AMS)

The "Analysis of the Management Situation" (AMS) for the Sumter National Forest is a determination of the forest's ability to supply goods and services in response to society's demand. The AMS provides a basis for determining the need for change in the existing Forest Plan and for formulating a broad range of reasonable alternatives. A draft AMS was completed in August 1996. A few important findings follow:

- Although water quality continues to improve, many of the streams on the national forest are listed by the state of South Carolina as impaired due to elevated fecal coliform levels.

- According to South Carolina's Department of Health and Environmental Control (DHEC), no violations of air quality standards have occurred on the Sumter National Forest. Following existing state guidelines should allow increased prescribed burning.

- Within the piedmont, early successional forests covered 16.9 percent and late successional forest covered 4.7 percent in 1996. This trend was reversed on the Andrew Pickens Ranger District where early successional forests covered 6.4 percent and late successional forests covered 31 percent in 1996. Since 1996 the early successional habitat has declined significantly to 5 percent on the piedmont and 2 percent on the Andrew Pickens in the year 2003.

- Inventory and monitoring have increased our knowledge of rare plant distributions, habitat requirements, and responses to management. The greatest number of rare plant species and populations is on the Andrew Pickens Ranger District in Oconee County.

- Very little existing old growth occurs on the Sumter National Forest.

- Southern pine beetle (SPB) has been the focus of the forest's insect suppression efforts from 1985 to present. Activity is cyclical with outbreaks occurring in 1988-89, 1992-93, and 1995-96. Since 1996, approximately 78 percent of the forest's pine stands (young, overstocked stands or stands greater than 60 years) are at great risk for SPB infestation. Another outbreak occurred in 2002.

- The hemlock woolly adelgid poses a long-term threat to hemlock on the forest.

- The Sumter National Forest represents a small portion of the timber inventory in South Carolina, but the quality of the material is generally higher than timber found on private land.

- Few requests are received for mineral exploration or mining operations.

- There were five roadless areas identified in the 1985 Forest Plan. The Ellicott Rock Extension was recommended for a wilderness study area. Long Creek and Ellicott Rock Expansion were placed in general forest management. The remaining two areas were placed in allocations that protected their roadless characteristics (i.e., scenic areas).

- In 1996, the following streams were determined to have outstandingly remarkable values and are eligible for possible inclusion in the National Wild and Scenic River System: Brasstown Creek, Cedar Creek,

Chauga River, Crane Creek, East Fork of the Chattooga River, Tamassee Creek, Stevens Creek, and Turkey Creek.

- Recreational uses of all kinds increased on the Chattooga Wild and Scenic River during the last 10 years.

- Since 1996 there has been a growing use/ demand for OHV trails.

- Increased population growth and development in all counties is changing the character of the landscape. Continuing growth and development is reducing the open spaces that are now farms, forests, and pastures. This development may reduce wildlife habitat, change the scenic character of the landscape, and increase the wildland/ urban interface concerns.

- Many counties are becoming less dependent on Forest Service dollars.

- The total forest road mileage has slightly decreased since 1985 from 1,110 miles to 1,053 miles.

A few of the important recommendations derived from the AMS follow:

- Establish goals, objectives, and desired conditions for riparian areas.

- Establish goals, objectives, and desired conditions that consider the key elements of biodiversity.

- Establish consistent management direction across national forest boundaries.

- Coordinate with the Chattahoochee National Forest in Georgia and the Nantahala National Forest in North Carolina to establish goals, objectives, and desired conditions for the Chattooga River Watershed.

- Consider insects and disease in developing desired conditions and in evaluating alternatives and effects.

- Establish goals, objectives, and desired conditions for recreational opportunities and experiences.

- Establish goals, objectives, and desired conditions for developing minerals.

- Define the role of timber production when developing desired conditions.

- Update the Visual Quality Objective system with the Scenery Management System.

- Recommend to Congress proposed wilderness and wild and scenic river designations.

- Remove direction from the revised Forest Plan that is not decided in the forest planning process, such as that included in the directive system, national policy, and executive orders.

- Link forest-wide and management area objectives to desired conditions, rather than to specific resource output targets.

- Revise the monitoring and evaluation direction to include effectiveness monitoring for Forest Plan goals, objectives, and desired conditions.

Summary of the Issues

Public involvement is a key part of the planning process. Our goals for public involvement were to ensure that all individuals and groups interested in or affected by the management of the Sumter National Forest had the opportunity to be informed and participate in the revision process; to reach an informed understanding with the public of the varying interest; and to consider these interests in developing this Forest Plan.

Public comments were used to identify the direction management should take in the future. This management includes goods and services to be provided, and environmental conditions. Many opportunities were provided for people to get involved in the planning process and to provide comments. Issues submitted by the public, as well as from within the Forest Service, guided the need to change current management strategies.

The Notice of Intent to prepare an environmental impact statement was published in August 1996. In September 1996 scoping notification was sent to interested and affected members of the public announcing the 120-day comment period and associated listening sessions. The scoping notification also ask for comments on the draft "Analysis of The Management Situation."

A four-phase process was used to develop alternatives. Based on the issues and public comments, four preliminary alternatives were developed. Public meetings were held throughout the state, and comments were solicited on the preliminary alternatives. Based on these comments, the five Southern Appalachian forests (National Forests in Alabama, Chattahoochee-Oconee, Cherokee, Sumter, and Jefferson) met and developed an additional four alternatives. Finally, a "Rolling Alternative" was created, based on criteria that addressed the Natural Resource Agenda (Watershed Health, Recreation, Sustainable Forest Ecosystem Management, and Forest Roads), Regional Forester's Emphasis Areas (Watershed Health/Water Quality, Habitat for Wide-ranging Species, Proposed, Endangered, Threatened Species (PETS) Recovery Plans, Old Growth, Semi-Primitive Recreation Opportunities, Roadless Areas, Special Areas, and a consistent approach to determining lands suitable for timber production), issues common to all five national forests, and the issues unique to each of the forests.

The issues developed for the Sumter National Forest follow. Brief explanations of how the issue will be addressed in the Forest Plan follow each issue statement. For further information, see the *Final Environmental Impact Statement*, Chapter 2, "Comparison of Alternatives."

1. **Terrestrial Plants and Animals and their Associated Habitats**: How should the national forest retain and/or restore a diverse mix of terrestrial plant and animal habitat conditions while meeting public demands for a variety of wildlife values and uses?

   Emphasize habitat conditions that are suitable for maintaining viable populations of all vertebrate species native to the planning area. Early successional habitats will be created and maintained by a variety of events, conditions, treatments, and activities.

2. **Threatened, Endangered, and Sensitive/Locally-rare Species**: What levels of management are needed to protect and recover the populations of federally-listed threatened, endangered, and proposed species? What level of management is needed for Forest Service sensitive and locally rare species?

   Emphasize the inventory, monitoring, conservation, and recovery of proposed, threatened, endangered, sensitive, and locally-rare species or their habitats.

3. **Old Growth:** The issue surrounding old growth has several facets. How much old growth is desired? Where should old

growth occur? How should old growth be managed?

Provide areas where old growth forest conditions are developed over time. Protect existing old growth.

4. **Riparian Area Management, Water Quality, and Aquatic Habitats**: What are the desired riparian ecosystem conditions within national forests, and how will they be identified, maintained, and/or restored? What management direction is needed to help ensure that the hydrologic conditions needed for the beneficial uses of water yielded by and flowing through national forest system lands are attained? What management is needed for the maintenance, enhancement, or restoration of aquatic habitats?

   Healthy watersheds will be maintained, and degraded watersheds will be restored to maintain or improve water quality and aquatic habitats. Riparian ecosystems will be essentially unchanged, except for those actions needed to restore riparian vegetative cover and riparian functions and values.

5. **Wood Products**: The issue surrounding the sustained yield production of wood products from national forests has several facets. What are the appropriate objectives for wood product management? Where should products be removed, given that this production is part of a set of multiple-use objectives and considering cost effectiveness? What should the level of outputs of wood products be? What management activities associated with the production of wood products are appropriate?

   Restore and maintain desired conditions and goals, which produce a stable supply of a variety of wood products including high quality sawtimber on the piedmont.

6. **Aesthetic/Scenery Management**: The issue surrounding the management of visual quality has two facets. What are the appropriate landscape character goals for the national forest? What should be the scenic integrity objectives for the national forest?

   National forest landscapes have a natural appearing or natural evolving character and are managed to maintain or enhance their scenic integrity.

7. **Recreation Opportunities/Experiences:** This issue includes considering a full range of opportunities for developed and dispersed recreational activities (including such things as nature study, hunting and fishing activities, and trail uses). How should the increasing demand for recreational opportunities and experiences be addressed on the national forest while protecting forest resources? Should the forest restrict equestrian use to designated routes only?

   Provide a spectrum of high quality, nature-based recreational settings and opportunities, within the capabilities of the land, which are not widely available on non-federal lands.

8. **Roadless Areas/Wilderness Management:** Should any of the roadless areas on national forest system lands be recommended for wilderness designation? How should roadless areas not recommended for wilderness be managed? How should areas recommended for wilderness designation be managed? How should the patterns and intensity of use, fire, and insects and diseases be managed in the existing wilderness areas?

   Wilderness and roadless areas are managed to provide their full range of social and ecological benefits.

9. **Forest Health:** What conditions are needed to maintain the ability of the forest to function in a sustainable manner as expected or desired? Of particular concern are the impacts of non-native species and the presence of ecological conditions with a higher level of insect and disease susceptibility.

    Restore and maintain forest ecosystems to provide the desired composition, structure, function, and productivity of those ecosystems over time.

10. **Special Areas and Rare Communities**: What special areas should be designated, and how should they be managed? How should rare communities, such as those identified in the *Southern Appalachian Assessment*, be managed?

    Protect and restore all existing special areas and rare communities.

11. **Wild and Scenic Rivers:**Which rivers are suitable for designation into the National Wild and Scenic River System? How should rivers that are eligible, but not suitable, be managed?

    Manage all existing, recommended, and eligible rivers to protect their outstandingly remarkable values.

12. **Access/Road Management**: How do we balance the rights of citizens to access their national forest with our responsibilities to protect and manage the soil and water resources, wildlife populations and habitat, aesthetics, forest health, and desired vegetative conditions?

    Provide the minimum transportation system that would supply and improve access for forest road users while protecting forest resources.

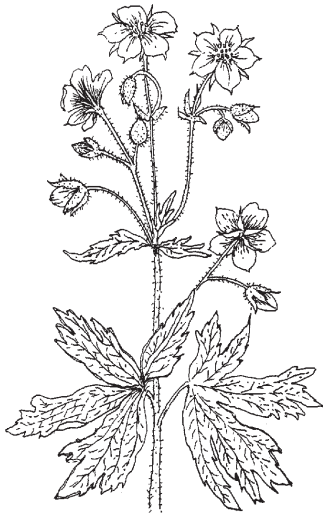
13. **Chattooga River Watershed**: How can the national forests manage the Chattooga River watershed for desired social and ecological benefits while protecting the outstanding values of the Chattooga Wild and Scenic River corridor? Should the Chattooga River be opened or closed to public boating above Highway 28?

    The Chattooga River watershed will be managed to emphasize recreation in association with the Chattooga Wild and Scenic River corridor; maintenance of roadless values; dispersed recreational opportunities; and improved water quality. Boating on the Chattooga is not allowed above the Highway 28 Bridge.

14. **Minerals**: What type of restrictions should we place on mineral development?

    Mineral exploration or development will be compatible with the desired condition of the appropriate management prescriptions or management areas.

The issues are further addressed in a variety of ways throughout this Forest Plan. Those ways include goals, objectives, standards, management prescriptions, management areas, and monitoring.



Chapter 2
Forest-Wide Direction

The Forest Plan is a strategic document providing land allocations, goals, objectives, desired conditions, and standards that must be met. This chapter outlines the overall management direction for the Sumter National Forest within the context of the southern Appalachian and piedmont ecosystems. This direction is organized around the physical, biological, and social resources of the Sumter, as well as the major issues identified by the citizens who helped develop this Forest Plan.

Each resource includes broad goal statements describing what we want to achieve. Objectives are concise statements, describing a specific result or condition desired to contribute toward achieving a goal. Objectives express measurable steps we will take over the next 10 years to achieve our goals and may be accomplished by maintaining a desired condition or by implementing a project or activity. Not all goals require quantifiable objectives. Objectives are linked to the monitoring plan.

While goals and objectives define where we are headed with management of the Sumter National Forest, standards define the rules we will follow to get there. Standards provide management direction for making decisions, which help achieve the forest's desired conditions, goals, and objectives. Standards are specific technical resource management directions and often preclude or impose limitations on management activities or resource uses, generally to protect the environment, to provide public safety, or to resolve an issue. Deviation from a standard requires a Forest Plan amendment. Adherence to Forest Plan standards is monitored during project implementation. In addition to following standards, the Sumter is required to comply with applicable laws, executive orders, and regulations listed in Appendix A.

Forest-wide goals, objectives, and standards apply to the entire forest unless superseded by specific management prescription direction. Objectives and standards may also be found at the management area and management prescription level. Projects are evaluated to determine if they are consistent with the management direction in the Forest Plan. This evaluation is documented in the project-level environmental document with a finding of consistency incorporated into the decision document.

While this direction was being developed, the forest identified some additional items that would not qualify as Forest Plan direction but are important for later plan implementation.

Any decisions on projects to implement the Forest Plan are based on site-specific analysis in compliance with the National Environmental Policy Act (NEPA). This environmental analysis is appropriately documented based on direction in the *Council on Environmental Quality Regulations For Implementing the Procedural Provisions of the National Environmental Policy Act* (40 CFR Parts 1500-1508) and the *Environmental Policy and Procedures Handbook* (Forest Service Handbook [FSH] 1909.15).

Riparian Area Management, Water Quality, Aquatic Habitats, Soil, and Air

In 1911, Congress authorized and directed the Secretary of Agriculture "…to examine, locate, and purchase such forested, cut-over, or denuded lands within the watersheds of navigable streams as in his judgment may be necessary to the regulation of the flow of navigable streams or for the production of timber," through the Weeks

Law. In 1936, as a result of this Act, the Sumter National Forest was established from these lands. Once established, the process of natural and managed restoration of those lands began. Erosion control projects, tree planting, and fire prevention and control are examples of management actions began to assist in restorating and protecting the natural forestland and resources. However, even with restoration efforts, past land abuses have left a legacy on the landscape of substantial areas with affected soils and streams that are still adjusting and needing improvement after many decades.

Soil and water conservation measures are necessary to maintain or improve many of the physical, chemical, and biological conditions on the national forest. Soil properties affect the processing of rainfall into streamflow and provide the basic elements from which plant and animal life exist. Streamflow maintains aquatic life, stream channel capacity, recreation, aesthetics, navigable waters, and favorable flow conditions.

Although water quality continues to improve, many of the streams on the Sumter remain impaired or impacted as identified by SC Department of Health and Environmental Control or the Environmental Protection Agency. Physical, chemical, and biological decline contribute in considerations of whether waters are listed as impaired. Fecal coliform, sediment or other water quality conditions caused by past or current activities contribute to impairment. Sedimentation in the Chattooga River is an example of how many activities influence water quality (Van Lear et. al., 1995). Past land abuses are often slow to recover. Some poorly located and maintained roads may contribute to impairment of water quality. Other contributors include industrial, agricultural, and silvicultural practices, land development, and other activities.

The Forest Service is responding to water quality concerns. Roads are stabilized and/or improved, and active gullies are treated. Some dispersed recreational sites within riparian areas within the Chattooga and Chauga River watersheds have been treated to reduce soil and water impacts. Actively eroding gullies and galled barrens are stabilized or restored to conditions where they are vegetated and functioning within the acceptable range of desired conditions. All activities on the Sumter meet or exceed state requirements for Best Management Practices (BMP). Where BMP have not been formally identified, similar measures are applied to protect soil and water resources from unacceptable impacts associated with soil exposure and surface disturbance. Practices protect soil productivity and are consistent with soil quality monitoring direction. Watersheds with critical aquatic habitats, wild and scenic rivers, municipal water sources, and those on the state water quality impaired list will be given priority consideration for providing technical, cooperative, and financial assistance when conditions on private lands that prevent achieving desired conditions on the national forest.

The primary purpose of the channeled ephemeral stream zone is to maintain the ability of the land areas to filter sediment from upslope disturbances while achieving the goals of the adjacent management prescription area. In addition, the emphasis along ephemeral streams is to maintain stream stability and sediment controls by minimizing soil exposure or disturbance. See “Standard for Channeled Ephermeral Streams.”

Productive soils are critical to the growth and health of fauna and flora. The soils on the Sumter National Forest vary from the piedmont and mountain topographic regions. The piedmont soils are formed from crystalline rocks, mixed acid rocks, micaceous rocks, and Carolina slates. The mountain soils are formed from colluvial materials weathered from gneiss, schist rock, and granite materials. The piedmont has 63 soil-mapping units and the mountains have 22 soil-mapping units. Mapping units have at least 50 percent of a primary soil series.

Soils of the piedmont include gently to steeply rolling hills, many of which have been severely eroded by past farming activities. Past degradation of many of these soils by erosion,

loss of infiltration capacity and depletion of nutrients has resulted in poor soil productivity (Hoover, 1949). Gullies formed in some areas. Some of this land that became the Sumter (Shands and Healy (1977). Some gullies, galls, and bare soil areas still exist on the Sumter and surrounding lands. Almost all of the piedmont surface soils have been eroded to some extent, averaging nearly a foot of surface soil lost, leaving fewer than 2 inches of soil surface on most of the landscapes. These areas require some type of treatment to improve soil productivity (McKee and Law, 1985). Efforts to reduce the effects of the gullies and severe erosion that began with the Civilian Conservation Corps in the 1930s were expanded in the 1980s and continue (Heede, 1976, Yoho, 1980, Schumm, et. al., 1984, Hansen, 1991, 1995, Hansen and Law, 1996).

Soil and water improvement measures are designed to address active severe erosion from gullies, abandoned roads, stream banks, or other sources. A combination of soil bioengineering, erosion control, stabilization and restoration measures appropriate for the landscape position result in a marked reduction in soil loss, erosion and sedimentation. Results improve poor or declining soil properties, water quality, watershed condition, riparian and/or aquatic habitats. Mitigation measures to limit the temporary effects of treatments are installed to produce rapid erosion control, permanent cover, and site recovery. Limiting sedimentation and improving soil properties are emphasized.

Cultivated or disked areas for wildlife openings or linear wildlife strips will prevent the concentrated flow, rill networks, erosion, and sedimentation. When necessary, alternating vegetated strips will be left on the contour to deter soil loss. Soil loss will be held to acceptable soil quality guides.

Active areas of ground disturbance will be limited in extent and duration within stream drainages to reduce the potential for direct, indirect, and cumulative effects caused by excessive changes in runoff, erosion, streamflow, sediment, and channel adjustment due to soil disturbance and vegetation change.

Air quality is another important element to consider for healthy forest resources.. Sulfur compounds in the atmosphere are primarily responsible for the haze that obscures visibility. Sulfur compounds and sometimes nitrogen compounds can cause acidification of headwater streams and cause nutrients to leach out of soils. Ozone causes visible injury to plant leaves, and can also cause reduced plant growth. The pollutants originate from many sources over a wide geographic area. Therefore, regional approaches to air pollution emission reductions are necessary to improve air quality and resource conditions. It is essential that the Sumter work cooperatively with air management agencies and Regional Planning Organizations (VISTAS) to reduce air pollution impacts to resources, and to minimize the Sumter's impacts to air quality.

Goals and Objectives

Goal 1 Watersheds are managed (and where necessary restored) to provide resilient and stable conditions to ensure the quality and quantity of water necessary to protect ecological functions and support intended beneficial water uses.

> **Objective 1.01** Improve soil and water conditions on 1,500 acres through stabilization or rehabilitation of actively eroding areas such as gullies, barren areas, abandoned roads or trails, and unstable stream banks over the 10-year planning period.

Goal 2 Manage in-stream flows and water levels, by working with other agencies if possible, to protect stream processes, aquatic and riparian habitats and communities, and recreation and aesthetic values.

> **Objective 2.01** The in-stream flows needed to protect stream processes, aquatic and riparian habitats and

communities, and recreation and aesthetic values will be determined on 50 streams.

Goal 3 Riparian ecosystems, wetlands, and aquatic systems are managed (and where necessary restored) to protect and maintain their physical, chemical, and biological integrity.

Goal 4 Maintain or restore natural aquatic and riparian communities or habitat conditions in amounts, arrangements, and conditions to provide suitable habitats for riparian dependent and migratory species, especially aquatic species including fish, amphibians, and water birds within the planning area. Perennial and intermittent streams are managed in a manner that emphasizes and recruits large woody debris (LWD).

Objective 4.01 Create and maintain dense understory of native vegetation on 1 to 5 percent of the total riparian corridor acreage during the 10-year planning period.

Goal 5 Maintain or restore soil productivity and quality.

Objective 5.01 Improve soil productivity on 8,000 acres of disturbed, low productivity, eroded soils with loblolly and shortleaf pine on the piedmont during the 10-year planning period.

Goal 6 Cooperate with landowners and other partners to address watershed needs and participate in efforts to identify stream problems, watershed planning, BMP and Total Mean Daily Load (TMDL) implementation with the South Carolina Department of Health and Environmental Control, South Carolina Forestry Commission and other agencies.

Goal 7 Provide good air quality for people's health and the health of the forest environment.

Standards

Water and Soil Quality

FW-1 Water quality, soil productivity, and channel structure are protected using best management practices to avoid impacts to water quality and soils. Where riparian prescription direction differs from BMP, the more restrictive or protective prescription will be followed. Seed mixtures and the removal of large woody debris added by harvest activities suggested in the state BMP for Forestry may not be followed when they conflict with native vegetation and aquatic habitat objectives.

FW-2 Where BMP are not specifically developed for activities, apply similar preventive measures such as those published by the SC Forestry Commission concerning forestry which avoid, minimize and/or mitigate effects to water quality, streamside management zones and soils.

FW-3 Major soil disturbances that expose the soil surface or substantially alter soil properties such as temporary roads, skid trails, landings, and rutting will not occupy more than 15 percent of forest vegetation management treatment areas except for chopping, watershed improvements, or other treatments during a rotation designed to reforest to suitable species or correct soil and water problems.

FW-4 To limit soil and water quality impacts, heavy mechanical equipment (dozers, skidders, feller/bunchers, etc.) will not be used on slopes over 40 percent except in designated locations with adequate and timely mitigation. Emergency fire lines and soil and water improvements specifically designed to stabilize or rehabilitate severe erosion such as active gullies are exceptions to this slope limit.

FW-5 Water is not diverted from streams (perennial or intermittent) or lakes when an in-stream flow needs or water level assessment indicates the diversion would adversely affect

protection of stream processes, aquatic and riparian habitats and communities, or recreation and aesthetic values.

Channeled Ephemeral Stream Zones

The following standards apply to 25 feet on each side of a channeled ephemeral stream. See the Glossary, Appendix B, for a definition of a channeled ephemeral stream.

FW-6 Skidders will only be allowed within the channels at designated crossings.

FW-7 For cable logging, at least partial suspension is required when yarding logs over ephemeral streams.

FW-8 Skid trail crossings will be located in a manner that minimizes stream channel and bank disturbance.

FW-9 Fire lines are not constructed along the length of stream channels.

FW-10 New motorized trails are prohibited within ephemeral stream zones except at designated crossings or where the trail location requires some encroachment, for example, to accommodate steep terrain.

FW-11 Stabilize disturbed soils at channel crossings.

FW-12 New mineral, oil, and gas leases will contain a controlled surface use stipulation for channeled ephemeral stream zones.

FW-13 Removing large woody debris from within the channeled ephemeral stream zone is allowed if the woody debris poses a significant risk to stream flow or water quality, degrades habitat for riparian dependent species, or poses a threat to private property or National Forest infrastructure (e.g., bridges). The need for removal is determined on a case-by-case basis. When needed to protect water quality, excessive small woody debris (logging slash) should be removed when its entry is a result of activities.

FW-14 Trees and native vegetation on the stream bank should not be removed except at designated crossings.

FW-15 Soil active herbicides are not broadcast within channeled ephemeral stream zones. Stream zones are identified before treatment, so applicators can easily avoid them.

FW-16 Pesticide mixing, loading, or cleaning areas are not located within the channeled ephemeral stream zone.

Air Quality

FW-17 Comply with South Carolina smoke management guidelines and Forest Service Region 8 smoke management guidelines.

Wildlife Habitat and Forest Vegetation

The Sumter National Forest lies within both the Blue Ridge and the piedmont physiographic provinces, where variations in elevation lead to differences in the vegetation that grows there. The Andrew Pickens Ranger District is located along the Blue Ridge. There is a mixture of shortleaf pine with various hardwoods on low elevation ridges and south-facing slopes. Pitch pine and table mountain pine are found on high ridges. Mesic oak-hickory forests are found on lower and north-facing slopes. Mixed mesophytic and white pine–hemlock forests are located in forested coves.

The Long Cane and Enoree Ranger Districts, in the piedmont, are predominantly loblolly pine forests interspersed with patches of upland hardwoods, including sweetgum, white oak, southern red oak, hickories, yellow-poplar, red maple, and various other oaks. Bottomland

hardwoods along streams dissect these upland forests.

Vegetation on the Sumter National Forest has been greatly modified by human activity over the last 200 years (Bates, 1993; Barden, 1997; Platt and Brantley, 1997; Frost, 2002). When the Sumter National Forest was established in 1936, it was comprised primarily of abandoned farmland. Early European explorers, beginning with Hernando DeSoto's 1540 expedition, found fire-maintained prairies, savannas, and woodlands in the uplands, created and maintained by the Native Americans who had occupied the land for at least 12,000 years. Shortleaf pine *(Pinus echinata)*, warm-season grasses, and hardwoods dominated the uplands, and the bottomlands were mosaics dominated by bottomland hardwoods, loblolly pine *(Pinus taeda)*, canebrakes, beaver ponds, beaver marshes, and successional thickets. Land clearing, and intensive cultivation, primarily in cotton, lasted from the late 1700s through the early 1900s followed by extensive planting of loblolly pine, initially by the Civilian Conservation Corps. During the 1960s, loblolly pine largely replaced the native shortleaf pine forests on the piedmont, since many of the existing shortleaf pine stands were susceptible to littleleaf disease, which is prevalent on severely eroded clay soils (Oak and Tainter, 1988). National forest management activities have perpetuated the loblolly pine forests we see today.

The Sumter National Forest is charged with creating and maintaining habitat conditions suitable to maintain viable populations of all species native to the planning area, and where appropriate support desirable levels of selected species. National Forest Management Act regulations, adopted in 1982, require selection of management indicator species (MIS) during development of forest plans (36 CFR 219.19(a)). Thirteen species have been selected as MIS for the Sumter National Forest. They will be used in conjunction with other identified management indicators described in chapter 3 of the FEIS ("Biological Elements" section), and other Forest Plan monitoring items to assess effects of alternatives and to help monitor effects of implementing the selected alternative. The MIS selected and their related objectives can be found in Chapter 5.

As shown in Table 2-1, mixes of management prescriptions are allocated to provide for a variety of habitat conditions. The following goals, objectives and standards are designed to protect, restore, maintain, and enhance wildlife and plant populations and communities while maintaining flexibility to manage other resources.

Table 2-1. Forest Communities by District.

District	Forest Community	Condition	2002 Acres
Andrew Pickens (Mountains)	Dry-Mesic Oak	Forest	15,699
	Dry-Xeric Oak	Forest	1,702
		Woodland	-
	Dry, Dry-Mesic Oak and Oak-pine	Forest	9,955
		Woodland	-
	Dry, Dry-Mesic Pine and Pine-oak	Forest	28,428
		Woodland	-
	Mixed Mesophytic Forest		20,663
	Loblolly Pine		6,936
Enoree and Long Cane (Piedmont)	Dry - Mesic Oak	Forest	29,817
	Dry - Xeric Oak	Forest	1,723
		Woodland	-
	Dry, Dry-Mesic Oak and Oak-pine	Forest	2,239
		Woodland	-
	Loblolly Pine	Forest	211,585
		Woodland	-
	Mixed Mesophytic Forest		1,824
	Bottomland, Riverfront Forest		28,875

Goals and Objectives

Goal 8 Maintain and restore natural communities and habitats in amounts, arrangements, and conditions capable of supporting viable populations of existing native and desired non-native plants, aquatic, and wildlife species within the planning area.

Objective 8.01 Restore 2,000 – 6,000 acres of native communities on sites occupied by loblolly pine on the Andrew Pickens District over the 10-year planning period.

Objective 8.02 Provide 8,000 – 11,000 acres of woodlands in the piedmont and 4,000 – 5,000 acres of woodlands on the mountains on dry-xeric sites in woodland, savanna, open grassland, or shrubland conditions with fire associated rare communities preferred over the 10-year planning period.

Objective 8.03 Create conditions to restore dry-mesic oak, oak-pine, and pine-oak forest communities on 20,000 acres currently in loblolly pine in the piedmont over the 10-year planning period.

Objective 8.04 Increase shortleaf pine and shortleaf pine/oak communities on 2,000 to 10,000 in the piedmont. This will be done on sites with low risk of littleleaf disease.

Objective 8.05 Increase structural diversity by creating canopy gaps in 1 to 5 percent of closed canopy mid- and late-successional mesic deciduous forest (including mixed mesophytic and mesic oak forests). Gaps are defined as small openings smaller than 2 acres in size and are designated to release mast producing species, particularly hard mast (oak, hickory, walnuts, etc.) and soft mast bearing trees (cherry, black gum, persimmon, etc.) over the 10-year planning period.

Objective 8.06 Restore more diverse native communities on 1,000 to 2,000 acres currently occupied by white pine stands. Prioritize xeric to intermediate sites over the 10-year planning period.

Goal 9 Provide habitats to sustain the diversity and distribution of resident reptile and amphibian species as well as breeding, wintering, and migration staging and stopover habitat for migratory birds in ways that contributes to their long-term conservation.

Objective 9.01 Construct or restore wetlands on 600 acres in the riparian corridor on the piedmont over the 10-year planning period.

Standards

FW-18 Standing snags, bird peck trees, and living den trees will not be cut or bulldozed during vegetation management treatments unrelated to timber regeneration treatments, unless necessary to provide for public or employee safety.

FW-19 Forests dominated by eastern hemlock are not subject to regeneration harvest during this planning period.

FW-20 During silvicultural treatments in all forest types, patches of hemlock greater than 0.25 acres are retained.

FW-21 Oak forests on mesic sites are not converted to pine forests.

FW-22 For all timber regeneration treatments, including salvage activities, two or more snags per acre from the larger size classes will be

retained. Live den trees will not be cut unless necessary to provide for public or employee safety. Distribution of retained snags may be clumped.

FW-23 On the Andrew Pickens, potential black bear den trees will be retained during all vegetation management treatments occurring in habitats suitable for bears. Potential den trees are those that are greater than 20" diameter at breast height (DBH) and are hollow with broken tops.

FW-24 In the piedmont, hardwood inclusions (1/2 acre in size or larger) in pine stands dominated by hard and soft mast producing trees (i.e., oaks, hickories, walnut, black gum, black cherry, persimmon) will be retained.

Proposed, Endangered, Threatened, Sensitive, (PETS) and Locally-rare species

The Sumter National Forest provides habitat for several federally proposed, endangered, or threatened species, Forest Service sensitive species (PETS), and locally rare species. The federally proposed, endangered, or threatened species listed in Table 2-2 were identified through coordination and consultation with the USDI Fish and Wildlife Service. See Appendix E of the FEIS ("Biological Assessment/ Biological Evaluation") for a complete listing of all PETS and their habitats, and Appendix F in the FEIS for a complete listing of all viability concern species and their habitats, including PETS and locally rare species.

Habitats for all PETS and locally rare species are provided through forest-wide goals, objectives, and standards recommended below, and emphasized in forest-wide, management prescription, and management area-wide direction associated with rare communities, riparian areas, and forest communities. The Sumter follows recovery plans for all federally-endangered and threatened species, when available. All PETS receive additional consideration in biological evaluations/ assessments prepared during project-level planning.

Table 2-2. Federally Proposed, Endangered, or Threatened Species which occur or are likely to occur on the Sumter National Forest

Federally-listed Species	Status	District most likely to occur
Bald Eagle *(Haliaeetus leucoocephalus)*	Threatened	Enoree and Long Cane
Carolina Heelsplitter *(Lasmigona decorata)*	Endangered	Long Cane
Florida Gooseberry *(Ribes echinellum)*	Threatened	Long Cane
Persistent Trillium *(Trillium persistens)*	Endangered	Andrew Pickens
Relict Trillium *(Trillium reliquum)*	Endangered	Long Cane
Small Whorled Pogonia *(Isotria medeoloides)*	Threatened	Andrew Pickens
Smooth Purple Coneflower *(Echinacea laevigata)*	Endangered	Andrew Pickens
Wood Stork *(Mycteria americana)*	Endangered	Enoree and Long Cane

Goals and Objectives

Goal 10 Contribute to the conservation and recovery of federally-listed species and take necessary actions to maintain viable populations of all species thereby avoiding the need to list those species.

> **Objective 10.01** Maintain or restore at least 8 self-sustaining populations for smooth coneflower and if possible, given the technical expertise, 4 populations for small whorled pogonia on the Andrew Pickens, including the habitat to support them.
>
> **Objective 10.02** Maintain or restore at least 8 self-sustaining populations for Georgia aster (Symphyotrichum georgianum) and 1 population for Florida gooseberry on the piedmont districts, and the habitat to support them.

Standards

FW-25 Permits for the collection of listed Regional Forester's sensitive species are not issued, except for approved scientific purposes or propagation.

FW-26 Where forest uses are negatively affecting federally-listed species, or species where viability is a concern, sites or uses are modified to reduce or eliminate negative impacts.

FW-27 Non-native species are controlled where they are causing adverse effects to federally-listed species, or species where viability is a concern. Non-native invasive species are not intentionally introduced near these species or individuals.

FW-28 Protection zones are delineated and maintained around all bald eagle nests and communal roost sites, until they are determined to be no longer suitable through coordination with the U.S. Fish and Wildlife Service. The protection zone extends a minimum of 1,500 feet from the nest or roost. Activities that modify the forest canopy within this zone are prohibited. All management activities not associated with bald eagle management and monitoring are prohibited within this zone during periods of use (nesting season is October 1 to June 15; roost use periods are determined through site-specific monitoring). Where controlled by the Forest Service, public access routes into or through this zone are closed during the seasons of use, unless they are major arterial roads.

FW-29 In artificial impoundments used by foraging wood storks, water levels are managed to provide for and encourage annual use by this species.

Special Areas, Rare Communities And Old Growth

Special areas on the Sumter include those with botanical zoological characteristics, and scenic areas. Following an evaluation, special areas are allocated to specific prescriptions 4.D. (Botanical Zoological Area) and 4.F. (Scenic Area).

Rare communities are assemblages of plants and animals that occupy a small proportion of the landscape but contribute significantly to plant and animal diversity. The list of plant and animal communities considered rare within the southern Appalachian and piedmont forests undergoing forest plan revision were identified by the *Southern Appalachian Assessment* and refined using the International Classification of Ecological Communities (NatureServe, 2001). The following groups of rare communities are recognized as occurring on the Sumter National Forest.

- Bogs, Seeps, and Seasonal Ponds
- Riverine Vegetation
- Table Mountain Pine Forest and Woodlands

- Basic Mesic Forests
- Cliffs and Bluffs
- Rock Outcrops
- Glades, Barrens, and Associated Woodlands
- Canebrakes
- Mines

Conditions to promote old growth forest development are needed to address various social, biological, recreational, and spiritual issues in South Carolina. Theforest will adhere to the "Guidance for Conserving and Restoring Old Growth Forest Communities on National Forests in the Southern Region" (1997), in defining old growth community types on the forest, and in describing inventory and monitoring needs. To date, few old growth inventories have been conducted on the Sumter, though very little existing old growth is thought to occur here, particularly on the piedmont districts (Jones, 1988; Carlson, 1995; White and Lloyd, 1998). Paul Carlson assessed the old growth forest resource on National Forest lands in the Chattooga watershed, and found 4 percent (of a total 122,000 acres) in existing old growth.

Consistent with the old growth guidance, a possible old growth inventory was developed for the Sumter National Forest in 1997, and rerun in 2002. It was considered in prescriptions allocation in this Forest Plan. This Forest Plan will provide conditionsto develop a network of small, medium, and large patches of future old growth, through prescriptions which are "unsuitable for timber production," including wilderness, wild and scenic rivers, special areas, old growth, dispersed recreation (unsuitable), remote backcountry recreation, riparian corridors, and rare communities. Additional small patches of existing old growth (10-100 acres in size) will be identified through sitespecific surveys, and will be protected.

The old growth report contains operational definitions for 16 old growth community types, of which 8 occur or have the potential to occur on the Sumter National Forest, including the following:

- Conifer-Northern Hardwood Forest
- Mixed Mesophytic Forest
- River Floodplain Hardwood Forest
- Dry-Mesic Oak Forest
- Dry and Xeric Oak Forest, Woodland, and Savanna
- Xeric Pine and Pine-Oak Forest and Woodland
- Dry and Dry-Mesic Oak-Pine Forest
- Eastern Riverfront Forest

Goals and Objectives

Goal 11 Those areas with special scenic, botanical, and/or zoological characteristics will be managed to protect those characteristics.

Goal 12 Protect or restore the rare communities found on national forest lands.

> **Objective 12.01** Restore 500 to 2,500 acres of table mountain pine forest over the 10-year planning period.
>
> **Objective12.02** In the piedmont, restore 1 to 5 percent of the riparian corridor on slopes less than 8 percent into the canebrake community over the 10-year planning period.

Goal 13 A variety of large, medium, and small old growth patches will be managed (through restoration, protection, or maintenance activities) to meet biological and social needs.

Standards

Rare Communities

FW-30 Rare communities as described in this Forest Plan are managed under the Rare Community Prescription (9.F.) wherever they occur.

FW-31 Project areas are surveyed for rare communities before implementing projects that have potential to adversely affect them.

FW-32 Table mountain pine will not be cut during vegetation management activities to maintain future restoration opportunities. Exceptions may be made where needed to provide for public safety, protection of private resources, or insect and disease control/ prevention or where needed to improve the habitat for PETS species.

Old Growth

FW-33 Existing old growth as defined in "Old Growth Guidance for the Southern Region," when encountered, will be managed to protect the old growth characteristics.

Forest Health

Insect and disease organisms are important components of forest ecosystems. Native organisms contribute to many ecological processes of forests including nutrient cycling, plant succession, and forest dynamics. In most cases, these native organisms are recognized as an integral component of forest health. In a few instances, however, these organisms cause unacceptable resource damage or loss, and adversely affect ecological, economic, or social values. In these cases, the organisms causing the damage are referred to as pests. Principal native insect pests on the Sumter National Forest include the southern pine beetle and a variety of defoliators. Primary native disease problems include oak decline, annosum root disease, and a variety of other decay organisms affecting living trees.

Throughout the past 100 years, a variety of insects, diseases, and plant species have been introduced to the United States and spread into the Sumter National Forest. These non-native organisms are often pests because they often have no natural enemies or other naturally controlling agent, and their unchecked spread can wreak untold damage to native ecosystems and forest communities. Chestnut blight has reduced the American chestnut from the dominant hardwood tree species in the mountains to a minor understory component of today's forests. Other important non-native pests include hemlock wooly adelgid, littleleaf disease, butternut canker, and dogwood anthracnose. Gypsy moth will probably reach the Sumter within the next few decades.

Non-native invasive plant species can spread into and persist in native plant communities and displace native plant species, posing a threat to the integrity of the natural plant communities. Some of the non-native invasive plants known to severely impact native plant diversity on the Sumter National Forest include Japanese and Chinese privet *(Ligustrum spp.)*, kudzu *(Pueraria lobata)*, sericea lespedeza (*Lespedeza cuneata*), Japanese honeysuckle (*Lonicera japonicum*), Chinese wisteria, (*Wisteria sinensis*), Japanese stiltgrass (*Microstegium vimineum)*, tree of heaven (*Ailanthus altissima*), autumn olive *(Elaeagus umbellata)*, multiflora rose (*Rosa mulitflora*), mimosa (*Albizia julibrissin*,) and China Berry *(Melia azedarach).*

The high percentage of relatively older (age 70-120) forest communities in the mountains poses challenges in addressing forest health issues. These large areas of mature forests are particularly vulnerable to both native and non-native forest pests. Oak decline is a primary concern in mature oak forests. In the piedmont, the Sumter National Forest has large acreages of loblolly pine that are mature, making them more susceptible to littleleaf disease, and southern pine beetle.

In 2002, the Sumter experienced a southern pine beetle (SPB) epidemic, resulting in substantial mortality to pines. SPB infestations have grown especially fast in dense forests. Higher stand densities make pine stands much more susceptible to SPB attack. This fact points to the need for maintaining these stands at moderate densities.

Pitch pine *(Pinus rigida)*, shortleaf pine *(Pinus echinata)*, and table mountain pine *(Pinus pungeus*) are declining in abundance throughout the southern Appalachian mountains because of age, southern pine beetle outbreaks, lack of fire, and limited amounts of disturbance.

Fire has historically played an important role in shaping the species composition of the Sumter National Forest. Historically, relatively frequent fires have maintained and restored many forested communities across the piedmont and southern Appalachians, especially xeric pine and pine-oak forest; dry and xeric oak forests; and dry and dry to mesic pine-oak forests. Without fire or other vegetation management actions that approximate fire's effects, many communities may show dramatic reductions in distribution and/or abundance in future years and shift towards shade-tolerant and fire-intolerant species. In the mountains, the absence of somewhat frequent fire has allowed fire dependent table mountain pine to shrink in distribution and is now considered a rare community.

Forests and streams located in areas of base-poor bedrock (sandstone and granite) and with elevations above 3,000 feet are being negatively affected by historical and current levels of acid deposition. The two primary acidifying compounds are sulfates and nitrates. The sources of acidifying compounds are generally located off national forest lands, with coal-fired electric generation facilities and vehicles accounting for the bulk of sulfur and nitrogen emissions. When nitrogen is deposited in excess of forest nutrient needs, some nitrate will leave the soil and take with it essential nutrients that impoverish the soil resource. When nutrients are leached from soils, growth of vegetation can be reduced. Sulfur deposition can cause the same effects on soils when the capacity to absorb sulfur is exceeded. Sulfur and nitrogen compounds in the soil also cause acidification of high elevation streams, which can alter the solubility, mobility and effect of aluminum and other chemicals, thereby endangering the habitat of native brook trout and other aquatic species. Recent and projected trends in air pollutants show sulfur compound emissions decreasing over the life of the Forest Plan, whereas nitrogen compound emissions are projected to remain relatively flat.

Ozone pollution is negatively affecting the health of susceptible forest tree species, black cherry *(Prunus serotina)* for example. Ozone is formed through chemical reactions in the atmosphere between nitrogen oxide (from vehicles and coal fired power generation) and volatile organic compounds (from industrial and natural sources) in the presence of sunlight. Ozone levels are highest during the summer. Recent studies suggest that competitiveness between tree species is changing over time because of elevated ozone levels. Tree species that are not susceptible to ozone will out compete more sensitive species over time. Significant reductions in ozone pollution over the life of the Forest Plan are not anticipated because nitrogen oxide emissions are not expected to decrease significantly.

Integrated Pest Management (IPM) bridges several of the following forest health goals. IPM is the maintenance of destructive agents, including insects, at tolerable levels, by the planned use of a variety of preventive, suppressive, or regulatory tactics and strategies that are ecologically and economically efficient and socially acceptable. Within the constraints of Forest Plan standards and desired conditions, forest insects and diseases are controlled using IPM if necessary to prevent unacceptable damage to resources on adjacent land, or prevent unnatural loss to the forest resource or to protect threatened, endangered, and sensate species

Goals and Objectives

Goal 14 Manage forest ecosystems and associated communities to maintain or restore composition, structure, function, and productivity over time.

Goal 15 Minimize adverse effects from non-native invasive species. Coordinate with private landowners and land managers as needed to address influx of non-native invasive species and treatments needed to protect the National Forest resources.

> **Objective 15.01** Control non-native invasive plants on, at a minimum,1,000 acres by the end of the 10-year planning period, emphasizing management prescriptions where biodiversity or restoration is a primary objective.

Goal 16 Maintain or restore native tree species whose role in forest ecosystems is threatened by insects or disease.

Goal 17 Manage forest stands so they are less susceptible to insects and disease.

> **Objective 17.01** Improve forest health on 10,000 – 50,000 acres of pine forests by reducing stand density.

Standards

FW-34 Apply pesticides according to label instructions, Forest Service policies and other federal regulations.

FW-35 Areas treated with pesticide are signed.

FW-36 Seeding with invasive non-native species (listed on the Regional Forester's invasive species list) shall not be conducted.

FW-37 Healthy (full crowns and free of littleleaf disease) shortleaf pine will not be cut on the piedmont during vegetation management activities in order to maintain future restoration opportunities. Exceptions may be made where needed to provide for public safety, protection of private resources, or insect and disease control, or thinnings.

FW-38 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.

FW-39 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.

FW-40 Herbicides and application methods are chosen to minimize risk to human and wildlife health and the environment. No class B, C, or D chemical (defined in Glossary, Appendix B) may be used on any project, except with Regional Forester's 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. Diesel oil will not be used as a carrier for herbicides, except as it may be a component of a formulated product when purchased from the manufacturer. Vegetable oils will be used as the carrier for herbicides when available and compatible with the application proposed.

FW-41 Areas are not burned under prescription for at least 30 days after herbicide treatment.

FW-42 Weather is monitored and the project is suspended if temperature, humidity, or wind becomes unfavorable as follows:

FW-43 Nozzles that produce large droplets (mean droplet size of 50 microns or larger) or streams of herbicide are used. Nozzles that

produce fine droplets (mean droplet size of less than 50 microns) are used only for hand treatment where distance from nozzle to target does not exceed 8 feet.

	Tempera-tures Higher Than	Humidity Less Than	Wind (at target) Greater Than
Ground:			
Hand (cut surface)	NA	NA	NA
Hand (other)	98^{0}F	20%	15 mph
Mechanical:			
Liquid	95^{0}F	30%	10 mph
Granular	NA	NA	10 mph
Aerial:			
Liquid	90^{0}F	50%	5 mph
Granular	NA	NA	8 mph

FW-44 A certified pesticide applicator supervises each Forest Service application crew Contracted crews will be supervised by a licensed pesticide applicator. Crewmembers are trained in personal safety, proper handling and application of herbicides, and proper disposal of empty containers.

FW-45 People living within ¼ mile of an area to be treated aerially are notified during project planning and shortly before treatment.

FW-46 With the exception of permittee treatment of right-of-way corridors that are continuous into or out of private land and through Forest Service managed areas, no herbicide is broadcast applied (as opposed to directed sprays) 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.

FW-47 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.

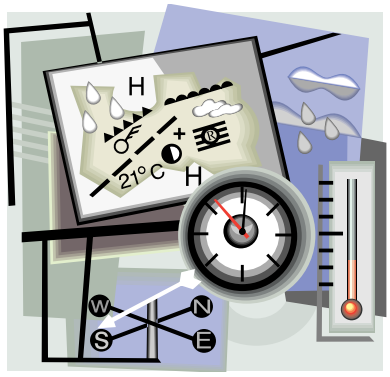
FW-48 Herbicide mixing, loading, or cleaning areas in the field are not located within 200 feet of private land, open water or wells, or other sensitive areas.

FW-49 No herbicide is aerially applied within 300 feet of any threatened, endangered, proposed, or sensitive plant. Buffers are clearly marked before treatment so applicators can easily see and avoid them.

FW-50 No herbicide is aerially applied within 100 horizontal feet of lakes, wetlands, or perennial or intermittent springs and streams.

FW-51 No herbicide is aerially 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.

FW-52 Pine straw or any other mulching material will not be sold (as mulch or for any other purpose) from areas treated with clopyralid.



Wood Products And Special Forest Products

Lands suitable for timber production provide a planned periodic harvest of wood products. Suitable lands are managed to influence tree species composition, control stocking, ensure adequate reforestation, harvest trees, and protect the productivity of the site while providing for a healthy vigorous forest within the growth capabilities of the sites. Maintaining a mix of successional habitats and/or a desired species composition is a primary objective for most of these lands on the Sumter National Forest.

Trees and the products derived from them are a highly valued forest resource, managed through a timber program for multiple-use objectives. Wood products contribute to the social and economic well being of the people living in the area. Forest products vary from high quality veneer for furniture and flooring to construction timbers to small diameter pulp logs used in the production of paper.

Lands not suitable for timber production may provide additional wood products. However, no yields of forest products are planned from these lands. Any such harvests are either driven by resource objectives other than forest products, or are a result of insect/disease control or salvage operations.

All of the acres in Table 2-3 are approximate. Management prescription 11 is estimated based on stream order, slope, and soil type. Actual area will be based on ground conditions. A map that accompanies this Forest Plan shows the allocation of management prescriptions on the Sumter.

The allowable sale quantity includes estimated timber volume from timber sales on lands suitable for timber production. The estimates are based on site quality, tree growth rates, habitat and environmental adjustments. When salvage occurs on these lands, the salvage volume is considered part of the allowable sale quantity. Salvage on lands unsuitable for timber production is not part of the allowable sale quantity. The allowable sale quantity for the forest is 139 million cubic feet (MMCF) for all decades, or an average of 13.9 MMCF annually.

Management of the Sumter National Forest balances the ecological value of leaving dead, dying, and damaged trees as part of the ecosystem, with aesthetic desires, visitor safety, and the economic value of this resource for wood products if removed before deterioration. During southern pine beetle outbreaks, salvage harvest is an important tool for preventing further spread of infested spots. Only a relatively small portion of the mortality across the Sumter is removed through salvage operations with the remainder providing organic matter, nutrients, tree cavities, large woody debris, etc.

Appropriate regeneration methods are used to perpetuate desirable tree species. Decisions on specific harvest methods are based on site-specific project level analysis.

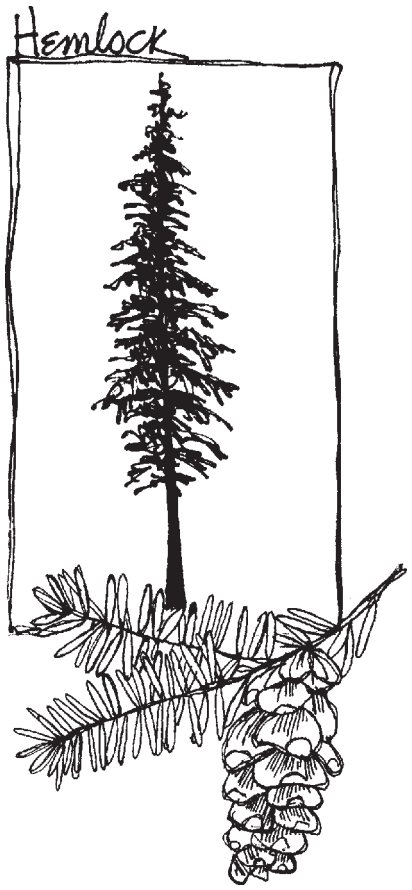


Table 2-3. Acres Suitable and Unsuitable for Timber Production				
Management Prescription	**Description**	**Acres Unsuitable for Timber Production**	**Acres Suitable for Timber Production**	**Total Acres**
1A	Designated Wilderness	2,855		2,855
1B	Recommended Wilderness	1,971		1,971
2A1	Designated Wild River	3,290		3,290
2A2	Designated Scenic River	224		224
2A3	Designated Recreational River	977		977
4D	Botanical Zoological Areas	4,379		4,379
4F	Scenic Areas	9,979		9,979
4G1	Calhoun Experimental Forest	908	3,111	4,019
5A	Administrative Sites	285		285
5B	Communication Sites	4		4
5C	Utility Corridors	2,480		2,480
6C	Old Growth	1,620		1,620
7A	Scenic Byway	2,754		2,754
7D	Concentrated Recreation Zones	235		235
7E1	Dispersed Recreation Areas	6,545		6,545
7E2	Dispersed Recreation Areas		51,381	51,381
8A1	Mix of Successional Forest Habitats		35,232	35,232
8B2	Woodlands/Grasslands/Savannas		6,630	6,630
9A3	Watershed Restoration		9,646	9,646
9F	Rare Communities *	622		622
9G2	Restoration of Upland Oak-Hickory and Mixed Pine-Oak-Hickory Forests		36,448	36,448
10B	High Quality Forest Products		116,865	116,865
11	Riparian Corridors	55,563		55,563
12A	Remote Backcountry Recreation	4,413		4,413
	Water	1,761		1,761
	Non-forest outside of 5A, 5B and 5C	2,672		2,672
	Total	**103,537**	**259,313**	**362,850**
*This number will be refined with the implementation of site-specific inventories.				

Goals and Objectives

Goal 18
Provide a sustainable supply of wood products.

Standards

FW-53 Special forest product collections are not allowed in botanical areas and rare communities, except for research or propagation.

FW-54 The maximum size of an opening created by even-aged or two-aged regeneration treatments is 80 acres for southern yellow pine and 40 acres for all other tree species. Exceptions to these acreage limitations may be permitted following review by the Regional Forester. These acreage limits do not apply to areas treated as a result of natural catastrophic conditions such as fire, insect or disease attack, or windstorm. Areas managed as permanent openings (e.g., meadows, pastures, food plots, rights-of-way, woodlands, savannas, and grasslands) are not subject to these standards and are not included in calculations of opening size, even when within or adjacent to created openings.

The 80-acre limit will not apply to the loblolly pine forest type on the Andrew Pickens Ranger District. These stands have a desired condition of more native species composition, and many are more than 80 acres with the largest stand being 290 acres. Leaving loblolly pine trees on site would provide an unwanted seed source and would work against restoration activities.

FW-55 An even-aged regeneration area will no longer be considered an opening when the certified reestablished stand has reached an age of 5 years.

FW-56 Regeneration harvest on lands suitable for timber production must be done under a regeneration harvest method where adequate stocking of desirable species is expected to occur within 5 years after the final harvest cut. (Five years after final harvest means 5 years after clearcutting, 5 years after final overstory removal in shelterwood cutting, 5 years after the seed tree removal cut in seed tree cutting, or 5 years after selection cutting.) The new stand must meet the minimum stocking levels as described in Table 2-4. These standards apply to both artificial and natural means of stand regeneration. Where natural means are used and stand reestablishment has not been accomplished within 3 years after committing the stand to regeneration, the stand is re-examined for further treatment needs.

FW-57 Sell no more than 138.7 MMCF of chargeable timber from lands suitable for timber production during the 10-year planning period.

FW-58 No timber harvesting shall occur on lands classified as not suited for timber production except for salvage sales, harvest activities necessary to protect other multiple-use values, or harvest activities needed to meet other (non-timber) desired conditions of the management prescriptions established in this Forest Plan.

Table 2-4. Minimum stocking guides

Forest Type	Minimum Number of Seedlings for Adequate Stocking
Loblolly pine	200 per acre
Shortleaf pine/pitch pine	200 per acre
White pine	100 per acre (will occur in mixed stands with other pines or hardwoods)
Hardwoods	100 desirable trees per acre
Table mountain pine	100 per acre
Mixed stands (hardwood/pine or pine/hardwood)	100 per acre

Fire Management

Historically, fire may have been the most common form of natural disturbance on the landscape now managed as the Sumter National Forest. Fire has played an important role in developing and maintaining southern yellow pine ecosystems and appears to be a major factor in the developing oak forests. (Reference *Southern Appalachian Assessment* "Terrestrial Report" page 94-96). For additional discussion on fire's role in forest health, please refer to "Forest Health."

For purposes of fire management, ecosystems have been classified into five fire regimes.

- **Group 1**—(0 to 35 years) low severity.
- **Group 2**—(0 to 35 years) stand replacement severity.
- **Group 3**—(35 to 100+ years) mixed severity.
- **Group 4**—(35 to 100+ years) stand replacement severity.
- **Group 5**—(more than 200 years) stands replacement severity.

Fire regimes are generalized descriptions of the role fire plays in an ecosystem. (Discussion of fire regimes can be found in the *FEIS*, Chapter 3, "Prescribed and Wildland Fire.") The Sumter is dominated by fire-adapted and fire-dependent ecosystems characterized by short return interval understory fire regimes with low to moderate intensity ground fires that generally are non-lethal to the dominant trees.

Fire exclusion, primarily by suppression, disrupted the pattern of fire intensity and occurrence on the Sumter. The effect of the changes in the vegetation eventually leads to a regime shift on the continuum. Almost all significant forest health problems and many of the most destructive wildfires occur in these ecosystems, where fire has been excluded for prolonged periods and the natural fire regime has shifted. (Reference *Land Management Considerations in Fire Adapted Ecosystems: Conceptual Guidelines.* USDA Forest Service, Fire and Aviation Management, Washington, DC. FS-590. August 1996.*)*

Three Condition Classes define the degree of departure from historical fire regimes, resulting in alteration of key ecosystem components. (Reference *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, 10-Year Comprehensive Strategy, Implementation Plan* May 200*2.)*

- **Condition Class 1:** Fire regimes in this fire condition class are within historical ranges. Vegetation composition and structure are intact. Fire dependent ecosystem components are maintained by desired fire regimes. Thus, the risk of losing key ecosystem components from the occurrence of wildland fire remains relatively low.

- **Condition Class 2:** Fire regimes on these lands have been moderately altered from their historical range. A moderate risk of losing key ecosystem components has been identified on these lands. Fire frequencies have departed by one or more return intervals. Vegetation composition has been moderately altered.

- **Condition Class 3:** Fire regimes on these lands have been significantly altered from their historical return interval. The risk of losing key ecosystem components from fire is high. Fire frequencies have departed from historical ranges by multiple return intervals. Vegetation composition, structure, and diversity have been significantly altered. Consequently, these lands verge on the greatest risk of ecological collapse.

The Sumter National Forest is characterized by short return-interval fire regime 1, and all three condition classes.

The hazardous fuels reduction program focuses on maintaining land in existing

condition class 1, and treating the fuels hazard in condition classes 2 and 3 to bring them into condition class 1. Priority is in the wildland urban interface (WUI), followed by maintaining and restoring fire adapted ecosystems.The current prescribed burning program for hazardous fuels and resource management treats about 20,000 acres annually. Approximately 18,000 acres of the average are burned for hazardous fuels reduction and 2,000 acres for other resource management. It is important for forest health, threatened and endangered species habitat, and reducing the risk in the wildland urban interface to maintain the forest currently in condition class 1 and restore as much of the condition class 2 and 3 to a lower class if possible.

Fire behavior and its effects vary within the Sumter National Forest. The piedmont is characterized by gentle rolling hills. Steeper, longer slopes characterize the mountains, and affect fire behavior and fire size more dramatically than the topography found in the piedmont. Consequently, the mountains have the potential for larger fires.

The Sumter National Forest suppresses an average of 30 wildland fires annually, which burn approximately 200 acres of National Forest land. Humans cause 94 percent of these fires: most are intentionally set or escaped debris burning. Lightning causes 6 percent of these fires. Most fires, 86 percent, are 10 acres or fewer.

The Sumter may expect 40 to 50 days of high fire danger and 1 day of very high to extreme fire danger, annually. Most fires occur during the high fire danger periods with flame lengths of 3-5 feet. Severe and extreme droughts occur periodically, usually beginning in the spring and may continue through November. During these periods the Keetch-Byrum Drought Index (KBDI) may reach 700+. In the past 25 years, the Sumter has had 17 escaped fires (over 100 acres), an annual escape fire frequency of 0.68 and an average of 234 acres burned per year.

Major factors affecting forest fuels are dominant vegetation type and age (overstory, midstory and ground cover), and the presence of insects and disease. Regeneration harvests over the past 20 years have resulted in a mosaic of 0 to 20 year-old pine stands. Fires starting in reproduction stands are harder to suppress than fire in open stands with light fuels. These stands have a greater potential of increased mortality to the overstory with increased potential for stand replacement fires. A recent infestation of the southern pine beetle has dramatically increased the amount of fuel present, both on the ground and standing. Treatments include salvage sales in the piedmont and cut-and-leave activities in the mountains and piedmont. Both types of treatment will increase hazardous fuels on the ground, and add complexity and hazard to suppression efforts and wildland fire use.

Much of the Sumter is in dispersed ownership and can be classified as wildland urban interface.This wildland urban interface places the private structures at increased risk from wildland fires and vice versa. If fire is excluded from these areas, fuel loadings will increase, resulting in increasingly greater risk for larger and more intense fires. The hazardous fuels reduction program strives to reduce this risk.

The National Fire Plan – A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan established four goals for Forest Service Fire Management (and other federal and state agencies). Theese goals provide the framework for developing the Sumter's fire management program. These four goals follow.

1. Improve Fire Prevention and Suppression
2. Reduce Hazardous Fuels
3. Restore Fire-Adapted Ecosystems
4. Promote Community Assistance

The appropriate management response will be used for suppression strategies. These strategies range from direct attack to minimizing acreage burned and resource value loss, to

indirect attack where firefighter and public safety is always the primary consideration. (Reference "Federal Wildland and Prescribed Fire Management Policy" 1995, and amendments.)

The "Fire Management Plan" (FMP), a strategic document based on and in support of this Forest Plan, provides comprehensive guidelines for both the suppression and the prescribed fire programs in relation to other management activities and geographic areas on the Sumter. The "Fire Management Plan" does not document fire management decisions; rather it provides the operational parameters whereby fire managers implement the goals and objectives in the Forest Plan or land management decisions." (FSH 31 5109.19 CH 50, 52.1)

Goals and Objectives

Goal 19 Protect life, property, and resources from unacceptable damage by fire through improved fire prevention, suppression, hazardous fuel reduction, and promoting community assistance.

Goal 20 Maintain and restore fire-adapted ecosystems by reducing hazardous fuels through the use of prescribed fire and mechanical fuels treatments.

> **Objective 20.01** Maintain condition class 1 by restoring historic fire return intervals and reducing the risk of losing ecosystem components to wildfire on approximately 250,000 acres over the 10-year planning period.

Goal 21 Emissions from prescribed fire will not hinder the state's progress toward attaining air quality standards and visibility goals.

Standards

Wildland Fire

FW-59 The safety of firefighters and the public is the first priority in all fire management activities.

FW–60 Suppress human-caused fires.

FW-61 Wildland fire use, the management of naturally ignited wildland fire, is allowed with an approved "Fire Management Plan" and a specific "Wildland Fire Implementation Plan" for the area.

FW–62 Wildland fire use of naturally-ignited wildland fire in wilderness is allowed with an approved "Fire Management Plan," a "Wilderness Fire Plan," and a specific "Wildland Fire Implementation Plan" for the area.

Prescribed Fire

FW-63 Prescribed fires will be implemented following the direction found in FSM 5140.

FW-64 Prescribed burns are done so they do not consume all litter and duff and/or alter structure and color of mineral soil on more than 15 percent of the area.

FW-65 On severely eroded forest soils, any area with an average litter-duff depth of less than ½ inch or duff less than ¼ inch will only be burned at low intensity.

FW-66 Use existing barriers, e.g., streams, lakes, wetlands, roads, and trails, whenever possible to reduce the need for fire line construction and to minimize resource impacts.

FW-67 All managed burns will comply with Smoke Management Programs (SMP) for South Carolina.

FW-68 Conform with the "State Implementation Plan" for any prescribed fire planned within EPA-designated "non-attainment" and "maintenance" areas.

Recreation—Developed, Dispersed, and Backcountry

The Sumter National Forest consists of three ranger districts, the Andrew Pickens, Enoree, and Long Cane. Each district is unique in its recreational offering as well as its landscape.

The **Andrew Pickens Ranger District** (85,500 acres) is located in the northwest corner of the state, bordering both North Carolina and Georgia. The district is also rural in nature. Apple orchards and small residential complexes are common sights. The district's land base is much more consolidated than either the Enoree or Long Cane Ranger Districts. National forest land dominates the landscape with some occasional private lands. The recreational resources include developed campgrounds, primitive/seasonal camps, several types of trails, including the Chattooga Wild and Scenic River, a rifle range, hunting and fishing opportunities. Hotspots on this district include the recreational use associated with the Chattooga Wild and Scenic River. The river is one of the main attractions of this area and people flock to see it. River boating approachs 100,000 per year. There is one state park within the forest's boundaries, Oconee State Park. Another large state park, Devils Fork State Park is located just a few miles to the east of the forest. This district is located on the state line for North Carolina, South Carolina and Georgia and borders both the Chattahoochee and the Nantahala National Forests. These national forests also provide recreational settings and opportunities that affect supply in the area.

The **Enoree Ranger District** (161,500 acres) is located in central South Carolina, between Spartanburg and Columbia. The district has a very rural setting with National Forest lands interspersed with pastured lands, croplands, industrial timberlands, and small communities. National forest lands in this area are not consolidated and often are adjacent to private lands. The recreational resources include campgrounds and primitive camps, rifle ranges, trails for a variety of uses, interpretive opportunities, hunting and several recreational fishing lakes. The statewide Palmetto Trail will cross this district when completed. Rose Hill State Park, a historic state park, is located in the middle of the district. An emphasis of this district is a premier network of trails for riding OHVs, horses, mountain bikes, and hiking, as well as abundant opportunities for hunting and wildlife viewing.

The **Long Cane Ranger District** (117,500 acres) is located on the western edge of the state, near Abbeville, Edgefield and North Augusta. The district also has a rural setting and an unconsolidated land base. Small towns and communities dot the landscape. Forested lands, pastures and private residences and industrial timberland coexist. The recreational resources on this district include developed campgrounds, primitive/seasonal camps, rifle ranges, trails for a variety of uses, interpretive opportunities, hunting, and fishing opportunities. There are several state parks located within the forest boundaries, including Baker Creek State Park, Hamilton Branch State Park, and Hickory Knob State Park. Also, there are several Corps of Engineer projects along the Strom Thurmond Lake, which borders the Long Cane to the west. A state scenic highway (state highway 28/81) runs through the district. Also, a National Heritage Corridor also runs through the district. An emphasis of this district is a premier network of trails for hiking and riding OHVs, horses, mountain bikes, as well as abundant opportunities for hunting and wildlife viewing.

Although the opportunities for outdoor recreation are extensive and the public demand for these opportunities is seemingly endless, the Sumter's capability to meet these demands is not endless. Visitor preferences can shift over time. Both changing financial limitations and

environmental impacts must be considered. In order to maximize value to the public with the limited resources available, the forest will focus on providing those opportunities that are unique or of exceptional long-term value in a manner that focuses on maximizing visitor satisfaction within financial and environmental limitations.

Goals and Objectives

Goal 22 Provide a spectrum of high quality nature-based recreational settings and opportunities that reflect the unique or exceptional resources of the Sumter and the interests of the recreating public on an environmentally sound and financially sustainable basis. Adapt management of recreation facilities and opportunities as needed to shift limited resources to those opportunities.

Goal 23 Where financially and environmentally feasible, enhance the following opportunities:

- Hiking, biking, canoe, kayak, raft and equestrian trail systems, especially in non-motorized settings with high quality landscapes
- Designated OHV routes
- The high priority improvements, expansions, or additions of facilities to provide developed recreational opportunities
- Hunting, fishing, wildlife, bird, and plant viewing opportunities
- Educational and interpretive opportunities

Objective 23.01 Maintain or improve 150 acres of ponds/lake habitat for recreational fisheries.

Objective 23.02 In the piedmont, increase acreage that is at least ½ mile from an open road to 35,000 acres, emphasizing land blocks that are at least 2,500 contiguous acres in size.

Goal 24 Enhance opportunities to provide backcountry (semi-primitive motorized and non-motorized/remote) recreational experiences that are generally not available on other land ownerships.

Goal 25 Provide a range of accessible recreation facilities and trails.

Standards

General

FW-69 Limit OHVs and mountain bikes to designated routes.

FW-70 Prohibit camping stays over 14 days, unless permitted.

FW-71 No new OHV routes in the Turkey, Stevens, Chauga and Chattooga Watersheds.

FW-72 Dispersed camping is not allowed on the Enoree and Long Cane ranger districts without a permit.

FW-73 Motorized use of the trail system is permissible for administrative purposes and emergencies.

FW-74 All management activities will be consistent with meeting or exceeding the condition associated with each Recreation Opportunity Spectrum (ROS) class.

FW-75 At developed recreational sites and on trails, effects from recreational use that conflicts with environmental laws (such as Endangered Species Act, National Heritage Preservation Act, or Clean Water Act), are analyzed and mitigated.

FW-76 At developed recreational sites, water, wastewater, and sewage treatment systems meet federal, state and local water quality regulations.

FW-77 At developed recreation sites high-risk conditions do not exist.

FW-78 At developed recreation sites, utility inspections meet federal, state and local requirements

FW-79 When signed as accessible, constructed features meet current accessibility guidelines.

FW-80 Trails, when signed accessible, meet current accessibility guidelines.

FW-81 Dispersed camping occurs at least 50 feet from lakes and streams to protect riparian areas, 50 feet from trails, and 1/4 mile from a road on the Andrews Pickens district.

FW-82 Camping with horses may only occur in designated areas on the Andrew Pickens District.

Roadless Areas and Wilderness Management

Congressionally designated wilderness areas are protected by law and valued for their ecological, historical, scientific, and experiential resources.

There is one designated wilderness area on the Sumter National Forest. Ellicott Rock Wilderness is shared between three national forests, the Sumter, the Nantahala and the Chattahoochee. Of the combined 8,271 acres for the entire wilderness area, 2,856 acres are on the Sumter. This acreage represents less that 1 percent of the total forest acreage. The existing wilderness areas will be managed to maintain the area's natural characteristics. Natural occurrences such as outbreaks of insects or disease are allowed as part of the natural cycle. Man-caused intrusions are not allowed. Under emergency conditions, mechanical equipment and motorized transport may be approved for use to control fire, which threatens life, property, or the wilderness resource. The Sumter National Forest contains one recommended wilderness study area that has not been acted upon by Congress, Ellicott Rock Extension (1,982 acres.)

The Sumter National Forest has 4 inventoried roadless areas, totaling approximately 6,161 acres. One of the areas is shared with the Chattahoochee National Forest.

Air pollution emitted within or near the Sumter can be transported and transformed over long distances. The impacts from secondary pollutants on natural resources can be found downwind of where the air pollution is emitted. There are four areas within 200 km of the Sumter that are designated as class I air quality according to the Clean Air Act Amendments of 1977. Three of these class I areas (Linville Gorge, Joyce Kilmer/Slickrock, and Shining Rock Wilderness) are under the responsibility of the USDA Forest Service on other national forests. The forests managing Class I wilderness have a legal responsibility to advise the state environmental agencies if any new or modified source of air pollution originating within the state will have an adverse impact to the air quality related values (AQRV) of the nearby class I areas.

Goals and Objectives

Goal 26 Maintain wilderness, wilderness study areas, and inventoried roadless area characteristics.

Goal 27 Manage wilderness, wilderness study areas, and inventoried roadless areas to provide the social and ecological benefits that only they can offer.

Wild and Scenic Rivers

Chattooga Wild and Scenic River

The Sumter National Forest has one designated Wild and Scenic River. On May 10, 1974, the Chattooga River was added to the National Wild and Scenic Rivers System. It is one of the premier whitewater streams of the eastern United States. Its 57 designated miles begin in the National Forests of North Carolina and forms the state boundary between South Carolina (Sumter National Forest) and Georgia (Chattahoochee National Forest). The Sumter National Forest has the lead authority for all boating/floating use (commercially-guided and self-guided) on the Chattooga River when it involves the main channel from Burrell's Ford to Lake Tugaloo, as well as the West Fork in Georgia. The respective forests where these uses occur administer all other land and water uses.

The Chattooga River has several outstandingly remarkable values including geology, biology, scenery, recreation and history.

The Chattooga River corridor has a variety of recreational activities from hiking and equestrian use to nature study, backpacking, and fishing. Floating use, both guided and self-guided, fluctuates each year based on water levels. In years of high water levels, the use for both guided and self-guided has reached as high as 89,000 people per year. In years of lower water levels the number can be significantly lower. Specific management direction can be found in Management Prescription 2A in Chapter 3.

Eligible Rivers

During the current forest plan development, rivers on the Sumter National Forest were considered for potential inclusion in the National Wild and Scenic Rivers System based on the requirements of Section 5(d)(1) of the Wild and Scenic Rivers Act. The forest evaluated the eligibility of five rivers and found only the Chauga River as eligible. This river was placed in a scenic area prescription to protect the free-flowing condition and outstandingly remarkable values.

In 1995 a comprehensive inventory was done. This inventory included rivers identified on the Nationwide Rivers Inventory, the South Carolina Statewide River Assessment, and by public involvement and information gathered by Forest Service personnel. Seventeen streams or rivers on the Sumter National Forest were reviewed for potential eligibility. Of the 17, eight were found to be free-flowing and possess one or more outstandingly remarkable values.

These streams were classified according to Section 2 of the Wild and Scenic Rivers Act (WSR) (PL 90-542). Table 2-5 shows the rivers that were studied and found ineligible and Table

Table 2-5 Rivers Studied for National Wild and Scenic River System and found Ineligible

District	River	Miles
Andrew Pickens	Limber Pole Creek	2.0
	King Creek	3.2
	Crooked Creek	1.3
Enoree	Broad River	37.0
	Tyger River	30.2
	Enoree River	36.7
	Fairforest Creek	9.6
Long Cane	Little River	6.2
	Long Cane Creek	29.2

Table 2-6 Rivers Studied for Inclusion as National Wild and Scenic River and found Eligible					
District	**River**	**Segment**	**Miles**	**Outstandingly Remarkable Value(s)**	**Classification**
Andrew Pickens	Brasstown Creek	N/A	3.9	Botanical/Ecological	Wild
	Cedar Creek	N/A	4.2	Botanical/Ecological	Scenic
	Chauga	I	7.9	Scenic Recreation Geologic Botanical/Ecological	Scenic
		II	4.1	Scenic Recreation Geologic Botanical/Ecological	Wild
		III	4.0	Scenic Recreation Geologic Botanical/Ecological	Scenic
	Crane	N/A	3.1	Fish/Aquatic	Scenic
	East Fork, Chattooga River	I	2.5	Fish/Aquatic	Recreational
		II	2.2	Fish/Aquatic	Wild
		III	.2	Fish/Aquatic Recreation	Recreational
		IV	2.4	Fish/Aquatic Recreation Botanical/Ecological	Wild
	Tamassee Creek	N/A	1.7	Botanical/Ecological	Wild
Long Cane	Turkey	N/A	12.5	Wildlife Fish/Aquatic Botanical Ecological	Scenic
	Stevens	N/A	13.4	Wildlife Botanical/Ecological	Recreational

2-6 shows the rivers that were studied and found eligible.

Management direction for the eligible rivers is not in separate management prescriptions but is governed by the following forest-wide direction. An explanation of the Wild and Scenic River study process can be found in Appendix D of the FEIS. A map of the eligible rivers can be found in Appendix I.

Goals and Objectives

Goal 28 The Chattooga Wild and Scenic River would be managed to protect and enhance free-flow, water quality and the outstandingly remarkable values of geology, biology, scenery, recreation and history.

Goal 29 Eligible rivers will be managed to protect free-flow, protect and to the extent possible enhance outstandingly remarkable values, and maintain the identified wild, scenic, or recreational classification.

> **Objective 29.01** A suitability analysis for Turkey and Stevens Creek will be completed by the year 2009.

Standards

Eligible Rivers

The following standards apply to ¼ mile on each side of the eligible rivers shown in Table 2-6.

FW-83 No new road construction in wild sections.

FW-84 No motorized boats or crafts are allowed on the wild sections.

FW-85 No motorized trails are allowed.

FW-86 No federal mineral leasing or mineral material authorization is permitted**.**

FW-87 New utility corridors or communications/electronic sites will be discouraged.

FW-88 Protect the outstandingly remarkable values and maintain the identified wild, scenic or recreational classification.

Aesthetics/Scenery Management

Public concern for the quality of scenery in National Forest System lands in the Blue Ridge and piedmont regions is increasing. Many sightseers visit the national forest as part of an interwoven experience with other tourist opportunities. The Sumter National Forest provides opportunities for high quality nature-related sightseeing and scenic viewing. Scenic features include the Chattooga Wild and Scenic River, a Congressionally-designated wilderness area, the Oscar Wiggington National Forest Scenic Byway. The Sumter National Forest also, offers premier opportunities for wildlife viewing and driving for pleasure.

These highly visible lands, including those adjacent to heavily used waterways, major forest trails, scenic road corridors and major highways through the forests, present challenges to land managers. Potential conflicts could arise between scenery management and other resource objectives. The visual resource has been inventoried and classified in an effort to arrive at management solutions that include the scenic resource. A visual inventory was mapped on Sumter lands using the Scenery Management System (SMS). This system increases the role of constituents throughout the inventory and planning process. It borrows from and is integrated with basic concepts and terminology of ecosystem management. The system provides for improved integration of aesthetics with other biological, physical, and social/cultural resources in the planning process.

Goals and Objectives

Goal 30 Protect and enhance the scenic and aesthetic values of the national forest lands in the Southern Appalachians and piedmont.

Standards

FW-89 The Forest Scenic Integrity Objectives Maps and Scenic Integrity Objectives (SIO) in each prescription governs all new projects (including special uses). Assigned SIO are consistent with Recreation Opportunity Spectrum management direction. Existing conditions may not meet the assigned SIO.

FW-90 The Scenery Management System guides protection and enhancement of scenery on the Sumter National Forest. The scenic class inventory will be maintained, refined, and updated as a result of site-specific project analysis. The standards under each Management Prescription in Chapter 3 refer to the inventory as updated.

FW-91 Lands mapped as concern level 1 middle ground from travel ways and use areas will be inventoried as Scenic Class 2 or higher and will be managed for an SIO of Moderate or higher.

Heritage Resources

Awaiting discovery in the woodlands of the Sumter National Forest are the remnants of past cultures that confront us and remind us of the centuries-old relationship between people and the land. These heritage resources hold clues to past ecosystems, add richness and depth to our landscapes, help us to understand past life-ways, provide links to living traditions, and help transform a walk in the woods into an unforgettable encounter with history.

More than 10,000 years ago American Indians first occupied the area of South Carolina that is now part of the Sumter National Forest. Historic period Indians included groups with social and political ties to the Cherokee and the Catawba. Archeological and historical research has been used to reconstruct and interpret both Native American prehistory and the advance of Euro-American settlement into the upstate of South Carolina beginning in the eighteenth century. Land acquisition for a national forest in South Carolina began as early as 1914 in Oconee County as part of the Nantahala National Forest. However, most of the land acquired to form the national forest in the piedmont was purchased from willing sellers between 1934 and 1936. Together these public lands became the Sumter National Forest.

More than 3,800 heritage resource sites are recorded on the Sumter National Forest. Prehistoric period sites include campsites, villages, hunting areas, stone tool quarrying areas, and petroglyphs. Historic period sites include farm houses, outbuildings, mines, improved springs, dams, mills, quarries, cemeteries, churches, Revolutionary War battlefields, pottery and lime kilns, bridges, Civilian Conservation Corp camps, World War II Prisoner of War camps, and fire lookout towers. A network of old Indian trails, railroad beds, and abandoned roadbeds can be found on the forest.

Heritage resources are nonrenewable and the purpose of the heritage management is to protect significant heritage resources. The Forest Service seeks to improve public understanding of our heritage, to raise public awareness of the fragile and irreplaceable nature of heritage resources, to share its values with the forest visitor, to contribute relevant information and perspectives to forest management, and to provide enhanced public recreational opportunities.

Heritage resources are an essential component of ecosystem analysis and forest health assessments providing the link that connects people, past, and present to the land. They also provide a context for understanding

contemporary landscapes and natural resource issues.

The Forest Plan for heritage resources takes its cue from the Forest Service's National Heritage Strategy; a strategic plan that articulates the role the heritage program can play in achieving the overall mission and vision of the Forest Service. It seeks to clarify and define the program in terms of three key components: stewardship, public service, and a context for natural resource management.

Goals and Objectives

Goal 31 Manage areas with special paleontological, cultural, or heritage characteristics to maintain or restore those characteristics.

Goal 32 Meet the demand for quality heritage learning and tourism opportunities. Realize the potential of heritage sites on the national forest to draw heritage tourism partners to benefit both the heritage assets and public programs.

Standards

FW-92 Significant sites are evaluated for eligibility to the *National Register of Historic Places* and are submitted to the State Historic Preservation Office for review.

FW-93 Projects are designed to avoid, minimize, or mitigate negative effects on potentially significant heritage resources. In-place protection of identified sites is the minimum requirement until site significance is determined.

FW-94 If cultural resources are encountered, regardless of whether the area has been previously disturbed, halt activities until the site significance is determined

Minerals and Geology

The United States holds title of nearly all of the mineral rights beneath the surface of the Sumter. Forest tract L-446, containing 358 acres, is the only tract on the Sumter where the United States does not own the mineral rights. The right of development of private mineral rights will be allowed subject to the terms of the deed which severed the mineral estate from the surface estate and the applicable state and federal laws. There are no active mines on the Sumter at this time. The "Plan of Operations for a Preference Right Lease Application for Gold" has been approved for 1,100 acres on the Long Cane District. A "Prospecting Permit Plan of Operations" has been approved on the Long Cane District and a Prospecting Permit Application has been received for 200 acres on the Long Cane District.

Congress has passed various laws providing for the exploration and development of mineral resources on National Forest System lands. Federal mineral resources are classified into three types: 1) locatable minerals, 2) leasable minerals, and 3) salable (common variety) minerals. Locatable mineral exploration and development is authorized by the 1872 Mining Act, which applies to Public Domain status lands. The Sumter has no public domain status lands; therefore, the locatable mineral program does not apply. However, locatable minerals (e.g., gold, silver, lead, iron, copper, etc.) become leasable on acquired status lands. All federal lands in the state of South Carolina have been acquired. Leasable minerals are managed in cooperation with the U.S. Department of Interior, Bureau of Land Management (BLM). The BLM is the federal agency that issues all mineral leases. Leasable minerals include the "locatable" minerals that occur on acquired status lands, the energy minerals (e.g., coal, oil, gas, geothermal, oil shale) and phosphate, sodium and potassium. Salable minerals (e.g., sand, gravel, pumice, clay, stone, riprap) are managed solely by the Forest Service on National Forest System lands.

Goals and Objectives

Goal 33 Mineral resources will be managed to meet demands for energy and non-energy minerals consistent with Forest Plan management prescriptions.

Standards

FW-95 Common variety mineral permits (individual sales and free use permits) involving more than casual use amounts (1 ton) or occurring in a sensitive area such as near streams or rare communities will have an approved mining and reclamation plan.

Access and Road Management

The transportation system provides public access and facilitates Forest use and management activities. The system is facing increased use with a declining road budget and a large backlog of deferred maintenance work. The increasing urban activities along and into the forest boundary are creating new demands on the road system. Most of the roads have existed for 25 years or more. Many of the system roads were not designed to handle these new demands of traffic mix and volume.

The Sumter road system includes 2,640.6 miles of road. This system includes the State, county, and National Forest System roads. The National Forest system roads have recently been divided into public and administrative road categories. The administrative roads are generally for administration of the national forest lands and resources and are not classified as public roads. However, the Secretary of Agriculture allows public use if the road is open to traffic. The designated public roads are generally open and can be traveled by car.

National Forest system roads currently total 1,052.9 miles. These system roads are divided into three functional classes: arterial, collector, and local. The roads are operated under road management objectives to minimize resource-use conflicts. These conflicts may include mixed vehicle use, wildlife considerations, and water quality concerns. Refer to Chapter 3 of the *FEIS* for miles of road by functional class.

Forest highways are specially designated routes maintained by a public road agency that is of special importance to the forest. These roads may be partially funded under the Federal Lands Highway program. The forest works with the state transportation department on the designation and management of these roads. The forest currently has 412.64 miles of designated forest highways.

National Forest System roads are divided into five levels for maintenance purposes. Roads requiring only custodial care, such as long-term closures, are level 1. Very low standard roads permitting limited passage of high clearance vehicles are level 2. Roads maintained for safe and moderately convenient travel suitable for passenger cars are level 3. Roads with higher average daily traffic and generally a through route are level 4. Arterial roads and routes into special locations, such as recreation campgrounds, are level 5. User comfort and driving ease are increasingly important considerations from level 3 to level 5. About 57.9 percent of the Sumter is in the level 3 to level 5 classes, and 38 percent of forest roads are in class 1, generally closed.

The forest handles nearly all maintenance activities with service or construction contracts. The Sumter road maintenance contracts for the last few years have had to reduce the mileage maintained because of decreased funding. The forest road condition survey program has identified over $27 million in deferred maintenance work on the road system.

Road management objectives will be reviewed for existing roads and proposed new roads through area analysis, watershed level analysis, and site-specific project analysis. These analyses will be aided by the use of a Road Analysis Process (RAP) to assist the forest in making road decisions including identifying any unclassified roads and deciding whether to add them to the system or re-vegetate them so they

can revert back into forest management. Timber sales will generally use existing roads or temporary roads. New road construction for timber sales will be less than in the past. The forest will have nearly 17,000 acres where no new roads will be allowed and nearly 138,000 acres where the open road mileage may decrease over the planning period. The forest will move to more cooperation with the counties in road maintenance especially for roads serving a large number of private residences or needed for school bus access or other community reasons. Key roads identified in the public roads program will be upgraded as funds become available to improve the public's access and safety.

Goals and Objectives

Goal 34 Provide a minimum transportation system that supplies safe and efficient access for forest users while protecting forest resources.

Goal 35 Improve conditions of needed roads that are adversely affecting soil and water resources.

Standards

FW-96 Establish and maintain vegetation, preferably native to the ecotype, on roadbeds, cut slopes, and fill slopes of intermittent service roads when they are closed. Annuals may be used to provide temporary soil cover until natives can take over.

FW-97 Constructed transportation routes inventoried in the Forest Transportation System (roads and trails) should remain opened for public travel unless any of the following occurs:

1. the road is unsafe for motorized public travel;
2. there is unacceptable resource damage;
3. closures or restrictions are needed to meet other resource needs;
4. cost to maintain is unacceptable/ impractical;
5. the road is determined unneeded for resource management or public access.

Lands and Special Uses

The Sumter National Forest has an active land adjustment program. A Land Ownership Adjustment Strategy (LOAS) will provide guidance to the land adjustment program and identify the optimum desired future land ownership pattern to provide for resource use and protection to meet public needs.

Consolidation of National Forest System lands is an important objective of the land ownership adjustment program. Land adjustments have been accomplished primarily through land exchanges and purchases. Between 1992 and 2002, four land exchanges have been completed resulting in the acquisition of 2,101 acres and the conveyance of 885 acres, or a net gain of 1,216 acres. During the same time period, eleven purchases totaling 5,420 acres have been completed using Land and Water Conservation Funds (LWCF). Purchases depend entirely on available LWCF funding for a given year. The purchase program is expected to increase as the public becomes more aware and supportive of protecting important lands within national forest boundaries. The LOAS will assist in identifying land purchase and exchange opportunities, and define criteria for prioritization of lands for acquisition and/or disposal.

There are currently 231 special use authorizations covering 4,746 acres on the Sumter National Forest. The number of proposals for new authorizations received is growing each year. Most authorizations are for road easements or permits. Other authorized uses include utilities, wells, cemeteries, communication uses, reservoirs, agriculture, churches, experimental or research areas, outfitters and guides and oil and gas pipelines.

About 20 new proposals for authorizations exceeding 1 year in duration are received annually for these types of uses. Numerous requests for authorizations lasting less than 1 year are also received.

Proper boundary line maintenance is an important factor in protecting the national forest from encroachment and trespass. The Sumter National Forest has about 1,750 miles of boundary lines to maintain. Several encroachment and trespass cases are processed every year as a result of poorly maintained boundary lines.

Goals and Objectives

Goal 36 Acquire non-federal lands through purchase, donation or exchange to improve management effectiveness, support specific resource management objectives, and enhance public benefits.

G**oal 37** Manage special uses in a manner that protects natural resource values and public health and safety.

Goal 38 Resolve all known title claims and encroachments affecting National Forest System lands.

Goal 39 Provide legal access to National Forest System lands to allow for the use and enjoyment by the public now and in the future.

Standards

FW-98 Rights-of-way (ROW) will be acquired for existing and proposed National Forest System roads and trails. Temporary rights-of-way are acceptable if a permanent right-of-way cannot be obtained.

FW-99 When compatible, manage future acquired lands according to the management prescription direction within which the newly acquired lands are located.

FW-100 Prior to authorizing or re-authorizing new or existing individual well/spring permits or diversions of water from streams or lakes, determine the in-stream flow or lake level needs sufficient to protect stream processes, aquatic and riparian habitats and communities, and recreation and aesthetic values.

General

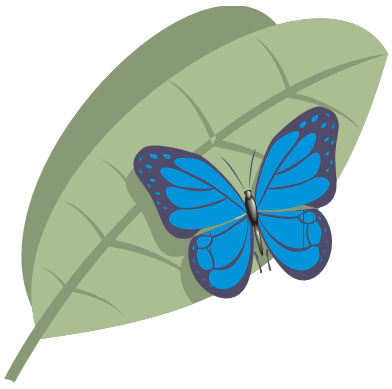
Standard

This standard is forest-wide.

FW-101 Except in the cases noted below, individual management prescription boundaries may be refined at the project level, through appropriate NEPA documentation, to provide logical, manageable boundaries.

Exceptions:

- allocations made at authority higher than the Regional Forester,
- where the change would involve the boundary or could potentially negatively affect the roadless character of an inventoried roadless area,
- where the change could potentially negatively affect the outstandingly remarkable values of streams meeting the eligibility requirements of Wild and Scenic River designation.



Chapter 3
Management Prescriptions

This chapter describes direction specific to the management prescriptions on the Sumter. The emphasis, desired condition, objectives, and standards for the area make up the management prescription direction.Forest-wide goals, objectives and standards apply to all management prescriptions unless specifically exempted or modified by the management prescription direction. See pages 3-2—3-4 for maps of the Management Prescriptions for each district.

1.A. Designated Wilderness Area

Ellicott Rock Wilderness Area—Andrew Pickens, 2,855 acres (approximate)

Emphasis: The emphasis is to allow ecological and biological processes to progress naturally with little to no human influence or intervention, except the minimum impacts made by those who seek the wilderness as a special place that offers opportunities to experience solitude.

Desired Condition: As stated in the Wilderness Act, Wilderness provides "…an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain... an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which; 1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; 2) has outstanding opportunities for solitude or a primitive and unconfined type of reaction; 3) …is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and 4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historic value."

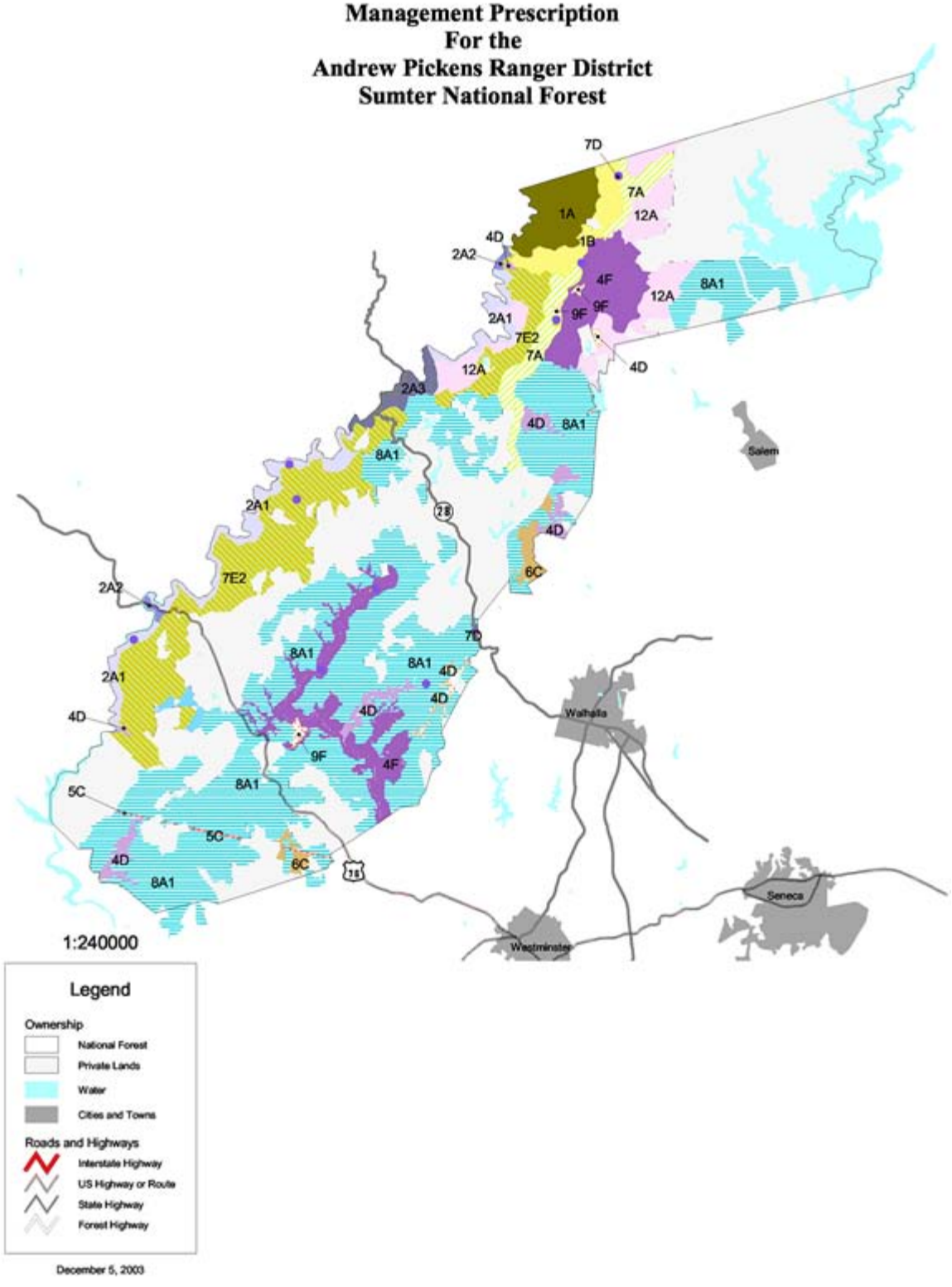
The natural evolving character of the landscape consists primarily of older forest communities, with many large trees. Dead and down trees are common. The forest canopy is continuous except for occasional gaps created by natural occurrences such as storms, insect or disease outbreaks, and fire.

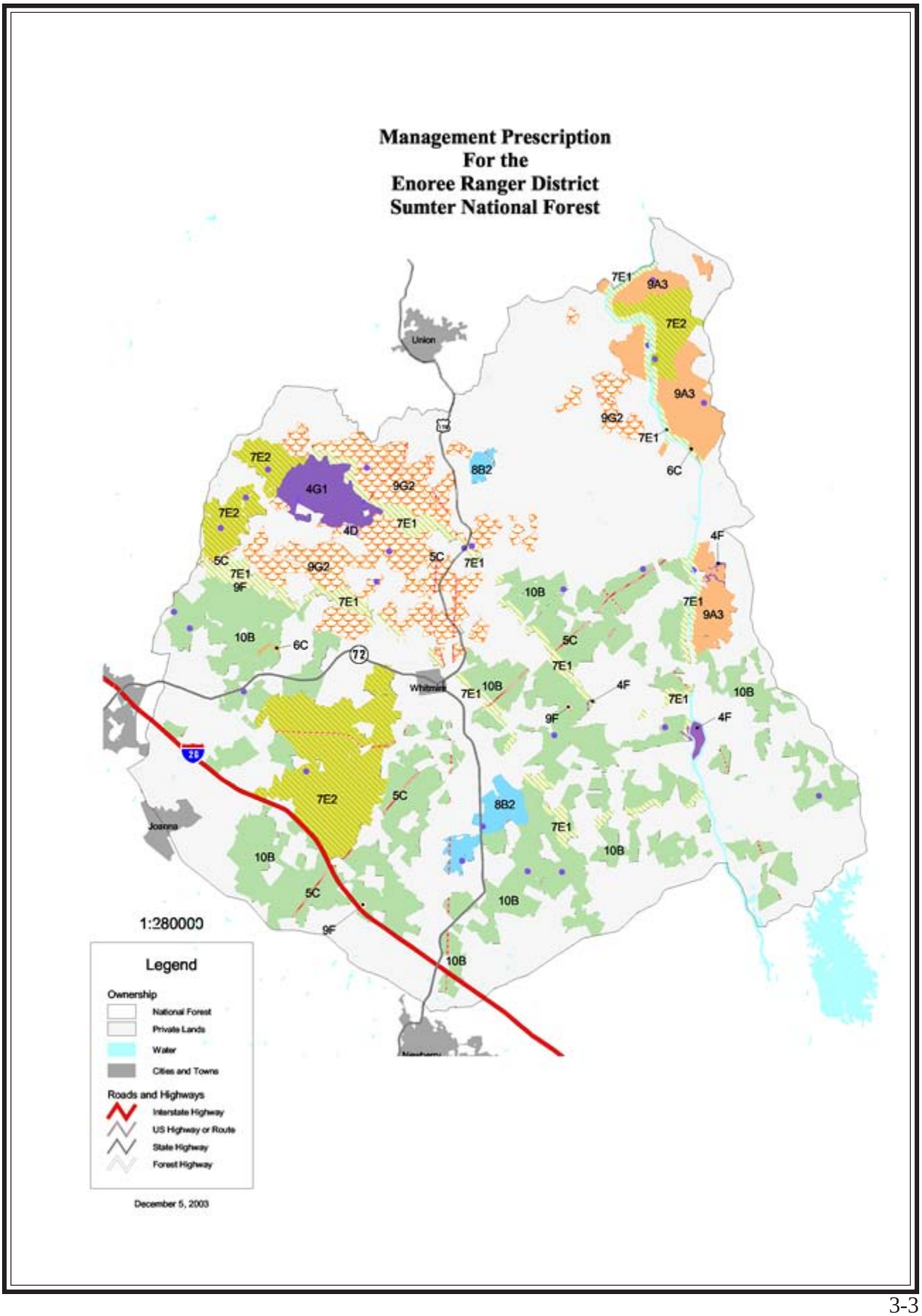
Bad Creek, reference drainage, is contained within the wilderness boundary, north of the East Fork of the Chattooga River drainage. This reference drainage is maintained in relatively undisturbed conditions from recent human intervention or impact.

Management ignited fire can be used to reduce the unnatural buildups of fuels to reduce the risks and consequences of wildfire within wilderness or escaping from wilderness.

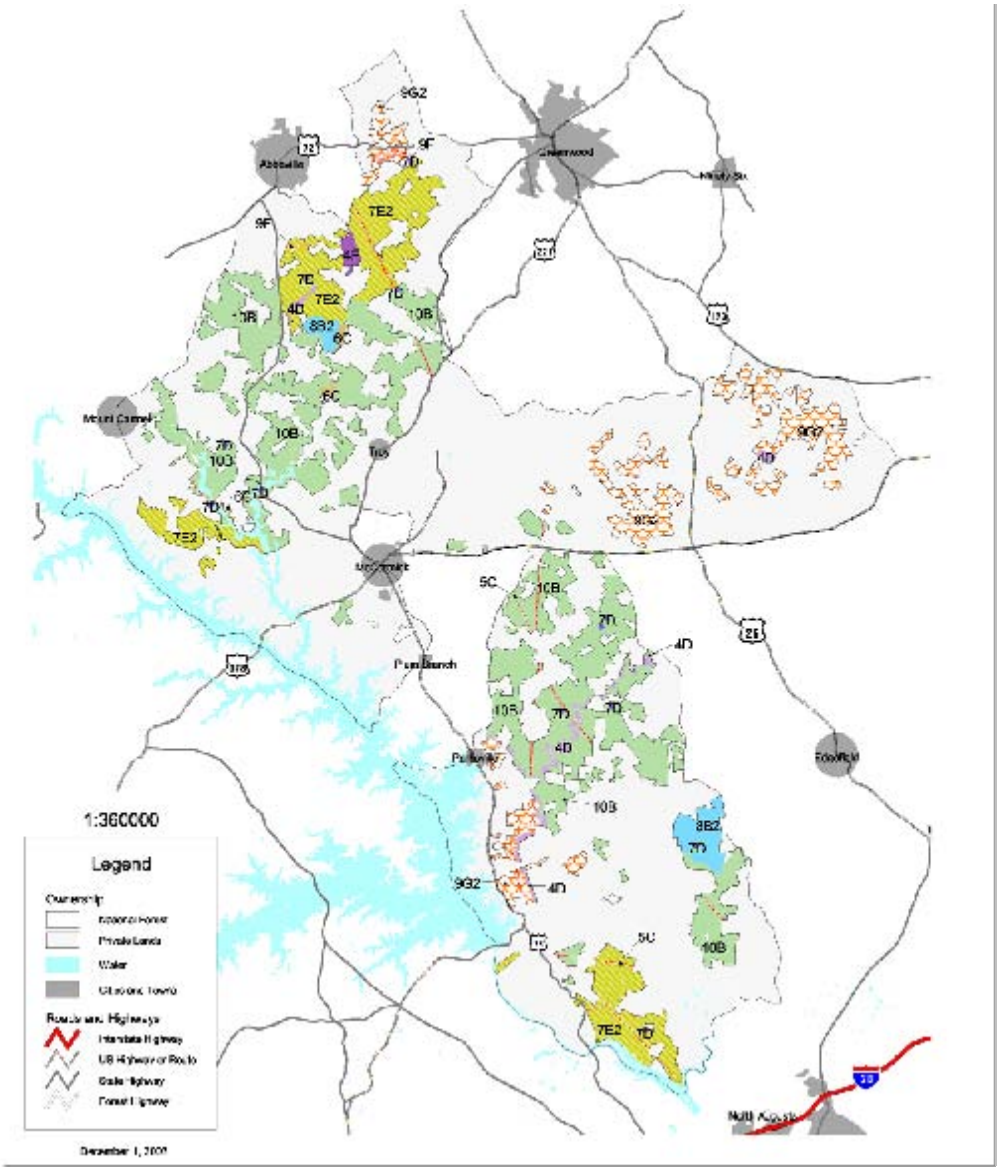
Mature forests and older stands in various stages of climax canopy development and decline dominate habitat conditions provided through this prescription. Wildlife responsive to large diameter standing snags and living den trees (raccoon, barred owl *[Strix varia]*, great-crested flycatcher *[Myiarchus cinerascens]*, chickadee, etc.) would be expected here in high densities if adequate food supplies were available. High canopy species such as red-eyed vireo *(Vireo altiloquus)* and species that use mid-story and well developed shrub layers in understory (thrushes, ovenbird *[Seiurus aurocapillus]*, etc.) would also be expected in high densities.

Existing old fields and wildlife openings are not maintained. In some cases, existing openings may be obliterated through tree planting and


Management Prescription
For the
Andrew Pickens Ranger District
Sumter National Forest
7D
7A
12A
1A
1B
4D
2A2
4F
8A1
12A
9F
9F
2A1
7E2
7A
4D
12A
2A3
4D
8A1
8A1
Salem
2A1
28
4D
6C
7E2
2A2
7D
8A1
8A1
4D
2A1
4D
4D
4D
Walhalla
9F
4F
5C
8A1
5C
4D
6C
76
8A1
Seneca
Westminster
1:240000
Legend
Ownership
National Forest
Private Lands
Water
Cities and Towns
Roads and Highways
Interstate Highway
US Highway or Route
State Highway
Forest Highway
December 5, 2003


Management Prescription
For the
Enoree Ranger District
Sumter National Forest
Union
Whitmire
Joanna
7E1
9A3
7E2
9G2
6C
8B2
4G1
4D
5C
9F
10B
4F
1:280000
Legend
Ownership
National Forest
Private Lands
Water
Cities and Towns
Roads and Highways
Interstate Highway
US Highway or Route
State Highway
Forest Highway
December 5, 2003

Management Prescription
for the
Long Cane Ranger District
Sumter National Forest



elimination of non-native species. New wildlife openings are not created.

Aquatic and riparian protection measures as referenced in Riparian Prescription 11 apply to this prescription.

The area provides visitors with solitude and remoteness in the most primitive and natural setting possible. Access into the areas is limited. Once in these areas, visitors must rely on their own primitive recreational skills. Recreation and trails within wilderness are non-motorized. Trailheads at surrounding roads are designed with sensitivity to scale and character to set the tone for experiencing a primitive experience. Trails, themselves lie lightly on the land, blending with the natural surroundings.Visitors are physically challenged as they ford streams and climb over downed trees. Few structures including signs and facilities are provided. The recreational opportunities are in a primitive recreational setting.

Standards

1.A.-1 The scenic integrity objective is very high for all inventoried scenic classes.

1.A.-2 The Forest Supervisor approves the use of motorized equipment or mechanical transport for emergencies where the situation involves an inescapable urgency and temporary need for speed beyond that available by primitive means or for exploration (categories include fire suppression, health and safety, law enforcement involving serious crime or fugitive pursuit, removal of deceased persons, and aircraft accident investigations) and development of valid existing mineral rights.

1.A.-3 Monitor and mitigate for acid rain and other pollution as needed on a case-by-case basis with Forest Supervisor approval.

1.A.-4. Allow fish stocking only to reestablish or maintain native species; species of fish traditionally stocked before wilderness designation may be considered native if the species is likely to survive. Stocking shall normally be done by primitive means; however, Regional Foresters may permit dropping of fish from aircraft for those waters where this practice was established before the area was designated a wilderness.

1.A.-5 No new utility corridors or communication sites will be authorized in these areas.

1.A.-6 Forest insect and disease outbreaks are controlled only if necessary to prevent unacceptable damage to resources on adjacent land, to prevent an unnatural loss to the wilderness resource due to exotic pests, or to protect threatened, endangered, and sensitive species.

1.A.-7 Hand-applied chemicals to eradicate non-native invasive plants requires Regional Forester approval.

1.A.-8 No permits for commercial use of any forest product is allowed.

1.A.-9 The Regional Forester approves the use of motorized equipment or mechanical transport for non-emergency purposes.

1.A.-10 Fire lines are obliterated as soon as practical.

1.A.-11 Following a catastrophic natural occurrence, chainsaw use to reopen trails is permitted with Regional Forester approval.

1.A.-12 Commercial and organized group size is limited to 12.

1.A.-13 No new permits for special uses, except for research and outfitter-guide operations. Phase out existing non-conforming uses.

1.A.-14 These areas are statutorily withdrawn for federal oil and gas and other mineral leases.

1.A.-15 These areas are not available for mineral materials for commercial purposes.

1.A.-16 Road construction is prohibited, subject to valid existing rights or leases.

1.A.-17 Motorized equipment for search and rescue requires Forest Supervisor approval.

1.A.-18 These lands are unsuitable for timber production.

1.A.-19 Use minimum impact suppression techniques (MIST) for fire suppression activities in wilderness.

1.B. Recommended Wilderness Study Areas

Ellicott Rock Extension—Andrew Pickens, 1,982 acres (approximate)

Emphasis: Manage this area to protect wilderness characteristics pending legislation as to their classification and provide for existing uses where compatible with protecting wilderness character.

Desired Condition: As stated in the Wilderness Act, Wilderness provides "…an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain... an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which; 1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; 2) has outstanding opportunities for solitude or a primitive and unconfined type of reaction; 3) is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and 4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historic value."

Wilderness consists primarily of older forest communities with many large trees. Dead and down trees are common. Forests are dense with a thick, shrubby, evergreen understory. The forest canopy is continuous except for occasional gaps created by natural occurrences such as storms, insect or disease outbreak, and fire.

Management ignited fire can be used to reduce the unnatural buildups of fuels to reduce the risks and consequences of wildfire within wilderness or escaping from wilderness.

Mature forests and older stands in various stages of climax canopy development and decline dominate habitat conditions provided though this prescription. Wildlife responsive to large diameter standing snags and living den trees (raccoon, barred owl, great-crested flycatcher, chickadee, etc.) would be expected here in high densities if adequate food supplies were available. High canopy species such as red-eyed vireo and species that use mid-story and well developed shrub layers in understory (thrushes, ovenbird, etc.) would also be expected in high densities.

Existing old fields and wildlife openings are maintained. In some cases, existing openings may be obliterated through tree planting and elimination of non-native species. New permanent wildlife openings are not created.

Aquatic and riparian protection measures as referenced in Riparian Prescription 11 apply to this prescription.

Trails lie lightly on the land, blending with the natural surroundings. Visitors are physically challenged as they ford streams and climb over downed trees. Few facilities are provided. Wilderness recreation includes inherent risks. Encounters with other visitors are rare.

Access into the area is limited. Once in the area, visitors must rely on their own primitive recreational skills. The recreational opportunities are in primitive to a semi-primitive non-motorized setting.

Standards

1.B-1 The scenic integrity objective is very high for all inventoried scenic classes.

1.B.-2 The Forest Supervisor approves the use of motorized equipment or mechanical transport for emergencies where the situation involves an inescapable urgency and temporary need for speed beyond that available by primitive means or for exploration (categories include fire suppression, health and safety, law enforcement involving serious crime or fugitive pursuit, removal of deceased persons, and aircraft accident investigations) and development of valid existing mineral rights.

1.B-3 Allow mitigation for acid rain and other pollution effects and evaluate on a case-by-case basis with Forest Supervisor approval.

1.B.-4 Allow fish stocking only to reestablish or maintain native species; species of fish traditionally stocked before wilderness designation may be considered native if the species is likely to survive. Stocking shall normally be done by primitive means; however, Forest Supervisor may permit dropping of fish from aircraft for those waters where this practice was established before the area was designated a wilderness.

1.B.-5 No new utility corridors or communication sites will be authorized in these areas.

1.B.-6 Forest insect and disease outbreaks are controlled only if necessary to prevent unacceptable damage to resources on adjacent land, prevent an unnatural loss to the wilderness resource due to non-native pests, or protect threatened, endangered, and sensitive species.

1.B.-7 Hand-applied chemicals to eradicate non-native invasive plants require Forest Supervisor approval.

1.B.-8 No permits for commercial use of any forest products are allowed.

1.B.-9 The Forest Supervisor approves the use of motorized equipment or mechanical transport for non-emergency purposes.

1.B.-10 Fire lines are obliterated as soon as practical.

1.B.-11 Commercial and organized group size is limited to 12.

1.B.-12 Scenic integrity objective for these areas is very high.

1.B.-13 Livestock grazing is not allowed.

1.B.-14 These areas are administratively withdrawn for federal oil and gas and other mineral leases.

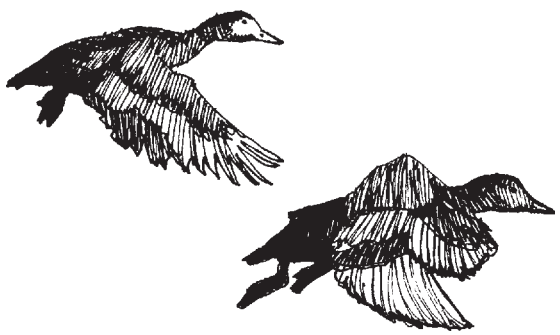
1.B.-15 These areas are not available for mineral materials for commercial purposes.

1.B.-16 Road construction is prohibited, subject to valid existing rights or leases.

1.B.-17 Motorized equipment for search and rescue requires Forest Supervisor approval.

1.B.-18 These lands are unsuitable for timber production.

1.B.-19 Use minimum impact suppression techniques (MIST) for fire suppression activities in wilderness.



2.A. Chattooga Wild and Scenic River Corridor

Table 3-1. Acres in Chattooga Wild and Scenic River Corridor by Forest by Classification

National Forest	Wild	Scenic	Recreational
Sumter (South Carolina)	3,290	224	1,030
Nantahala (North Carolina)	1,065	305	985
Chattahoochee (Georgia)	5,998	468	1,551
Total Acres	10,353	997	3,566

Emphasis: Congress designated this corridor as part of the National Wild and Scenic Rivers System. It is managed to protect and enhance the outstandingly remarkable values of the river and its surroundings. The river will be preserved in a free-flowing condition for the benefit, use, and enjoyment of present and future generations.

The Chattooga Wild and Scenic River corridor is located in the Sumter, Nantahala, and Chattahoochee National Forests. Its 57 designated miles begin in North Carolina (Nantahala National Forest) and forms the state boundary between South Carolina (Sumter National Forest) and Georgia (Chattahoochee National Forest). The river includes sections designated as 'wild,' 'scenic' and 'recreational'.

The direction in this Forest Plan specific to the Chattooga (prescriptions 2A, 2.A.1, 2.A.2. and 2.A.3.) constitutes the comprehensive plan as required in Section 3(d)(2) of the Wild and Scenic Rivers Act (Act).

Relative to the requirements in the Act, this direction:

- Describes the outstandingly remarkable values.
- Includes emphasis statements, desired conditions and standards to protect river values.
- Provides detailed direction for on-river recreational capacity and establishes capacity for in-corridor recreation through a desired condition for facility development.
- Addresses water quality issues within the watershed, particularly through partnerships in Chapter 4.
- Includes river-specific monitoring measures for water quality and the outstandingly remarkable values in Chapter 5. Plan Implementation, Monitoring and Evaluation.

The Nantahala and Chattahoochee National Forests will use this direction for management of the river within their respective forest boundaries.

By agreement among the three forests, the Sumter National Forest has the lead authority for all boating/floating use (commercially-guided and self-guided) on the Chattooga River when it involves the main channel from Burrell's Ford to Lake Tugaloo, as well as the West Fork .

Outstandingly Remarkable Values of the Chattooga River

In 1974, when the river was designated by Congress as a part of the National Wild and Scenic Rivers System, the river possessed several outstandingly remarkable values including geology, biology, scenery, recreation and history. These values have generally improved over the years.

Geology—The geologic and geomorphologic values of the Chattooga, as described in the 1971 *Wild and Scenic River Study Report* for the Chattooga River and included the deeply dissected escarpment and the steep, rocky, forested slopes that plunge into deep, narrow gorges. There are a series of outstanding monolithic treeless domes and slopes of exposed resistant granite, which occur at the upper

headwaters of the river in North Carolina. Another feature of the river is that it is the headwaters of the Savannah River, which flows into the Atlantic Ocean. It is likely that a combination of geologic fault, severe erosion, and channel entrenchment associated with the headwaters of the Savannah River, now known as the Tugaloo River (formed by the confluence of Chattooga and the Tallulah) captured these rivers from the Chattahoochee River. A stream capture of this magnitude is unusual in the region, but the adjacent Chauga River also exhibits these characteristics.

Biology—There is a variety and richness of the plant life within the Chattooga Watershed, including the Chattooga Wild and Scenic River Corridor. The unique geography and climate characteristics provide habitats for uncommon assemblages of endemic, disjunct, and relic plant species. The most rare species within the Chattooga River Gorge landtype are the Southern Appalachian endemics, which include the liverworts; the rock gnome lichen and Blue Ridge bindweed, Fraser's loosestrife, Manhart's sedge, Biltmore's sedge pink shell azeala and the divided leaf ragwort. Old growth communities comprise almost 10 percent of the corridor. Federal and state agencies consider several non-game wildlife species within the watershed sensitive species.

Scenery—The scenery along the Chattooga River is exceptional. The scenery plays an important part of the Wild and Scenic River experience. The river is deeply entrenched between high ridges for large stretches of its length. Steep forested slopes on either side of the river give a feeling of seclusion. The river constantly meanders and curves, and there are excellent views along these bends. The seasons change the landscape from the varying soft greens of spring and summer to the patchwork of red, yellow, and orange. The winter finds the leaves stripped away and the patches of green from the white pines stand out against the gray-brown hillsides and exposed rock formations. The river itself provides a varying scene from a smooth flowing stream to a river with thundering falls and cascades, raging rapids, enormous boulders, and cliff-enclosed deep pools.

Recreation—The recreational values of the river and corridor are outstanding along its 57-mile course. The river offers a wide variety of activities in a high-quality setting. Activities range from swimming to hiking and horseback riding with spectacular scenery, to excellent trout fishing and nationally recognized white-water rafting opportunities. Other activities include backpacking, photography, and nature study. Most of these activities take place in largely unmodified natural surroundings, with many opportunities for remoteness and solitude.

History—Very little systematic survey has been completed in the river corridor. A total of 38 archeological sites have been recorded within the corridor. These include 15 prehistoric sites, 15 historic house and farmstead sites, a railroad embankment, 2 historic cemeteries, a 19th century mineral prospecting pit, and a rock shelter. About half of these sites are considered potentially eligible for the *National Register of Historic Places*. The Cherokees destroyed Chattooga Town, a large settlement of Indians, before 1600. The site is near the present day Highway 28 bridge site. This regionally significant site is potentially eligible for the *National Register of Historic Places*.

Standards

2.A.-1 Floating on the Chattooga River is not allowed upstream of the Highway 28 bridge.

2.A.-2 Organized events (such as boat races) are not allowed on the river.

2.A.-3 Motorized boats or craft are not allowed on the river.

2.A.-4 The number of multi-year permits to provide guided inflatable raft trips for the public on the Chattooga River will not exceed three (3).

2.A.-5 The number of multi-year permits to provide guided hardboat trips on the Chattooga River will not exceed five (5).

2.A.-6 The recognized holidays for all boating/ floating uses (both guided and self-guided) are Memorial Day, Independence Day, and Labor Day.

2.A.-7 Allow no more than 12 craft on all guided trips.

2.A.-8 Overnight camping at locations along the river by guided (inflatable and hardboat) permittees must be approved by the Forest Service.

2.A.-9 The total allocation of guided inflatable trips (for all multi-year permittees combined) and their locations are as follows (See Tables 3-2 and 3-3.):

Allocation

Low Water Level (below approximately one foot at the Highway 76 gauge)

A. Weekdays, except for Holidays - 9 Section IV trips and no Section III trips (A map of these sections is found in Appendix I). Only 6 of these trips may run Five Falls.
B. Weekends and Holidays:
   1. October-April—9 Section IV trips and no Section III trips. Only 5 of these trips may run Five Falls.
   2. May-September—8 Section IV trips and no Section III trips. Only 4 of these trips may run Five Falls.

Moderate Water Level (approximately 1 to 2 1/2 feet on the Highway 76 gauge)

A. Weekdays, except for Holidays—6 Section IV
   trips and 7 Section III trips.
B. Weekends and Holidays:
   1. October-April—5 Section IV trips and 4 Section III trips.
   2. May-September—4 Section IV trips and 4 Section III trips.

High Water Level (approximately 2 1/2 to 3 feet on the Highway 76 gauge) At this level, the Section IV trips may launch as far upstream as Thrift's Ferry, thus the Section III and Section IV trips may overlap between Thrift's Ferry and Highway 76. At this level, the Section IV trips may not run Five Falls.

A. Weekdays, except for Holidays—6 Section IV trips and 7 Section III trips.
B. Weekends and Holidays:
   1. October-April—5 Section IV trips and 4 Section III trips.
   2. May-September—4 Section IV trips and 4 Section III trips.

Very High Water Level (approximately 3 feet on the Highway 76 gauge up to the maximum safe water level)

A. Weekdays, except for Holidays—No Section IV trips and 13 Section III trips.
B. Weekends and Holidays:
   1. October-April—No Section IV trips and 9 Section III trips.
   2. May-September—No Section IV trips and 8 Section III trips.

Trip size (including guides, paying clients and non-paying clients) does not exceed 40. Trips may exceed 30 clients: however, total number of clients served per section per day does not exceed the average of 30 per trip.

Location

A. Section III trips launch as far upstream as Earl's Ford and take out as far downstream as Woodall Shoals, unless otherwise noted.
B. Section IV trips launch as far upstream as Highway 76 and takeout as far downstream as Lake Tugaloo, unless otherwise noted.
C. Section III and IV trips may overlap between Highway 76 and Woodall Shoals.

D. Inflatable raft trips in Sections III and IV can be moved to Sections I or II.
E. Short-term adjustments to the locations of launches and takeouts are necessary on rare occasions because of occurrences such as accidents or natural disasters, which affect access to or navigability of the river. These adjustments will only be made with the approval of the Forest Service.

2.A.-10 The total allocation of guided hardboat trip***s*** (for all multi-year permittees combined) and their locations are as follows (See Table 3-3):

Allocation

A. No more than 48 trips per week (20 on Section I/II and 28 on Section III) on weekdays.
B. No more than 13 trips (6 on Section I/II and 7 on Section III) on weekdays.
C. No more than 2 trips per day on weekends.
D. No trips on holidays or holiday weekends.
E. The combined total number of clients and instructors will not exceed 24 people per trip.
F. Two inflatable canoes and kayaks are allowed on each trip.

Location

A. Section I/II trips launch as far upstream as the West Fork registration site and take out as far downstream as Earls Ford.
B. Section III trips launch as far upstream as Earls Ford and take out as far downstream as Highway 76.
C. A trip in Section IV is allowed in the place of a scheduled Section IV guided inflatable trip.

2.A.-11 The total allocation of short-term canoe, kayak and inner-tube guided trips (for short term permits) and their locations are as follows:

Allocation

A. The number of permits is unlimited.
B. The maximum number of trips permitted each year by each different organization is 5. (Each day on the river is considered one trip.)
C. The maximum group size is 12 crafts (10 for students) for canoes and kayaks, not to exceed 24 people (including instructors).
D. The maximum group size is 24 inner tubes, not to exceed 24 people (including instructors).

E. Trips are allowed on weekdays only from April 1 through September 30 and on all days (including weekends) during the remainder of the year.

Location

A. Canoe and kayak trips can be taken in Sections I, II, and III only.
B. Inner tube trips can be taken in Sections I and II only.

2.A.-12 The total allocation of self-guided boaters and their locations are as follows. (See Table 3-5.)

Allocation and Location

A. In Section III, year-round allocation for self-guided use at all water levels is 175 people per weekend day and holidays and 125 people per weekday.
B. In Section IV, year-round allocation for self-guided use at all water levels is 160 people per weekend day and holidays and 75 people per weekday.
C. The procedure for the enforcement of self-guided use allocations in Sections III and IV is:

In Section III between April 1 and August 31, should daily self-guided use ever reach 175 people per weekend day (holidays included) for 20 days per year for 2 consecutive years, reservations would be required for self-guided boaters on Section III on weekends and holidays during those

months beginning the following year. Similarly, should daily self-guided use reach 125 people per weekday for 50 weekdays per year for 2 consecutive years, reservations would be required for self-guided boaters on Section III on weekdays during those months beginning the following year.

In Section IV between April 1 and August 31, should daily self-guided use ever reach 160 people per weekend day (holidays included) for 20 weekend days per year for 2 consecutive years, reservations would be required for self-guided boaters on Section IV on weekends and holidays during those months beginning the following year. Similarly, should daily self-guided use reach 75 people per weekday for 50 weekdays per year for 2 consecutive years, reservations would be required for self-guided boaters on Section IV on weekdays during those months beginning the following year.

D. Self-guided users will use a non-voluntary registration system.

Tables 3-2 through 3-5 summarize some of the requirements discussed above in standards 2.A.-9 through 2.A.-12.

2.A.-13 The total allocation of shuttles for self-guided boaters is as follows:

A. No more than two shuttle permittees.

B. No more than 30 percent of the daily self-guided allocation by section is authorized for shuttle services.

2.A-14 Possessing or using a saddle, pack, or draft animal is prohibited within the corridor unless on a designated trail or road.

2.A-15 The corridor is unsuitable for timber production.

2.A-16 New utility corridors or communications/ electronic sites will be discouraged within the corridor.

2.A.-17 Fire can be used within the corridor if the outstandingly remarkable values of the stream are protected.

2.A.-18 Limit mountain biking to designated routes.

Table 3-2. Chattooga River Guided Rafting Allocations Section III

Water Levels	Capacity Permitted	May--September		October--April	
		Weekdays	Weekends[1]	Weekdays	Weekends[1]
Low	Trips/day	0	0	0	0
	People/day[2]	0	0	0	0
Moderate	Trips/day	7	4	7	4
	People/day[2]	280	160	280	160
High	Trips/day	7	4	7	4
	People/day[2]	280	160	280	160
Very High[3]	Trips/day	13/3	8/3	13/3	9/3
	People/day[2]	520	320	520	360

[1]Includes Holidays
[2]Includes Guides
[3]Denominator indicates portion of trips allowed from Hwy 28 to Earl's or Sandy Ford

Table 3-3. Chattooga River Guided Rafting Allocations Section IV					
Water Levels	**Capacity Permitted**	**May-September**		**October-April**	
		Weekdays	Weekends[1]	Weekdays	Weekends[1]
Low[3]	Trips/day	9/6	8/4	9/6	9/5
	People/day[2]	360	320	360	360
Moderate	Trips/day	6	4	6	5
	People/day[2]	240	160	240	200
High[4]	Trips/day	6	4	6	5
	People/day[2]	240	160	240	200
Very High	Trips/day	0	0	0	0
	People/day[2]	0	0	0	0

[1]Includes Holidays
[2]Includes Guides
[3]Denominator indicates portion of trips allowed in Five Falls
[4]These trips may put in at Thrift's Ferry

Table 3-4. Chattooga River Guided Hardboat Allocations			
Day of the Week	**Capacity Permitted**	**River Section**	
		I & II	**III**
Weekdays	Trips/week	20	28
	Trips/day	6	7
Weekends	Trips/day	2	

Table 3-5. Chattooga River Self-guided Boating Use Allocations (boaters/day) for Sections III and IV	
All Year	
Weekdays	**Weekends***
Section III	
125	175
Section IV	
75	160
*Includes holidays	

2.A.1. Designated Wild River Segments, Chattooga River

Table 3-6. Designated Wild River Segments of the Chattooga River	
National Forest	**Wild River Segments (in acres)**
Sumter (South Carolina)	3,290
Nantahala (North Carolina)	1,065
Chattahoochee (Georgia)	5,998
Total Acres	10,353

Emphasis: Congress designated these wild river segments and their associated corridors as part of the National Wild and Scenic Rivers System. They are managed to protect and enhance the outstandingly remarkable values of the river. The river will be preserved in a free-flowing condition for the benefit, use, and enjoyment of present and future generations.

Desired Condition: These segments of the Chattooga River are the most primitive and remote. Management of these segments is focused on protecting the outstandingly remarkable values of the river and preserving the natural environment and natural processes from human influences. Access to the area is limited to roads outside of the corridor. Non-motorized trails accommodate use and river access while protecting the resources and the river's outstanding resource values. Canoeing, kayaking, fishing, outfitted use, hiking, backpacking, and wildlife viewing are all typical uses along some activities without seeing many other users except parts of this corridor. Most users enjoy these at the occasional boat put-ins and trailheads. Capacity of facilities is typically low, and they are rustic in character. Limited new facilities are provided, and if constructed, are usually in response to the need to correct environmental problems rather than increase capacity. Type, number, location, and degree of facility development are a primary means of limiting visitor use. There is no emphasis on upgrading recreational facilities to provide more amenities. Floating these segments of the river (If allowed, some wild segments do not allow floating/ boating.) requires considerable skill and self-reliance. The recreational opportunities are in a semi-primitive non-motorized setting.

The landscape character is natural evolving with a mostly continuous canopy except for the linear swath of the river itself. Occasional gaps occur from the results of natural disturbances. Most of the forest is mature, with many large trees. Most common tree species include hemlock, white pine, and various hardwoods. Understory plants, particularly rhododendron, silverbell, dogwood, redbud, and ferns such as Christmas fern and New York Fern provide a lush vegetative understory visible from the river and trails. Old growth forests predominate, except where significant natural disturbances occur.

Existing old fields and openings for wildlife may be present and maintained when consistent with and do not detract from the outstandingly remarkable values, but no creation of new permanent openings of this type occurs. Native species are preferred but non-invasive, non-native species may be used when establishing food plants for wildlife.

Aquatic and riparian protection measures in Riparian Prescription 11 apply to this prescription.

Mature forests and older stands in various stages of climax canopy development and decline dominate habitat conditions provided though this prescription. Wildlife responsive to large diameter standing snags and living den trees (raccoon, barred owl, great-crested flycatcher, chickadee, etc.) would be expected here in high densities if adequate food supplies were available. High canopy species such as red-eyed vireo and species that use mid-story and well developed shrub layers in understory (thrushes, ovenbird, etc.) would also be expected in high densities.

Disturbance is primarily caused by natural process (floods, wind storms, insects, diseases, and fires) or prescribed fire. Prescribed fire may be used to mimic natural disturbances and to maintain and restore rare communities and threatened, endangered and sensitive species habitat, and fuel reduction. Integrated pest management practices might be used to control or minimize impacts from native and non-native invasive species. This may include the use of mechanized equipment, power tools and approved pesticides. Mechanized equipment and power tools may also be used to provide for public health and safety; search and rescue; facilities, trail and wildlife opening maintenance and fire line construction.

Standards

2.A.1.-1 The scenic integrity objective is very high for all inventoried scenic classes.

2.A.1.-2 Road construction and new river crossings are prohibited, subject to valid existing rights or leases.

2.A.1.-3 No federal mineral leasing. No mineral material authorization is permitted for commercial or private use.

2.A.1.-4 No new wildlife clearings will be developed, but existing ones may be maintained.

2.A.2. Designated Scenic River Segments, Chattooga River

Table 3-7. Designated Scenic River Segments of the Chattooga River

National Forest	Scenic River Segments (in acres)
Sumter (South Carolina)	224
Nantahala (North Carolina)	305
Chattahoochee (Georgia)	468
Total Acres	997

Emphasis: Congress designated these scenic river segments and their associated corridors as a part of the National Wild and Scenic Rivers System. They are managed to protect and enhance the outstandingly remarkable values that led to their designation. The river itself is preserved in a free-flowing condition for the benefit, use, and enjoyment of present and future generations. Recreational opportunities emphasize relatively low development levels.

Desired Condition: The scenic river segments on the Chattooga are slightly more developed than the wild segments. The river's shorelines are undeveloped with occasional roads or bridges crossing the river and there may be designated parking areas and trailheads. Non-motorized trails accommodate use and river access while protecting the resources and the river's outstanding resource values. Non-motorized trail users may include hikers, anglers, boaters, mountain bikers, and horseback riders.

Visitors enjoy a natural setting although the sights and sounds of other visitors and civilization may be present. Visitors' outdoor skills are challenged moderately. The opportunity to encounter other visitors is moderate to high, depending upon the location and time of year. Visitors seeking solitude visit during non-peak seasons, mid-week, or by hiking some distance from roads and parking areas.

Recreational facilities are primarily for visitor safety and access and to protect the river resources. Capacity of facilities is typically low, and they are rustic in character. Limited new facilities are provided, and if constructed, are usually in response to the need to correct environmental problems rather than increase capacity. Type, number, location, and degree of facility development is a primary means of limiting visitor use. There is no emphasis on upgrading recreational facilities to provide more amenities. The recreational opportunities are in semi-primitive motorized setting.

The landscape character is natural appearing and pastoral with a mostly continous canopy except for the linear swath of the river itself. Most of the forest is mature, with many large trees. Most common tree species include hemlock, white pine, and various hardwoods. Understory plants, particularly rhododendron, silverbell, dogwood, redbud, and ferns such as Christmas fern and New York Fern provide a lush vegetative understory visible from the river and trails. Old growth forests predominate, except where significant natural disturbances occur. Existing old fields and openings for wildlife may be present and maintained. New wildlife openings may be created if they enhance the outstandingly remarkable values of the corridor. Native species are preferred but non-invasive non-native species may be used when establishing food plants for wildlife.

Aquatic and riparian protection measures as referenced in Riparian Prescription 11 apply to this prescription.

Mature forests and older stands in various stages of climax canopy development and decline dominate habitat conditions provided though this

prescription. Wildlife responsive to large diameter standing snags and living den trees (raccoon, barred owl, great-crested flycatcher, chickadee, etc.) would be expected here in high densities if adequate food supplies were available. High canopy species such as red-eyed vireo and species that use mid-story and well developed shrub layers in understory (thrushes, ovenbird, etc.) would also be expected in high densities.

Disturbance is primarily caused by natural process (floods, wind storms, and fires) or prescribed fire. Management actions may provide scenic vistas and watchable wildlife opportunities, maintain developed recreation facilities and trails, restore native vegetative communities, restore aquatic and riparian ecosystems, reduce fuel buildup and control non-native invasive vegetation. Prescribed fire is used to mimic natural disturbances and to maintain and restore desired communities. Integrated pest management practices might be used to control or minimize impacts from native and non-native invasive species. This may include the use of mechanized equipment, power tools and approved pesticides. Mechanized equipment and power tools may also be used to provide for public health and safety; search and rescue; facilities, trail and wildlife opening maintenance.

Standards

2.A.2.-1 The scenic integrity objective is high for inventoried scenic classes.

2.A.2.-2 Road construction and new river crossing are prohibited, subject to valid existing rights or leases

2.A.2.-3 Federal mineral leasing is allowed with a no surface occupancy (NSO) stipulation. No mineral material authorization is permitted for commercial or private use.

2.A.2.-4 Allow no new wildlife openings unless they enhance the outstandingly remarkable values.

2.A.3. Designated Recreational River Segments, Chattooga River

Table 3-8. Acres of Recreational River Segments

National Forest	Recreational River Segment
Sumter (South Carolina)	1,030
Nantahala (North Carolina)	985
Chattahoochee (Georgia)	1,551
Total Acres	3,566

Emphasis: Congress designated these recreational river segments and their associated corridors as part of the National Wild and Scenic Rivers System. They are managed to protect and enhance the outstandingly remarkable values that led to their designation. The river itself is preserved in a free-flowing condition for the benefit, use, and enjoyment of present and future generations. A range of recreational opportunities is provided in this prescription area. These opportunities are characteristic of, and in harmony with, the natural setting of the individual river segments.

Desired Condition: The river corridor provides outstanding opportunities for people to enjoy a wide variety of river-oriented recreational opportunities in an attractive natural setting.

Visitors are likely to see others. Non-motorized trails may be highly developed, including hardened trails for a high level of accessibility for persons of all abilities. The river is readily accessible by roads. Roads may parallel the river for stretches.

There is evidence of human activity along the shores of these segments of river.
There is limited need for visitors to rely on their personal physical abilities and primitive recreational skills within developed and trail areas of these segments. Other areas remain

remote and difficult to access or negotiate. Visitors seeking solitude may find it difficult to achieve, particularly in peak-use rafting and fishing seasons. On National Forest system land, visitors enjoy a natural-appearing setting with a range of man-made recreational developments. Since there is the potential for large numbers of visitors at peak-use seasons, regulations may be necessary to protect resources and visitors. Facilities provide visitor safety and comfort and protect the river resources. Facilities may include parking areas, trailheads, bulletin boards, interpretive kiosks, signs, restrooms, canoe/raft launches, fishing platforms, picnic sites, etc. The recreational opportunities are in roaded natural setting.

The landscape character is mostly natural appearing and pastoral. Plant communities are structurally diverse with occasional small gaps occurring from natural events and manipulation. However, most of the forest in these sections is mature, with many large trees. Most common tree species include hemlock, white pine, and various hardwoods. Understory plants, particularly rhododendron, silverbell, dogwood, redbud, and ferns such as Christmas fern and New York Fern provide a lush vegetative understory visible from the river and trails. Management actions may provide scenic vistas and watchable wildlife opportunities, maintain developed recreation facilities and trails, restore native vegetative communities, restore aquatic and riparian ecosystems, reduce fuel buildup, and control non-native invasive vegetation. Prescribed fire is used to mimic natural disturbances and to maintain and restore desired communities. Integrated pest management practices might be used to control or minimize impacts from native and non-native invasive species. This may include the use of mechanized equipment, power tools and approved pesticides. Mechanized equipment and power tools may also be used to provide for public health and safety; search and rescue; facilities, trail and wildlife opening maintenance. Existing old fields and openings for wildlife may be present and maintained, but no creation of new permanent openings of this type occurs. New wildlife openings may be created if they enhance the outstandingly remarkable values of the corridor. Native species are preferred but non-invasive non-native species may be used when establishing food plants for wildlife.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this prescription.

Mature forests and older stands in various stages of climax canopy development and decline dominate habitat conditions provided though this prescription. Wildlife responsive to large diameter standing snags and living den trees (raccoon, barred owl, great-crested flycatcher, chickadee, etc.) would be expected here in high densities if adequate food supplies were available. High canopy species such as red-eyed vireo and species that use mid-story and well developed shrub layers in understory (thrushes, ovenbird, etc.) would also be expected in high densities. Species associated with habitat conditions found in riparian areas, i.e., Acadian flycatcher, parula warbler, Louisiana waterthrush, could potentially be found in high densities in these areas.

Standards

2.A.3.-1 The scenic integrity objective is high for inventoried scenic classes 1 and 2 and moderate for scenic classes 3 through 5.

2.A.3.-2 No new river crossings are permitted, subject to valid existing rights.

2.A.3.-3 Federal mineral leasing is allowed with a no surface occupancy (NSO) stipulation. Mineral material authorizations will be allowed.

2.A.3.-4 Allow no new wildlife openings unless they enhance the outstandingly remarkable values.

4. D. Botanical-Zoological Area

4,399 acres (approximate)

Enoree Ranger District
Rosehill Chestnut Oak/Oak-Hickory Forest

Long Cane Ranger District
Parsons Mountain Monadnock
Post Oak Savanna Complex
Turkey/Stevens Creek Corridor

Andrew Pickens Ranger District
Brasstown Creek and Falls
Cedar Creek Natural Area
King Creek
Opossum Creek
Station Cove/Station Mountain Cove
Tamassee Knob and Coves/Tamassee Creek

Emphasis: These lands serve as a network of core areas for conservation of significant elements of biological diversity. These areas serve to perpetuate or increase existing individual plant or animal species that are of national, regional, or state significance as identified on PETS lists; and to perpetuate plant and animal communities that are unique at the scale of their ecological section or subsection unit.

Desired Condition: The goals of designation and management of these areas are:

1. Perpetuate or increase existing individual plant or animal species that are of national, regional, or state significance as identified on PETS lists.
2. Perpetuate plant and animal communities that are unique or uncommon at the scale of their ecological section or subsection unit.
3. Allow for public use and enjoyment.

The botanical-zoological areas on the Sumter National Forest are primarily dominated by a variety of older forested communities containing a variety of species native to the area. Disturbances within these areas are primarily caused by natural events and prescribed fire. Management that maintains or enhances the botanical, zoological, or interpretive properties for which these areas were designated, such as the control of non-native invasive species, may be seen. Interpretive signs encouraging the protection of native plant and animals in these areas are commonly seen.

This prescription area encompasses a wide variety of habitat conditions, from deep rich coves, to natural barrens and glades, to table mountain pine woodlands. Wildlife and plants found in these areas are a combination of species commonly found across the Sumter (warblers, vireos, squirrels, bats, etc.) and species that are almost always found in or near these specialized habitats (i.e., walking fern, nodding trillium). Existing old fields and wildlife openings are not maintained but are allowed to succeed to forest. In some cases, existing openings may be obliterated by tree planting and eliminating non-native species. New permanent wildlife openings are not created.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this prescription.

The Turkey and Stevens Creek corridor is eligible for wild and scenic river designation and will be studied for wild and scenic river suitability by the year 2009. The outstandingly remarkable values, including wildlife, botanical/ecological, and fish/aquatic, will be protected within this prescription.

The landscape character is natural evolving to natural appearing to most forest visitors. Hikers, hunters, anglers, and backpackers commonly use these areas. Signs that interpret the biological or cultural aspects of each area may be commonly seen along interpretative trail sections. Closed roads and trails, compatible with maintenance of the botanical, zoological, or interpretive values, are available for non-motorized uses. The recreational opportunities are in a roaded natural setting.

Density of open roads and/or motorized trails may decrease over time as roads and/or trails that are unneeded or are causing undesirable resource impacts are closed. This decrease results in improvements in remote recreational opportunities, habitat for disturbance-sensitive wildlife, and water quality.

Standards

4.D.-1 The scenic integrity objective is high for inventoried scenic classes 1 and 2 and moderate for inventoried scenic classes 3 through 5.

4.D.-2 New federal mineral leases will contain a no surface occupancy stipulation or controlled surface use stipulation.

4.D.-3 No mineral material operations are allowed.

4.D.-4 OHVs and horses are not permitted.

4.D.-5 These lands are unsuitable for timber production.

4.F. Scenic Areas

10,020 acres (approximate)

Enoree Ranger District
Henderson Island/Broad River Scenic Area
Sandy River Scenic Area
Lower Rennick's Branch

Long Cane Ranger District
Long Cane Scenic Area

Andrew Pickens Ranger District
Chauga Scenic Area
White Rock Scenic Area

Emphasis: Protect and enhance the scenic qualities and natural beauty of designated scenic areas.

Desired Condition: Visitors enjoy a variety of activities in these areas that may include hiking, photography, wildlife viewing, canoeing/ kayaking, mountain bicycling, horseback riding, hunting, and fishing. The landscape is natural appearing with an intact, mostly continuous forest canopy containing a variety of species native to the area. Old growth forest communities develop over time.

Disturbances are primarily caused by natural process (floods, wind storms, insects, diseases, and fires). Occasionally, some vegetation would be manipulated, and open forest canopies would be present. Many factors contribute to these conditions: PETS habitat may be improved; wildlife viewing opportunities provided; native vegetation restored; southern pine beetle activity suppressed; salvage timber removed; riparian ecosystems restored; or hazard trees removed. Existing old fields and openings for wildlife may be present and maintained. Native species are preferred but non-invasive non-native species may be used when establishing food plants for wildlife. Prescribed fire is an essential component of maintaining fire-adapted communities within the areas and fuel reduction.

Hiking, biking, and horseback riding trails may be present. Recreational facilities fit the character of the specific sites where they are located. Facilities might include roads, pullouts, and overlooks, parking areas, trails, trailheads, bulletin boards, interpretive kiosks, signs, restrooms and picnic sites. Trails may be highly developed, including hardened trails for a high level of accessibility for persons of all abilities. The recreational opportunities are in roaded natural and rural settings. Open road density will not increase or decrease significantly.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this prescription.

Density of open roads and/or motorized vehicle trails remains near the current level throughout the planning period, with only small increases and decreases.

Standards

4.F.-1 The scenic integrity objective is very high for inventoried scenic class 1 and high for inventoried scenic class 2.

4.F.-2 New federal mineral leases will contain a no surface occupancy stipulation and controlled surface use stipulation.

4.F.-3 These lands are unsuitable for timber production.

4.G.1 Calhoun Experimental Forest

4,862 acres (approximate)

Emphasis: Meet the current and future research needs of the Southern Research Station. Demonstrate common forestry practices to non-industrial private forest landowners

Desired Condition: Research results supply needed information to forest landowners and land managers. Demonstration aspects of the experimental forest transfer knowledge to non-industrial private forest landowners to meet the increased demands for forest benefits in an environmentally conscientious manner.

Forest vegetation is in a variety of conditions that meet the research needs of the Southern Research Station. Aside from demonstration, the main need is to maintain various age classes and conditions for future research. Within the natural area (908 acres) of the experimental forest, old growth conditions exist. The following conditions apply outside of the natural area, and outside of riparian areas. Trees are typically grown to ages of 50 to 80 years for pine, and 80 to 120 years for hardwood. Relatively equal amounts of area are in each 10-year age class up to rotation age. Pine stands are maintained at moderate densities (less than 100 square feet/acre basal area) to reduce susceptibility to southern pine beetle attack and to promote understory development. A flow of wood products is provided to local economies.

For wildlife, the emphasis of this prescription is to balance objectives that result in a range of beneficial habitat conditions . Animals that utilize a variety of habitats (white-tailed deer, wild turkey, gray squirrel, woodpeckers, and migrating neotropical birds) would benefit and would be expected to be found in high densities in this area. Existing old fields and openings for wildlife may be present and maintained. Native species are preferred but non-invasive non-native species may be used when establishing food plants for wildlife.

Aquatic and riparian protection measures as found in Riparian Prescription 11 apply to this prescription

Hiking, biking, and horseback riding trails may be present. Visitors enjoy a natural appearing setting especially on trails away from high use areas. The recreational opportunities are in roaded natural and rural settings. Open road density will be maintained at the current level.

Prescribed fire may be used to reduce hazardous fuels, maintain or restore PETS habitat or rare communities, maintain wildlife habitat, or meet research needs.

Standards

4.G.1.-1 The scenic integrity objective is high for inventoried scenic class 1 and moderate for inventoried scenic class 2 and low for scenic classes 3 through 5.

4.G.1.-2 New federal mineral eases will contain a no surface occupancy stipulation.

4.G.1.-3 No mineral leases or mineral material operations are allowed in the natural area

4.G.1.-4 The natural area is unsuitable for timber production, the remainder of the experimental forest is suitable for timber production.

5.A. Administrative Sites

(285 acres embedded in adjoining prescriptions)

Emphasis: Sites are managed to serve and support resource programs and will be maintained to protect capital investment. Site such as work centers, lookout towers, and Forest Service owned offices are included.

Desired Condition: Provide administrative sites and facilities that effectively and safely serve the public and accommodate the work force. Administrative sites are readily accessed by road, and should have barrier-free access.

The landscape character can range from natural appearing to urban/cultural. The limited recreational opportunities are in rural settings. Occasionally, short, hiking trails can complement the offices. Where possible these sites provide condensed examples of open grassland/shrub land to backyard habitats.

Sumter offices provide educational and interpretive opportunities such as exhibits and displays, books, videos, and brochures.

Standards

5.A.-1 The scenic integrity objective is high for inventoried scenic class 1 and moderate for inventoried scenic classes 2 through 5.

5.A.-2 No mineral leasing or mineral material operations are allowed.

5.A.-3 Dispose of administrative sites no longer needed for national forest management purposes.

5.A.-4 These lands are unsuitable for timber production.

5.B. Designated Communication Sites

(4 acres embedded in adjoining prescriptions)

Emphasis: These specific sites serve a public benefit and include ridge top radio towers and support facilities to provide for local governmental agencies and the nation's communication and electronic network. Areas are managed to minimize adverse impacts on other areas.

Desired Condition: The Long Mountain Communication site is the only designated communication site. Existing special-use authorizations for communications and electronics continue within these designated areas. Where possible, existing sites are expanded as needed rather than creating additional areas. All users' equipment is compatible to forest surroundings and other users equipment and frequencies. New equipment is as inconspicuous to the surrounding terrain as possible.

These sites are non-forested, benefiting wildlife species that favor grass, shrubs, old fields, and forest edges. These areas contain low-growing vegetation, which conforms to the safe-operating requirements of the utility and reduces surface water runoff and erosion. Recreation is not emphasized nor encouraged at these sites.

Standards

5.B.-1 The scenic integrity objective is moderate for inventoried scenic class 1 and 2 and low for inventoried scenic classes 3 through 5.

5.B.-2 No mineral leasing will be allowed.

5.B.-3 No mineral material operations are allowed.

5.B.-4 These lands are unsuitable for timber production.

5.C. Designated Utility Cooridors

2,948 acres (approximate)

Emphasis: These uses serve a public benefit and include long linear features such as high voltage electric transmission lines and buried pipelines for public drinking water or natural gas. These designated corridors serve uses that require at least 50 feet of right-of-way. Local distribution lines are not included in this prescription area, but rather are part of the prescription area where they are physically located.

Desired Condition: Existing linear special-use authorizations for electric transmission lines and pipelines for water and natural gas will continue within these designated corridors. Utility corridors are authorized either by special-use authorization or license. Where possible, existing corridors are expanded to add new transmission lines as needed rather than creating additional areas. Compatible multiple uses are encouraged. Utility access roads and trails within corridors are designed, managed, and maintained to forest standards, including appropriate stream crossings, surfacing and/or drainage dips, or other appropriate water control structures. Recreational use is generally hunting related, although existing trail systems occasionally cross these corridors. The recreational opportunities are in roaded natural and rural settings. The landscape character ranges from natural appearing to pastoral/cultural.

Utility corridors, electric transmission lines, and oil or gas pipelines are prime areas for viewing wildlife species that favor grass, shrubs, old fields, and forest edges. These areas are managed to retain a variety of low-growing and/or shallow-rooted vegetation, which conforms to the safe-operating requirements of the utility and reduces surface water runoff and erosion. These areas provide opportunities for annual plantings. When the permit is renewed or revised opportunities are taken to utilize these corridors by planting and maintaining wildlife plantings.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this prescription.

Standards

5.C.-1 The scenic integrity objective is moderate for inventoried scenic classes 1 and 2 and low for inventoried scenic classes 3 through 5.

5.C.-2 Herbicide application methods will target woody or invasive non-native species only.

5.C.-3 These lands are unsuitable for timber production.

5.C.-4 No mineral leasing will be allowed.

6.C. Old-Growth Areas Managed with a Mix of Natural Processes and Restoration Activities

1,640 acres (approximate)

Emphasis: This prescription is part of an overall network of large (2,500+ acres), medium (100 to 2,499 acres), and small (fewer than 100 acres) old growth patches associated with a disturbance regime. Management of these areas emphasizes protection, restoration, and management of old growth forests and their associated wildlife, botanical, recreational, scientific, educational, cultural, and spiritual values. Within this prescription, most of the area will contain forest communities where no forest management activities or intervention will take place. On a smaller portion of the area, forest management activities are allowed to restore or maintain old-growth conditions.

Desired Condition: The area contains a variety of old growth community types including dry and dry-mesic oak-pine forest, dry-mesic oak forest, mixed mesophytic forest, dry and xeric oak forest, woodland, and savanna, river floodplain hardwood forest, and eastern riverfront forest.

Desired future conditions and natural disturbance regimes (including fire) specific to each old growth community type are described in the "Guidance for Conserving and Restoring Old-Growth Forest Communities on National Forests in the Southern Region" (May 1997). There may be evidence of past land use in most of these areas especially in the piedmont. Dead, dying, and down trees, and large-diameter trees are common. Forest canopies are typically continuous, interspersed with small gaps from natural causes. Management to restore or maintain the desired composition and structure for the respective old growth community types will be allowed.

Mature forests and older stands in various stages of climax canopy development and decline dominate habitat conditions provided though this prescription. Wildlife that responds to large diameter standing snags and living den trees (raccoon, barred owl, great-crested flycatcher, chickadee, etc.) would be expected here in high densities if adequate food supplies were available. High canopy species such as red-eyed vireo and species that use mid-story and well developed shrub layers in understory (thrushes, ovenbird, etc.) would also be expected in high densities. Existing old fields and wildlife openings are not maintained but are allowed to succeed to forest. In some cases, existing openings may be obliterated by tree planting and eliminating non-native species. New permanent wildlife openings are not created.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this prescription.

The landscape character of the area is natural appearing. Hikers, backpackers, dispersed campers, boaters, hunters, or anglers commonly use these areas. Closed roads and trails are available for non-motorized uses. The recreational opportunities are in roaded natural settings. Open road density is likely to decrease in this area.

Standards

6.C.-1 The scenic integrity objective is high for inventoried scenic classes 1 and 2 and moderate for inventoried scenic classes 3 through 5.

6.C.-2 New federal mineral leases will contain a no surface occupancy stipulation. Mineral material authorizations with conditions to protect the old-growthcharacter may be permitted.

6.C.-3 These lands are unsuitable for timber production.

6.C.-4. OHVs are not permitted and horses are only permitted on designated trails.

7.A. Scenic Byway Corridor

Oscar Wiggington Scenic Byway—Andrew Pickens,

3,044 acres (approximate)

Emphasis: A scenic byway corridor is managed to provide visitors with the enjoyment of outstanding scenery of natural and cultural landscapes along a well-maintained road. The area may also contain recreational and interpretive trails. The area that is visible during the leaf-off season for up to ½ mile from either side of the road, unless other criteria are established in a site-specific scenic byway corridor management plan. Management is focused on protecting and showcasing the unique and scenic natural and cultural resources, which were the basis for the corridor's being designated a scenic byway.

Desired Condition: The area provides exceptional opportunities for motorized recreation, including scenic driving. The scenic byway, state highways 107 and 413, is a mixture of private ownership and national forest lands. The landscape results in a patchwork of

pastureland, residences, farms, forests, and woodlands.

The landscape character of the area is natural appearing to pastoral settings. On national forest lands, the byway has a mostly continuous overstory canopy of large hardwoods and pines as well as diverse midstory and understory vegetation, which provide colorful accents. Both natural processes and humans influence vegetation. Occasional openings allow visitors to enjoy viewing wildlife, native wildflowers, flowing water, geographic features, or a cultural landscape. A combination of prescribed fire and some vegetative management result in a forest of deciduous and mixed hardwood-pine forest community types primarily in mid- and late-successional conditions. Areas of older forest communities are common and increase over time. Tree harvest may also be used to control insect infestation or disease, or to remove salvage timber. Existing old fields and openings for wildlife may be present and maintained. Native species are preferred but non-invasive non-native species may be used when establishing food plants for wildlife. Additional openings and open park-like woodland conditions may be developed to improve views in the area. Openings may provide views of wildlife, water, or geographic features.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this prescription.

This area is easily accessed with a moderate to high potential to encounter others.Byway facilities may include pullouts, overlooks, interpretive kiosks, trails, restrooms, and picnic sites. Scenic, historical and/or natural resources are interpreted for the benefit of visitors. There is little need for visitors to rely on personal abilities or primitive recreation skills. Most, if not all facilities are designed to accommodate persons with disabilities. The recreational opportunities are in roaded natural and rural settings.

Mature forests and older stands in various stages of climax canopy development and decline dominate habitat conditions provided by this prescription. Wildlife that responds to large diameter standing snags and living den trees (raccoon, barred owl, great-crested flycatcher, chickadee, etc.) would be expected here in high densities if adequate food supplies were available. High canopy species such as red-eyed vireo would also be expected in high densities.

Density of open roads and/or motorized vehicle trails remains near the current level throughout the planning period, with only small increases and decreases.

Standards

7.A.-1 The scenic integrity objective is high for inventoried scenic classes 1 and 2.

7.A.-2 New federal mineral leases will contain a no surface occupancy stipulation. (Mineral material authorizations with conditions to protect the scenic character may be permitted.

7.A.-3 These lands are unsuitable for timber production.

7.D. Concentrated Recreation Zone

605 acres (approximate)

Emphasis: Concentrated Recreation Zones are managed to provide the public with a variety of recreational opportunities in visually appealing and environmentally healthy settings. Developed recreation areas, concentrated use areas, and areas of high-density dispersed recreational activity are the components of Concentrated Recreation Zones. Facilities are provided to enhance the quality of the recreational experience and/or to mitigate damage to the affected ecosystems. These areas also serve as “gateways” to the wide diversity of recreational opportunities on the remainder of the forest.

Desired Conditions: Provide and maintain high quality recreation sites in natural forested settings.

Visitors will be able to choose from a variety of recreational experiences**.** Campgrounds, rifle ranges, picnic sites, boat ramps, river access sites, swimming beaches, interpretive sites, primitive camping areas, and trails provide a variety of enjoyable recreational experiences. Recreational information and interpretive programs enhance visitors' experience. Access to fishing, hunting, trails, and nature study are provided. Outdoor skills are generally of little importance, except where knowledge of specialized activities (boating or horseback riding) is critical. Motorized access and their support facilities (i.e., roads, parking lots, or water access) will be provided, but some experiences (for example, walking, and viewing nature) will be non-motorized. The recreational opportunities are in roaded natural and rural settings.

The landscape character is natural appearing with visitors enjoy a pleasing mosaic of tree species of various densities and stem forms, flowering trees, character trees and shrub species, park-like effects in the understory, fall color species, opportunities for photography, and minimal impacts from insect and disease outbreaks.

These areas are in a variety of vegetative communities. The landscape character will be natural appearing with variations created by the recreational facilities. Over time, native hardwoods component of the piedmont forest recreation zones increase. Risk to visitors from hazard trees is minimal. Older forest communities are common and increase over time.

Wildlife tolerant of high levels of human activity and open park-like conditions are commonly found in these areas. Sights and sounds of American robin (*Turdus migratorius),* chipping sparrow *(Spizella passerina),* northern mockingbird *(Mimus polyglottos),* cardinal *(Cardinalis cardinalis),* barn swallow *(Hirwood rustica),* gray squirrel, American crow *(Corvus brachyrynchos),* raccoon *(Procyon lotor),* and opossum *(Didelphis virginiana)* are evident in and around these sites.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this prescription.

Standards

7.D.-1 The scenic integrity objective is high for inventoried scenic classes 1 and 2, moderate for inventoried scenic classes 3 through 5.

7.D.-2 New federal mineral leases will contain a no surface occupancy stipulation. Mineral material authorizations with conditions to protect the recreational character may be permitted.

7.D.-3 These lands are unsuitable for timber production.

7.E.1. Dispersed Recreation Areas (Piedmont Only)

12,575 acres (approximate)

Emphasis: Dispersed recreational demand is managed to provide the public with a variety of recreational opportunities in a setting that provides quality scenery, numerous trails, and limited facilities.

Desired Condition: These areas include the foreground view shed of the Enoree, Tyger, and Broad Rivers on the Enoree Ranger District. These areas are approximately ¼ mile from each side of the Enoree, Tyger, and Broad Rivers. Visitors may choose from a variety of high quality, well maintained dispersed recreational opportunities including, but not limited, to day hiking, mountain biking, horseback riding, photography, canoeing, kayaking, boating, fishing, hunting, waterfowl hunting, dispersed camping, and nature study. Recreational information, interpretive trails, and self-guided programs enhance visitors' experiences. Visitors will frequently see other people in some parts of

this area. Outdoor skills are of moderate importance. The recreational opportunities are in roaded natural and rural settings.

The landscape character is natural appearing with visitors enjoying a pleasing mosaic of tree species of various densities and stem forms, flowering trees, character trees and shrub species, park-like effects in the understory, fall color species, opportunities for photography, and minimal impacts from insect and disease outbreaks. Prescribed fire is used to reduce fuel buildup, mimic natural disturbance, maintain pleasing open park-like views, and maintain and restore desired native communities. Additional open park-like woodland conditions may be developed to improve habitat conditions or views in the area. Tree harvest may be used to control insect infestation or disease, to remove salvage timber, to maintain moderate stand densities, to create small canopy gaps, or to create openings for canebrakes. Existing openings and linear strips may be found or new ones created to improve habitat conditions or views in the area. Native species are preferred but non-invasive, non-native species may be used when establishing food plants for wildlife.

Road and river access is conveniently located within some parts of this area.

Mature forests and older stands in various stages of climax canopy development and decline dominate habitat conditions provided by this prescription. Wildlife responsive to large diameter standing snags and living den trees (raccoon, barred owl, great-crested flycatcher, chickadee, etc.) would be expected here in high densities if adequate food supplies were available. High canopy species such as yellow-throated warbler and red-eyed vireo as well as species that use mid-story and well developed shrub layers in understory (thrushes, ovenbird, etc.) would also be expected in high densities.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this prescription.

Density of open roads and/or motorized vehicle trails remains near the current level throughout the planning period, with only small increases and decreases.

Standards

7.E.1.-1 The scenic integrity objective is high for inventoried scenic classes 1 and moderate for inventoried scenic classes 2 through 5.

7.E.1.-2 These lands are unsuitable for timber production.

7.E.2. Dispersed Recreation Areas with Vegetation Management

61,938 acres (approximate)

Emphasis: These areas receive moderate to high recreational use and are managed to provide a variety of dispersed recreation opportunities, improve the settings for outdoor recreation, and enhance visitor experiences, in a manner that protects and restores the health, diversity, and productivity of the land. These areas provide a sustained yield of timber products; however, timber harvest methods used will be compatible with the recreational and aesthetic values of these suitable lands.

Desired Condition: Visitors may choose from a variety of high quality, well maintained dispersed recreational opportunities that may include, but are not limited to, horseback riding, hiking, hunting, fishing, mountain bike riding, OHVriding, and nature study. Maintain, improve, or expand trails to meet local demands without negatively affecting the local ecosystem. These areas absorb moderate to high levels of use while protecting air, soil, vegetation, and water resource conditions. The recreational opportunities are in roaded natural and rural settings. A flow of wood products is provided to local economies.

Forest management activities maintain the natural characteristics that make the area

popular. They include restoring native vegetative communities, creating permanent openings, establishing a pleasing mosaic of tree species of various densities and stem forms, feature flowering trees, character trees and shrub species, enhance fall color species, enhance both game and non-game wildlife habitat for viewing, photography and hunting, minimize impacts from insect and disease outbreaks and rehabilitate areas damaged by insects and disease. Pine stands are maintained at moderate to low densities (less than 100 square feet/acre basal area) to reduce susceptibility to southern pine beetle attack and promote understory development. Existing old fields and openings for wildlife may be present and maintained. Expansion of existing openings and linear strips or creation of new ones may occur to improve habitat conditions or views in the area. Native species are preferred but non-invasive, non-native species may be used when establishing food plants for wildlife. Over time, the oak/hickory component of the piedmont forest increases, especially within trail and road corridors.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this prescription.

In the mountains, Loblolly pine stands will be replaced over time with openings and native species including, woodlands or native forest types. Permanent openings, savanna to woodland conditions and oaks, hickories, shortleaf pine and pitch pine dominate locations previously occupied by loblolly pine.

An intermediate mix of forest successional stages characterizes these areas. Mid-and late-successional forests are common, but 4 to 10 percent of the forested land is in early-successional forest conditions. Fifty percent of the forest acres are in mid-to late successional forests conditions. Within this 50 percent, at least 20 percent are in late successional or old growth conditions

Provide for tree diversity for current and future production of hard and soft mast and den trees. In addition, existing patches dominated by mast producing hardwoods, or scattered hard and soft mast or fruit producers, will be retained across the stand to the extent compatible with achieving desired conditions of open pine forests.

Retain soft mast producing species (dogwood, black gum, hawthorn, grapes, serviceberry, etc.) during vegetative treatments to the extent compatible with meeting treatment objectives.

This prescription provides habitat conditions for wild turkey, white-tailed deer, gray squirrels and other small mammals, tanagers, whip-poor-wills and a variety of passerine birds.

Prescribed fire is used to reduce fuel buildup, mimic natural disturbance, maintain pleasing open park-like views, create and maintain wildlife and plant habitat, and maintain and restore desired communities such as woodland conditions.

Densities of open roads remain near current levels.

Standards

7.E.2.-1 The scenic integrity objective is high for inventoried scenic class 1 and moderate for inventoried scenic classes 2 through 5.

7.E.2.-2 These lands are suitable for timber production.

8.A.1. Mix of Successional Forest Habitats

41,544 acres (approximate)

Emphasis: This area provides habitat for plants and animals associated with mid- to late-successional forest habitats. Management activities are designed to: (1) maintain a minimum of 50 percent of the forested acres in mid- to late-successional habitat, (2) maintain or enhance hard and soft mast production, (3) increase vegetative diversity (structural and spatial), and (4) limit motorized access across the prescription area.

Desired Condition: A full range of wildlife habitats is provided with most of the forested stands in this prescription in mid- to late-successional forest conditions. Develop and maintain high capacities for hard mast production across the landscape. Create and maintain woodland/savannah habitats on suitable sites. Hunting and wildlife viewing are emphasized recreation opportunities. A flow of wood products is provided to local economies.

Forests 40+ years of age dominate the landscape, occupying 50 percent or more of the prescription area. These forested stands will be maintained in more open forest conditions than currently exists, with an emphasis on oak and hickory mast production on appropriate sites, i.e., oaks and hickories with large, well-developed crowns.

An intermediate mix of forest successional stages characterizes these areas. Mid-and late-successional forests are common, but 4 to 10 percent of the forested land is in early-successional forest conditions. Fifty percent of the forest acres are in mid-to late- successional forests conditions. Within this 50 percent, at least 20 percent are in late successional or old growth conditions. Additional areas will be maintained in open woodland, savanna habitat conditions.

On ridges, south and west facing slopes, and in pine, pine-oak, oak-pine or oak forest types, most of the stands in mid-to late-successional forest conditions will be maintained as moderately stocked, with a desirable level of 60 to100 square feet of basal area, and open crown conditions. Older trees will occur as individuals and inclusions in these stands to retain high canopy, late successional habitat characteristics.

Loblolly pine stands will be replaced over time with more native habitats including openings, woodlands, or native forest types. Permanent openings, savanna to woodland conditions and oaks, hickories, shortleaf pine and pitch pine dominate locations previously occupied by loblolly pine.

Sweetgum will be discouraged for future production of hard and soft mast and den trees. In addition, existing patches dominated by mast producing hardwoods, or scattered hard and soft mast or fruit producers, will be retained across the stand to the extent compatible with achieving desired conditions of open pine forests.

Soft mast producing species (dogwood, black gum, hawthorn, grapes, serviceberry, etc.) remains during vegetative treatments to the extent compatible with meeting treatment objectives

Habitats in this prescription are weighted towards mid-to late-successional forest conditions in a forested landscape that includes young forested stands, grass/shrubland openings and woodland/savanna conditions. Principal beneficiaries of this management approach would favor species such as pileated woodpecker, red-eyed vireo, and Eastern wood peewee. With the emphasis on hard mast, all species that consume acorns and hickory nuts (squirrels, turkey, deer, raccoon, black bear, etc.) would also benefit. Well developed crowns and multi-layered canopies within mature forest stands benefit most breeding forest-dwelling birds, i.e., black-and-white warbler *(Mniotilta yaria)*, wood thrush *(Hylocichla mustrlina)*, vireos, flycatchers, and northern flicker *(Colaptes auratus)*, and are extremely important to a majority of neotropical migrants that pass through the Sumter in the spring and fall.

The compliment of early successional habitat in a landscape dominated by mature forest in this prescription is important to species such as prairie warbler, yellow-breasted chat, Bobwhite quail, Swainson's warbler, ruffed grouse, wild turkey, white-tailed deer, and a variety of small mammals. Existing old fields and openings for wildlife may be present and maintained. Existing openings and linear strips may be expanded, and/or new openings may be present and maintained. Additional open, park-like woodland conditions may be developed to improve habitat conditions in the area. Native species are preferred but non-invasive non-native species may be used when establishing food plants for wildlife. Permanent forest openings, woodland, and savanna conditions with a well developed herbaceous layer, to a grass/shrub dominated area with

scattered trees will benefit several other species of wildlife. These species include Bachman's sparrow, American kestrel, red-tailed hawk, Cooper's hawk, eastern cottontail, fox, cotton mouse, eastern bluebird, and mourning dove.

Aquatic and riparian protection measures foundin Riparian Prescription 11 apply to this prescription.

Prescribed fire plays an important role in maintaining forest openings, woodland conditions, and many forested communities. Prescribed fire encourages oak sprouting and reduces competition from more shade tolerant species, creates conditions for developing an uneven canopy which stimulates shrubs as well as mid-story development and forage production, restores and maintains habitat for federally-endangered smooth coneflower, restores and maintains habitat for sensitive species such as Fraser's loosestrife and sun-facing coneflower. Prescribed fire may also be used to reduce fuel build up and the risk of wildfire.

Recreational opportunities in this area include, but are not limited to, driving for pleasure, day hiking, mountain biking, horseback riding, dispersed camping, backpacking, hunting, fishing, rock climbing, nature study, viewing, and photographing scenery. Trails through this area are well marked and may include features for visitors with special access needs, loop systems, and/or interpretive programs. Facilities within these areas may include portable or permanent toilets, trash receptacles, fire grills, signs, or vehicle barriers, but are generally rare and are only provided for health and sanitation or to protect the area from resource damage. The landscape character of the area appears natural.

The sights and sounds of other visitors and motorized vehicles may be present. The opportunity to encounter other visitors is high along roadways, at parking areas, pullouts, and overlooks, but may be moderate to low on trails away from congregated use areas. At points of highly developed recreational use, visitors take on low risk and are not challenged to rely on their own physical abilities and outdoor skills. Once away from the more developed areas, opportunities for solitude are available. In these more remote areas, visitors may take on some risk and be challenged to rely on their own personal physical abilities and primitive recreational skills. The recreational opportunities are in roaded natural and rural settings.

Open road densities may decrease over the planning period. Roads that are unneeded or are causing undesirable resource impacts may be closed.

Standards

8.A.1.-1 The scenic integrity objective is high for inventoried scenic class 1 and moderate for inventoried scenic class 2 and low for inventoried scenic classes 3 through 5.

8.A.1.-2 These lands are suitable for timber production.

8.B.2. Woodland and Grassland/ Savanna Habitats

8,320 acres (approximate)

Emphasis: This area emphasizes providing optimal to suitable habitat for a variety of upland game species and plant and animal populations associated with early successional habitats. Open park-like woodlands and savannas with herbaceous ground cover are found. Management activities are designed to (1) sustain a distribution of early successional habitat conditions interspersed throughout a forested landscape, (2) restore areas of native warm season grasses and maintain open, forb and grass-dominated groundcover, (3) optimize hard and soft mast production, and (4) control access to protect habitat when necessary.

Desired Condition: Create and maintain woodland habitats (very open forests with low tree densities) and grassland/savanna habitat. Improve, restore, and maintain habitats for fire-adapted communities and species.

Fire-adapted species are common in groundcover and the overstory.

Grassland and savanna to woodland conditions are common in small to large patches in this area and collectively dominate the landscape. Annual and perennial herbaceous plants dominate ground cover. Habitats for sun-loving species such as smooth coneflower, sun-facing coneflower, and others are improved and expanded to their natural extent.

Woodland conditions are characteristically found on areas that are frequently maintained with prescribed fire. Woodlands have relatively low tree densities of 25 to 60 percent forest cover. Young forests are likely to have higher densities. Trees in the overstory will vary in age, diameter, and species composition. Scattered clumps of mast producing hardwoods occur throughout. Shortleaf pine is desirable in places where littleleaf disease is not likely to adversely affect it.

A mix of forest successional stages characterizes these areas, with an emphasis on early-successional forests. Mid- and late-successional forests are common, but in stands not managed as woodland, grassland or savanna habitats 10 to 17 percent of the remaining forested land is in early-successional forest conditions. A flow of wood products is provided to local economies.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this prescription.

Prescribed fire is an essential feature of this management prescription. It creates, shapes, and maintains the desired herbaceous understory and the remaining overstory in upland stands. It limits the establishment of woody stems in the understory. Fire frequency is 1 to 3 years in the uplands.

The emphasis on developing and maintaining open forest woodland to savanna and grassland habitats with scattered trees produces ideal habitats for northern Bobwhite quail, cottontail rabbit, bluebird, turkey, deer, sparrows, rodents, raptors, and bats. The combination of open conditions on suitable sites, forested draws, and moist slopes not responsive to burning produce unique habitat conditions particularly suited for animals such as Indigo bunting, blue-grosbeak, orioles, American kestrel, fox, and mourning dove. Existing old fields and openings for wildlife may be present and maintained. Expansion of existing openings and linear strips or creation of new ones may occur to improve habitat conditions or views in the area. Native species are preferred but non-invasive non-native species may be used when establishing food plants for wildlife.

Sweetgum will be discouraged to provide additional diversity for current and future production of hard and soft mast and den trees. In addition, existing patches dominated by mast producing hardwoods, or scattered hard and soft mast or fruit producers, will be retained across the landscape to the extent compatible with achieving desired conditions of open pine forests.

Retain soft mast-producing species (dogwood, black gum, hawthorn, grapes, serviceberry, etc.) during vegetative treatments to the extent compatible with meeting treatment objectives.

The landscape character appears natural.These areas provide a variety of recreational opportunities, especially hunting. Hunting opportunities are some of the best available on the Sumter National Forest, most notably for upland game. Wildlife viewing opportunities are plentiful. The recreational opportunities are in roaded natural and rural settings.

Open road density may decrease over the planning period. Roads that are unneeded or are causing undesirable resource impacts are closed.

Standards

8.B.2.-1 The scenic integrity objective is high for inventoried scenic class 1 and moderate for inventoried scenic class 2 and low for inventoried scenic classes 3 through 5.

8.B.2.-2 OHVs are not permitted.

8.B.2.-3 These lands are suitable for timber production.

9.A.3. Watershed Restoration Areas

11,360 acres (approximate)

Emphasis: Management emphasis is on improving conditions where past land uses have degraded water quality or soil productivity. The long-term goal of these watersheds is to showcase restored and resilient watersheds where proper multiple use management practices are applied. When this goal is achieved, these watersheds are allocated to a different management prescription.

Desired Condition: These areas have experienced severe erosion in past years. Steep side slopes are allowed to continue healing. Areas with active erosion are restored with soil and water rehabilitation work to improve soil productivity and water quality.

Soil productivity and cover are satisfactory, and erosion is limited. Barren areas (galls) or actively eroding gullies and stream banks are stabilized or restored whenever possible. Some of the methods used to stabilize and restore these areas may involve intense ground disturbing activities with temporary to short-term effects. Exposed soil is seldom seen. The forested drains would remain essentially intact over time unless gully restoration activities require reshaping the land to stop unacceptable erosion.

Upland forest canopies are maintained at moderate to low densities to encourage a dense understory of shrubs, warm season grasses, and other herbaceous species. Over time there is an increased oak/hickory component. Permanent openings are retained and occupy 1 to 2 percent of the area. An intermediate mix of forest successional stages characterizes these areas. Mid- and late-successional forests are common, but 4 to 10 percent of the forested land is in early-successional forest conditions. Fifty percent of the forest is in mid- to late- successional forest conditions and within this 50 percent, at least 10 percent is in late successional or old growth conditions. Pine stands are maintained at moderate to low densities (less than 100 square feet/acre basal area) to reduce susceptibility to southern pine beetle attack and promote understory development. A flow of wood products is provided to local economies.

The emphasis of this prescription would create two distinct combinations of habitat conditions interlaced across the landscape. Most forest dwelling species are found in this prescription. The shrubby and herbaceous ground cover encourages eastern bluebird *(Sialia sialis)* red-bellied woodpecker *(Melanerpes carolinus)*, brown-headed nuthatch *(Sitta pusilla)* Carolina wren *(Thryothorus ludovicianus)*, eastern wild turkey *(Melearia gallopavo)*, white-tailed deer *(Odocoileus virginianus)*, and white-eyed vireo *(Vireo griseus)*. The closed canopy forested portions of this area support varying densities of red-eyed vireo, great crested flycatcher, pileated woodpecker, gray squirrel, a variety of migratory birds, and small mammals. As consistent with watershed protection goals, existing openings and linear strips may be expanded or new ones created to improve habitat conditions or views in the area. Native species are preferred but non-invasive non-native species may be used when establishing food plants for wildlife.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this prescription.

Sweetgum is discouraged to provide for future production of hard and soft mast and den trees. In addition, existing patches dominated by mast producing hardwoods, or scattered hard and soft mast or fruit producers, are retained across the stand to the extent compatible with achieving desired conditions of open pine forests.

Soft mast producing species (dogwood, black gum, hawthorn, grapes, serviceberry, persimmon, etc.) are retained during vegetative treatments to the extent compatible with meeting treatment objectives

Prescribed fire is used to maintain PETS habitats.

Open road densities may decrease over the planning period. Roads that are unneeded or are causing undesirable resource impacts may be closed.

People use these areas for hunting or other dispersed recreational activities. Recreational opportunities in this area include, but are not limited to, driving for pleasure, day hiking, dispersed camping, backpacking, hunting, fishing, nature study, mountain biking, viewing and photographing scenery. The landscape character of the area appears natural.

The recreational opportunities are in roaded natural and rural settings.

Standards

9.A.3.-1 The scenic integrity objective is high for inventoried scenic class 1 and moderate for inventoried scenic classes 2 through 5.

9.A.3.-2 No new OHV routes.

9.A.3.-3 These lands are suitable for timber production.

9.F. Rare Communities

916 acres (approximate)

Emphasis: Rare communities are assemblages of plants and animals that occupy a small portion of the landscape, but contribute significantly to plant and animal diversity. They generally are limited in number of occurrences, are small in size, and have relatively discrete boundaries. Rare communities, wherever they occur on the Sumter, will be managed under this prescription to ensure their contribution to meeting goals for community diversity, endangered and threatened species recovery, and species viability. All known rare community sites are allocated to this prescription. As new rare community sites are found, they will be added to this prescription without Forest Plan amendment, unless such additions would result in large shifts in land allocation or expected benefits and outputs.

Desired Condition: Rare communities exhibit the composition, structure, and function necessary to support vigorous populations of species characteristic of the community, including relevant federally-listed threatened and endangered species, and species at risk of losing viability. Ecological disturbances are at the frequency and intensity needed to maintain desired composition, structure, and function. Generally, natural forces are sufficient to maintain these conditions; however, in some cases environmental factors have changed to the extent that natural processes are prevented or hindered from maintaining the community. In these cases management activities used to restore or maintain desired conditions, such as prescribed burning or vegetation management, may be evident.

Beyond restoration and maintenance activities, human-caused alteration of rare communities is not evident. Signs and barriers may limit recreational access where necessary to protect community integrity. Interpretive signs or other information may be made available where it is likely to promote public knowledge of rare communities and improve community protection.

These naturally evolving or natural-appearing communities are characterized by a variety of forested and nonforested communities, ranging from granitic domes, to table mountain pine woodlands and ephemeral wetlands. (See description of communities.) Old growth forest conditions will often develop within many of the communities in future years; however, some of the rare communities may require active restoration and maintenance using prescribed fire and/or mid-story removal.

This prescription area encompasses a wide variety of habitat conditions, from deep rich coves, to natural barrens and glades, to caves and rock cliffs. Wildlife and plants found in these areas are a combination of species commonly found across the forest (warblers, vireos,

squirrels, bats, etc.) and species that are almost always found in or near these specialized habitats (wood rat, coneflower, etc.). Existing old fields and wildlife openings are not maintained but are allowed to succeed to forest. In some cases, tree planting and elimination of non-native species may obliterate existing openings. New permanent wildlife openings are not created.

Aquatic and riparian protection measuresfound in Riparian Prescription 11 apply to this prescription.

Access is primarily by a non-motorized trail system. Interpretive signs or other information may be available to promote public knowledge of rare communities and improve community protection.The recreational opportunities are in roaded natural and rural settings. Motorized access is limited to existing roads and open road density is likely to decrease in the future. The landscape character of the area is natural evolving to natural appearing.

The following rare communities are covered by this prescription:

Wetland Communities

Appalachian Highlands Bogs, Fens, Seeps, and Ponds—These rare communities are characterized by 1) soils that are semi-permanently to permanently saturated as a result of groundwater seepage, perched water tables, rainfall, or beaver activity, but otherwise are generally nonalluvial, and 2) presence of wetland-associated species such as sphagnum, ferns, and sedges. Dominant vegetation may be herbs, shrubs, trees, or some complex of the three. Ponds in this group include lime sink, karst, and depression ponds, which may hold areas of shallow open water for significant portions of the year. Also included are some impoundments and associated wetlands resulting from beaver activity. Artificial impoundments are not included, unless they support significant populations or associations of species at risk. These communities may be found in both the Appalachian and piedmont regions. Primary management needs are protection from non-target management disturbance and resource impacts, particularly to local hydrology. Periodic vegetation management may be necessary to maintain desired herbaceous and/or shrubby composition at some sites. These communities include mafic and calcareous fens, sphagnum and shrub bogs, swamp forest-bog complexes, mountain ponds, seasonally dry sinkhole ponds, and beaver pond and wetland complexes as defined in the *Southern Appalachian Assessment* and rare associations within the following ecological groups defined by NatureServe (2001a):

458-15	Appalachian Highlands Wooded Depression Ponds
470-10	Appalachian Highlands Forested Bogs
470-20	Appalachian Highlands Forested Acid Seeps
475-10	Appalachian Highlands Acid Herbaceous Seeps
475-30	Appalachian and Interior Highlands Herbaceous Depression Ponds and Pondshores

Appalachian Highlands Riverine Vegetation—These rare communities are characterized by 1) sites adjacent to or within stream channels that are exposed to periodic flooding and scour, and 2) presence of significant populations or associations of species at risk. These communities may be found in both Appalachian and piedmont regions. Primary management needs are protection from disturbance during development of road crossings, and maintaining desirable in-stream flows. These communities include river gravel-cobble bars as defined in the *Southern Appalachian Assessment*, and the rare associations within the following ecological groups defined by NatureServe (2001a):

457-10	Appalachian Highlands Riverine Vegetation
457-30	Rocky Riverbeds
40-40	Appalachian Highlands Riverscour Vegetation

20-20 Appalachian Highlands Small Stream and Lower Slope Forest
420-xx Appalachian Highlands Large River Floodplain Forest

Forest Communities

Table Mountain Pine Forest and Woodland— This community is characterized by a dominant or significant component of table mountain pine (*Pinus pungens*) in the overstory often in combination with pitch pine (*Pinus rigida*). It is found in the Appalachian region. Primary management needs are maintaining and expanding existing occurrences, using thinning and prescribed fire. This community corresponds to table mountain pine/pitch pine woodlands as defined in the *Southern Appalachian Assessment*, and all associations within the following ecological group defined by NatureServe (2001a):

401-80 Appalachian Highlands Pitch and Table Mountain Pine Woodlands

Basic Mesic Forests—These communities are characterized by complex multi-storied canopies comprised of deciduous overstories and rich and diverse understories of calciphilic herbs, underlain by high-base geological substrates. On moderate to high elevation sites, these communities are typically found in protected coves, and can be distinguished from more acidic mesic cove forests by the abundance of species such as white basswood (*Tilia americana*), yellow buckeye (*Aesculus flava*), black walnut (*Juglans nigra*), faded trillium (*Trillium discolor*), sweet white trillium (*Trillium simile*), black cohosh (*Cimicifuga racemosa*), blue cohosh (*Caulophyllum thalictroides*), whorled horsebalm (*Collinsonia verticillata*), mock orange (*Philadelphus inodorus*), sweet shrub (*Calycanthus floridus*), sweet cicely (*Ozmorhiza* spp.), doll's eyes (*Actaea racemosa*), maidenhair fern (*Adiantum pedatum*), and plantain-leaved sedge (*Carex plantaginea*). Good examples of moderate and high elevation basic mesic forests have a low incidence of white pine (*Pinus strobus*), eastern hemlock (*Tsuga canadensis*), rhododendron (*Rhododendron* spp.), and Christmas fern (*Polystichum acrostichoides*). An oak-dominated variant of moderate to high elevation basic mesic forest occurs over limestone on upper to mid slopes of the Interior Plateau of Tennessee, the Cumberlands of Alabama, and the Ridge and Valley of Georgia. This basic mesic community is dominated or co dominated by shumard oak (*Quercus shumardii*) or chinquapin oak (*Quercus muehlenbergii*), in combination with various species of oaks and hickories and either sugar maple (*Acer saccharum*), chalk maple (*Acer leucoderme*), or southern sugar maple (*Acer barbatum*). Typical calciphilic understory species also are present. On lower elevation sites, these communities are more typically found on north slopes, where dominant and characteristic overstory species are American beech (*Fagus grandifolia*) and northern red oak (*Quercus rubra*), with tulip poplar (*Liriodendron tulipifera*), white oak (*Quercus alba*), shagbark hickory *(Carya ovata)*, or white ash *(Fraxinus americana)*, with southern sugar maple, chalk maple, painted buckeye (*Aesculus sylvatica*), and pawpaw (*Asimina triloba*) in the midstory and shrub layers, and understories that include faded trillium, nodding trillium (*Trillium rugelii*), black cohosh, doll's eyes, foam flower (*Tiarella cordifolia var. collina*), bloodroot (*Sanguinaria canadensis*), bellworts (*Uvularia sp.*) and trout lilies (*Erythronium spp.)*. Good examples of low elevation basic mesic forests have a low incidence of sweetgum (*Liquidambar styraciflua*), loblolly pine (*Pinus taeda*), and non-natives such as Japanese honeysuckle (*Lonicera japonica*) or Chinese privet *(Lingustrum vulgare).* Basic mesic forest communities are found in both the Appalachian and piedmont regions. Provisions of the rare community prescription apply only to prime examples of this community that support significant populations or associations of species of viability concern. Primary management needs are protection from non-target management disturbance. This community includes the

following associations defined by NatureServe (2001a, 2001b):

CEGL007711	Southern Appalachian Cove Forest (Rich Foothills Type),
CEGL007695	Southern Appalachian Cove Forest (Rich Montane Type),
CEGL008466	Basic Piedmont Mesic Mixed Hardwood Forest
CEGL004542	Piedmont Rocky Mesic Mafic Forest.

Cliffs and Rock Outcrops

Cliffs and Bluffs—Steep, rocky, sparsely vegetated slopes, usually above streams or rivers, characterize these communities. Cliff communities may be dry or wet, and include communities associated with waterfalls, such as spray cliffs and rock houses. These communities are found in the Appalachian region. Primary management needs are protection from management disturbance and maintenance of hydrology near wet cliffs. This community includes calcareous cliffs, mafic cliffs, sandstone cliffs, and spray cliffs as defined in the *Southern Appalachian Assessment*, and all associations within the following ecological groups as defined by NatureServe (2001a):

430-40	Eastern Dry Acid Cliffs
430-45	Eastern Moist Acid Cliffs
430-50	Eastern Dry Alkaline Cliffs

Rock Outcrops—Significant areas of exposed, usually smooth, exfoliating granite or related rocks, with scattered vegetation mats and abundant lichens characterize these communities. These communities are found in both the Appalachian and piedmont regions. Primary management needs are protection from nontarget management disturbance and recreational impacts. This community includes granitic dome and granitic flatrock as defined in the *Southern Appalachian Assessment*, and all associations within the following ecological groups defined by NatureServe (2001a):

435-10	Appalachian Highlands Granitic Domes
435-20	Appalachian Highlands Grantic Flatrock

Other Communities

Glades, Barrens, and Associated Woodlands—These communities are characterized by thin soils and exposed parent material that result in localized complexes of bare soil and rock, herbaceous and/or shrubby vegetation, and thin, often stunted woods. During wet periods, they may include scattered shallow pools or areas of seepage. They vary widely in species composition depending on the type of underlying parent material. They differ from rock outcrop communities by exhibiting some level of soil and vegetation over most of the site. Field delineations should include the entire complex of characteristic vegetation composition and structure. These communities may be found in both Appalachian and piedmont regions. Primary management needs are protection from nontarget management disturbance and recreational impacts. Periodic vegetation management, especially prescribed fire, may be necessary to maintain or restore desired herbaceous and/or shrubby composition. These communities include calcareous woodlands and glades, mafic woodlands and glades, serpentine woodlands and glades, and shale barrens as defined in the *Southern Appalachian Assessment*, and the rare associations within the following ecological groups as defined by NatureServe (2001a):

401-17	Appalachian Highlands Calcareous/Circumneutral Dry-Mesic Hardwood Forests and Woodlands
440-40	Appalachian Shale Glades and Barrens
80-80	Appalachian Mafic Igneous/ Metamorphic Glades and Barrens

12-12 Appalachian Highlands Xeric Hardpan Forests and Woodlands
12-13 Appalachian Highlands Dry Mesic Oak Forests and Woodlands
401-xx Appalachian Highlands Unstable Substrate Woodlands

Canebrakes—This community is characterized by almost monotypic stands of giant or switch cane (*Arundinaria gigantea*), usually with no or low densities of overstory tree canopy. It is typically found in bottomlands or stream terraces. Although cane is found commonly as an understory component on these sites, provisions of the Rare Community Prescription apply only to larger patches (generally greater than 0.25 acres) exhibiting high densities that result in nearly monotypic conditions, or to areas selected for restoration of such conditions. This community is found in the Appalachian, piedmont, and coastal plain regions. Primary management needs are restoration and maintenance through overstory reduction and periodic prescribed fire. Although several associations described by NatureServe (2001a, 2001b) include cane as a major component, this community most closely corresponds to:

CEGL003836 Floodplain Canebrake

Mines—This community is characterized by natural and human-made openings in the ground that extend beyond the zone of light, creating sites buffered in relation to the outside environment. Included are karst and sinkhole features that lead to such subterranean environments. Provisions of the Rare Community Prescription apply only to those sites supporting cave-associated species. This community is found in the Appalachian region. Primary management needs are protection from non-target management disturbance and recreational impacts, and maintaining quality of water flowing into underground streams.

Standards

9.F.-1 The scenic integrity objective is very high to high for inventoried scenic class 1 and high for inventoried scenic class 2 and moderate for scenic classes 3 through 5.

9.F.-2 Rare communities are protected from detrimental effects caused by management actions. An exception may be made for beaver ponds on a case-by-case basis where conflicts with aquatic PETS, trout or safety, health, and infrastructure (roads, buildings, culverts, developed sites) are known to occur. Management activities occur within rare communities only where maintenance or restoration of rare community composition, structure, or function is needed.

9.F.-3 Where recreational or other uses are negatively affecting rare communities, sites are modified to reduce or eliminate negative effects. New recreational developments are designed to avoid adverse effects to rare communities

9.F.-4 Management actions that may adversely alter the hydrologic conditions of wetland rare communities are prohibited. Such actions include construction of roads, plowed or bladed firelines, and impoundments in or near these communities. Exceptions are made for actions designed to control impacts caused by beavers, activities designed to manage water levels to expand or maintain wetland communities, or where needed to control fires to provide for public and employee safety and to protect private land resources.

9.F.-5 Introducing fish into wetland rare communities is prohibited. An exception may be made for beaver ponds on a case-by-case basis.

9.F.-6 New federal mineral leases will contain a no surface occupancy (NSO) stipulation.

9.F.-7 No mineral material operations are allowed.

9.F.-8 Non-native invasive species are controlled where they are causing adverse effects to rare communities. Non-native invasive species are not introduced in or near rare communities.

9.F.-9 In proximity to rich cove communities (basic mesic), limit the direct application of fire on north- and east-facing slopes, allowing low intensity fires only. Avoid the use of fire on these sites when conditions are droughty.

9.F.-10 These lands are unsuitable for timber production.

9.F.-11. OHVs, mountain bikes and horses are not permitted.

9.G.2 Restoration of Upland Oak-Hickory and Mixed Pine-Oak-Hickory Forests

43,080 acres (approximate)

Emphasis: Restore and maintain upland oak-hickory and mixed oak-hickory-pine forest.

Desired Condition: These areas contain primarily oak-hickory and oak-hickory-pine forests. Fire-maintained woodlands and savannas, and mixed mesophytic forests occur as a minor component of the landscape.

Short-term. Advanced oak and/or hickory regeneration occurs as seedlings or saplings in the understory of loblolly pine stands. Loblolly pine stands are manipulated to encourage oaks and hickory, yet suppress loblolly pine growth and regeneration. Stand densities are moderate to low (60 to 80 square feet/acre basal area) to encourage oak and hickory seedling development, to maintain larger crowns for mast production, to reduce susceptibility to southern pine beetle attack and to promote understory development. The trees will be larger and more widely spaced, and understory hardwoods will be more developed. In the short-term, oak and hickory may comprise a minor component of the forest composition, accompanied by loblolly pine, sweetgum, red maple, yellow poplar, and dogwood. An intermediate mix of forest successional stages characterizes these areas. Mid-and late-successional forests are common, but 4 to 10 percent of the forested land is in early-successional forest conditions. Fifty percent of the forest acres are in mid-to late-successional forests conditions and within this 50 percent, at least 20 percent are in late successional or old growth conditions. Where compatible with other multiple-use objectives, early-successional forest created by management actions is clustered on the landscape to maintain blocks of mid- and late- successional forest.

In the long-term, oaks, hickories, and pines dominate most sites. Sweetgum, red maple, and yellow poplar comprise a minor component.

Management activities in this prescription provide a flow of wood products to local economies.

This management approach would favor species such as pileated woodpecker, red-eyed vireo, and Eastern wood peewee. With the emphasis on hard mast, this approach will also favor all species that consume acorns and hickory nuts (squirrels, turkey, deer, raccoon, etc.). Well-developed crowns and multi-layered canopies within mature forest stands would be most beneficial to most breeding forest-dwelling birds, i.e., black-and-white warbler, wood thrush, vireos, flycatchers, and flicker. Existing openings and linear strips may be expanded or new ones created to improve habitat conditions or views in the area. Native species are preferred but non-invasive non-native species may be used when establishing food plants for wildlife.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this prescription.

Prescribed fire will be used periodically to maintain or to restore the desired composition.

Density of open roads remains near the current level throughout the planning area.

The landscape character is generally natural appearing. The sights and sounds of human activities, especially motorized uses along main

travel corridors, are evident in many parts of these areas. Visitors frequently see other people in some parts of these areas. Motorized access is available to many places. Non-motorized trails are also available, and in some cases, motorized trails are available. Hunting and wildlife and plant viewing are common activities. The recreational opportunities are in roaded natural and rural settings.

Standards

9.G.2.-1 The scenic integrity objective is high for inventoried scenic class 1 and moderate for inventoried scenic class 2 and low for scenic classes 3 through 5.

9.G.2.-2 Only use site preparation methods that promote oak/hickory regeneration.

9.G.2.-3 These lands are suitable for timber production.

10.B. High Quality Forest Products (Piedmont Only)

139,528 acres (approximate)

Emphasis: This prescription is applied to lands capable of producing high quality, valuable sawtimber. Timber stand improvement and regeneration harvest methods that best provide for the growth and harvest of high quality, valuable sawtimber that is most in demand in the marketplace are applied. Opportunities are also provided for other high value forest products.

Desired Condition: Grow and sell saw log size timber (pine and hardwood) in a sustained manner on upland sites. Where opportunities exist, the oak and hickory component is expanded.

The predominant species are loblolly pine and mixtures of loblolly pine and hardwoods. Encourage mast-producing species as a component of pine stands. Shortleaf pine *(Pinus echinata)* is desirable in places where littleleaf disease is not likely to adversely affect it. Across the landscape one sees trees of various ages and sizes. Individual stands are likely to have somewhat uniform heights and diameters. As markets allow, pine stands are maintained at moderate densities (less than 100 square feet/acre basal area) to reduce susceptibility to southern pine beetle attack, and to encourage development of larger diameter trees. Pulpwood, fuelwood, and other low value forest products are produced to maintain moderate densities and as secondary products in sawtimber harvests.

A mix of forest successional stages characterizes these areas, with an emphasis on early-successional forests. Mid- and late-successional forests are common, but 10 to 17 percent of forested land is in early-successional forest conditions. Twenty percent of the forest is in mid-to late-successional forest conditions and within this 20 percent at least 10 percent is in late successional or old growth conditions. Relatively equal areas are in each 10-year age class.Where opportunities exist, the oak and hickory component is expanded. Additional open, park-like woodland conditions may be developed to improve habitat conditions in the area. Existing openings and linear strips may be expanded or new ones created to improve habitat conditions or views in the area. Native species are preferred but non-invasive non-native species may be used when establishing food plants for wildlife.

Sweetgum will be discriminated against in order to provide for additional tree diversity for current and future production of hard and soft mast and den trees. In addition, existing patches dominated by mast producing hardwoods, or scattered hard and soft mast or fruit producers, will be retained across the stand to the extent compatible with achieving desired conditions of open pine forests.

Soft mast producing species (dogwood, black gum, hawthorn, grapes, serviceberry, etc.) are retained during vegetative treatments to the extent compatible with meeting treatment objectives.

For wildlife, this prescription balances objectives for providing a range of habitat conditions. Animals that use a variety of habitats (white-tailed deer, wild turkey, gray squirrel, woodpeckers, and migrating neotropical birds) benefit and are found in high densities in this prescription. Species that prefer more mature forest conditions and species that prefer more grassland/shrubland habitats would also be found in noticeable numbers throughout this area.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this prescription.

Prescribed fire is likely to be used for fuel reduction, wildlife habitat objectives, and PETS habitat improvement in the uplands.

The landscape character generally appears natural. The recreational opportunities are in roaded natural and rural settings. These areas are very accessible and provide a variety of recreational opportunities, foremost of which is hunting.

Density of open roads remains near the current level throughout the planning period, with only small increases and decreases. Additional roads may be needed to provide environmentally suitable access for management activities, but may be closed to public use.

Objectives

10.B-OBJ-1 Provide local economies with 47–74 MMCF of wood products annually.

Standards

10.B.-1 The scenic integrity objective is high for inventoried scenic class 1 and moderate for inventoried scenic class 2 and low for scenic classes 3 through 5.

10.B.-2 These lands are suitable for timber production.

11. Riparian Corridors

(62,524 acres embedded in adjoining prescriptions)

Emphasis: Riparian corridors will be managed to retain, restore and/or enhance the inherent ecological processes and functions of the associated aquatic, riparian, and upland components within the corridor.

Desired Conditions for the Riparian Corridor: Riparian corridors reflect the physical structure, biological components, and ecological processes that sustain aquatic, riparian, and associated upland functions and values.

Primarily, natural processes (floods, erosion, seasonal water table fluctuations, etc.) will modify most of the areas within the riparian corridor. However, management activities may be used to provide terrestrial or aquatic habitat improvement, favor recovery of native vegetation, control insect infestation and disease, comply with legal requirements (e.g., Endangered Species Act, Clean Water Act), provide for recreation and public safety, and meet other riparian functions and values. (See Appendix C for a graphical representation of a Riparian Corridor and an operational definition of a riparian area.)

Riparian corridors occur along all defined perennial and intermittent stream channels that show signs of scour, and around natural ponds, lakeshores, wetlands, springs, and seeps. Portions of the corridor may extend into upland areas, especially within steep-sided stream valleys and headwater reaches. The riparian corridor management direction and these minimum distances (See Tables 3-9 and 3-10.) do not apply to constructed ponds, reservoirs, ditches, or terraces. For these areas, site-specific analysis will determine the appropriate protective measures.

Streams are in dynamic equilibrium; that is, stream systems normally function within natural ranges of flow, sediment movement, temperature,

and other variables. The geomorphic condition of some channels may reflect the process of long-term adjustment from historical watershed disturbances (e.g., past intensive farming practices within the piedmont). The combination of geomorphic and hydrologic processes creates a diverse physical environment, which, in turn, fosters biological diversity. The physical integrity of aquatic systems, stream banks and substrate, including shorelines and other components of habitat is intact and stable.

The natural range of in-stream flows is maintained to support channel function, aquatic biota and wildlife habitat, floodplain function, and aesthetic values.

Water quality remains within a range that ensures survival, growth, reproduction, and migration of aquatic and riparian-dependent species, and contributes to the biological, physical, and chemical integrity of aquatic ecosystems. Water quality meets or exceeds state and federal standards. Water quality (e.g., water temperatures, reducing sediment, dissolved oxygen, and pH) will be improved where necessary to benefit aquatic communities.

The soils of riparian corridors have an organic layer (including litter, duff, and/or humus) of sufficient depth and composition to maintain the natural infiltration capacity, moisture regime, and productivity of the soil (recognizing that floods may periodically sweep some areas within the floodplain of soil and vegetation). Exposed mineral soil and soil compaction from human activity may be present but are dispersed and do not impair the productivity and fertility of the soil. Any human-caused disturbances or modifications that cause environmental degradation through concentrated runoff, soil erosion, or sediment transport to the channel or water body are promptly rehabilitated or mitigated to reduce or eliminate impacts.

Floodplains properly function as detention/ retention storage areas for floodwaters, sources of organic matter to the water column, and habitat for aquatic and riparian-dependent species. Modification of the floodplain is infrequent but may be undertaken to protect human life and property or to meet other appropriate management goals (e.g., restoration). There may be evidence of some roads, trails, and recreational developments. Some wetland habitats may show signs of restoration.

Silvicultural treatments including timber and vegetation removal may occur to restore and/or enhance riparian resources such as soil, water, wildlife and natural communities. Prescribed fire can be used within the corridor to create or maintain the composition and vitality of fire-dependent vegetative communities (e.g., canebrakes). Low intensity fire may occur when streams are used as natural firebreaks in association with landscape-level burning.

Vegetative communities within the riparian corridor are diverse and productive, providing for a rich variety of organisms and habitat types. The vegetative community within the riparian corridor is predominantly forested; however, some natural non-forested habitats such as wet meadows, grasses or shrub dominated plant communities may occur. Many canebrake communities may be restored. Existing old fields and openings for wildlife may be present and maintained. Native species are preferred but non-invasive non-native species may be used when establishing food plants for wildlife. Some agricultural plantings of non-invasive non-natives may occur to augment stopover and wintering habitat for migratory species.

The forest contains multiple canopy layers, which provide a variety of habitat niches, and thermal and protective cover for wildlife. Snags used by birds, bats, and small animals are abundant. Dying and down trees are common, often in natural patches. Suitable habitat is provided in riparian areas, and where applicable in the associated uplands, for riparian-dependent flora and fauna; including migratory species. High canopy species such as red-eyed vireo and yellow-throated warbler as well as species that use mid-story and well developed shrub layers in understory (thrushes, ovenbird, etc.) would also be expected in high densities. Species associated with habitat conditions found in riparian areas and wetland habitats, (i.e., Acadian flycatcher

(Epidonax viresens), parula *(Parula Americana)* Louisiana waterthrush *(Seiurus motacilla*), prothonotary warbler *(Protonotaria chrea)*, wood duck *(Aix sponsa)*, egrets and great blue heron *(Aroea herodias)* could potentially be found in high densities in localized areas.

Trees within the corridors are managed to provide sufficient amounts and sizes of woody debris to maintain habitat complexity and diversity for aquatic and riparian-dependent species. Recruitment of woody debris typically occurs naturally; however, woody debris may be purposefully introduced to enhance aquatic and terrestrial habitat. Both in-stream and terrestrial woody debris are regarded as essential and generally left undisturbed.

The biological integrity of aquatic communities is maintained, restored or enhanced. Aquatic species distributions are maintained or expanded into previously occupied habitat. The amount, distribution and characteristics of aquatic habitat for all life stages are present to maintain populations of indigenous and desired nonnative species. Habitat conditions contribute to the recovery of species under the Endangered Species Act. Species composition, distribution and relative abundance in managed habitats are comparable to that of natural habitats of the same region or reference stream. Streams and water bodies are periodically inventoried and monitored on a sample basis to characterize larger scale conditions or trends. Streams and water bodies are protected from adverse effects and managed to restore native species as appropriate. Management activities are allowed to restore, enhance, and manage aquatic communities of native and demand species. Management activities will be coordinated with the South Carolina Department of Natural Resources.

Perennial and intermittent streams are managed in a manner that emphasizes and recruits large woody debris. The desired condition is approximately 200 pieces of large woody debris (LWD) per stream mile.

The landscape character is naturally evolving or natural appearing, but occasional enclaves of a rural landscape character may occur with pastoral settings and recreational developments (such as a swim beach at a campground). However, due to the high value that these areas have for many uses, evidence of human activity (developed recreation areas, roads and trails, dams and reservoirs, and pastoral areas) may be present.

The recreational opportunities are in roaded natural and rural settings. Both dispersed and developed recreational opportunities may be present within these corridors. Hiking, nature viewing, camping, canoeing, hunting, and fishing are activities available within the corridor. Visitors may encounter developed camping areas, boat launches, and fishing piers. Current recreation areas and facilities are maintained or upgraded to minimize impacts on stream banks, shorelines, and water quality. Environmental education and interpretation about the aquatic component and riparian corridor may be provided to increase awareness of the value of riparian dependent resources.

Density of open roads and/or motorized trails may decrease over time as roads and/or trails that are unneeded or are causing undesirable resource impacts are closed.

Determination of Riparian Corridors

Due to their spatial extent, riparian corridors are not identified on the Forest Plan map of prescription allocations.

Riparian corridor widths are designed to encompass the riparian area when defined on the basis of soils, vegetation and hydrology as described in Appendix C, and the ecological functions and values associated with the riparian area to include distinctive landscape features such as alluvial terraces, floodplains, bottomland hardwoods, and wetlands.

For project planning and implementation, the following process will be used to determine the extent of site-specific riparian corridors:

The widths in Tables 3-9 and3-10 shall be used to define the riparian corridor along streams, lakes and other water bodies if the corridor is not site-specifically determined as described below.

If a site-specific field investigation determines the need to vary the widths in Table3-9 and 2 to better address desired riparian, aquatic or resource health conditions, that width shall become the project level riparian corridor. This corridor ensures that riparian values and functions are maintained.

The slope-dependent riparian corridor widths are measured in on-the-ground surface feet perpendicular from the edge of the channel or bank (stream, water body, etc.) and extend out from each side of a stream.

For ponds, lakes, sloughs, and wetlands (including seeps or springs associated with wetlands) the measurement would start at the ordinary high water mark and go around the perimeter. For braided streams, the outermost braid will be used as the water's edge. Entrenched streams do not have banks along a floodplain and will typically be measured from the terrace along the bank. An interrupted stream (a watercourse that goes underground and then reappears) will be treated as if the stream were above ground. (An acceptable level of error for on-the-ground measurements of these widths is + 10 percent.) The riparian corridor includes human-created reservoirs, wildlife ponds, wetlands, and waterholes connected to or associated with natural water features. In addition, those areas not associated with natural water features, but support riparian-associated flora or fauna, will have a riparian corridor designation. The riparian corridor management direction does not apply to constructed ponds developed for recreational uses; or to human-made ditches, gullies, or other features that are maintained or in the process of restoration. For these areas, site-specific analysis will determine appropriate protective measures.

Relationship with Ephemeral Streams

Ephemeral streams do not have riparian areas, but are hydrologically connected to perennial and intermittent streams downstream. They flow only in direct response to precipitation, normally lack defined channels and are above the water table. Some ephemeral streams exhibit evidence of scouring from storm events.

Standards for the Ephemeral Stream Zone are found in Chapter 2, Forest-wide Standards, of this Forest Plan.

Objectives

11-OBJ-1 Improve structural diversity and composition within the riparian corridor on 2,000 acres on the piedmont as canebrake habitat restoration.

11-OBJ-2 Restore and enhance stream habitat and aquatic communities in 50 miles of streams. This includes woody debris, stream bank stabilization, brook trout restoration, and in stream habitat improvement.

Relationship with Other Management Prescriptions

The riparian corridors overlap with other management prescription allocations. In order to establish precedence, the following rules apply.

- Where the riparian corridor management prescription area overlaps with lands that have been allocated to Management Prescriptions 1A/1B—Wilderness and Recommended Wilderness, 2A—Existing Wild/Scenic/Recreational Rivers, 4D and 4F—Special Areas, and 9F—Rare Communities; then whichever management direction is the most restrictive will apply.

- For lands allocated to any of the other management prescriptions, where the riparian corridor overlaps with these allocations, the direction in the Riparian Corridor Management Prescription will take precedence.

Standards

11.-1 The scenic integrity objective is high for inventoried scenic classes 1 through 5.

11.-2 The removal of large woody debris (pieces greater than 4 feet long and 4 inches in diameter on the small end) is allowed if it poses a risk to water quality, degrades habitat for riparian-dependent species, for recreational access, or when it poses a threat to private property or National Forest infrastructures (i.e., culverts, bridges). The need for removal must be determined on a case-by-case basis. Except in unusual circumstances, woody debris embedded within the channel materials will not be removed.

11.-3 Stocking of new nonnative species and stocking of previously unstocked areas is discouraged where it will adversely impact native aquatic species or communities. Before any stocking, coordinate with South Carolina Department of Natural Resources to ensure that populations and habitats of native species are maintained.

11.-4 Existing wildlife openings are allowed within the riparian corridor. However, wildlife openings identified as causing environmental degradation through concentrated runoff, soil erosion, sediment transport to the channel or water body, loss of thermal shading, stream bank support and aquatic or riparian habitats will be mitigated or closed and restored. New wildlife openings within the riparian corridor are permitted where needed to provide habitat for migratory or riparian-dependent species.

11.-5 New non-motorized trail construction is allowed to improve existing trail configuration and to improve access to specific locations along streams, lakes, and the riparian corridor.

11.-6 New motorized trails are prohibited within the riparian corridor except at designated crossings or where the trail location requires some encroachment, for example, to accommodate steep terrain.

11.-7 Motorized and non-motorized trail reconstruction and relocation within the riparian corridor are allowed to reduce impacts to riparian and aquatic resources.

11.-8 New stream crossings will be evaluated and where necessary constructed so that they do not adversely impact the passage of aquatic organisms. Exceptions may be allowed to prevent the upstream migration of undesired species.

11.-9 Alternative locations must be considered for all new facilities. Where none exist, potential impacts must be minimized or mitigated to moderate the severity of those impacts.

11.-10 Camping trailers and vehicles are not allowed within 100 feet of perennial streams, lakes or other water bodies, except at designated areas.

11.-11 Tethering or corralling of horses or other livestock is not allowed within 100 feet of stream courses or lakes.

11.-12 New federal mineral leases will contain a no surface occupancy stipulation or controlled-surface-use stipulation for the riparian corridor.

11.-13 Federal mineral material (36 CFR 228(c)) authorizations are only allowed to restore riparian areas and aquatic habitat, control erosion and sedimentation, and repair flood damage.

11.-14 Gold panning and other related activities are only authorized where they do not adversely affect stream channel stability, substrate, aquatic species, or their habitats.

11.-15 Commercial collection of botanical products will not be allowed in the riparian corridor if it would adversely affect the functions and values of the riparian area.

11.-16 Tree removals may only take place if needed to enhance the recovery of the health, diversity and/or complexity of vegetation, rehabilitate both natural and human-caused disturbances, provide habitat improvements for PETS or riparian-dependent species, suppress pest insect populations, reduce hazardous fuel buildup, provide for visitor safety, and for approved facility construction/renovation.

11.-17 Permitted firewood cutting within the riparian corridor must take into consideration the large woody debris requirements.

11.-18 Alternative measures for insect and disease control will be determined on the basis of risk to adjacent resources, long-term sustainability, and appropriate needs for the function and condition of the riparian area.

11.-19 Except for wildfire or escaped prescribed fire, construction of firelines with heavy mechanized equipment (e.g., bulldozers) in wetlands or riparian corridors is prohibited.

11.-20 Except for wildfire or escaped prescribed fire, hand lines will be used for fire line construction and water diversions will be used to deter sediments from streams. Fire lines are not constructed in stream channels, but streams may be used as firelines.

11.-21 Where risks of resource damage are high, each road segment will be constructed and stabilized before starting another segment. High-risk areas include landslide prone areas such as certain colluvial slopes, steep slopes and highly erosive soils. High-risk streams include streams containing sensitive aquatic species such as trout and mussels, or any threatened or endangered species, Wild and Scenic Rivers, Outstanding Resource Waters, those listed with sediment, turbidity or aquatic habitat problems on state 303d or 305b water quality reports.

11.-22 To minimize the length of streamside disturbance, ensure that approach sections are aligned with the stream channel at as near a right angle as possible. Locate riparian corridor crossings to minimize the amount of fill material needed and minimize channel impacts.

11.-23 If culverts are removed, stream banks and channels must be restored to a natural size and shape. All disturbed soil must be removed from the active channel and floodplain, and stabilized.

11.-24 These lands are unsuitable for timber production.

12.A. Remote Backcountry Recreation—Few Open Roads

Andrew Pickens Ranger District, 4,929 acres (approximate)

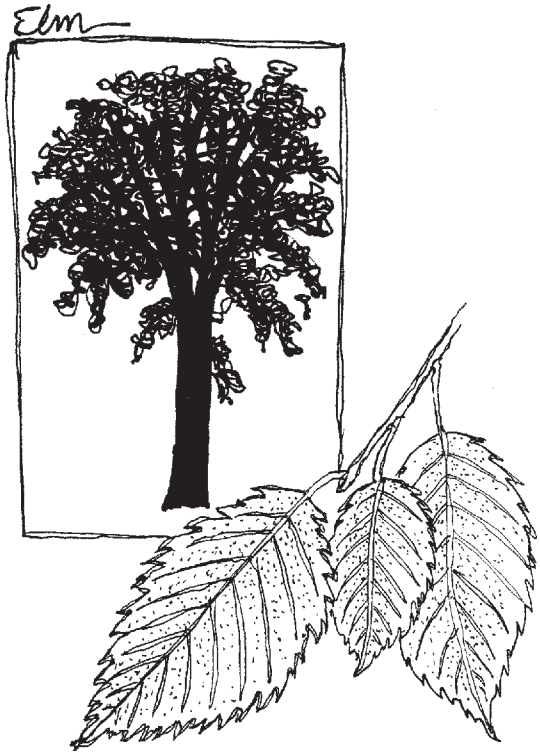
Emphasis: These lands are managed to provide users with a degree of solitude and a semi-primitive experience in large remote areas that still allow the use of limited public motorized access on existing, open motorized roads. Areas will be 2,500 acres or greater in size unless adjacent to a prescription that also provides a semi-primitive experience (1.A., 1.B., 4.A., 6.A., 12.B., 12.C., etc.).

Desired Condition: Provide users with solitude and a semi-primitive experience in large remote areas. These areas provide large tracts of backcountry recreational opportunities with a semi-primitive non-motorized emphasis that allows some existing vehicular access. Human activities may be evident in some places.Visitors occasionally see other people especially near the few open roads in these areas. A non-motorized trail system provides the predominant means of access. Closed roads are available for non-motorized uses. Outdoor skills are important for visitors in the more remote portions of these areas. Hiking, horseback riding, mountain biking, backpacking, dispersed camping, hunting, and fishing are typical activities available in this area.

The landscape character appears natural with ecological processes, rather than management activities, being the primary forces shaping the landscape. Vegetative management activities, including prescribed fire, are for the purposes of threatened, endangered, sensitive and locally rare species habitat improvements; forest health considerations; to restore native vegetative communities; and to restore riparian ecosystems. Older forest communities predominate and increase over time

Habitat conditions provided though this prescription are dominated by climax canopy development and decline. Wildlife that responds to large diameter standing snags and living den trees (raccoon, barred owl, great-crested flycatcher, chickadee, etc.) would be expected here in high densities if adequate food supplies were available. High canopy species such as red-eyed vireo and species that use mid-story and well developed shrub layers in understory (thrushes, ovenbird, etc.) would also be expected in high densities. The limited supply of open shrubland habitats (openings, rights-of way, road corridors) would provide foraging habitat for some species (black and white warbler, towhee, cardinal, etc.) in portions of this prescription.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this prescription.



Standards

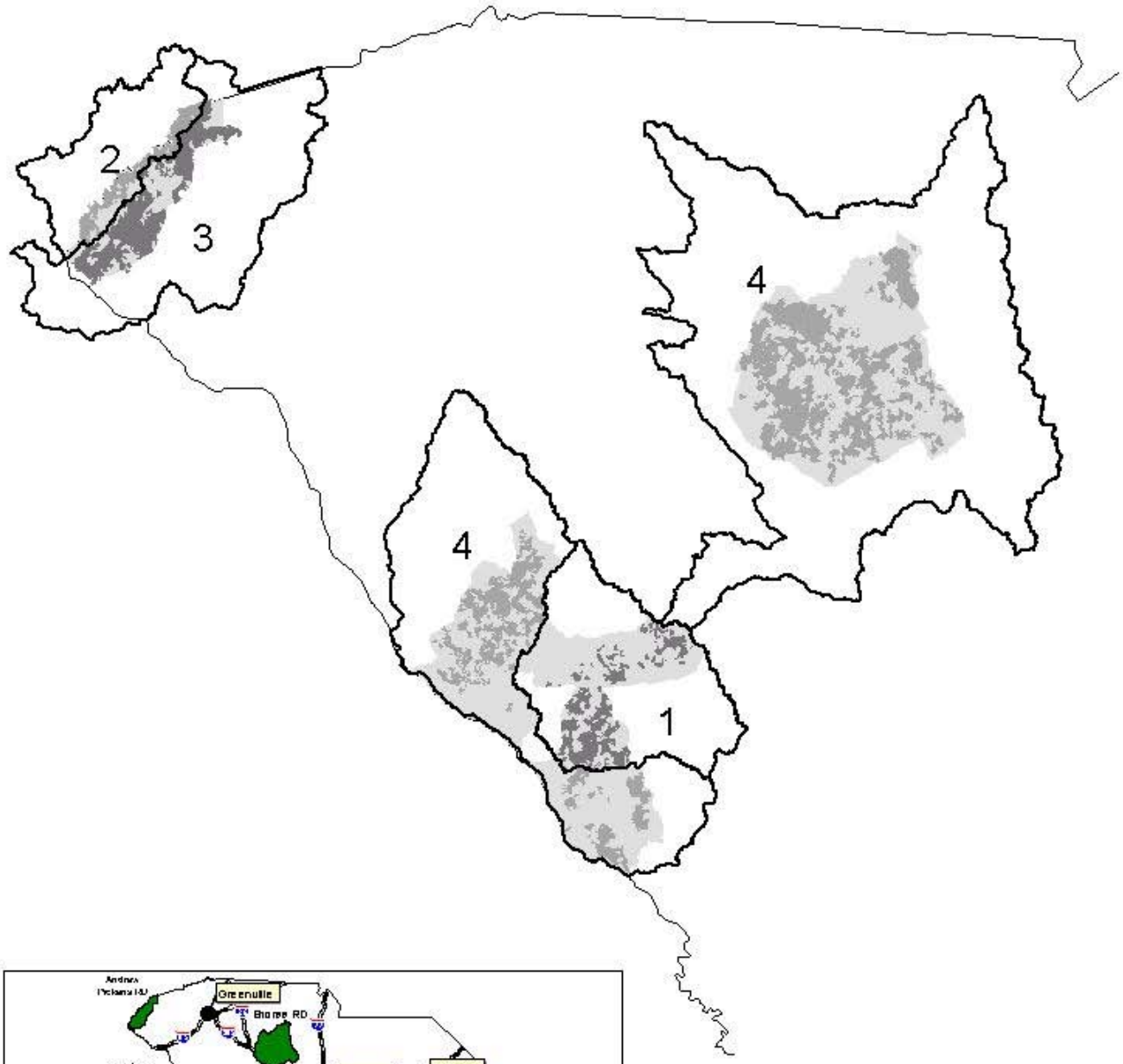
12.A.-1 The scenic integrity objective is high for inventoried scenic classes 1 through 5.

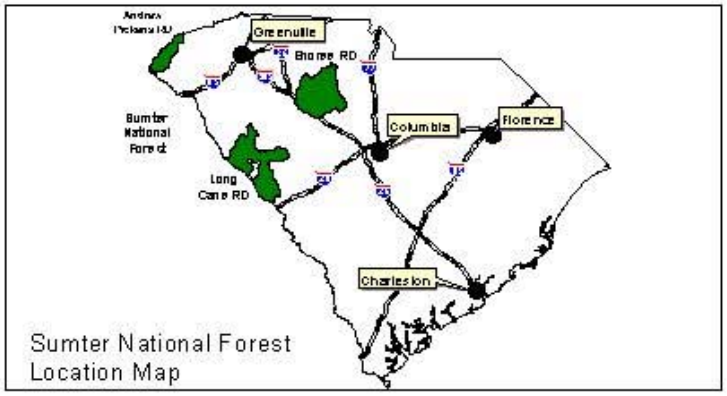
12.A.-2 New road and motorized trail construction is prohibited, subject to valid existing rights or leases.

12.A.-3 New federal mineral leases will contain a no surface occupancy stipulation or controlled surface use stipulation.

12.A.-4 These lands are unsuitable for timber production.

Management Areas
For the
Sumter National Forest
Alternative I





November 11, 2002

Chapter 4
Management Areas

Management Areas are assigned on all acres of the Sumter. There are two types of management areas. One type will have unique management direction that is not covered in either forest-wide goals, objectives, standards, or management prescription desired conditions, objectives and standards. These management areas will be based on watersheds and are described below as Turkey Creek and Upper Stevens Creek Management Area and Chattooga River Management Area.

The second type of management area contains no unique direction. The direction is already available in the Forest Plan. These management areas are presented here to provide a "sense of place" as well as to present additional information related to objectives and management prescription allocations.These management arears are defined on the remaining forest acres outside the Turkey Creek and Upper Stevens Creek Management Area and Chattooga River Management Area. They are described below as Blue Ridge Mountains and Foothills Management Area (Andrew Pickens District) and the Piedmont Management Area (Enoree and Long Cane Districts).

Management Area 1—Turkey Creek and Upper Stevens Creek, Long Cane Ranger District

Existing Conditions

This 41,653-acre management area includes Turkey Creek and Upper Stevens Creek watershed areas above the confluence of Turkey and Stevens Creeks. This area contains approximately 238.4 miles of moderate to large perennial streams, all classified as freshwater by the state. Turkey and Upper Stevens Creek watersheds contain critical habitat for the federally-endangered Carolina Heelsplitter, (*Lasmigona decorata)*. Occurring along with the Carolina heelsplitter is the brook floater (*Alasmidonta varicosa*), a sensitive species. According to several state and federal authorities, the Stevens Creek/Turkey Creek watershed is "…one of the most biologically diverse aquatic systems in all of South Carolina and appears to be the most biologically significant tributary of the entire Savannah River Basin in North Carolina, South Carolina, and Georgia." (Alderman, 1998) The Nature Conservancy has identified Stevens Creek watershed as one of national significance for conservation of aquatic biodiversity (Master, et al, 1998). It ranks in the top 15 percent of the entire nation's watersheds for its significance in biodiversity.

The management area is underlain by several complex sequences of crystalline, mixed acid, micaceous rocks and Carolina slates. Soils surfaces are generally thin with sandy clay loam surfaces. Carolina slate surfaces consist of silt loams and subsurfaces consist of silty clay loams. Annual precipitation averages about 45 inches of which 17 inches is water yield. Vegetation is primarily loblolly pine *(Pinus taeda).* Secondary vegetation includes red oak *(Quercus falcata),* white oak (*Quercus alba*), hickory *(Carya spp.),* sweetgum (*Liquidambar styraciflua*), yellow polar (*Liriodendron tulipifera*), water oak (*Quercus nigra*), willow oak (*Quercus phellos*), river birch (*Betula nigra*), sycamore *(Platanus occidentalis),* cottonwood *(Populus deltoides),* elm *(Mlmus spp.),* ash (*Fraxinus sp.*), and red maple (*Acer rubrum*). Some areas contain invasive non-native species such as kudzu *(Pueraria lobata),* privet *(Ligustrum spp.),* autumn olive *(Elaeagnus*

umbellate), and Chinese wisteria *(Wisteria sinenis).*

Turkey Creek was evaluated by outside agencies and found to have elevated levels of suspended solids and turbidity resulting from agricultural activities, with fecal coliform, dissolved oxygen and phosphorus levels also problematic for some sections. Upper Stevens Creek is listed in the Nonpoint Source Management Program as needing water quality and macroinvertebrate community improvement, with Cuffytown and Hard Labor Creeks also mentioned for elevated turbidity and suspended solids. About 3 percent is urban land, 83 percent forested land, and 14 percent agricultural land. National Forest land comprises 15 percent of the Turkey Creek and 9 percent of Upper Stevens Creek watersheds.

Municipal water uses in the vicinity include McCormick, SC, from Lake Thurmond and North Augusta, SC, and Edgefield County from the Savannah River. Due to the size of the Savannah River, the amount of private land involved and distance from both the Long Cane and Andrew Pickens Ranger Districts, forest management activities have little or no influence on these public water sources.

A variety of wildlife species occur within the area including Bachman's sparrow (*Aimophila aestivalis*), brown-headed nuthatch (*Sitta pusilla*), white tail deer (*Odocoileus virginianus*), quail (*Colinus virginianus*), Webster's salamander (*Plethodon websteri*) and red fox (*Vulpes fulva*). A diversity of significant plant life occurs in this area: faded trillium (*Trillium discolor*), Oglethorpe oak (*Quercus oglethorpensis*), Shoal's spider lily (*Hymenocallis coronaria*), and others. The fire maintained woodland/savanna habitat, known for its 300-year-old post oak trees located near Little Mountain Creek in the northern portion of this management area also is significant.

This area also contains one of the original wild turkey releases and turkey management sites in the state of South Carolina.

Desired Conditions

Habitat for Carolina heelsplitter (*Lasmigona decorata*) is maintained or improved, and populations are increasing toward recovery. The movement of aquatic species is unhindered by migration barriers. Habitats for the diversity of freshwater mussels and other aquatic sensitive species are stable or increasing. The dominant land use is forestry. This low frequency use pattern is the best land cover to conserve most Atlantic slope freshwater mussels, reptiles, and amphibians. Mid- and late- successional forests dominate this management area; however, some scattered early successional habitat is evident. In the long-term, pines, oak, and hickory dominate most of the sites.

There are a variety of high-quality well maintained developed and dispersed recreational opportunities including camping, shooting ranges, day hiking, mountain biking, canoeing and kayaking, fishing, hunting, dispersed camping and nature study. Visitors frequently see other people in parts of the management area. Outdoor skills are of moderate importance. The recreational opportunities are in roaded natural and rural settings.

Old growth communities, especially mixed mesophytic forests, dry-mesic oak forests, and dry-mesic oak-pine and pine-oak forests, are found along the riparian corridors within this management area. Small or medium-sized patches of dry-xeric pine and oak old growth woodlands and savannas, and dry-mesic oak forests, are scattered throughout. In the short-term, the results of loblolly pine removal may be observed as old growth communities more native to the area are restored.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this management area.

Wooded riparian corridors are maintained to prevent stream isolation; to provide large woody debris, stream bank stability and morphology, allochthonous material, stable microclimate (including stream temperature); and to control sedimentation, erosion, and toxic material

movement. Mature hardwoods dominate the historic floodplain of the creeks within these riparian corridors in the long-term, and advanced oak and/or hickory regeneration occurs as seedlings or saplings in the pine understories. Some natural non-forested habitats such as wet meadows, grasses or shrub dominated plant communities may occur. Vegetative communities within the riparian corridor are diverse and productive, providing a rich variety of organisms and habitat types.

Due to the heavily mixed ownership pattern, addressing water quality and aquatic habitat concerns will require cooperating with private landowners and conservation agencies.

The acres of management prescription allocations are displayed in Table 4-1.

Table 4-1. Management Prescription Allocations for Management Area 1

Management Prescription	Description	Acres
4D	Botanical/Zoological Areas	1,415
5C	Designated Utility Corridors	412
7D	Concentrated Recreation Zones	32
9F	Rare Communities*	6
9G2	Restoration of Upland Oak-Hickory and Mixed Pine-Oak-Hickory Forests	13,537
10B	High Quality Forest Products	26,403
11	Riparian Corridors**	-----
Total		41,804
* An increase in rare communities is predicted as a result of more site-specific inventories.		
** Approximately 4,588 acres are embedded in adjoining prescriptions.		

Management Area Standards

MA 1-1 Create a secondary zone from the established riparian corridor to include 200 feet on either side of perennial streams and 100 feet on either side of intermittent streams.

MA 1-2 In the secondary zone maintain an average of 70 percent canopy cover, and allow only natural regeneration can occur, unless hardwood planting is necessary to achieve the desired future condition (or no artificial regeneration of pine is allowed).

MA 1-3 No cutting within the natural floodplain except, as a last resort, for the control of pest.

MA 1-4 No new roads are built within the secondary zone as defined in MA1-1 except where needed to cross streams.

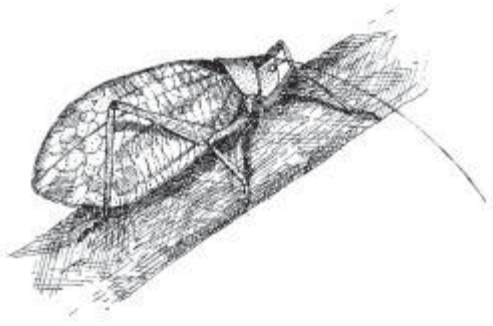
MA 1-5 Commercial mining permits contain no surface occupancy or controlled surface use stipulations.

MA 1-6 No new OHV trails are allowed.

MA 1-7 Within 50 feet of sites known to support Webster's salamander, maintain canopy cover and ground litter. Low intensity fires are allowed within these areas.

MA 1-8 No motorized boats or craft are allowed on Turkey or Stevens Creeks.

MA 1-9 No road construction is allowed in the Turkey/Stevens Creek Botanical Area (4D).



Management Area 2—Chattooga River

Existing Conditions

This 180,000-acre watershed includes the 122,192-acre management area comprised of public lands in National Forest management located within the Blue Ridge Mountains and upper piedmont of Georgia, South Carolina, and North Carolina.The Chattahoochee-Oconee National Forests in Georgia, Nantahala National Forest in North Carolina and the Sumter National Forest in South Carolina share management of the watershed, with the Sumter National Forest in charge of administering the river uses associated with the Chattooga Wild and Scenic River Corridor.

The dominant forest types in upland areas are Virginia and shortleaf pine (*Pinus virginiana and P. echinata*) and chestnut and scarlet oak *(Quercus prinus and Q. coccinea*) species, while eastern hemlock (*Tsuga canadensis*), yellow poplar (*Liriodendron tulipfera*) and white pine (*P. strobus*) often dominate moist areas as coves and streamsides with dense understories of rhododendron (*Rhododendron sp.*) and mountain laurel (*Kalmia latifolia*) (Van Lear et al., 1995).

Rainfall is well distributed throughout the year. The 50-year annual precipitation averages from 167 cm at the Long Creek, South Carolina, site in the lower portion of the watershed to 216 cm at the Highlands, North Carolina, rain gauge near the headwaters (NOAA, 1999). About ½ of the rainfall is returned to streamflow as water yield. Elevation ranges from about 300 m to 1,500 m.

The primary rock types include graywacke, mica schist, amphibolite, aluminous schist, granite, mica gneiss, gneiss, and granite gneiss. The rock types are highly weathered, increasing their erodibility. The primary soil types are Evard and Brevard series with Toccoa soil series in the floodplains. Most of the perennial and intermittent streams are entrenched to moderately entrenched, with low to high width to depth ratios.

A variety of wildlife can be found in the watershed including black bear (*Ursus americanus*), white tail deer (*Odocoileus virginianus*), red squirrel, black-throated green warbler, star-nosed mole, Eastern small-footed bat (*Myotis leibii*), and ruffed grouse (*Bonasa umbellus*). Fish species include rainbow, brown and brook trout, as well as a diverse cool water fish community, including darters, shiners, madtoms and chubs. The sensitive Oconee stream crayfish (*Cambarus chaugaensis*) and the sensitive brook floater (*Alasmidonta varicosa*) are present.

Water quality is a special concern for suspended sediment and/or fecal coliform on some Chattooga River tributaries resulting in streams being water quality impaired or on the watch list. Impaired streams are because of excessive sedimentation, aquatic biological community or habitat impairment or poor biological community rating. Watch list streams show signs of impact and may need added protection from sedimentation and increased monitoring of point and non-point source pollutants. This management area includes the following impaired (I) and watch list (W) streams: sections of Stekoa Creek (I) including tributaries Scott Creek (I), Pool Creek (I), Chechero Creek (I), Saddle Gap Creek (I) and Cutting Bone Creek (W); Warwoman Creek (I) including Morsingills (I), Goldmine Creeks (I), Martin/Finney (W), and Tuckaluge (W); West Fork Chattooga River including tributaries Law Ground (I), Laurel (I), Clear (I), Reed Mill (I), and Big Creeks (W); and various tributaries of North Fork Chattooga River including Ammons Branch (I), Norton Mill (I), and Fowler Creeks (I), Scottsman Branch (W), East Fork Chattooga River (W), Ridley Creek (W), Hedden Creek (W) and King Creek (W) and middle to lower Chattooga River tributaries including Whetstone Creek (I); Adline Creek (I), Fall Creek (I), Pole Creek (I), Licklog Creek (I), Reedy Creek (I), Buckeye Branch (W), Long Creek (I), and Camp Creek (W). Fecal coliform levels within Stekoa

Creek often exceed swimming standards by several orders of magnitude during storm events and remain an intermittent problem even during non-storm periods. Many of the tributary areas have temporary elevation of fecal coliforms during storm events, but typically these levels decline to safe levels during non-storm periods.

The states and EPA are currently working on Best Management Practices (BMP) to help reduce impacts. The Chattooga River Ecosystem Demonstration Project (1993-1995) and the Chattooga River Large Scale Watershed Project increased the information known about the watershed and help to focus resources toward improving conditions.

Congress designated 57 miles of the Chattooga River corridor as a component of the National Wild and Scenic River System on May 10, 1974. The headwaters of the river begin in North Carolina and continue downriver along the South Carolina and Georgia border. The river corridor and its immediate surroundings offer many recreational uses including boating, fishing, swimming, floating, hiking, horseback riding, and sightseeing in remote and occasionally in roaded settings. The river provides premier trout fishing opportunities for anglers across the Southeast. Recreational boating (including kayaking, canoeing, and rafting) has been a very popular use of the river and includes both guided and self-guided users. Water quality declines on some sections, especially below the confluence with Stekoa Creek or in relation to storm events in other ar

Desired Conditions

There are no longer any water quality impaired or watch list streams. Water quality concerns have diminished and excessive sediments, fecal coliform concentrations, and/or impacts to aquatic habitats have been removed.

Proactive measures are taken to help evaluate and prioritize pollutant sources and work with communities, agencies, neighbors, industry, developers, farmers, ranchers, and foresters on water quality issues within the watershed. Currently the means is through the efforts of various groups concerned about the Chattooga River water quality, state water and environmental agencies, EPA, Forest Service Large Scale Chattooga Watershed Project and NRCS personnel and programs. Efforts to develop partnerships and seek internal and external sources of funding to improve water quality will be undertaken.

Fecal coliform levels do not exceed water quality standards, even during storm events. Until standards can be met, official notice to river companies and private boaters will be made that health concerns during river uses and water contact sports are much higher than normal below Stekoa Creek and for most areas during heavy storm events. See Appendix E for water quality monitoring.

Outstandingly remarkable values and free-flowing conditions are not impaired by forest management actions.See Appendix E for monitoring of these values and conditions.

There are a variety of high-quality well maintained developed and dispersed recreational opportunities including camping, backpacking, day hiking, horseback riding, fishing (warm, cool and cold waters), hunting, dispersed camping, photography and nature study. Visitors frequently see other people in some parts of the management area in other parts the area people are rarely seen. The recreational opportunities include the full range from the most primitive in Ellicott Rock Wilderness to more developed in roaded natural and rural settings and therefore outdoor skills are of moderate importance in some parts and very important in others. The Chattooga River is a popular place for recreational activities that center around the Chattooga River including whitewater boating for both guided and self-guided boaters, swimming, tubing, fishing, hiking and sightseeing.

The loblolly pine is reduced to a minor component within this area. Early successional native forest and openings are present where loblolly pine forest previously stood. Some of

these stands and openings are larger than 80 acres.

Medium to large patches of old growth, especially mixed mesophytic forests, dry-mesic oak forests, and dry-mesic oak-pine and pine-oak forests occur along the Chattooga river, and at higher elevations in the Ellicott Wilderness and associated Extension area. Small or medium-sized patches of old growth are scattered throughout the uplands, and along riparian corridors.

Habitat for sensitive species such a brook floater *(Alasmidonta varicosa*), a freshwater mussel and Oconee stream crayfish *(Cambarus chaugaensis)*, is protected, maintained, and monitored to help prevent listing. Brook trout are restored to suitable streams within their range.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this management area.

Management prescription allocations for the Sumter National Forest are shown in Table 4-2. Table 4-3 shows the management prescription allocations for the Chattahoochee-Oconee National Forests in Georgia. Table 4-3 is provided for information only. For information about management preciptions on the Nantahala National Forest in North Carolina, please refer to the *Land and Resource Management Plan* for the Nantahala National Forest.

Table 4-2. Management Prescription Allocations Management Area 2, Andrew Pickens Ranger District, Sumter National Forest

Management Prescriptions	Description	Acres
1A	Designated Wilderness	2,855
1B	Recommended Wilderness	1,970
2A1	Designated Wild River	3,290
2A2	Designated Scenic River	224
2A3	Designated Recreational River	1,026
4D	Botanical/Zoological Areas	78
4F	Scenic Areas	15
7A	Scenic Byway	719
7D	Concentrated Recreation Zone	36
7E2	Dispersed Recreation Area	12,169
8A1	Mix of Successional Forest Habitats	284
8B2	Woodlands/Grassla-nds/Savannas	357
9F	Rare Communities*	0
11	Riparian Corridors**	------
12A	Remote Backcountry Recreation	1,321
Total		24,343
* An increase in rare communities is predicted as a result of more site-specific inventories.		
** Approximately 3,342 acres are embedded in adjoining prescriptions.		

Table 4-3. Management Prescription Allocations, Management Area 2, Chattahoochee and Oconee National Forests (Georgia).*

Management Prescriptions	Description	Acres
0	Custodial Management	459
1A	Designated Wilderness	2,023
1B	Recommended Wilderness	562
2A1	Designated Wild River	5,998
2A2	Designated Scenic River	468
2A3	Designated Recreational River	1,551
2B1	Eligible Wild River	137
2B2	Eligible Scenic River	180
4I	Natural Area	6,280
4I	Natural Area	6,193
5A	Administrative Sites	3
6B	Old Growth	10
8A1	Mix of Successional Forest Habitats	13,611
8E3	High Elevation Early Successional Habitat	6
9A3	Watershed Restoration	16,299
9H	Restoration of Plant Associations	24,466
11	Riparian Corridors**	------
12A	Remote Backcountry Recreation	1,788
Total		76,901

*For more information refer to the *Revised Land and Resource Management Plan* for the Chattahoochee-Oconee National Forests.

** Embedded in adjoining prescriptions

Management Area 3—Blue Ridge Mountains and Foothills, Andrew Pickens District—outside the Chattooga Watershed

Existing Conditions

The 59,975-acre management area is located in the mountains and upper piedmont of South Carolina within Oconee County.

The dominant forest types in upland areas are Virginia and shortleaf pine (*Pinus virginiana and P. echinata*) and chestnut and scarlet oak species, *(Quercus prinus and Q. coccinea*) while eastern hemlock (*Tsuga canadensis*), yellow poplar (*Liriodendron tulipfera*) and white pine (*P. strobus*) often dominate moist areas as coves and streamsides with dense understories of rhododendron (*Rhododendron sp.*) and mountain laurel (*Kalmia latifolia*) (Van Lear et al., 1995).

Rainfall is well distributed throughout the year averaging somewhat less than found within the Chattooga Watershed. About ½ of the rainfall is returned to streamflow as water yield.

The primary rock types include graywacke, mica schist, amphibolite, aluminous schist, granite, mica gneiss, gneiss, and granite gneiss. The rocks are highly weathered. The primary soil types are Evard and Brevard Series with Toccoa Series in the floodplains. Most of the perennial and intermittent streams are entrenched to moderately entrenched, with low to high width to depth ratios.

A variety of wildlife can be found in the watershed including black bear (*Ursus americanus*), white tail deer (*Odocoileus virginianus*), red squirrel, black-throated green warbler, star-nosed mole, Eastern small-footed bat (*Myotis leibii*), and ruffed grouse (*Bonasa umbellus*). Fish species include rainbow, brown and brook trout, as well as a diverse cool water community, which includes dartes, shiners, madtoms and chubs.

Watersheds

This management area includes portions of six watersheds including Chauga River, Coneross Creek, Upper Lake Keowee Composite, Little River Composite, Tugaloo River Composite, and the Whitewater River Composite. The Chauga River has about 50 percent of its land base in National Forest System land with each of the other watersheds composed of 14 percent or less.

The Chauga is the most noted of the watersheds within this management area. Just below the forest boundary, the community of Westminster, SC, uses the river as its municipal water supply, with the Ramsey Creek tributary as its backup water source. Most of the watershed is presently in good condition and many of the streams listed as Outstanding Resource Waters by South Carolina. There are some concerns about the existing and potential impacts to aquatic life from nonpoint pollutant sources such as roads, timber harvest, rural development, poultry producers and agriculture uses including pastureland. A rare crayfish, *Cambarus chaugaensis*, is found within the Chauga watershed. A variety of rare plants are found, especially within the calcareous soil area associated with the Brevard fault zone.

In the sediment analysis conducted, Coneross Creek was identified as having below average conditions. The state has listed Coneross as impaired for elevated fecal coliform, which can impact recreational uses, and increasing nitrogen and declining dissolved oxygen are added trends. Other streams mentioned by the state include Battle and Brasstown Creeks that have suspended solids and sediment concerns.

Some of the watersheds north of Coneross Creek contribute to Lake Keowee, which is the municipal water source for Greenville and Seneca, SC and the Oconee Nuclear station. Due to the distance from the forest, amount of private lands involved and size of Lake Keowee, there are few concerns relative to National Forest management for these public sources of water.

Table 4-4 shows the management prescription allocations.

Table 4-4. Management Prescription Allocations, Management Area 3

Management Prescriptions	Descriptions	Acres
1B	Recommended Wilderness	12
2A3	Designated Recreational River	4
4D	Botanical/Zoological Areas	1,797
4F	Scenic Areas	8,720
5C	Designated Utility Corridors	144
6C	Old Growth	1,023
7A	Scenic Byway	2,325
7D	Concentrated Recreation Zones	69
7E2	Dispersed Recreation Areas	341
8A1	Mix of Successional Forest Habitats	41,261
8B2	Woodlands/Grassland Savanna Habitats	4
9F	Rare Communities*	545
11	Riparian Corridors**	-------
12A	Remote Backcountry Recreation	3,608
Total		59,854

*An increase in rare communities is predicted as a result of more site-specific inventories.

** Approximately 9,630 acres are embedded in adjoining prescriptions.

Desired Conditions

Elevated levels of suspended sediment, fecal coliform and other water quality factors beyond existing water quality standards are infrequent. No streams are listed as being water quality impaired or on the watch list due to excessive pollutants, decline in aquatic biological community or habitat impairment. Biological community ratings are excellent to good, with

strong viable populations of native aquatic species. Instream flow needs are met to maintain aquatic species, channel conditions, administrative needs, recreation, scenic, research and other needs on the forest. Sand and smaller particles seldom dominate channel substrates, and ample amount of large woody debris is within streams and being retained for future stream and habitat needs. Waters within the forest boundaries are of suitable quality and quantity to meet beneficial water uses including municipal, indigenous aquatic habitat, channel, recreational, administrative, research, fire, scenic, wildlife and other resource needs.

There are a variety of high-quality well maintained developed and dispersed recreation opportunities including camping, backpacking, day hiking, horseback riding, mountain biking, shooting ranges, fishing (warm, cool and cold waters), hunting, dispersed camping, photography and nature study. Visitors frequently see other people in some parts of the management area in other parts the area people are rarely seen. The recreational opportunities range from the more remote in Bee Cove Roadless Area to more developed in roaded natural and rural settings and therefore outdoor skills are of moderate importance in some parts and very important in others.

The loblolly pine is reduced to a minor component within this area. Early successional native forest and openings are present where loblolly pine forest previously stood. Some of these stands and openings are larger than 80 acres.

Medium to large patches of old growth, especially mixed mesophytic forests, dry-mesic oak forests, and dry-mesic oak-pine and pine-oak forests occur throughout the management area, especially along the Chauga River, the White Rock Scenic Area, various botanical/zoological areas, and along riparian corridors. Small or medium-sized patches of old growth are scattered throughout the uplands.

Habitat for sensitive species such as Oconee stream crayfish (*Cambarus chaugaensis*), is protected, maintained, and monitored. Historic native trout are maintained and/or restored where suitable.

Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this management area.

Management Area 4—Piedmont, Enoree and Long Cane Districts, outside of the Turkey Creek and Upper Stevens Creek Watersheds

Existing Conditions

The 236,113-acre management area is located in the piedmont of South Carolina within Abbeville, Edgefield, Greenwood, McCormick and Saluda counties for the Long Cane Ranger District and within Chester, Fairfield, Laurens, Newberry, and Union counties for the Enoree Ranger District.

The piedmont is underlain by several complex sequences of crystalline, mixed acid, micaceous rocks and Carolina slates. Soils surfaces are generally thin with sandy clay loam surfaces. Carolina slate surfaces consist of silt loams and subsurfaces consist of silty clay loams. Annual precipitation averages about 45 inches of which 17 inches are water yield. Past agricultural uses have left portions of the area with little or no topsoil and active and inactive gullies.

Vegetation is primarily loblolly pine with some shortleaf and Virginia pine. Secondary vegetation includes red oak, white oak, hickory, sweetgum, yellow polar, water oak, willow oak, river birch, sycamore, cottonwood, elm, ash, and red maple. Some areas contain invasive non-native species such as kudzu, privet, autumn olive, mimosa, sericea lespedeza, and tree of heaven that may be addressed for containment or eradication activities.

Watersheds

Watersheds on the Long Cane Ranger District with substantial portions of national forest include Little River, Long Cane Creek and Lower Savannah River composite areas. Some streams segments are listed as impaired from excessive levels of fecal coliform, turbidity or suspended solids. Abnormal levels or declining conditions for nutrients and ammonium toxicity are local problems. Most of the problems are associated with non-forest land uses. Small portions of the Long Cane district have been severely eroded and lost over a foot of topsoil from past agricultural activities. Many other areas of past agricultural uses were only moderately eroded due to more gentle slopes. Therefore, most of these areas still contain a thin soil A horizon with well developed B horizon that is somewhat resistant to erosion. Extensive efforts to recover soil and water conditions on severely eroded or barren lands have been ongoing since the lands were acquired.

Municipal water uses in the vicinity include McCormick, SC from Lake Thurmond and North Augusta, SC and Edgefield County from the Savannah River. Due to the size of the Savannah River, the amount of private land involved and distance from both the Long Cane and Andrew Pickens Ranger Districts, forest management activities have little or no influence on these public water sources.

Watersheds on the Enoree Ranger District with substantial portions of national forest include Duncan Creek, Indian Creek, Lower Enoree River Composite, and the Upper Broad River Composite. Duncan Creek is a backup water source for the community of Whitmire, South Carolina. Most of the watersheds within this area contain streams which are listed as impaired from excessive levels of fecal coliform, high turbidity and/or suspended solids. Specific river or stream segments have abnormal levels or declining conditions for zinc, pesticides, pH, dissolved oxygen and/or phosphorus. In some instances, mercury accumulation in certain fish species is also a concern. The water quality problems are primarily linked to past and present activities outside of National Forest control and residual air pollutants.

Much of the Enoree district has been severely eroded and lost more than a foot of topsoil from past agricultural activities. Many areas have eroded into the B horizon, which has higher clay content and somewhat restricts erosion. The most severe erosion occur as gullies, where the B horizon has been breached and the extremely erosive C horizon is exposed, causing rapid gully development and expansion. This area is generally more eroded from past activities than the Long Cane Ranger District. Extensive efforts to recover soil and water conditions have been ongoing since the lands were acquired. Table 4-5 shows the management prescription allocations for this management area.

Municipal uses of water associated with the streams within or adjacent to the Enoree Ranger District include the Enoree River with Duncan Creek as a backup source of water for Whitmire, SC; and the Broad River supplies municipal needs for Union, SC, Lockhart Mills and Carlisle Cone Mills, with the source for Columbia, SC a substantial distance downstream. Due to the size of the Broad River sub-basin and flow, forest management activities have little or no influence on these public water sources.

Desired Conditions

Elevated levels of suspended sediment, fecal coliform and other water quality factors beyond existing water quality standards are infrequent. No streams are listed as being water quality impaired or on the watch list due to excessive pollutants, decline in aquatic biological community or habitat impairment. Biological community ratings are excellent to good, with strong viable populations of native aquatic species. In-stream flow needs are met to maintain aquatic species, channel conditions, administrative needs, recreation, scenic, research and other needs on the forest. Sand and smaller particles seldom dominate channel substrates,

and ample amount of large woody debris is within streams and being retained for future stream and habitat needs. Waters within the forest boundaries are of suitable quality and quantity to meet beneficial water uses including municipal, indigenous aquatic habitat, channel, recreational, administrative, research, fire, scenic, wildlife and other resource needs.

There are a variety of high-quality well maintained developed and dispersed recreation opportunities including camping, shooting ranges, day hiking, OHV riding, mountain biking, canoeing and kayaking, fishing, hunting, dispersed camping and nature study. Visitors frequently see other people in parts of the management area. Outdoor skills are of moderate importance. The recreational opportunities are in roaded natural and rural settings.

Old growth communities, especially mixed mesophytic forests, dry-mesic oak forests, and dry-mesic oak-pine and pine-oak forests, dominate the riparian corridors within this management area, and occur more extensively along the Broad, Tyger, and Enoree Rivers. Small to medium-sized patches of dry-xeric pine and oak old growth woodlands and savannas, and dry-mesic oak old growth forests, are scattered throughout the uplands. In the short-term, the results of loblolly pine removal may be observed as old growth communities more native to the area are restored.

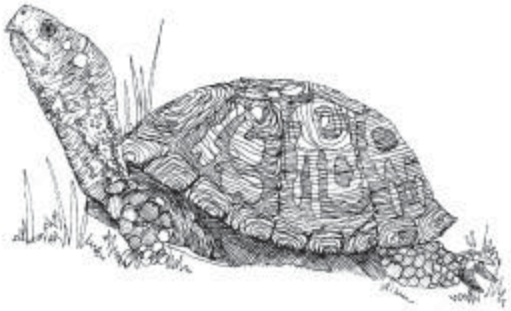
Aquatic and riparian protection measures found in Riparian Prescription 11 apply to this management area.

Table 4-5. Management Prescription Allocations, Management Area 4

Management Prescriptions	Descriptions	Acres
4D	Botanical/Zoological Areas	1,109
4F	Scenic Areas	1,286
4G1	Calhoun Experimental Forest	4,862
5C	Designated Utility Corridors	2,392
6C	Old Growth	617
7D	Concentrated Recreation Zone	468
7E1	Dispersed Recreation Area	12,575
7E2	Dispersed Recreation Area	49,428
8B2	Woodlands/Grasslands/ Savannas	7,958
9A3	Watershed Restoration	11,360
9F	Rare Communities*	364
9G2	Restoration of Upland Oak-Hickory and Mixed Pine-Oak-Hickory Forests	29,543
10B	High Quality Forest Products	92,509
11	Riparian Corridors**	-------
Total		113,125

*An increase in rare communities is predicted as a result of more site-specific inventories.

** Approximately 44,964 acres are embedded in adjoining prescriptions.



Chapter 5
Implementation

Interpretation of Desired Condition Percentages of Successional Habitat

The desired conditions by management prescription are described in part, in terms of the percentage of forested land desired in early and late-successional forest. To be meaningful, percentage recommendations must also come with a geographic scale at which the percentage should be calculated. Some previous discussion has focused on setting successional stage objectives at the forest-level. In South Carolina, this scale is not particularly meaningful from a wildlife perspective, because most species will select habitat at a smaller scale—that of the immediate stand and/or the surrounding landscape. The scale of the relevant surrounding landscape will vary with species, but will rarely if ever reach the scale of the entire Sumter National Forest, particularly because of the geographically separated units of the Sumter.

Given the incomplete ownership patterns within each ranger district on the Sumter, the appropriate scale for successional stage objectives is landscape-level blocks of the same prescription in relative proximity to each other. Prescription allocations are the management unit closest to this scale. Forest Plan compliance during project planning should be done on the basis of geographically contiguous prescription allocation blocks. Relatively small prescription allocation blocks may be lumped with nearby prescriptions having the same successional stage objectives. Grouping of blocks for analysis purposes should be responsive to project level issues and at an appropriate scale for project level analysis.

With this process, forest-wide or management area objectives for each successional stage can be determined by summing allocations of prescriptions. Judgments can be made as to whether allocations adequately provide amounts and distributions of these habitats across the forest. Related discussions will be productive, because they can be made within the context of Interdisciplinary Team decisions specific to conditions and considerations of particular pieces of the landscape.

Percentages of various forest successional stages shown in the desired conditions of each management prescription include intermingled riparian areas. Acres of non-forest, such as roads, water, and permanent openings, acres to be maintained or restored to woodlands, savannas, and grasslands, which will be managed for an open condition permanently, should be deducted before performing calculations. Patches smaller than 2 acres of either type would not be counted, but would be included with the surrounding type. Conditions of surrounding private lands would not be included in calculations, but should be considered when developing alternatives during project-level planning. For example, high amounts of quality early-successional forest on surrounding private land might result in decisions to provide such habitats on national forest land at the low end of the objective range.

Early successional forest for all forest types is defined as regenerating forest predominantly 0-10 years old. Early-successional forest patches created by natural disturbances would be included in calculations, but we would not attempt to predict amounts of early-successional forest likely to be created by natural events in the future. Even-aged and two-aged regeneration cutting, prescribed burning, or other types of vegetation management treatments, may create

early-successional forest. The desired habitat result we want to achieve is relatively dense regeneration of woody species across patches larger than 2 acres, and the larger the patch the better for many dependent species.

For a complete discussion of the ages within early, mid- and late-successional forests by forest community, refer to the process record entitled "Forest Community Types and Forest Successional Classes for National Forests in the Southern Appalachian Plan Revisions."

Ages of mid- and late-successional forests are defined in the Glossary, Appendix B. To meet objectives for mid- and late-successional forest habitats, managers would ensure that planned forest regeneration would not result in percentages falling below objectives. Management treatments to thin or create small canopy gaps are compatible with maintaining mid- and late-successional forest conditions.

Areas managed under uneven-aged regeneration methods would not be counted as either early- or late-successional, but as a separate successional stage category. Acreage of these areas would be included as part of the forested acreage base for the purpose of successional stage calculations. Based on discussions with forest interdisciplinary teams, we do not expect this acreage to be extensive enough to conflict with meeting successional stage objectives.

Monitoring and Evaluation

Monitoring and evaluation provide information to determine if programs and projects are meeting Forest Plan direction, and if the cost anticipated to implement the Forest Plan coincides with actual costs. Monitoring and evaluation is required by NFMA implementing regulations (36 CFR 219.12(k)) to determine if requirements of the regulations and Forest Plan are being met.

This chapter establishes monitoring questions that are to be answered over the course of Forest Plan implementation. Monitoring questions address if the desired conditions, goals and objectives of the Forest Plan are being met and if Forest Plan standards are effective. Monitoring questions are part of the Forest Plan and are stated in terms that will direct what will be monitored, but are not so specific as to address how monitoring will be accomplished.

Monitoring questions will be further refined during Forest Plan implementation into monitoring elements and task sheets, which are detailed, specific and measurable. Monitoring elements and task sheets may be modified and prioritized to guide monitoring activities over the course of Forest Plan implementation. The monitoring summary table and sample task sheet (Appendix E) demonstrate the relationships between Forest Plan goals, objectives, standards and monitoring questions, and indicate the nature of monitoring elements and monitoring details that are to be further developed during Forest Plan implementation. The monitoring summary table and sample task sheet are presented here only for information and may be modified as needed to address changes in needs, priorities, availability of personnel, and funding.

The concept of adaptive management is foundational for planning and Forest Plan implementation in a dynamic environment. Regulations require that Forest Plans be revised periodically (36 CFR 219.10(g)). However, forest plans may need to be more dynamic to account for changed resource conditions (such as large storms or insect outbreaks), new information or findings of science, or new regulations or policies. An effective monitoring and evaluation program is essential for determining when these needs may exist and leading to quick resolution of a need for change.

The monitoring questions were developed to address three types of monitoring:

- Implementation monitoring–Is the Forest Plan being carried out?
- Effectiveness monitoring–Are desired conditions resulting?

- Validation monitoring–Has the information used in developing the Forest Plan changed?

Monitoring and evaluation provide information that can be used to keep Forest Plans current. Key results and findings will be used to determine if changes are needed in goals, objectives, standards, monitoring questions, or research needs.

Monitoring and evaluation are distinct activities. The monitoring phase usually includes collecting data and information, either by observation, direct measurement, or compiling data from appropriate sources. Evaluation is the analysis of this data and information, and is used to assess if the Forest Plan is being implemented correctly and if it needs to be changed. Forest Plan monitoring and evaluations will be reported annually in the "Sumter National Forest Monitoring and Evaluation Report."

Monitoring and evaluation may lead to adjustments of programs, projects or activities, changes or amendment to the Forest Plan, or to recommend changes in laws, regulations, and policies that affect both the Forest Plan and project implementation (FSM 1922.7).

Forest Plan amendments and revisions should be responsive to changes that affect the Forest Plan, and may be needed at any time if a Forest Plan becomes outdated in some way. Within an adaptive management framework, the need to amend or revise the Forest Plan may result from:

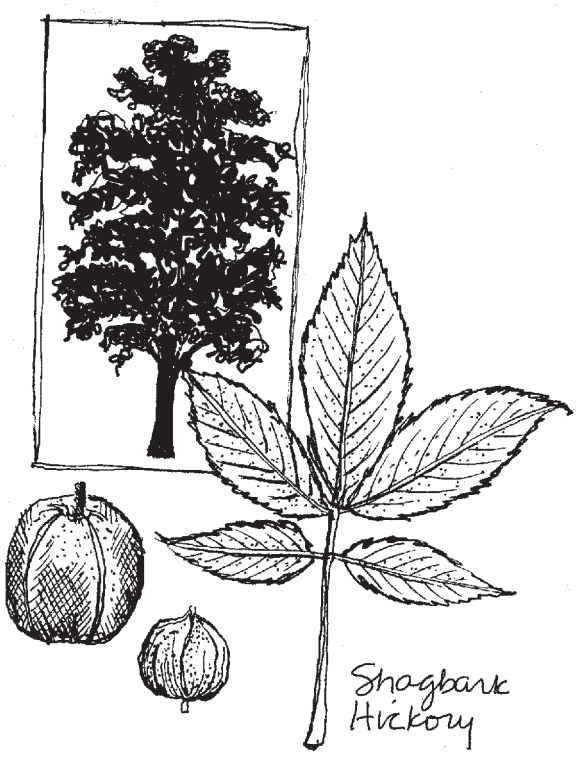
- Recommendations of an interdisciplinary team, based on evaluation and monitoring results
- Changes in agency policy and regulations
- Planning errors found during Forest Plan implementation
- Changes in physical, biological, social, or economic conditions

The evaluation of findings under the following monitoring questions will lead forest managers to these determinations.

Monitoring Questions

1. Are rare ecological communities being protected, maintained, and restored?

A Forest Plan goal, related objectives and standards are designed to maintain and restore rare communities. To monitor accomplishment of these provisions and the effects that overall Forest Plan implementation will have on rare communities, trends in number of occurrences, locations, and conditions, and effects of maintenance and restoration activities will be tracked.



2. Are landscape and stand-level composition, structure, and function of major forest communities within desirable ranges of variability?

Success in maintaining and restoring composition, structure, and function of forest ecosystems within desired ranges of variability is reflected by both changes in forest condition and by levels of management and other effects that are shaping these communities. Monitoring will include tracking the abundance of major forest cover/community types and levels of management activities conducted to maintain and restore desired conditions. Trends in population indices or surveys, and trends in abundance of habitat for species selected as Management Indicator Species will be monitored to help indicate effects of national forest management within selected communities. In addition, presence or absence of a combination of representative species of fire associated plant communities will be used to evaluate effectiveness of management in maintaining desired conditions in *woodland/ grassland/savanna* habitats.

Management Indicator Species	Reasons for Selection/ Associated Forest Community	Related Objectives
Hooded Warbler *(Wilsonia citrina)*	Presence, and trends in frequency of occurrence of hooded warblers in mesic deciduous forests will be used to help indicate the effectiveness of management for providing dense understory and midstory structure within these forest communities.	8.03 8.05
Scarlet Tanager *(Piranga olivacea)*	Presence, and trends in frequency of occurrence of this species will be used to help indicate the effectiveness of management for maintaining oak forests (See also Monitoring Question 7.)	8.03 8.04
Pine Warbler (*Dendroica pinus)*	Presence, and trends in frequency of occurrence of these species in pine/pine-oak forests will be used to help indicate effectiveness of management in restoring and maintaining pine dominated types.	8.04 17.01
Acadian Flycatcher *(Epidonax virescens)*	Presence, and trends in frequency of occurrence of these species in riparian forests will be used to help indicate effectiveness of management in maintaining these conditions.	4.01
Brown-headed nuthatch (*Sitta pusilla)*	Presence, and trends in frequency of occurrence of these species in mid and late successional pine and pine/oak forest will be used to help indicate effectiveness of management in maintaining these communities.	8.04 17.01

3. Are key successional stage habitats being provided?

Forest goals, objectives, and standards have been established for maintaining a balance between the early, mid-, and late-successional habitat conditions. Some wildlife species depend on early- successional forests, while others depend on late-successional forests. Trends in successional conditions and abundance of key successional habitats, such as old growth and permanent wildlife openings, will be monitored. Population trends of Management Indicator Species selected to help indicate effects of management on successional habitats will be monitored.

Management Indicator Species	Reasons for Selection/Associated Forest Community	Related Objectives
Prairie warbler *(Dendroica discolor)*	Presence, and trends in frequency of occurrence of this species in early-successional forests will be used to help indicate the effectiveness of management in achieving desired conditions within these habitats.	8.01 8.06
Swainson's warbler *(Limnothlypis swainsonii)*	Presence and trends in frequency of occurrence of this species in canebrakes and other early-successional riparian habitats will be used to help indicate the effectiveness of management in achieving desired conditions.	4.01
Field sparrow *(Spizella pusilla)*	Presence and trends in frequency of occurrence of this species in woodland/grassland/ savanna habitats will be used to help indicate the effectiveness of management in achieving desired conditions.	8.02 8.03
American woodcock (*Scolopax minor*)	Presence and trends in frequency of occurrence of this species in early successional riparian habitats will be used to help indicte the effectiveness of management in achieving desired conditions	4.01

4. How well are key terrestrial habitat attributes being provided?

Special habitat attributes such as hard and soft mast, den trees, snags, and downed wood are necessary elements for certain species. A variety of Forest Plan goals, objectives, and standards protect, restore, and maintain these elements. Trends in the abundance and condition of key terrestrial habitat attributes and associated Management Indicator Species will be monitored.

Management Indicator Species	Reasons for Selection/Associated Habitat Attribute	Related Objectives
Pileated woodpecker *(Dryocopus pileatus)*	Presence, and trends in frequency of occurrence of this species across the forest will be used to help indicate the effectiveness of management in maintaining desired condition relative to abundance of snags.	See standard FW-18

5. What is the status and trend in aquatic habitat conditions in relationship to aquatic communities?

The Forest Plan protects and restores riparian ecosystems, wetlands, and aquatic systems and assures that aquatic habitat conditions are suitable to maintain native aquatic communities. Water and habitat quantity and quality, in-stream large woody debris, and aquatic species passage will be monitored. Population trends for aquatic management indicators in relation to the habitat conditions they are selected to represent will be monitored. These indicators are the presence and abundance of fish and aquatic macroinvertebrates in cool water, cold water, and warm water aquatic communities.

6. What are status and trends of forest health threats on the Sumter?

Measures designed to control or mitigate negative effects of insects, disease, non-native invasive species, air pollution, and high fuel levels are important aspects of this Forest Plan. Trends in occurrence and effects of air pollutants, wildland fire, insects and diseases, and non-native invasive species will be monitored.

7. What are the status and trends of federally listed species and populations or habitats for species with viability concerns on the Sumter?

Contribution to conservation and recovery of federally listed threatened and endangered species, and federal candidates for listing, is an important goal of this Forest Plan. Trends in occurrence or abundance of these species will be monitored along with levels of management activities implemented for the purpose of achieving recovery.

Maintaining habitat capable of supporting viable populations of native and desired non-native species is also an important goal of the Forest Plan. Many objectives and standards are designed to meet this goal. Monitoring will focus on trends for populations and/or habitats of species of viability concern. Where feasible, species monitoring will often be accomplished by monitoring communities of species (i.e., fish, bats, birds).

8. What are the trends for demand species and their use?

The Sumter National Forest provides large public ownership with opportunities for hunting, fishing, wildlife viewing, and collection of special forest products. Monitoring of some game species populations and/or harvest levels will be done in coordination with the South Carolina Department of Natural Resources (DNR). Some of these species are selected as Management Indicator Species where effects of national forest management are important to meeting public demand, and monitoring assistance from the SCDNR is available. Some species that are collected as special forest products will be monitored through management of the permitting process. In addition, trends in harvest levels, other population indices, license sales, and Wildlife Management Area (WMA) permit sales will be used to indicate effectiveness of management of habitat, as well as meeting public demand for deer, turkey, and bear hunting.

9. Are high quality, nature-based recreational experiences being provided and what are the trends?

The Sumter National Forest offers a unique combination of nature based dispersed recreation, including undeveloped settings, built environments reinforcing natural character, and wildland settings that complement enjoyment of special places. This Forest Plan aims to provide for safe, natural, well-designed, accessible, and well-maintained recreational opportunities for all visitors. Monitoring visitor experiences and the condition of facilities will help gage the effectiveness in meeting this commitment.

10. What are the status and trends of recreational use impacts on the environment?

This Forest Plan is committed to providing recreational opportunities that are compatible with stewardship of forest resources. Impacts of motorized uses, site occupancy, and large volumes of users on riparian, stream and aquatic resources, vegetation, and soils will be monitored.

Management Indicator Species	Reason for Selection	Related Objectives
Bobwhite quail *(Colinus virginianus)*	Trends in population indices will be used to help indicate effectiveness of management in meeting public demand for this species.	8.08 8.09
Eastern wild turkey *(Meleagris gallopavo)*	Trends in population indices and harvest levels will be used to help evaluate result of management activities on this high demand species.	8.02, 8.03, 8.04, 8.06, 8.07, 8.08, 8.09
Black bear *(Ursus americanus)*	Trends in population indices and harvest levels will be used to help evaluate result of management activities on this high profile species.	8.02 8.05 8.06

11. What are the status and trend of wilderness character?

Wilderness character is comprised of both human and biophysical elements. Monitoring the human elements requires monitoring trends in the human experiences, i.e., solitude, crowding, etc., as well as trends in the use patterns and visitor impacts. User monitoring and surveys will allow for tracking trends among visitors to wilderness, while trailhead use and identification of sites with impacts will allow us to track movement and activities within wilderness and relationships to biophysical effects. Monitoring biophysical elements is important for tracking changes to the natural systems because of natural and human influences within and outside the wilderness. Although there are many components to the biophysical element, air quality is viewed as a basic indicator of wilderness health. Additionally, changes that are occurring in wilderness due to the fire regime, especially in fire dependent communities, will be monitored.

12. What are the status and trend of Wild and Scenic River conditions?

A free-flowing condition and the presence of Outstandingly Remarkable Values are the two main elements in determining the eligibility and suitability of a river to be included in the National Wild and Scenic Rivers System. Rivers determined to be eligible, or eligible and suitable that have not yet been designated by Congress must have those elements protected until a further designation is assigned. Monitoring changes to these elements will help us evaluate our management of these rivers on the Sumter.

13. Are the scenery and recreational settings changing and why?

Scenery and recreational settings are managed by establishing Scenic Integrity Objectives (SIO) and Recreation Opportunity Spectrum (ROS) class management direction. Management of scenery and settings is essential in managing recreational experiences and the quality of the environment. Changes in scenic quality of the forest and the recreational settings will be monitored.

14. Are heritage sites being protected?

Heritage resources listed or eligible for listing on the *National Register of Historic Places* along with other designated properties (including World Heritage Sites, National Historic Landmarks, and National Historic Trails) are preserved and protected from both natural forces and vandalism. Heritage resources at risk are monitored on a regular schedule in accordance with general preservation plans, site-specific plans, and other treatments specified by agreements. Heritage Preservation Plans (HPP) are developed and implemented, either on an individual basis or by heritage resource site type, for at risk properties. HPP are designed to protect those qualities and values that contribute to the property's significance.

Prehistoric and historic artifacts, investigation field records, and historic archival data, including photographs, maps, and information sources, are maintained to national curatorial and/or archival standards (36 CFR 79 Curation of Federally Owned Collections).

Archaeological Resource Protection Act (ARPA) investigations are completed in a timely manner at properties that have been damaged by illegal activities. Damage assessments are developed in accordance with ARPA and agency guidelines.

15. Are watersheds maintained (and where necessary restored) to provide resilient and stable conditions to support the quality and quantity of water necessary to protect ecological functions and support intended beneficial uses?

This Forest Plan provides for management of watersheds to provide resilient and stable

conditions to protect soil productivity and support the quality and quantity of water necessary to protect ecological functions and support intended beneficial water uses. Numerous best management practices are established as standards or where appropriate part of the implementation guidelines for practices to carry out during implementation of the Forest Plan. Watershed condition, improvement needs, water quality, soil productivity and implementation of best management practices and forest standards will be monitored. Procedures for estimating effects will be periodically checked or validated to be sure they are meeting their intent.

16. What are the conditions and trends of riparian area, wetland and floodplain functions and values?

Riparian ecosystems restoration and management is important to maintain aquatic resources and values. Desired conditions, including the composition and structure of vegetation, equipment limitations, maintaining ground cover and stable stream-banks are established in the Forest Plan. Floodplains and wetlands are to be protected when possible and activities minimized or mitigated when they impact these areas. Consistency with direction including Executive Orders 11988 concerning floodplains and 11990 concerning wetlands need to be evaluated. Riparian management practices and standards, ground cover, stream bank stability, wetland and floodplain status will be monitored.

17. How do actual outputs and services compare with projected? [36 CFR 219.12(k)1]

The 1982 NFMA implementing regulations require that outputs and services be monitored and compared to those projected in the Forest Plan. Trends in forest product, mineral leasing and surface rights, access and road conditions, and Forest Plan implementation costs will be tracked and compared to projections made at the time the Forest Plan was developed.

18. Are silvicultural requirements of the Forest Plan being met?

The 1982 NFMA implementing regulations also require monitoring of specific silvicultural requirements. Silvicultural practices, harvest methods, harvest unit size, regeneration establishment, and land suitability for timber productions will be monitored and evaluated to determine if and when changes may be needed.

19. Are Forest Plan objectives and standards being applied and accomplishing their intended purpose?

Periodic review of objectives and standards established in the Forest Plan is required to assure desired condition are being achieved and that these requirements will stay current given Forest Plan modifications, changed conditions and new information that accumulate over time. Implementation and effectiveness of best management practices and other standards will be tracked and periodically evaluated.

Research Needs

A key element of adaptive management is monitoring. Another is research. Ongoing monitoring will identify needs for further research as the plan is implemented. At its inception; however, the plan can identify areas of concern that can be the subject of “research needs.”

Riparian

There is a need for more information on the appropriate corridor for a physiographic area or zone given the goals and objectives of managing riparian areas. We need to know more about how we can best determine the effectiveness of

riparian corridors to meet riparian area functions and values. Research is extant relative to hydrology, vegetation, sediment, nutrient loading, and water temperature, but some functions and values in the riparian area are not as well studied. Recreation impacts on water quality and riparian areas, specifically OHVs and equestrian use, are topics for which more information is needed.

Conduct inventory and compile an assessment of proper functioning condition of streams in the piedmont.

Conduct an inventory and compile an assessment of riparian conditions for water quality protection, restoration of hydrologic function, vegetative composition, and wildlife habitat.

Vegetation

Determine appropriate methods for restoring and maintaining understories in fire-associated communities (i.e., shortleaf pine-oak and table mountain pine woodlands and savannas) on the Sumter National Forest.

Determine appropriate methods for managing sustainable populations of the small whorled pogonia on the Sumter National Forest.

Determine appropriate methods for restoring oak, longleaf pine, shortleaf pine and associated species on sites dominated by loblolly pine on the Sumter National Forest.

Identify and classify physical (soil, water, air, geology, etc.) characteristics on the Sumter National Forest where habitats are suitable for recruitment and/or management of rare, threatened or endangered flora.

Wildlife

Determine feasible and efficient methods for monitoring trends of amphibian populations on the Sumter National Forest.

Determine feasible and efficient methods for monitoring trends of bat populations on the Sumter National Forest.

Determine feasible and efficient methods for monitoring trends of winter resident land bird populations on the Sumter National Forest.

Determine feasible and efficient methods for monitoring trends and relationships between distribution and abundance of crayfish populations.

Determine feasible and efficient methods for monitoring tends and relationships between distribution and abundance of mollusk populations.

Prescribed Fire

Determine the effects of growing season and frequent burning on soil productivity, water quality, mast-producing species, invertebrate diversity and abundance, and other effects on wildlife.

Cultural Resources

Complete a cultural resources overview and determine the numbers and types of sites needed to model prehistoric and historic land use on the forest.

Archaeological site on the Enoree Ranger District.

Appendixes

Appendix A
Relevant Statutes, Regulations, Policies, and Agreements

This Appendix contains a listing of relevant statutes, regulations, policies and agreements applicable to the Forest Service. This section has been updated from the Proposed Revised Forest Plan to include brief summaries of the statutes, regulations and Executive Orders. Web site locations where the text of the documents can be obtained are also provided where available.

Forest Service Directives

http://www.fs.fed.us/im/directives/

The following is a partial listing of national and regional Forest Service policies relevant to this Land and Resource Management Plan. A complete listing can be found in Forest Service Manuals and Forest Service Handbooks. Together, these are known as the Forest Service Directives System.

The Directives System is the primary basis for the management and control of all internal programs and serves as the primary source of administrative direction for Forest Service employees. The system sets forth legal authorities, management objectives, policies, responsibilities, delegations, standards, procedures, and other instructions.

The Forest Service Manual (FSM) contains legal authorities, goals, objectives, policies, responsibilities, instructions, and the necessary guidance to plan and execute assigned programs and activities.

Forest Service Handbooks (FSH) are directives that provide instructions and guidance on how to proceed with a specialized phase of a program or activity. Handbooks either are based on a part of the Manual or they incorporate external directives.

Here is a listing of the Forest Service Manual system and referenced Handbooks:

Forest Service Manuals

1010 Laws, Regulations, and Orders
http://www.fs.fed.us/im/directives/dughtml/fsm_1000.html

1020 Forest Service Mission
http://www.fs.fed.us/im/directives/dughtml/fsm_1000.html

1500 External Relations
http://www.fs.fed.us/im/directives/dughtml/fsm_1000.html

1600 Information Resources
http://www.fs.fed.us/im/directives/dughtml/fsm_1000.html

1900 Planning
http://www.fs.fed.us/im/directives/dughtml/fsm_1000.html

2060 Eco-system Classification, Interpretation, and Application
http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html

2070 Biological Diversity (Reserved)
http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html

2200 Range Management
http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html

2300 Recreation, Wilderness, and Related Resource Management
http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html

2400 Timber Management
http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html

2500 Watershed and Air Management
http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html

2600 Wildlife, Fish, and Sensitive Plant Habitat Management
http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html

2700 Special Uses Management
http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html

2800 Minerals and Geology
http://www.fs.fed.us/im/directives/dughtml/fsm_2000.html

3400 Forest Pest Management
http://www.fs.fed.us/im/directives/dughtml/fsm_3000.html

5100 Fire Management
http://www.fs.fed.us/im/directives/dughtml/fsm_5000.html

5400 Land Ownership
http://www.fs.fed.us/im/directives/dughtml/fsm_5000.html

7400 Public Health and Pollution Control Facilities
http://www.fs.fed.us/im/directives/dughtml/fsm_7000.html

7500 Water Storage and Transportation
http://www.fs.fed.us/im/directives/dughtml/fsm_7000.html

7700 Transportation System
http://www.fs.fed.us/im/directives/dughtml/fsm_7000.html

Forest Service Handbooks

2509.22 Soil and Water Conservation Handbook
http://www.fs.fed.us/cgi-bin/directives/get_dirs/fsh?2509.22!r10_all

Federal Statutes

American Indian Religious Freedom Act of August 11, 1978
http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=42&sec=1996

Protects and preserves for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects and the freedom to worship through ceremonial and traditional rites.

Americans with Disabilities Act of 1990
http://www.usdoj.gov/crt/ada/statute.html

Provides a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities; for clear, strong, consistent, enforceable standards addressing discrimination against individuals with disabilities; to ensure that the federal government plays a central role in enforcing the standards established in this Act on behalf of individuals with disabilities; and to invoke the sweep of congressional authority, including the power to enforce the fourteenth amendment and to regulate commerce, in order to address the major areas of discrimination faced by people with disabilities.

Anderson-Mansfield Reforestation and Revegetation Act of October 11, 1949
http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=581j

Provides for the reforestation and revegetation of National Forest lands and other lands under the administration or control of the Forest Service.

Antiquities Act of June 8, 1906

http://www.cr.nps.gov/local-law/anti1906.htm

Prevents the appropriation, excavation, injury, or destruction of any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the United States without the permission of the Secretary of the Interior having jurisdiction over the lands on which said antiquities are situated; and authorizes the President to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon lands owned or controlled by the United States to be national monuments, and to reserve as a part thereof parcels of land needed for the proper care and management of the objects to be protected.

Archaeological Resources Protection Act of October 31, 1979, as amended 1988

http://www2.cr.nps.gov/laws/archprotect.htm

Enacted to secure the protection of archaeological resources and sites on public and Indian lands and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community and private individuals having access to and information related to these resources.

Architectural Barriers Act of 1968

http://www4.law.cornell.edu/uscode/42/4151.html

Ensures that standards for the design, construction, and alteration of buildings owned, leased, or funded by the United States are prescribed to ensure, wherever possible, that physically handicapped people have ready access to and use of such buildings.

Bankhead-Jones Farm Tenant Act of July 22, 1937

http://laws.fws.gov/lawsdigest/bankjon.html

Directed the Secretary of Agriculture to develop a program of land conservation and utilization in order to correct maladjustments in land use and thus assist in such things as control of soil erosion, reforestation, preservation of natural resources, and protection of fish and wildlife.

Clarke-McNary Act of June 7, 1924

http://www.senate.gov/~agriculture/Legislation/Agricultural%20Law/Forests/cma.pdf

Authorizes and directs the Secretary of Agriculture, in cooperation with land grant colleges and universities or with other suitable state agencies, to aid farmers through advice, education, demonstrations, or other similar means in establishing, renewing, protecting, and managing wood lots, shelter belts, windbreakers, and other valuable forest growth, and in harvesting, utilizing, and marketing the products thereof. The Act also authorizes the Secretary to accept, on behalf of the United States, title to any land donated by private land owners to assure future timber supplies or for other national forest purposes.

Clean Air Act of August 7, 1977, as amended (1977 and 1990)

http://www4.law.cornell.edu/uscode/unframed/42/ch85.html

Enacted to protect and enhance the quality of the Nation's air resources; to initiate and accelerate a national research and development program to achieve the prevention and control of air pollution; to provide technical and financial assistance to state and local governments in connection with the development and execution of their air pollution prevention and control programs; and, to encourage and assist the development and operation of regional air pollution prevention and control programs.

Color of Title Act of December 22, 1928

http://www4.law.cornell.edu/uscode/43/ch25A.html

Granted the Secretary of the Interior the authority to issue patents up to 160 acres to

claimants that had held a tract of public land in good faith and in peaceful, adverse possession and had made valuable improvements on the land or reduced it to cultivation. The Act reserved the rights to coal and all other minerals contained therein to the United States.

Common Varieties of Mineral Materials Act of July 31, 1947

http://www4.law.cornell.edu/uscode/30/601.html

Authorizes the Secretaries of the Interior and Agriculture, under such rules and regulations as they may prescribe, to dispose of mineral materials (including but not limited to common varieties sand, stone, gravel, pumice, pumicite, cinders, and clay) and vegetative materials (including but not limited to yucca, manzanita, mesquite, cactus, and timber or other forest products) on public lands of the United States, if the disposal of such materials is not otherwise expressly authorized by law, is not expressly prohibited by laws of the United States, and would not be detrimental to the public interest.

Cooperative Forestry Assistance Act of July 1, 1978

http://www4.law.cornell.edu/uscode/16/2101.html

Authorizes the Secretary of Agriculture to assist in the establishment of a coordinated and cooperative federal, state, and local forest stewardship program for the management of non-federal forest lands and forest lands in foreign countries.

Disaster Relief Act of May 22, 1974

http://www4.law.cornell.edu/uscode/42/ch68.html

Provides an orderly and continuing means of assistance by the federal government to state and local governments in developing, coordinating, and carrying out their disaster relief programs, and provides federal assistance programs for both public and private losses sustained in disasters.

Eastern Wilderness Act of January 3, 1975

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=1132

Established Wilderness areas in the eastern United States, proposed several more for Wilderness Study, and authorized the Secretary of Agriculture to acquire, through purchase, by gift, exchange, condemnation, or otherwise such lands, waters, or interests therein as determined necessary or desirable for the purposes of the Act.

Economy Act of June 30, 1932

http://www4.law.cornell.edu/uscode/31/1535.html

Authorizes the head of a federal agency or major organizational unit within an agency to obtain goods or services from a major organizational unit within the same agency or another agency if amounts are available; if it is determined to be in the best interest of the United States government; the agency or unit is able to provide or get by contract the ordered goods or services; and the head of the agency decides ordered goods or services cannot be provided as conveniently or cheaply by a commercial enterprise.

Emergency Flood Prevention (Agricultural Credit Act) Act of August 4, 1978

http://www4.law.cornell.edu/uscode/16/2201.html

Authorizes the Secretary of Agriculture to undertake emergency measures for runoff retardation and soil-erosion prevention, in cooperation with land owners and users, as the Secretary deems necessary to safeguard lives and property from floods, drought, and the products of erosion on any watershed whenever fire, flood, or other natural occurrence is causing or has caused a sudden impairment of that watershed.

Endangered Species Act of December 28, 1973

http://laws.fws.gov/lawsdigest/esact.html

http://www4.law.cornell.edu/uscode/16/ch35.html

Authorizes the determination and listing of species as endangered and threatened; prohibits unauthorized taking, possession, sale, and transport of endangered species; provides authority to acquire land for the conservation of listed species, using Land and Water Conservation Funds; authorizes establishment of cooperative agreements and grants-in-aid to states that establish and maintain programs for endangered and threatened wildlife and plants; authorizes the assessment of civil and criminal penalties for violating the Act or regulations; and, authorizes the payment of rewards to anyone furnishing information leading to arrest and conviction for any violation of the Act or any regulation issued there under. Section 7 of the Act requires federal agencies to insure that any action authorized, funded or carried out by them is not likely to jeopardize the continued existence of listed species or modify their critical habitat.

Energy Security Act of June 30, 1980

http://thomas.loc.gov/cgi-bin/bdquery/z?d096:SN00932:@@@L|TOM:/bss/d096query.html|

Authorizes the Secretary of Agriculture to make available timber resources of the National Forest System, in accordance with appropriate timber appraisal and sale procedures, for use by biomass energy projects.

Federal Advisory Committee Act of October 6, 1972

http://www.nara.gov/fedreg/legal/index.html#faca

Sets standards and uniform procedures to govern the establishment, operation, administration, and duration of advisory committees.

Federal Cave Resources Protection Act of November 18, 1988

http://laws.fws.gov/lawsdigest/caveres.html

Established requirements for the management and protection of caves and their resources on federal lands, including allowing land managing agencies to withhold the location of caves from the public, and requiring permits for any removal or collecting activities in caves on federal lands.

Federal Coal Leasing Amendments Act of August 4, 1976

http://thomas.loc.gov/cgi-bin/bdquery/z?d094:SN00391:@@@L|TOM:/bss/d094query.html|

Authorizes the Secretary of the Interior to divide lands, subject to the Mineral Lands Leasing Act, which have been classified for coal leasing into tracts of such size as he finds appropriate and in the public interest and which can be economically extracted, and, in his discretion, upon the request of any qualified applicant or on his own motion, from time to time offer such lands for leasing by competitive bid.

Federal Insecticide, Rodenticide, and Fungicide Act of October 21, 1972

http://www4.law.cornell.edu/uscode/unframed/7/ch6.html

Requires the Administrator of the Environmental Protection Agency to prescribe standards for the certification of individuals authorized to use or supervise the use of any pesticide that is classified for restricted use; regulates the sale of restricted use pesticides; and provides penalties for the unauthorized use or sale of restricted use pesticides.

Federal Land Policy and Management Act of October 21, 1976

http://www4.law.cornell.edu/uscode/unframed/43/ch35.html

Requires that public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use. Also

states that the United States shall receive fair market value of the use of the public lands and their resources unless otherwise provided for by law.

Federal Noxious Weed Act of January 3, 1975

http://laws.fws.gov/lawsdigest/fednox.html

Authorizes the Secretary of Agriculture to designate plants as noxious weeds by regulation; to prohibit the movement of all such weeds in interstate or foreign commerce except under permit; to inspect, seize and destroy products, and to quarantine areas, if necessary to prevent the spread of such weeds; and to cooperate with other federal, state and local agencies, farmers associations, and private individuals in measures to control, eradicate, prevent, or retard the spread of such weeds.

Federal Power Act of June 10, 1920

http://laws.fws.gov/lawsdigest/fedpowr.html

Provides for cooperation between the Federal Energy Regulatory Commission and other federal agencies, including resource agencies, in licensing and relicensing power projects.

Federal-State Cooperation for Soil Conservation Act of December 22, 1944

http://www4.law.cornell.edu/uscode/33/701-1.html

Authorized the adoption of eleven watershed improvement programs in various states for the improvement of water runoff, water flow retardation, and soil erosion prevention.

Federal Water Pollution Control Act and Amendments of 1972 (Clean Water Act)

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=33&sec=1251

Enacted to restore and maintain the chemical, physical, and ecological integrity of the Nation's waters. Provides for measures to prevent, reduce, and eliminate water pollution; recognizes, preserves, and protects the responsibilities and rights of states to prevent, reduce, and eliminate pollution, and to plan the development and use (including restoration, preservation, and enhancement) of land and water resources; and provides for federal support and aid of research relating to the prevention, reduction, and elimination of pollution, and federal technical services and financial aid to state and interstate agencies and municipalities for the prevention, reduction, and elimination of pollution.

Established goals for the elimination of water pollution; required all municipal and industrial wastewater to be treated before being discharged into waterways; increased federal assistance for municipal treatment plant construction; strengthened and streamlined enforcement policies; and expanded the federal role while retaining the responsibility of states for day-to-day implementation of the law.

Federal Water Project Recreation Act of July 9, 1965

http://laws.fws.gov/lawsdigest/fwatrre.html

http://www4.law.cornell.edu/uscode/unframed/16/460l-12.html

Requires that recreation and fish and wildlife enhancement opportunities be considered in the planning and development of federal water development.

Fish and Wildlife Conservation Act of September 15, 1960

http://www4.law.cornell.edu/uscode/unframed/16/670a.html

Requires the Secretaries of the Interior and Agriculture, in cooperation with state agencies, to plan, develop, maintain, and coordinate programs for the conservation and rehabilitation of wildlife, fish, and game on public lands under their jurisdiction.

Fish and Wildlife Coordination Act of March 10, 1934

http://laws.fws.gov/lawsdigest/fwcoord.html

Authorizes the Secretaries of Agriculture and Commerce to provide assistance to and cooperate with other federal and state agencies

to protect, rear, stock, and increase the supply of game and fur-bearing animals, as well as to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife. The Act also authorizes the preparation of plans to protect wildlife resources, the completion of wildlife surveys on public lands, and the acceptance by federal agencies of funds or lands for related purposes provided that land donations receive the consent of the state in which they are located.

Forest Highways Act of August 27, 1958
http://www4.law.cornell.edu/uscode/unframed/23/205.html

Requires that funds available for forest development roads and trails be used by the Secretary of Agriculture to pay for the costs of construction and maintenance thereof, including roads and trails on experimental and other areas under Forest Service administration, or for adjacent vehicular parking areas and sanitary, water, and fire control facilities. Authorizes the Secretary of Agriculture to enter into contracts with a state or civil subdivision thereof, and issue such regulations as he deems desirable.

Forest and Rangeland Renewable Resources Planning Act of August 17, 1974
http://www4.law.cornell.edu/uscode/16/ch36.html

Directs the Secretary of Agriculture to prepare a Renewable Resource Assessment every ten years; to transmit a recommended Renewable Resources Program to the President every five years; to develop, maintain, and, as appropriate, revise land and resource management plans for units of the National Forest System; and to ensure that the development and administration of the resources of the National Forest System are in full accord with the concepts of multiple use and sustained yield.

Freedom of Information Act of November 21, 1974
http://www4.law.cornell.edu/uscode/unframed/5/ch5.html

Governs which government records are released to the public either automatically or upon request.

Geothermal Steam Act of December 24, 1970
http://www4.law.cornell.edu/uscode/30/1001.html

Authorizes the Secretary of the Interior to issue leases for the development and utilization of geothermal steam and associated geothermal resources in any lands administered by him or by the Department of Agriculture, and to prescribe such rules and regulations as he deems appropriate to carry out the provisions of the Act.

Granger-Thye Act of April 24, 1950
http://www4.law.cornell.edu/uscode/16/581i-1.html

Authorizes the Forest Service to spend appropriated funds on buildings, lookout towers, and other structures on lands owned by states, counties, municipalities, or other political subdivisions, corporations, or individuals; to procure and operate aerial facilities and services for the protection of National Forests; to cooperate with and assist public and private agencies, organizations, institutions, and individuals in performing work on non-forest land for the administration, protection, improvement, reforestation, and other kinds of work as the Forest Service is authorized to do on Forest land; to deposit sums from timber purchases to cover the costs of disposing of brush and debris; to permit the use of structures under its control; to sell nursery stock; and other purposes.

Historic Sites Act of 1935
http://www4.law.cornell.edu/uscode/16/461.html

Establishes a policy to preserve for public use historic sites, buildings, and objects of national significance for the benefit of the people.

Historic Preservation Act of October 15, 1966

http://www.cr.nps.gov/local-law/nhpa1966.htm

Establishes a program for the preservation of additional historic properties throughout the nation, and for other purposes.

Joint Surveys of Watershed Areas Act of September 5, 1962

http://www4.law.cornell.edu/uscode/16/1009.html

Authorizes and directs the Secretaries of the Army and Agriculture to make joint investigations and surveys of watershed areas in the United States, Puerto Rico, and the Virgin Islands, and to prepare joint reports setting forth their recommendations for improvements needed for flood prevention, for the conservation, development, utilization, and disposal of water, and for flood control.

Knutson-Vandenberg Act of June 9, 1930

http://www4.law.cornell.edu/uscode/16/576.html

Authorizes the Secretary of Agriculture to establish forest tree nurseries; to deposit monies from timber sale purchasers to cover the costs of planting young trees, sowing seed, removing undesirable trees or other growth, and protecting and improving the future productivity of the land; and to furnish seedlings and/or young trees for the replanting of burned-over areas in any National Park.

Land Acquisition Act of March 3, 1925

http://www.wildrockies.org/appeals/68-575.htm

http://www4.law.cornell.edu/uscode/16/ch3.html

Authorizes the Secretary of Agriculture to purchase land for National Forest headquarters, Ranger Stations, dwellings, or other sites required for the effective performance of the authorized activities of the Forest Service.

Land Acquisition-Declaration of Taking Act of February 26, 1931

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title-40&sec=258a

Provides for the immediate transfer of land to the United States and for just compensation for such lands.

Land Acquisition – Title Adjustment Act of July 8, 1943

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=7&sec=2253

Authorizes the Secretary of Agriculture to execute and deliver title adjustments if, after the acquisition of the land, the title thereto is legally insufficient for the purposes for which the land was acquired or if the land was acquired through mistake, misunderstanding, error, or inadvertence.

Land and Water Conservation Fund Act of September 3, 1964

http://www4.law.cornell.edu/uscode/16/460l-4.html

http://classweb.gmu.edu/jkozlows/lwcfregs.htm

Authorizes the appropriation of funds for federal assistance to states in planning, acquisition, and development of needed land and water areas and facilities and for the federal acquisition and development of certain lands and other areas for the purposes of preserving, developing, and assuring accessibility to outdoor recreation resources.

Law Enforcement Authority Act of March 3, 1905

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sce=559

Authorizes all Forest Service employees to make arrests for the violation of the laws and regulations relating to the national forests.

Leases Around Reservoirs Act of March 3, 1962

http://www4.law.cornell.edu/uscode/16/460d-2.html

Authorizes the Secretary of Agriculture to amend any lease with respect to lands under the jurisdiction of the Forest Service providing for the construction, maintenance, and operation of commercial recreational facilities at a federal reservoir project so as to provide for the adjustment of the amount of rental or other consideration payable to the United States under such lease.

Mineral Leasing Act of February 25, 1920

http://ipl.unm.edu/cwl/fedbook/minerall.html

Provides that the deposits of certain minerals on land owned by the United States shall be subject to lease to citizens of the United States, provided royalties on such deposits are paid to the United States.

Mineral Leasing Act for Acquired Lands Act of August 7, 1947

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=30&sec=351

Extended the provisions of the "mineral leasing laws" to those lands previously acquired by the United States for which they had not been extended, and lands thereafter acquired by the United States.

Mineral Resources on Weeks Law Lands Act of March 4, 1917

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=520

Authorizes the Secretary of Agriculture to permit the prospecting, development, and utilization of the mineral resources of the lands acquired under the Weeks Law.

Mineral Springs Leasing Act of February 28, 1899

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=495

Authorizes the Secretary of Agriculture to rent or lease to responsible persons suitable spaces and portions of ground near, or adjacent to, mineral, medicinal, or other springs within any National Forest where the public is accustomed to or desires to frequent for health or pleasure.

Mining Claims Rights Restoration Act of August 11, 1955

http://www4.law.cornell.edu/uscode/30/621.html

States that all public lands belonging to the United States which have been withdrawn or reserved for power development or power sites shall be open to entry for location and patent of mining claims and mineral development, subject to certain conditions.

Mining and Minerals Policy Act of December 31, 1970

http://www4.law.cornell.edu/uscode/30/21a.html

States that it is the policy of the federal government to foster and encourage the development of economically sound and stable domestic mining, minerals, metal, and mineral reclamation industries; the orderly and economic development of domestic mineral resources, reserves, and reclamation of metals and minerals to help assure satisfaction of industrial, security, and environmental needs; mining, mineral, and metallurgical research to promote the wise and efficient use of our natural and reclaimable mineral resources; and the study and development of methods for the disposal, control, and reclamation of mineral waste products and the reclamation of mined land.

Multiple-Use Sustained-Yield Act of June 12, 1960

http://ipl.unm.edu/cwl/fedbook/multiu.html

States that it is the policy of Congress that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes, and authorizes and directs the Secretary of Agriculture to develop and administer the renewable surface resources of the national forests for the multiple use and sustained yield of the products and services obtained therefrom.

National Environmental Education Act of November 16, 1970

http://ipl.unm.edu/cwl/fedbook/natened.html

Enacted to establish and support a program of environmental education for students and personnel working with students in schools, institutions of higher education, and related educational facilities, and to encourage postsecondary students to pursue careers related to the environment.

National Environmental Policy Act of January 1, 1970

http://es.epa.gov/oeca/ofa/nepa.html

Directs all federal agencies to consider and report the potential environmental impacts of proposed federal actions, and established the Council on Environmental Quality.

National 1990 Farm Bill (title XII – Forest Stewardship Act) Act of November 28, 1990

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=582a

Directs the Secretary of Agriculture to establish a competitive forestry, natural resources, and environmental grants program, and provides for other research programs.

National Forest Management Act of October 22, 1976

http://ipl.unm.edu/cwl/fedbook/nfma.html

The National Forest Management Act reorganized, expanded and otherwise amended the Forest and Rangeland Renewable Resources Planning Act of 1974, which called for the management of renewable resources on National Forest lands. The National Forest Management Act requires the Secretary of Agriculture to assess forest lands, develop a management program based on multiple-use, sustained-yield principles, and implement a resource management plan for each unit of the National Forest System. It is the primary statute governing the administration of National Forests.

National Forest Roads and Trails Act of October 13, 1964

http://www.house.gov/resources/105cong/reports/105_a/roads_.pdf

Authorizes the Secretary of Agriculture to provide for the acquisition, construction, and maintenance of forest development roads within and near the National Forests through the use of appropriated funds, deposits from timber sale purchasers, cooperative financing with other public agencies, or a combination of these methods. The Act also authorizes the Secretary to grant rights-of-way and easements over national forest lands.

National Historic Preservation Act of December 12, 1980 as amended (1980 and 1992)

http://www4.law.cornell.edu/uscode/16/470.html

Authorized the federal government to accelerate its historic preservation programs and activities; to give maximum encouragement to agencies and individuals undertaking preservation by private means; and to assist state and local governments and the National Trust for Historic Preservation in the United States to expand and accelerate their historic preservation programs and activities.

National Trails System Act of October 2, 1968

http://ipl.unm.edu/cwl/fedbook/nattrail.html

Established a national system of recreation, scenic, and historic trails by designating the initial components of the system and prescribing the methods and standards through which additional components may be added.

Native American Graves Protection and Repatriation Act of November 16, 1990

http://www4.law.cornell.edu/uscode/25/3001.html

Directs that the ownership and control of Native American human remains and objects shall be given to the ancestors of the Native American or to the appropriate Native American

tribe.

Occupancy Permits Act of March 4, 1915

http://www.wy.blm.gov/Information/fai/wynf.0001(99).pdf

http://www.wildrockies.org/appeals/63-293.htm

Authorizes the Secretary of Agriculture to permit, under such regulations as he may prescribe, the use and occupancy of suitable areas of land within the National Forests for the purpose of constructing or maintaining hotels, resorts, or other structures necessary or desirable for recreation, public convenience, or safety; to permit the use and occupancy of suitable land for the purpose of constructing or maintaining summer homes; to permit the use and occupancy of suitable land for the purpose of constructing or maintaining buildings, structures, and facilities for industrial or commercial purposes when such use is consistent with other uses of the National Forest; and to permit any state or political subdivision thereof to use or occupy suitable land for the purpose of constructing or maintaining buildings, structures, or facilities necessary or desirable for education or for any other public use or in connection with any other public activity.

Oil and Gas Leasing Reform Act of 1987

http://thomas.loc.gov/cgi-bin/bdquery/z?d100:HR03545:@@@D|TOM:/bss/d100query.html

Amended the Mineral Lands Leasing Act of 1920 regarding competitive leasing of oil and gas for onshore federal lands. Sets forth guidelines for the promulgation of regulations regarding lease sales, and prohibits the issuance of oil or gas leases upon certain lands allocated or designated as Wilderness areas.

Organic Administration Act of June 4, 1897

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=473

Authorizes the President to modify or revoke any instrument creating a National Forest; states that no National Forest may be established except to improve and protect the forest within its boundaries, for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States. Authorizes the Secretary of Agriculture to promulgate rules and regulations to regulate the use and occupancy of the National Forests.

Petrified Wood Act of September 28, 1962

Document Attached – Post on Chugach Web and link

Authorizes the Secretary of Agriculture to promulgate regulations under which limited quantities of petrified wood may be removed from the National Forests.

Pipelines Act of February 25, 1920

http://www4.law.cornell.edu/uscode/30/185.html

Authorizes the Secretary of the Interior or appropriate agency head to grant rights-of-way through any federal lands for pipeline purposes for the transportation of oil, natural gas, synthetic liquid or gaseous fuels, or any refined product produced there from to any applicant possessing the qualifications provided in the Act.

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Preservation of Historical and Archaeological Data Act of May 24, 1974

http://www2.cr.nps.gov/laws/archpreserv.htm

Authorizes the Secretary of the Interior to undertake the recovery, protection, and preservation of significant scientific, prehistorical, historical, or archeological data whenever any federal agency finds or is notified that activities in connection with any federal construction project or federally licensed project, activity, or program may cause irreparable loss or destruction of such data.

Public Buildings Cooperative Use Act of 1976

http://caselaw.lp.findlaw.com/casecode/uscodes/40/chapters/12/sections/section_601a.html

Authorizes the federal government to acquire and utilize space in suitable buildings of historic, architectural, or cultural significance, unless

use of such space would not prove feasible and prudent compared with available alternatives; to encourage the location of commercial, cultural, educational, and recreational facilities and activities within public buildings; to provide and maintain space, facilities, and activities, to the extent practicable, which encourages public access to and stimulates public pedestrian traffic around, into, and through public buildings, permitting cooperative improvements to and uses of the area between the building and the street, so that such activities complement and supplement commercial, cultural, educational, and recreational resources in the neighborhood of public buildings; and to encourage the public use of public buildings for cultural, educational, and recreational activities.

Public Land Surveys Act of March 3, 1899

http://www4.law.cornell.edu/uscode/16/488.text.html

http://www.lib.duke.edu/forest/usfscoll/092-097.htm

Provides that all standard, meander, township, and section lines of the public land surveys shall be established under the direction and supervision of the Commissioner of the General Land Office, whether the lands to be surveyed are within or without reservations, except that where the exterior boundaries of public forest reservations are required to be coincident with standard, township, or section lines, such boundaries may, if not previously established in the ordinary course of the public land surveys, be established and marked under the supervision of the Director of the United States Geological survey. This act made the surveying of forest-reserve lands identical, in all but the establishment of boundaries, with that of the public domain.

Public Rangelands Improvement Act of October 25, 1978

http://caselaw.lp.findlaw.com/casecode/uscodes/43/chapters/37/sections/section_1901.html

Establishes and reaffirms the national policy and commitment to inventory and identify current public rangeland conditions and trends; manage, maintain and improve the condition of public rangelands so that they become as productive as feasible for all rangeland values in accordance with management objectives and the land use planning process; charge a fee for public grazing use which is equitable; continue the policy of protecting wild free-roaming horses and burros from capture, branding, harassment, or death, while at the same time facilitating the removal and disposal of excess wild free-roaming horses and burros which pose a threat to themselves and their habitat and to other rangeland values.

Rehabilitation Act of 1973, as amended

http://caselaw.lp.findlaw.com/casecode/uscodes/29/chapters/16/miscs/0/sections/section_701.html

States that it is national policy that the federal government plays a leadership role in promoting the employment of individuals with disabilities, and in assisting states and providers of services in fulfilling the aspirations of such individuals with disabilities for meaningful and gainful employment and independent living.

Renewable Resources Extension Act of June 30, 1978

http://caselaw.lp.findlaw.com/casecode/uscodes/16/chapters/36/subchapters/iii/sections/section_1671.html

Authorizes and directs the Secretary of Agriculture, in cooperation with the state Directors of the Cooperative Extension Service programs, to provide educational programs relating to forest and rangeland renewable resources.

Reorganization Plan Numbered 3 of 1946

http://www.access.gpo.gov/uscode/title5a/5a_4_8_1_.html

Creates the Environmental Protection Agency (EPA), abolishes the Federal Water Quality Administration under the Department of the Interior, and transfers those functions to the EPA.

Research Grants Act of September 6, 1958

http://laws.fws.gov/lawsdigest/researc.html

Authorizes the Secretary of the Interior to enter into contracts with educational institutions, public or private agencies or organizations, or persons to conduct scientific or technological research.

Right of Eminent Domain Act of August 1, 1888

http://caselaw.lp.finlaw.com/scripts/ts_search.pl?title=40&sec=257

Grants the Secretary of the Treasury or any other officer of the government who has been authorized to procure real estate for the erection of a building or for other public uses the authority to acquire such real estate by condemnation, provided such acquisition is otherwise authorized by statute.

Rural Development Act of August 30, 1972

http://www.reeusda.gov/1700/legis/ruraldev.htm

Enacted to provide multi-state regional agencies, states, counties, cities, multi-county planning and development districts, businesses, industries, Indian tribes on federal and state reservations or other federally recognized Indian tribal groups and others involved with public services and investments in rural areas or that provide or may provide employment in these areas the best available scientific, technical, economic, organizational, environmental, and management information and knowledge useful to them, and to assist and encourage them in the interpretation and application of this information to practical problems and needs in rural development.

Safe Drinking Water Amendments of November 18, 1977

http://thomas.loc.gov/cgi-bin/bdquery/z?d095:SN01528:|TOM:/bss/d095query.html|

Amended the Safe Drinking Water Act to authorize appropriations for research conducted by the Environmental Protection Agency relating to safe drinking water; federal grants to states for public water system supervision programs and underground water source protection programs; and grants to assist special studies relating to the provision of a safe supply of drinking water.

Secure Rural Schools and Community Self-Determination Act of 2000

http://www.fs.fed.us/r10/payments/

Through this law the Forest Service gives rural communities the means to build and improve schools, provide road maintenance, emergency services, and conservation programs for their citizens. Thus, communities are no longer dependent on federal timber sales from national forests to improve local schools and roads.

Sikes Act of October 18, 1974

http://laws.fws.gov/lawsdigest/sikes.html

http://www4.law.cornell.edu/uscode/16/670a.html

Provides for cooperation between the Secretary of Defense and the Secretary of the Interior to provide for conservation and rehabilitation of natural resources on military installations.

Small Tracts Act of January 22, 1983

http://www4.law.cornell.edu/uscode/16/521e.html

Authorizes the Secretary of Agriculture to sell, exchange, or interchange by quitclaim deed all right, title and interest, including the mineral estate, of the United States in and to certain lands within the National Forest when he determines it to be in the public interest.

Smokey Bear Act of May 23, 1952

http://caselaw.lp.findlaw.com/casecode/uscodes/18/parts/i/chapters/33/sections/section_711.html

Prohibits the unauthorized use of the "Smokey Bear" character or name.

Soil and Water Resources Conservation Act of November 18, 1977

http://ipl.unm.edu/cwl/fedbook/soilwate.html

Provides for a continuing appraisal of the United State's soil, water and related resources, including fish and wildlife habitats, and a soil and water conservation program to assist landowners and land users in furthering soil and water conservation.

Solid Waste Disposal (Resource Conservation & Recovery Act) Act of October 21, 1976

http://www4.law.cornell.edu/uscode/42/6901.html

Promotes the protection of health and the environment and the conservation of valuable material and energy resources by providing technical and financial assistance to state and local governments and interstate agencies for the improvement of solid waste management techniques.

Supplemental National Forest Reforestation Fund Act of September 18, 1972

http://www4.law.cornell.edu/uscode/16/576c.html

Directs the Secretary of Agriculture to establish a supplemental national reforestation fund, and states that money transferred to this fund shall be available to the Secretary for the purpose of supplementing programs of tree planting and seeding on National Forest lands determined by the Secretary to be in need of reforestation.

Surface Mining Control and Reclamation Act of August 3, 1977

http://caselaw.lp.findlaw.com/casecode/uscodes/30/chapters/25/subchapters/i/sections/section_1201.html

Authorizes the Secretary of Agriculture to enter into agreements with landowners, providing for land stabilization, erosion, and sediment control, and reclamation through conservation treatment, including measures for the conservation and development of soil, water, woodland, wildlife, and recreation resources, and agricultural productivity of such lands.

Sustained Yield Forest Management Act of March 29, 1944

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=583

Authorizes the Secretaries of Agriculture and the Interior to establish by formal declaration cooperative sustained-yield units which shall consist of federally owned or administered forest land under their jurisdiction and, in addition thereto, land which reasonably may be expected to be made the subject of one or more of the cooperative agreements with private landowners authorized by section 2 of the Act in order to promote the stability of forest industries, of employment, of communities, and of taxable forest wealth through continuous supplies of timber and forest products; and in order to secure the benefits of forests in the maintenance of water supply, regulation of stream flow, prevention of soil erosion, amelioration of climate, and preservation of wildlife.

Timber Export Act of March 4, 1917

http://www.fs.fed.us/r10/chugach/revision/pdfs/timber_export_act.pdf

Permits the Secretary of Agriculture to allow timber or other forest products to be cut or removed from a national forest and exported from the state or territory in which that national forest is situated.

Timber Exportation Act of April 12, 1926

http://www4.law.cornell.edu/uscode/16/617.html

Authorizes the exportation of lawfully cut timber from the state or territory where grown if the supply of timber for local use will not be endangered, and authorizes the Secretary to issue rules and regulations to carry out the provisions of the Act.

Title Adjustment Act of April 28, 1930

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=43&sec=872

Authorizes the Secretaries of the Interior and Agriculture to execute a quitclaim deed where an application for a conveyance of land has been withdrawn or rejected.

Toxic Substances Control Act of October 11, 1976

http://caselaw.lp.findlaw.com/casecode/uscodes/15/chapters/53/subchapters/i/sections/section_2601.html

Grants the Administrator of the Environmental Protection Agency the authority to regulate chemical substances and mixtures, which present an unreasonable risk of injury to the public health or the environment, and to take action with respect to chemical substances and mixtures, which are imminent hazards.

Transfer Act of February 1, 1905

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=472

Transferred the management and control of the Forest Reserves from the General Land Office (GLO) in the Department of the Interior to the Bureau of Forestry in the Department of Agriculture.

Twenty-Five Percent Fund Act of May 23, 1908

http://www.wildrockies.org/appeals/60-136.htm

Provides that twenty-five percent of all monies received from the sale of timber or other forest products shall be paid to the state in which such forest is located to be expended as the state may prescribe for the benefit of public schools and roads.

Uniform Federal Accessibility Standards U.S. Criminal Code (Title 18 USC Chapter 91 – Public Lands) Act of June 25, 1948

http://www.wildrockies.org/appeals/80-772.htm

http://caselaw.lp.findlaw.com/casecode/uscodes/18/parts/i/chapters/91/toc.html

Defines the crimes and criminal procedure for crimes committed against public lands.

U.S. Mining Laws (Public Domain Lands) Act of May 10, 1872

http://www4.law.cornell.edu/uscode/30/22.html

Provides that all valuable mineral deposits in lands belonging to the United States, both surveyed and unsurveyed, are free and open to exploration and purchase, and the lands in which they are found to occupation and purchase by citizens of the United States and those who have declared their intention to become such, under regulations prescribed by law, and according to the local customs or rules of miners, so far as the same are applicable and not inconsistent with the laws of the United States. There are a number of Acts which modify the mining laws as applied to local areas by prohibiting entry altogether or by limiting or restricting the use which may be made of the surface and the right, title, or interest which may pass through patent.

Volunteers in the National Forests Act of May 18, 1972

http://www4.law.cornell.edu/uscode/16/558a.html

Authorizes the Secretary of Agriculture to recruit, train, and accept without regard to the civil service classification laws, rules, or regulations the services of individuals without compensation as volunteers for or in aid of interpretive functions, visitor services, conservation measures and development, or other activities in and related to areas administered by the Secretary through the Forest Service.

Water Quality Improvement Act of April 3, 1970

http://laws.fws.gov/lawsdigest/fwatrpo.html

Amends the prohibitions of oil discharges, authorizes the President to determine quantities of oil which would be harmful to the public heath or welfare of the United States; to publish a National Contingency Plan to provide for coordinated action to minimize damage from oil discharges. Requires performance standards for marine sanitation device and authorizes

demonstration projects to control acid or other mine pollution, and to control water pollution within the watersheds of the Great Lakes. Requires that applicants for federal permits for activities involving discharges into navigable waters provide state certification that they will not violate applicable water quality standards

Water Resources Planning Act of July 22, 1965

http://www4.law.cornell.edu/uscode/42/1962.html

Encourages the conservation, development, and utilization of water and related land resources of the United States on a comprehensive and coordinated basis by the federal government, states, localities, and private enterprises.

Watershed Protection and Flood Prevention Act of August 4, 1954

http://www4.law.cornell.edu/uscode/16/1001.html

Establishes policy that the federal government should cooperate with states and their political subdivisions, soil or water conservation districts, flood prevention or control districts, and other local public agencies for the purposes of preventing erosion, floodwater, and sediment damages in the watersheds of the rivers and streams of the United States; furthering the conservation, development, utilization, and disposal of water, and the conservation and utilization of land; and thereby preserving, protecting, and improving the Nation's land and water resources and the quality of the environment.

Weeks Act Status for Certain Lands Act of September 2, 1958

http://www4.law.cornell.edu/uscode/16/521a.html

Subjects all lands of the United States within the exterior boundaries of national forests which were or hereafter are acquired for or in connection with the national forests or transferred to the Forest Service for administration and protection substantially in accordance with national forest regulations, policies, and procedures, excepting (a) lands reserved from the public domain or acquired pursuant to laws authorizing the exchange of land or timber reserved from or part of the public domain, and (b) lands within the official limits of towns or cities, notwithstanding the provisions of any other Act, to the provisions of the Weeks Act of March 1, 1911 (36 Stat. 961), as amended, and to all laws, rules, and regulations applicable to national forest lands acquired thereunder.

Weeks Act of March 1, 1911

http://www.house.gove/resources/105cong/reports/105_a/weeks_.pdf

Authorizes the Secretary of Agriculture to purchase lands within the watersheds of navigable streams in order to promote regulation of the flow of navigable streams or for the production of timber, provided the legislature of the state in which the lands are located consents to the acquisition. This law is the primary land acquisition authority for the Forest Service.

Wild Horse Protection Act of September 8, 1959

http://www4.law.cornell.edu/uscode/18/47.html

Established the use of a motor vehicle to hunt, for the purpose of capturing or killing, any wild horse, mare, colt, or burro running at large on the public lands. Also prohibits the pollution of watering holes on public lands for the purposes of trapping, killing, wounding, or maiming any of these animals.

Wild Horses and Burros Act of December 15, 1971

http://www4.law.cornell.edu/uscode/16/1331.html

Protects wild free-roaming horses and burros from capture, branding, harassment, or death; and states they are to be considered in the area where presently found an integral part of the natural system of the public lands.

Wild and Scenic Rivers Act of October 2, 1968

http://www4.law.cornell.edu/uscode/16/1271.html

Instituted a National Wild and Scenic Rivers System by designating the initial components of that system, and by prescribing the methods by which and standards according to which additional components may be added to the system from time to time.

Wilderness Act of September 3, 1964

http://www4.law.cornell.edu/uscode/16/1131.html

Established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as ''wilderness areas'' and administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as Wilderness. Provides for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness. States that no federal lands shall be designated as ''wilderness areas'' except as provided for in the Act or by a subsequent Act.

Wilderness Act of 1975 (Public Law 93-622; 93rd Congress, S 3433), January 3, 1975

Designated several Wilderness areas nation-wide, including Joyce Kilmer-Slickrock Wilderness (15,000 acres) in Nantahala and Cherokee National Forests and Gee Creek Wilderness (2,570 acres) in Cherokee National Forest; designated several wilderness study areas nation-wide, including Big Frog Wilderness Study Area (4,500 acres) and Citico Creek Area (14,000 acres) of the Joyce Kilmer-Slickrock Wilderness; provided direction for management of wilderness study areas.

Wildlife Game Refuges Act of August 11, 1916

http://caselaw.lp.findlaw.com/scripts/ts_search.pl?title=16&sec=683

Authorizes the President of the United States to set aside lands for the protection of game animals, birds, or fish; and prohibits the hunting, catching, trapping, willful disturbance, or killing of any kind of game animal, game or non-game bird, or fish, or the taking of eggs of any such bird on any lands so set aside or in or on the waters thereof.

Wood Residue Utilization Act December 19, 1980

http://caselaw.lp.findlaw.com/casecode/uscodes/16/chapters/36/subchapters/iv/toc.html

Enacted to develop, demonstrate, and make available information on feasible methods that have the potential for commercial application to increase and improve utilization in residential, commercial, and industrial or power plant applications of wood residues resulting from timber harvesting and forest protection and management activities occurring on public and private forest lands, and from the manufacture of forest products, including wood pulp.

Woodsy Owl/Smokey Bear Act of June 22, 1974

http://caselaw.lp.findlaw.com/casecode/uscodes/18/parts/i/chapters/33/sections/section_711a.html

Prohibits the unauthorized manufacture, reproduction, or use of the character "Woodsy Owl," the name "Woodsy Owl," or the associated slogan ''Give a Hoot, Don't Pollute.'' Also prohibits the unauthorized manufacture, reproduction, or use of the character "Smokey Bear" or the name "Smokey Bear," or a facsimile or simulation of such character or name.

Youth Conservation Corps Act of August 13, 1970

http://www4.law.cornell.edu/uscode 16/1701.html

Establishes a Youth Conservation Corps whom the Secretaries of the Interior or Agriculture may employ without regard to

the civil service or classification laws, rules, or regulations for the purpose of developing, preserving, or maintaining the lands and waters of the United States.

Regulations

33 CFR 323 Permits for Discharges of Dredged or Fill Material into Waters of the United States

http://www4.law.cornell.edu/cfr/33p323.htm#33p323s

This regulation prescribes those special policies, practices and procedures to be followed by the Corps of Engineers in connection with the review of applications for permits to authorize the discharge of dredged or fill material into waters of the United States.

36 CFR 60 National Register of Historic Places

http://www4.law.cornell.edu/cfr/36p60.htm#start

Sets forth the procedural requirements for listing properties on the National Register.

36 CFR 63 Determinations of Eligibility for Inclusion in the National Register of Historic Places

http://www4.law.cornell.edu/cfr/36p63.htm#start

Developed to assist agencies in identifying and evaluating the eligibility of properties for inclusion in the National Register, and to explain how to request determinations of eligibility.

36 CFR 65 National Historic Landmarks Program

http://www4.law.cornell.edu/cfr/36p65.htm#start

Sets forth the criteria for establishing national significance and the procedures used by the Department of the Interior for conducting the National Historic Landmarks Program.

36 CFR 68 The Secretary of the Interior's Standards for Historic Preservation Projects

http://www4.law.cornell.edu/cfr/36p68.htm#start

Sets forth standards for the treatment of historic properties containing standards for preservation, rehabilitation, restoration, and reconstruction. These standards apply to all proposed grant-in-aid development projects assisted through the National Historic Preservation Fund.

36 CFR 212 Forest Development Transportation System

http://www4.law.cornell.edu/cfr/36p212.htm#start

Sets forth the requirements for the development and administration of the forest development transportation system.

36 CFR 213 Administration Under Bank-Jones Act

http://www4.law.cornell.edu/cfr/36p213.htm#start

Sets forth the requirements relating to the designation, administration, and development of National Grasslands.

36 CFR 219 Planning

http://www4.law.cornell.edu/cfr/36p219.htm#start

Sets forth a process for developing, adopting, and revising land and resource management plans for the National Forest System.

36 CFR 221 Timber Management Planning

http://www4.law.cornell.edu/cfr/36p221.htm#start

Sets forth the requirements for management plans for National Forest timber resources.

36 CFR 222 Range Management

http://www4.law.cornell.edu/cfr/36p222.htm#start

Sets forth the requirements for range management on the National Forests, and for the administration of wild and free-roaming horses and burros and their environment.

36 CFR 223 Sale and Disposal of National Forest System Timber

http://www4.law.cornell.edu/cfr/36p223.htm#start

Sets forth the requirements relating to the sale and disposal of National Forest System timber.

36 CFR 228 Minerals

http://www4.law.cornell.edu/cfr/36p228.htm#start

Sets forth the rules and procedures through which use of the surface of National Forest System lands, in connection with mining and mineral operations, shall be conducted so as to minimize adverse environmental impacts on National Forest System surface resources.

36 CFR 241 Fish and Wildlife

http://www4.law.cornell.edu/cfr/36p241.htm#start

Sets forth the rules and procedures relating to the management, conservation, and protection of fish and wildlife resources on National Forest System lands.

36 CFR 251 Land Uses

http://www4.law.cornell.edu/cfr/36p251.htm#start

Sets forth the rules and procedures relating to the use and occupancy of National Forest System lands.

36 CFR 254 Landownership Adjustments

http://www4.law.cornell.edu/cfr/36p254.htm#start

Sets forth the rules and procedures relating to exchange and conveyance of National Forest System lands.

36 CFR 261 Prohibitions

http://www4.law.cornell.edu/cfr/36p261.htm#start

Sets forth the general prohibitions relating to the use and occupancy of National Forest System lands.

36 CFR 291 Occupancy and Use of Developed Sites and Areas of Concentrated Public Use

http://www4.law.cornell.edu/cfr/36p291.htm#start

Provides for fees charged for the occupancy and use of developed sites and areas of concentrated public use.

36 CFR 292 National Recreation Areas

http://www4.law.cornell.edu/cfr/36p292.htm#start

Sets forth the requirements for the administration of National Recreation Areas.

36 CFR 293 Wilderness-Primitive Areas

http://www4.law.cornell.edu/cfr/36p293.htm#start

Sets forth the requirements for the administration of Wilderness and primitive areas.

36 CFR 294 Special Areas

http://www4.law.cornell.edu/cfr/36p294.htm#start

Sets forth the requirements for designation of special recreation areas.

36 CFR 295 Use of Motor Vehicles Off Forest Development Road

http://www4.law.cornell.edu/cfr/36p295.htm#start

Sets forth the rules and procedures relating to the administrative designation and location of specific areas and trails of National Forest System lands on which the use of motor vehicles traveling off of National Forest development roads is allowed.

36 CFR 296 Protection of Archaeological Resources

http://www4.law.cornell.edu/cfr/36p296.htm#start

Implements the provisions of the Archaeological Resources Protection Act.

36 CFR 297 Wild and Scenic Rivers

http://www4.law.cornell.edu/cfr/36p297.htm#start

Sets forth the rules and procedures relating to federal assistance in the construction of water resources projects affecting Wild and Scenic Rivers or study rivers on lands administered by the Secretary of Agriculture.

36 CFR 800 Protection of Historic Properties
http://www4.law.cornell.edu/cfr/36p800.htm#start

Sets forth the provisions for the administration of the National Historic Preservation Act.

40 CFR 121-135 Water Programs
http://www4.law.cornell.edu/cfr/40p121.htm#40p121s

Sets forth the provisions for the administration of water programs including: State certification of activities requiring a federal license or permit; EPA administered permit programs; State program requirements; procedures for decision making; criteria and standards for the National Pollutant Discharge Elimination System; toxic pollutant effluent standards; water quality planning and management; water quality standards; water quality guidance for the Great Lakes System; secondary treatment regulation; and, prior notice of citizen suits. Title 40 (Protection of Environment), Chapter 1 (Environmental Protection Agency), subchapter D (Water Programs).

40 CFR 1500 Council on Environmental Quality
http://www4.law.cornell.edu/cfr/40p1500.htm#start

Council on Environmental Quality regulations implementing the National Environmental Policy Act.

43 CFR 10 Native American Graves Protection and Repatriation Act Regulations
http://www4.law.cornell.edu/cfr/43p10.htm#43p10s

Implements the provisions of the Native American Graves Protection and Repatriation Act of 1990.

Executive Orders

EO 12898 Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations
http://www.fs.fed.us/land/envjust.html

Addresses Environmental Justice in minority and low-income populations and is designed to focus Federal attention on the environmental and human health conditions in minority communities and low-income communities with the goal of achieving environmental justice. The order is also intended to promote non-discrimination in Federal programs substantially affecting human health and the environment, and to provide minority communities and low-income communities access to public information on, and an opportunity for public participation in, matters relating to human health or the environment.

EO 11593 Protection and Enhancement of Cultural Environment
http://archnet.asu.edu/archnet/topical/crm/usdocs/execord.htm

States that the federal government shall provide leadership in preserving, restoring and maintaining the historic and cultural environment of the Nation, and that federal agencies shall administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations; initiate measures necessary to direct their policies, plans and programs in such a way that federally owned sites, structures, and objects of historical, architectural or archaeological significance are preserved, restored and maintained for the inspiration and benefit of the people; and, in consultation with the Advisory Council on Historic Preservation, institute procedures to assure that federal plans and programs contribute to the preservation and enhancement

of non-federally owned sites, structures and objects of historical, architectural or archaeological significance.

EO 11990 Protection of Wetlands

http://hydra.gsa.gov/pbs/pt/call-in/eo11990.htm

Requires each federal agency to provide leadership and to take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for acquiring, managing, and disposing of federal lands and facilities; providing federally undertaken, financed, or assisted construction and improvements; and conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

EO 11644 (amended by EO 11989) Use of Off-Road Vehicles

http://www.nara.gov/fedreg/codific/eos/e11644.html

Establishes policies and provides for procedures that ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.

EO 11988 Floodplain Management

http://hydra.gsa.gov/pbs/pt/call-in/eo11988.htm

Requires each federal agency to provide leadership and to take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for acquiring, managing, and disposing of federal lands and facilities; providing federally undertaken, financed, or assisted construction and improvements; and conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

EO 12088 Federal Compliance with Pollution Control Standards (Amended by E.O. 12580, January 23, 1987)

http://hydra.gasa.gov/pbs/pt/call-in/eo12088.htm

Delegates responsibility to the head of each executive agency for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution. This order gives the Environmental Protection Agency authority to conduct reviews and inspections to monitor Federal facility compliance with pollution control standards.

EO 12372 Intergovernmental Review of Federal Programs

http://www.nara.gov/fedreg/codific/eos/e12372.html

Issued to foster an intergovernmental partnership and a strengthened federalism by relying on State and local government coordination and review of proposed Federal financial assistance and direct federal development. It requires federal agencies to provide opportunities for consultation by elected officials of those State and local governments that would provide the non-federal funds for, or that would be directly affected by, proposed federal financial assistance or direct federal development. It also allows states to develop their own process or refine existing processes for state and local elected officials to use in reviewing and coordinating proposed federal financial assistance and direct federal development.

EO 12862 Setting Customer Service Standards

http://www.usbr.gov/laws/eo12862.html

http://govinfo.library.unt.edu/npr/library/direct/orders/2222.html

Requires all executive departments and agencies that provide significant services directly to the public to provide those services in a manner that seeks to meet the customer service standard established in the Order, and requires agencies to identify customers, survey customers and front-line employees to determine the kind and quality of services needed and barriers to those services, benchmark customer service performance against the best in the business, make information, services, and complaint systems easily accessible, and provide a means to address customer complaints.

EO 13007 Indian Sacred Sites

http://hydra.gsa.gov/pbs/pt/call-in/eo13007.htm

Requires each executive branch agency with statutory or administrative responsibility for the management of federal lands, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies shall maintain the confidentiality of sacred sites.

Agreements and Memorandums of Understanding

Memorandum of Understanding; United States Department of Transportation, Federal Highway Administration and USDA, Forest Service. dated 8/20/98

Minerals

Legal and Administrative Framework

Statutory and regulatory direction separates mineral resources in the publicly owned lands of the United States into three categories: locatable, leasable and salable. Statutes, regulations and Executive Orders guide Forest Service policy governing the exploration and development of mineral activities on National Forest System lands. Management direction for mineral resources on the Sumter National Forest can be found in the following areas:

36 CFR 228, Subpart A (Locatable Minerals), Subpart C (Salable Minerals), and Subpart E (Leasable Minerals).

U.S. Mining Laws Act of May 10, 1872— applies to all mineral deposits in national forest lands reserved from the public domain, or which were acquired by exchange under the Act of March 20, 1922, and National Grasslands, or other Title III lands transferred from the public domain, except for oil, gas, oil shale, coal and other "leasing act" minerals, and mineral materials, including, but not limited to, sand and gravel. Mining laws do not apply to lands situated in Minnesota, Michigan, Wisconsin, Alabama, Missouri, and Kansas; and certain lands in Oklahoma. Generally declared that all valuable locatable mineral deposits and public domain lands where they are found are free and open to exploration, occupation, and purchase under regulations prescribed by law.

Mineral Resources on Weeks Law Lands Act of March 4, 1917—Authorizes the Secretary of Agriculture to permit the prospecting, development, and utilization of mineral resources on lands acquired under the Weeks Act of 1911 (subject to section 402 of Reorganization Plan No. 3, of July 16, 1946 that transferred the function to the Secretary of Interior. The Functions Transfer Act of June 11, 1960 transferred the function back to the Secretary of Agriculture with respect to mineral materials only (sand and gravel).

Mineral Leasing Act of February 25,1920 —Provides for leasing of energy minerals (coal, oil, gas, oil shale), sodium, phosphate, and

potassium on all lands owned by the United States, except for those acquired under the Weeks Act of March 1, 1911. The Bureau of Land Management (BLM) is the federal government's leasing agency.

Minerals Materials Act of July 31, 1947 —Authorizes the disposal of mineral and vegetative materials through a sales system on public lands of the United States. The law also provides for free use of these materials by federal or state agencies, municipalities, or nonprofit associations, if not for commercial, industrial, or resale purposes.

Mineral Leasing Act for Acquired Lands of August 7, 1947—Extends the provisions of the mineral leasing system to all acquired federal minerals, including those within the National Forests, unless excepted by the Act. It requires the consent of the Secretary of Agriculture prior to the BLM issuing a lease covering acquired lands administered by the Forest Service.

Multiple Use Mining Act of 1955, Act of July 23, 1955 (Public Law 84-167)—Amended sections 1 and 2 of the Materials Act of 1947. This legislation defined "common varieties" of mineral materials, and distinguished them from rare varieties, that may be locatable in certain states under the Mining Laws of 1872.

Mineral Leasing Act Revision of 1960— Established a system of leasing public lands through either a competitive bidding process, utilized when BLM determined the lands to be within a known geological structure (KGS); or by one of two non-competitive leasing processes, an "over-the-counter" application process for non-KGS lands that had never been leased before; and a simultaneous lottery type system (SIMO) for non-KGS lands that had been previously leased.

Multiple-Use Sustained-Yield Act of 1960— The Act established the multiple use principles on which the National Forest Management Act of 1976 is based. The Multiple-Use Sustained-Yield Act specifically addresses the role of minerals in the management of the National Forests. The Act states, **"**Nothing herein shall be construed so as to affect the use or administration of the mineral resources of national forest system lands …"

Wild and Scenic Rivers Act of October 2, 1968 —Under the Act, the minerals in federal lands which are part of the system and constitute the bed or bank, or are situated within one-quarter mile of the bank of any river segment which is designated a wild river under this Act, are withdrawn from all forms of appropriation under the mining laws and from operation of the mineral leasing laws. This restriction does not apply to those segments of a Wild and Scenic River that are designated as "scenic" or "recreational."

Mining and Minerals Policy Act of 1970— Establishes a national minerals policy, and states in part: "The Congress declares that it is the continuing policy of the Federal Government in the national interest to foster and encourage private enterprise in (1) the development of economically sound and stable domestic mining, minerals, metal and mineral reclamation industries; and 2) the orderly and economic development of domestic mineral resources, reserves, and reclamation of metals and minerals to help assure satisfaction of industrial, security and environmental needs."

Federal Land Policy and Management Act of 1976 —Public lands and their resources will be periodically and systematically inventoried, and their present and future use projected through a land use planning process. Also requires that the "public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber and fiber from public lands, including implementation of the Mining and Minerals Policy Act of 1970."

Surface Mining Control and Reclamation Act of 1977—Prohibits surface (strip) mining of coal on federally administered lands located east of the 100th Meridian.

Energy Security Act of June 30, 1980— Directs the Secretary of Agriculture to process applications for leases and permits to explore, drill and develop resources on National Forest System lands, notwithstanding the current status of the Land and Resource Management Plan (Forest Plan).

Federal Onshore Oil and Gas Leasing Reform Act of 1987—Provides additional authority for the Forest Service in regard to leasing and administration of surface operations during oil and gas development. The BLM may not issue any lease on National Forest public domain lands over the objection of the Secretary of Agriculture. Forest Service must approve and administer all surface disturbing activities on leases issued on National Forest lands. The Act repealed the Known Geologic Structures (KGS) process and the Simultaneous leasing system (SIMO). The Act established a 2-level leasing process: 1) all tracts are offered competitively to the highest bidder, with a minimum bonus bid of not less than $2/acre, in addition to the annual rental; and 2) tracts offered for competitive sale which receive no bids, and for which no pre-sale applications were received, are then available non-competitively ("over-the-counter") for 2 years after the sale. The competitive lease sale notices must be posted in the appropriate FS office for 45 days prior to the competitive lease sale. Prior to approval of applications for permits to drill (APD's) or lease modifications, a notice must be posted for 30 days prior approval.

Executive Order 13212 (Actions to Expedite Energy-related Projects) of May 18, 2001 —Executive departments and agencies shall take appropriate actions, to the extent consistent with applicable law, to expedite projects that will increase the production, transmission, or conservation of energy. For energy-related projects, agencies shall expedite their review of permits or take other actions as necessary to accelerate the completion of such projects, while maintaining safety, public health, and environment protections.

Onshore Oil and Gas Order #1—States the necessary requirements for the approval of all proposed exploratory, development, and service wells. The Order requires the lessee/operator to submit a Surface Use Plan of Operation and a Drilling Plan as part of the Application for Permit to Drill (APD). Both the Forest Service and the BLM must approve the APD prior to drilling operations commencing on NF lands. The Forest Service adopted the section of BLM's Onshore Oil and Gas Order #1 that dealt with Surface Use Plans of Operation, and incorporated it as Appendix A of 36 CFR 228E.

Forest Service Regulations at 36 CFR 219.22— Requires that outstanding and reserved mineral rights (private mineral rights under NFS surface) shall be recognized to the extent practicable in forest planning.

Forest Service Regulations at 36 CFR 219.22 (f)—Specifically addresses minerals in Forest plans:

The following shall be recognized to the extent practicable in forest planning: (f) the probable effect of renewable resource prescriptions and management direction on mineral resources and activities, including exploration and development.

Lands Statutorily Withdrawn from Mineral Entry or Mineral Leasing

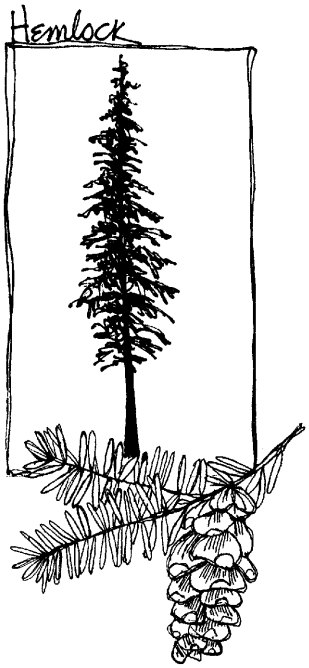
1. Subject to valid existing rights then existing effective January 1, 1984, the minerals in lands designated under the Wilderness Act of September 3, 1964, are withdrawn from all forms of appropriation under the mining laws

and from disposition under all laws pertaining to mineral leasing. The SumterNational Forest has one congressionally designated wilderness, Ellicott Rock, 2,855 acres, which is statutorily withdrawn from mineral entry or leasing.

2. Subject to valid existing rights, the minerals in federal lands, which constitute the bed or bank, or are situated within ¼ mile of the bank of any river designated a "Wild River" under this Act, are withdrawn from all forms of appropriation under the mining laws and from operation of the mineral leasing laws.

On the Sumter National Forest, there is one W&SR river. the Chattooga. See prescription 2.a.1. in chapter 3 for detailed information.

Note: This restriction does not apply to those segments of a Wild and Scenic River that are designated as "scenic" or "recreational." Elsewhere, the W&SR sections of the FEIS and Forest Plan should list the Wild & Scenic Rivers, their classification, the miles of river in each category, how many acres fall within ¼ mile of any wild segments, and the acreage within the various river category management area corridors. If the width of the management corridor for the wild segment of the river exceeds the ¼ mile area statutorily withdrawn, then a standard should be established for those acres outside the ¼ mile, but within the corridor (possibly leasing with no surface occupancy). For the corridor areas, which are managed as scenic or recreational, a controlled surface use stipulation could be adopted which precludes any long term surface disturbance which would alter the esthetics of the area which qualified it for inclusion in the W&SR system. By using this stipulation, short-term use, such as running a seismic line during the summer, could be authorized.



Appendix B
Glossary

Acronyms

AMS	Analysis of the Management Situation
ARPA	Archaeological Resource Protection Act
ASQ	allowable sale quantity
AQRV	air quality related values
BA	basal area
BF	board foot
BLM	Bureau of Land Management
BMP	best management practices
CAA	Clean Air Act
CCF	hundred cubic feet
CEQ	Council on Environmental Quality
CF	cubic foot
CFL	commercial forest land
CFR	Code of Federal Regulations
DBH	diameter at breast height
DEIS	Draft Environmental Impact Statement
DHEC	Department of Health and Environmental Control
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FEIS	Final Environmental Impact Statement
FSH	Forest Service Handbook
FSM	Forest Service Manuel
FW	Forest-wide
FMP	fire management plan
GIS	geographic information system
HPP	heritage preservation plans
KBDI	Kutch-Byrum Drought Index
LOAS	land ownership adjustment strategy
LWCF	land and water conservation fund
LWD	large woody debris
MMCF	million cubic feet
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act
NIPF	non-industrial private forest
NSO	no surface occupancy
NFS	National Forest System
OHV	off-highway vehicle
PETS	proposed, endangered, threatened species
PRLA	Preference Right Lease Application
RAP	road analysis process
ROS	recreation opportunity spectrum
ROW	right(s)-of-way
SAA	*Southern Appalachian Assessment*
SC	South Carolina
SIO	scenic integrity objectives
SMP	smoke management programs
SMS	scenery management system
SPB	southern pine beetle
TMDL	total mean daily load
USDA	United States Department of Agriculture
WUI	wildland urban interface

Definitions

Definitions were taken from the following sources:

Code of Federal Regulations (CFR) Title 36, Parks, Forests, and Public Property, Chapter II, Forest Service, Department of Agriculture; Part 219, Planning, Section A National Forest System Land and Resource Management Planning; Section 219.3, Definitions and Terminology, Revised July 1, 1998. (Referred to as 36 CFR 219.3)

Forest IDT is the Interdisciplinary Team on the Chattahoochee-Oconee NFs. (Referred to as Forest IDT)

Society of American Foresters. 1998. The Dictionary of Forestry. Edited by John A. Helms. 210 p. (Referred to as SAF)

Timber Staff is the Timber Staff on the Chattahoochee-Oconee NFs. (Referred to as Timber Staff)

USDA Forest Service, Final Environmental Impact Statement for the Sumter National Forests Land and Resource Management Plan, Southern Region, Supervisor's Office, Cikumbia, SC 2004. (Referred to as FEIS.

Forest Service Handbook (FSH) 2090.11, Ecological Classification and Inventory Handbook, WO Amendment 2090.11-91-1, Effective 4/26/91, 05—Definitions. (Referred to as FSH 2090.11-05)

FSH 2409.13, Timber Resource Planning Handbook, WO Amendment 2409.13-92-1, Effective 8/3/92, 05—Definitions. (Referred to as FSH 2409.13-05)

FSH 2409.15, Timber Sale Administration Handbook, Amendment No. 2409.15-96-2, Effective Sept. 19, 1996, 05—Definitions. (Referred to as FSH 2409.15-05)

FSH 2409.17, Silvicultural Practices Handbook, 1/85 WO, Chapter 9—Timber Stocking Guides and Growth Predictions, 9.05—Definitions. (Referred to as FSH 2409.17-9.05)

FSH 2609.13, Wildlife and Fisheries Program Management Handbook, WO Amendment 2609.13-92-1, Effective 8/3/92, Chapter 70—Analysis of Economic Efficiency of Wildlife and Fisheries Projects, 70.5—Definitions. (Referred to as FSH 2609.70.5)

FSH 2709.12, Road Rights-of-Way Grants Handbook, 9/85 WO, Zero Code, 05—Definitions. (Referred to as FSH 2709.12-05)

Forest Service Manual (FSM) 1900—Planning, Amendment No. 1900-91-3, Effective March 15, 1991, 1905—Definitions. (FSM 1905)

FSM 2163, Hazardous Waste Management, Chapter 2163.05, Definitions. (Referred to as FSM 2163)

FSM 2200, Range Management, WO Amendment 2200-91-1 Effective 3/1/91, Chapter 2230, Grazing and Livestock Use Permit System, 2230.5—Definitions. (Referred to as FSM 2230)

FSM 2300, Recreation, Wilderness, and Related Resource Management, Amendment No. 2300-91-3 Effective March 12, 1991. Chapter 2355, Off-Road Vehicle Use Management, Executive Order 116-44, as amended by Executive Order 11989, Use of Off-Road Vehicles on the Public Lands 37 FR 2877 (Feb. 9, 1972), 42 FR 26959 (May 25, 1977). (Referred to as FSM 2355)

FSM 2300, Recreation, Wilderness, and Related Resource Management, WO AFSM 2300—Recreation, Wilderness, and Related Resource Management, WO Amendment 2300-90-1, Effective 6/1/90, Chapter 2310—Planning and Data Management—2312—Recreation Information Management (RIM). (Referred to as (FSM 2312)

FSM 2400, Timber Management, WO Amendment 2400-96-6 Effective 9/24/96. Chapter 2435—Salvage Sales. 2435.05, Definitions. (FSM 2435)

FSM 2500, Watershed and Air Management, Amendment No. 2500-94-4, Effective Dec. 20, 1994. Chapter 2520, Watershed Protection and Management. 2521—Watershed Condition Assessment. 2521.05—Definitions. (Referred to as FSM 2521)

FSM 2500, Watershed and Air Management, Amendment No. 2500-94-4, Effective Dec. 20, 1994. Chapter 2520, Watershed Protection and Management. FSM 2526—Riparian Area Management. 2526.05—Definitions. (Referred to as FSM 2526)

FSM 2600, Wildlife, Fish, and Sensitive Plant Habitat Management, Amendment No. 2600-91-8 Effective Oct. 22, 1991, Chapter 2605, Definitions. (Referred to as FSM 2605)

FSM 2600,Wildlife, Fish, and Sensitive Plant Habitat Management, WO Amendment 2600-95-7, Effective 6/23/95, Chapter 2670, Threatened, Endangered, and Sensitive Plants and Animals, 2670.5—Definitions. (Referred to as FSM 2670)

A User's Guide to Forest Information Retrieval (FIR), Southeastern Forest Experiment Station, Forest Inventory and Analysis Unit, Asheville, NC, 1988. (Referred to as FIR) Interim Resource Inventory Glossary, File 1900, Washington, DC, 96 p., June 14, 1989. (Referred to IRIG)

A

accessibility—The relative ease or difficulty of getting from or to someplace, especially the ability of a site, facility or opportunity to be used by persons of varying physical and mental abilities.

acid deposition—Rain, snow, or particulate matter containing high concentrations of acid anions (e.g., nitrate and sulfacte), usually produced by atmospheric transformation of the byproducts of fossil fuel combustion. Precipitation with a pH lower than 5.0 is generally considered to be acidic.

acid neutralizing capacity—The total capacity of a water supply to neutralize acids, as determined by titration with a strong acid. Acid neutralizing capacity includes alkalinity (e.g., carbonate) plus base cations.

acidification —To convert into an acid or become acid.

Agriculture Conservation Program— USDA cost-share program for steambank improvement.

acquisition of land—Obtaining full landownership rights by donation, purchase, exchange, or condemnation.

acre-equivalents—The number of acres of forest habitat improved or affected by the installation of various wildlife habitat improvements in an area. Determined by multiplying by various coefficients.

acre-foot—A measurement of water volume, equal to the amount of water that would cover an area of 1 acre to a depth of 1 foot (specifically 43,560 cubic feet or 325,851 gallons).

activity—A measure, course of action, or treatment that is undertaken to directly or indirectly produce, enhance, or maintain forest and rangeland outputs or achieve administrative or environmental quality objectives.

adaptive management —A dynamic approach to forest management in which the effects of treatments and decisions are continually monitored and used, along with research results, to modify management on a continuing basis to ensure objectives are being met.

administrative unit —All the National Forest System lands where one forest supervisor has responsibility. The basic geographic management area within a Forest Service Region, station, or area.

advance regeneration (reproduction)—Seedlings or saplings that develop, or are present, in the understory.

aerial logging—A yarding system employing aerial means, (e.g., helicopters, balloons), to lift logs.

afforestation—Establishment of a forest or stand in an area not recently forested.

age class —A grouping of living things based on their age.

age class (cohort) —A distinct aggregation of trees originating from a single natural disturbance or regeneration cutting.

Age dependent relationships—Complex yield composite relationships between independent and dependent variables that vary by the age of the understory and/or the overstory.

agricultural land —Areas used primarily for production of food and/or fiber (excludes wood fiber). Examples include cropland, pasture, orchards, vineyards, nurseries, confined feeding areas, farmsteads, and ranch headquarters.

air pollution—Any substance or energy form (heat, light, noise, etc.) that alters the state of the air from what would naturally occur.]

air quality class—Three broad classifications used to prevent significant deterioration of air quality for all areas of the country.

Class I—All areas where essentially any degradation of air quality would be considered significant deterioration.
Class II—All areas where moderate degradation over baseline concentrations are allowed.
Class III—All others.

all aged stand—A stand with trees of all, or almost all age classes, including those of exploitable age.

allocated fund—Funds transferred from one agency or bureau to another for carrying out the purpose of the parent appropriation and agency.

allocation—The assignment of management prescriptions or combination of management practices to a particular land area to achieve the goals and objectives of the alternative.

allopatric —Condition where one species lives in a section of stream without other closely related species. The species have disjunct distributions. Opposite of sympatric.

allotment management plan—The basic land unit used to facilitate management of the range resource on National Forest System and associated lands administered by the Forest Service.

allowable sale quantity—The quantity of timber that may be sold from the area of suitable land covered by the Forest Plan for a time period specified by the Forest Plan. This quantity is usually expressed on an annual basis as the "average annual allowable sale quantity."

all-terrain vehicle —Any motorized, off-highway vehicle 50 inches or less in width, having a dry weight of 600 pounds or less that travels straddled by the operator. Low-pressure tires are six inches or more in width and designed for use on wheel rim diameters of 12 inches or less, utilizing an operating pressure of 10 pounds per square inch (psi) or less as recommended by the vehicle manufacturer.

alternative—In forest planning, a mix of resource outputs designed to achieve a desired management emphasis as expressed in goals and objectives, and in response to public issues or management concerns.

amendment —A formal alteration of the Forest Plan by modification, addition, or deletion. Forest Plan amendment requires an environmental analysis. Significant findings require an environmental impact statement and the amendment will follow the same procedure used for plan preparation. Insignificant findings allow the changes to be implemented following public notification. Amendments can take place at any time following plan approval.

amenity values—Features or qualities which are pleasurable or aesthetic, as contrasted with the utilitarian features of a plan, project, location, or resource.

analysis area—A collection of lands, not necessary contiguous, sufficiently similar in character, that they may be treated as if they were identical.

analysis area identifier—A resource characteristic used to stratify the land into capability areas and analysis areas.

Analysis of the Management Situation—A determination of the ability of the planning area to supply goods and services in response to society's demand. The AMS is contained in a 35-page report available from the Forest Supervisor. The Forest Plan includes a summary of the AMS. Information from it is contained throughout the EIS/Plan.

animal unit month—The quantity of forage required by one mature cow and her calf (or the equivalent, in sheep or horses), for one month; 682 pounds of air-dry forage.

annual forest program—The summary or aggregation of all projects that make up an integrated (multifunctional) course of action for a given level of funding of a forest planning area that is consistent with the Forest Plan.

annual work planning process—Preparation of technical plans that serve to implement land and resource management, and program decisions contained in the integrated land, resource plans, and budget allocations.

appropriated fund—Funds available for obligation or outlay by Congress to a given agency.

appropriate management response—The response to a wildland fire based on an evaluation of risks to firefighter and public safety. Circumstances under which the fire occurs, including weather and fuel conditions, natural and cultural resource management objectives, protection priorities, and values to be protected. The evaluation must also include an analysis of the context of the specific fire within the overall logic, geographic area, or national wildland fire situation.

aquatic ecosystem—Components that include: the stream channel, lake and estuary beds, water, biotic community, and associated habitat features. Also included are streams and lakes with intermittently, semipermanently, and seasonally flooded channels or streambeds. In the absence of flowing water, intermittent streams may have pools or surface water.

aquatic habitat types—The classification of instream habitat based on location within

channel, patterns of water flow, and nature of flow controlling structures. Habitat is classified into a number of types according to location within the channel, patterns of water flow, and nature of flow controlling structure. Riffles are divided into three habitat types: low gradient riffles, rapids, and cascades. Pools are divided into seven types: secondary channel pools, backward pools, trench pools, plunge pools, lateral scour pools, dammed pools, and beaver ponds. Glides, the third habitat type, are intermediate in many characteristics between riffles and pools. It is recognized that as aquatic habitat types occur in various parts of the country, additional habitat types may have to be described. If necessary, the regional fishery biologist will describe and define the additional habitat types.

arterial roads—Roads that provide service to large land areas and usually connect with public highways or other forest arterial roads to form an integrated network of primary travel routes. The location and standard are often determined by a demand for maximum mobility and travel efficiency rather than specific resource-management service. They are usually developed and operated for long-term land and resource management purposes and constant service. These roads generally serve areas more than 40,000 acres.

artificial regeneration (reproduction)—Creation of a new age class by renewal of a tree crop by direct seeding, or by planting seedlings or cuttings.

authorized use—Specific activity or occupancy, including a ski area, historical marker, or oil and gas lease, for which a special authorization is issued.

B

background—The area after the middleground in a picture or landscape; generally over 4 miles distance from the viewer.

bald—An early successional opening generally above 4,000 feet, characterized by grassy or heath vegetation.

basal area—The area of the cross-section of a tree inclusive of bark at breast height (4.5 feet or 1.37 meters above the ground) most commonly expressed as square feet per acre or square meters per hectare. Used to measure the density of a stand of trees. For shrubs and herbs it is used to determine phytomass. Grasses, forbs, and shrubs usually measured at or less then 1 inch above soil level. Trees—the cross-section area of a tree stem in square feet commonly measured at breast height (4.5' above ground) and inclusive of bark, usually computed by using diameter at breast height (DBH), or tallied through the use of basal area factor angle gauge.

basal spray—The application of a pesticide, usually a herbicide for controlling brush or weed trees, directed at the base of the stem.

base sale schedule—A timber sale schedule formulated on the basis that the quantity of timber planned for sale and harvest for any future decade is equal to, or greater than, the planned sale and harvest for the preceding decade. The planned sale and harvest for any decade must not be greater than the long-term sustained yield capacity.

best management practices (BMP)—A practice, or a combination of practices determined to be the most effective and practical means of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with water quality goals.

biodiversity—The variety of life in an area, including the variety of gene pools, species, plant and animal communities, ecosystems, and the processes through which individual organisms interact with one another, and their environments.

biological assessment—A "biological evaluation" conducted for major federal construction projects requiring an environmental impact statement, in accordance with legal requirements under Section 7 of the Endangered Species Act (16 U.S.C. 1536(c)). The purpose of the assessment and resulting document is to determine whether the proposed action is likely to affect an endangered, threatened, or proposed species.

biological evaluation —A documented Forest Service review of its programs or activities in sufficient detail to determine how an action or proposed action may affect any proposed, endangered, threatened, or sensitive species. biological growth potential—The average net growth attainable on a fully-stocked natural forest land.

biological oxygen demand —Dissolved oxygen required by organisms for the aerobic biochemical decomposition of organic matter present in water.

bladed skid road—A travel way through the woods formed by loggers to facilitate dragging (skidding) logs from the stump to a log landing. Skid roads are generally used in steep terrain and are cut into mountainsides with a bulldozer.

board foot—A unit of timber measurement equaling the amount of wood contained in an unfinished board 1 inch thick, 12 inches long, and 12 inches wide. Commonly, 1,000 board feet is written as 1 MBF, and 1,000,000 board feet is written as 1MMBF.

browse—Young twigs, leaves and tender shoots of plants, shrubs or trees that animals eat.

burning (prescribed)—The application of fire, usually under existing stands and under specified conditions of weather and fuel moisture, in order to attain silvicultural or other management objectives.

C

cable logging—A term for any system involving transport of logs along, or by means of steel cables with the load being lifted partly or wholly off the ground.

canopy cover—The percent of a fixed area covered by the crown of an individual plant species or delimited by the vertical projection of its outermost perimeter. Small openings in the crown are included. Used to express the relative importance of individual species within a vegetation community, or to express the canopy cover of woody species. Canopy cover may be used as a measure of land cover change or trend. Often used for wildlife habitat evaluations.

capability—The potential of a land area to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and a given level of management intensity. Note: capability depends upon the current condition and site conditions including climate, slope, land form, soil and geology, and the application of management practices and protection from fire, insects, and disease.

carrying capacity—The number of organisms of a given species and quality that can survive in, without causing deterioration of, a given ecosystem through the least favorable environmental conditions that occur within a stated interval of time.

channel ephemeral streams—Ephemeral streams that have a defined channel of flow where surface water converges with enough energy to remove soil, organic matter, and leaf litter. Ones that exhibit an ordinary high watermark and show signs of annual scour or sediment transport are considered navigable waters of the United States (USACE, Part 330-Nationwide Permit program, 2000).

channelization—Artificial change of a stream channel profile.

Class A, B, C, and D Chemicals—The Vegetation Management EISs (VMEIS) for both the Coastal Plain/Piedmont and for the Appalachian Mountains classified combinations of herbicides/application methods as Class A, B, C or D. Each VMEIS classifies these combinations of herbicides and appliecation methods as follows:

Class A—Do not pose risk which would require mitigation in addition to those stated in chapter II (section E.2.c.) in the VMEIS.

Class B—Pose human or wildlife health risk which requires additional mitigation, OR have soil-active half-lives (appendix A, table 4-9 in the VMEIS) exceeding 6 months.

Class C—Pose human or wildlife health risk which requires additional mitigation, AND have soil-active half-lives (appendix A, table 4-9 in the VMEIS) exceeding 6 months.

Class D—Pose a risk to human or wildlife health or to the environment which cannot be mitigated to an acceptable level of risk.

Clean Air Act of 1970—A congressional act, along with the amendments passed in 1977 and 1990, that provides authority for the Environmental Protection Agency to develop specific regulations controlling air pollution.

cleaning—A release treatment made in an age class, not past the sapling stage, in order to free the favored trees from less desirable individuals of the same age class which can overtop them.

clearcutting—The harvesting in one cut of all trees on an area for the purpose of creating a new, even-aged stand. The area harvested may be a patch, stand, or strip large enough to be mapped or recorded as a separate age class in planning for sustained yield under area regulation. A method of regenerating an even-aged stand. Regeneration is from natural seeding, direct seeding, planted seedlings, and/or advance reproduction. Harvesting may be done in groups or patches (group or patch clearcutting), or in strips (strip clearcutting). In the clearcutting system, the management unit or stand in which regeneration, growth, and yield are regulated consists of the individual clearcut stand.

clearcutting with reserves—A two-aged regeneration method in which varying numbers of reserve trees are not harvested to attain goals other than regeneration.

climax—The culminating stage in plant succession for a given environment with the vegetation having reached a highly stable condition.

co-dominant trees—Trees or shrubs with crowns receiving full light from above, but comparatively little from the sides. Crowns usually form the general level of the canopy.

cohort— a group of trees developing after a single disturbance, commonly consisting of trees of similar age, although it can include a considerable range of tree ages of seeding or sprout origin and threes that predate the disturbance.

cold water fishery—Aquatic habitats that predominately support fish species that have temperature tolerances up to about 70°F, and exhibit their greatest reproductive success at temperatures below 65°F (18.3°C).

collector road—Roads that serve smaller land areas and are usually connected to a forest arterial or public highway. They collect traffic from forest local roads or terminal facilities. The location and standard are influenced by long-term multi-resource service needs, and travel efficiency. Forest collector roads may be operated for constant or intermittent service, depending on land-use and resource management objectives for the area served by the facility. These roads generally have two or more local roads feeding into them and generally serve an area exceeding 10,000 acres.

commercial forest land—Forest land that can produce crops of industrial wood, and has not been withdrawn by Congress, the Secretary of Agriculture, or the Chief of the Forest Service. Existing technology and knowledge must be available to ensure timber production without irreversible damage to soils productivity, or watershed conditions. Adequate restocking can be attained within five years after final harvesting.

commercial thinning—Any type of thinning producing merchantable material at least equal to the value of the direct cost of harvesting.

commercial tree species—(1) Tree species suitable for industrial wood produces. (2) Conifer and hardwood species used to calculate the commercial forest land allowable sale quality.

commodity outputs—A resource output with commercial value. All resource products that are articles of commerce.

compartment—A portion of a forest under one ownership, usually contiguous and composed of a variety of forest stand types, defined for purposes of locational reference.

composition (stand)—The proportion of each tree species in a stand expressed as a percentage of the total number, basal area, or volume of all tree species in the stand.

constraint—A restriction or limit that must be met.

Continuous Inventory of Stand Condition (CISC)—A system that continuously reflects an up-to-date description of timber stands. It tells what and when actions are planned for stands and gives some information about actions that have taken place. It is also the name of the data base management computer system used for the storage and retrieval of data.

conventional logging—A term used to identify methods commonly used in an area to move logs from stump to mill.

conversion (forest management)—A change from one forest type to another in a stand on land that has the capability of both forest types.

coppice —A method of regenerating a stand in which all trees in the previous stand are harvested and the majority of regeneration is from stump sprouts or root suckers.

coppice with reserve—A two-aged regeneration method in which reserve trees are retained to goals other than regeneration. This method normally creates a two-aged stand.

cord —A unit of gross volume measurement for stacked, round wood based on external dimensions, generally implies a stack of 4 x 4 feet vertical cross section and 8 feet long. Contains 128 stacked cubic feet.

corridor —A linear strip of land identified for the present or future location of transportation or utility rights-of-way within its boundaries.

It can also be identified for wildlife habitat connecting, or protecting forest resources.

Council on Environmental Quality—An advisory council to the president established by the National Environmental Policy Act of 1969. It reviews federal programs for their effect on the environment, conducts environmental studies, and advises the president on environmental matters.

creel survey—A survey of anglers.

critical habitat—Habitat, determined by the Secretary of Interior, essential to the conservation of the endangered or threatened species.

crown class—A class of tree based on crown position relative to the crowns of adjacent trees.

dominant —Trees with crowns extending above the general level of the main canopy of even-aged groups of trees. They receive full light from above, and partly from the sides.

co-dominant—Trees with crowns forming the general level of the main canopy in even-aged groups of trees. They receive full light from above, and comparatively little from the sides.

intermediate—Trees with crowns extending into the lower portion of the main canopy of even-aged groups of trees, but shorter in height than the co-dominants. They receive little direct light from above, and none from the sides.
overtopped (suppressed)—Trees of varying levels of vigor that have their crowns completely covered by the crowns of one or more neighboring trees.

cubic foot—A unit of measure reflecting a piece of wood 12 inches long, 12 inches wide, and 12 inches thick.

culmination of mean annual increment —Age at which average rate of annual tree growth stops increasing and begins to decline. Mean annual increment is expressed in cubic feet measure and is based on expected growth, according to the management intensities and utilization standards assumed in accordance with 36 CFR 219.16(a)(2)(i) and (ii). Culmination of mean annual increment includes regeneration harvest yields, and any additional yields from planned intermediate harvests.

cultural resources—Physical remains of districts, sites, structures, buildings, networks or objects that were used by humans. They may be historic, prehistoric, archaeological or architectural or spiritual in nature. Cultural resources are non-renewable.

cunit—Equivalent to 100 cubic feet of solid wood. Commonly, 100 cubic feet is expressed as 1 CCF.

cut-offs—Analysis constraints that prevent the valuation of non-timber outputs produced in excess of demand plus x percent. It ensures that the assumptions of a horizontal demand curve are not violated.

cutting cycle—The planned interval between partial harvest in a stand being managed with an uneven-aged regeneration method.

D

daylighting —The practices of cutting back edges of roads or trails by removing shrub and tree growth.

decision criteria—Rules or standards used to evaluate and rank alternatives.

den trees—Trees having rainproof, weather-tight cavities used by wildlife.

desired future condition—An expression of resource goals that have been set for a unit of land. It is written as a narrative description of the landscape as it will appear when the goals have been achieved. The condition also includes a description of physical and biological processes, the environmental setting, and the human experience.

developed recreation—Recreation use or opportunities occurring at developed sites.

developed recreation site—A discrete place containing a concentration of facilities and services used to provide recreation opportunities to the public and evidencing a significant investment in facilities and management under the direction of an administrative unit in the National Forest System.

development level—An indication of site modification based on classes in the Recreation Opportunity Spectrum. Development Level 1 equates to Primitive, with minimum site modification; 2 equates to Semi-Primitive Motorized/ Nonmotorized, with little site modification; 3 equates to Roaded, with moderate modification; 4 equates to Rural, with heavy site modification; and 5 relates to Urban, with a high degree of site modification.

diameter at breast height—A tree's diameter measured at about 4.5 feet (1.37m) above the forest floor on the uphill side of the tree. For the purposes of determining breast height, the forest floor includes the duff layer that may be present, but does not include unincorporated woody debris that may rise above the ground line.

diameter class—Any of the intervals into which a range of diameters of tree stems may be divided for classification and use, (e.g., 10-inch class includes diameters from 9.5 inches to 10.49 inches.

disjunct (species)—Separated; plant or animal populations occupying sites away from their normal range, or away from other sites of occurrence.

dispersed recreation—Recreation opportunities or use occurring in the general forest area. Does not take place in developed sites..

disturbance (ecology)—Any relative discrete event in time that disrupts the ecosystem, community, or population structure and changes resources, substrate availability, or the physical environment.

disturbance-recovery regime—A natural pattern of periodic disturbance followed by a period of recovery. Examples include fire or flooding.

diversity—The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.

drainage area/basin—The total area above a given point on a stream that contributes to the flow at that point. Term is often used interchangeably with watershed.

drum chopping—Method used to prepare areas for reforestation. Large drums with cutting blades attached are pulled over areas by vehicles that include crawler-type tractors and rubber-tired skidders.

E

early succession forest—The biotic community that develops immediately following the removal or mortality of most or all of forest canopy, resulting in a predominance of woody species regeneration. As used in the Final Environmental Impact Statement and Forest Plan, a stand age of 0 to

10 years is used to define this condition. See successional stage.

early successional habitat—A vegatative condition typically characterized by low density to no tree canopy cover and an abundane of herbaceous and/or woody ground cover. This condition may include early-successional forest, maintained openings, pastures, balds, and open woodlands.

early successional species—Plant or animal species characteristic of early forest successional stages.

ecological classification system—A hierarchical system used to help organize and coordinate the classification of ecological types, units, and to make comparisons. Classification is ecologically based and integrates existing resource data including climate, topography, geology, soil, hydrology, and vegetation. The system includes many levels (from the top-down approach): domain, division, province, section, subsection, land type, land type association, land type phase, and site.

ecological management unit—A grouping of one or more soil series that have similar characteristics including texture, structure, or water retention capacity. EMUs are used in soil mapping.

ecosystem—A complete interacting system of organisms and their environment.

ecosystem/cover type —The native vegetation ecological community considered together with non-living factors of the environment as a unit. The general cover type occupying the greatest percent of the stand location. Based on tree or plant species forming a plurality of the stocking within the stand. May be observed in the field, or computed from plot measurements.

electronic sites—Areas designated for the operation of equipment which transmits and receives radio signals.

endangered species —Any species that is in danger of extinction throughout all or a significant portion of its range, other than members of the class Insecta that have been determined by the Department of Interior to constitute a pest whose protection under the provisions of this (Endangered Species Act of 1973) act would present an overwhelming and overriding risk to humans. It must be designated in the *Federal Register* by the appropriate secretary.

Endangered Species Act of 1973—An act that enables endangered and threatened species to be conserved. It provides a program for the conservation of such species, and takes appropriate steps to achieve the purposes of the (relevant) treaties and conventions.

endemic—Species restricted to a particular geographic area. Usually limited to one or a few small streams or a single drainage.

ending inventory—The standing volume at the end of the planning horizon. It must be adequate for the maintenance of long-term sustained yield.

environment—All the conditions, circumstances, and influences surrounding and affecting the development of an organism, or group of organisms.

environmental consequence—The result or effect of an action upon the environment.

Environmental Impact Statement —A disclosure document revealing the environmental effects of a proposed action, which is required for major federal actions under Section 102 of the National Environmental Policy Act, and released to the public and other agencies for comment and review. Final Environmental Impact Statement (FEIS) is the final version of the statement disclosing environmental effects required for

major federal actions under Section 102 of the National Environmental Policy Act.

environmental impact—Used interchangeably with environmental consequence or effect.

ephemeral streams—Streams having flows that occur for short periods of time in direct response to storm precipitation or snowmelt runoff. Their bottoms are always above the water table and do not contain fish or aquatic insects that have larvae with multiple-year life cycles. Ephemeral streams may have a defined channel, but may be manifested as a natural swale or depression with vegetation and organic material covering the bottom. They also may serve as a conduit for much of the sediment that enters the stream system. Large woody debris associated with ephemeral streams may also contribute significantly to the stability of a stream system. Ephemeral streams that exhibit an ordinary high watermark, show signs of annual scour or sediment transport, are considered navigable waters of the United States.

erosion—The wearing away of the land surface by the action of wind, water, or gravity.

essential habitat—Habitat in which threatened and endangered species occur, but which has not been declared as critical habitat. Occupied habitat or suitable unoccupied habitat necessary for the protection and recovery of a federally designated threatened or endangered species.
eutrophication—Condition of a lake where deleterious effects are caused by increased nutrients (nitrogen and phosphorous), and a decrease in oxygen.

evapo-transpiration—The transfer of water vapor to the atmosphere from soil and water surfaces (evaporation), and from living plant cells (transpiration).

even-aged methods—Regeneration methods designed to maintain and regenerate a stand with a single age class.

even-aged silvicultural system—A planned sequence of treatments designed to maintain and regenerate a stand with one age class.

even-aged stand—A stand of trees containing a single age class in which the range of tree ages is usually less than 20 percent of rotation.

existing old growth—Individual stands currently recognized by the FS as meeting the parameters for existing old growth as described in the "Guidance for Conserving and Restoring Old-Growth Forest Communities on National Forests in the Southern Region"

extirpation —Extinction of a species from all or part of its range.

F

farmer-owned land—Owned by farm operators, excluding incorporated farm ownerships.

fauna—The animals of a given region or period.

featured species—The selected wildlife species whose habitat requirements guide wildlife management including coordination, multiple use planning, direct habitat improvements, and cooperative programs for a unit of land. In context of land management planning, featured species are similar to management indicator species.

Federal Register—The designated document that notifies the public of federal actions and includes Notice of Intent, calls for public involvement, etc. It also publishes the regulations needed to implement those federal actions.

felling—The cutting down of trees.

final crop—That portion of the growing stock (to be) kept until final commercial harvest, (i.e.,

final product objective)

fire condition class—Based on coarse scale national data, classes measure general wildfire risk:

Class One—Fire regimes are usually within historical ranges. Vegetation composition and structure are intact. The risk of losing key ecosystem components from the occurrence of fire is relatively low.

Class Two—Fire regimes on these lands have been moderately altered from their historical range by increased or decreased fire frequency. A moderate risk of losing key ecosystem components has been identified.

Class Three—Fire regimes on these lands have been significantly altered from their historical return interval. The risk of losing key ecosystem components from fire is high. Fire frequencies have departed from historical ranges by multiple return intervals. Vegetation composition, structure and diversity have been significantly altered.

fire line—A linear barrier used to stop prescribed burns and wildfires by removing or treating fuels. Fire lines may include using mechanically plowed lines, water, retardants, etc.

fire management effectiveness index—A measure of the effectiveness of annual fire management operational programs. Measured in dollars per thousand acres protected, the objective is to minimize the index value.

fire management plan—Strategic plans that define a program to manage wildland fires based on an area's approved land management plan.They must address a full range of fire management activities that support ecosystem sustainability, values to be protected, protection of firefighter and public safety, public health and environmental issues, and must be consistent with resource management objectives and activities of the area.

fire regime—A generalized description of the role a fire plays in the ecosystem. It is characterized by fire frequency, predictability, seasonality, intensity, duration, scale (patch size), and regularity or variability. Five combinations of fire frequency exist.

Groups One and **Two** include fire return intervals in the 0-35 range. One includes Ponderosa Pine, other long needle pine species, and dry site Douglas Fir. Group Two includes the drier grassland types—tall grass prairie, and some Pacific chaparral ecosystems.

Groups Three and **Four** include fire return intervals in the 35-100+ year range. Three includes interior dry site shrub communities including sagebrush and chaparral ecosystems. Group Four includes Lodgepole and Jack Pine.

Group Five is the long interval (infrequent), stand replacement fire regime and includes temperate rain forest, boreal forest, and high elevation conifer species.

fire use—The combination of wildland fire use and prescribed fire application to meet resource objectives.

fisheries classification—Water bodies and streams classed as having a cold- or warm-water fishery. This designation is dependent upon the dominant species of fish occupying the water.

fisheries habitat—Streams, lakes, and reservoirs that support fish.

floodplains—Lowland or relatively flat areas joining inland and coastal water including, at a minimum, that area subject to a 1-percent (100-

year return period) or greater chance of flooding in any given year. Although floodplains and wetlands fall within the riparian area, they are defined here separately as described in the Forest Service Manual.

floor on first period production—The minimum harvest volume in the first period that should be produced to prevent a significant impact on the local economy.

flora—The plants of a given region or period.

forage—All browse and non-woody plants that are available to livestock or game animals used for grazing or harvested for feeding.

forage production—The weight of forage that is produced within a designated period of time on a given area. The weight may be expressed as green, air dry, or oven dry. The term may also be modified as to time of production including annual, current years, or seasonal forage production.

foreground—The area between the viewer and the middle ground in a landscape; generally from 0 to ½ mile distance.

forest—An area managed for the production of timber and other forest products, or maintained under woody vegetation for indirect benefits as protection of a watershed, recreation, or wildlife habitat.

forest type—A category of forest defined by its vegetation (particularly its dominant composition) as based on a percentage cover of trees.

forest development road—A road wholly or partly within, or adjacent to, and serving a part of the National Forest System. It also has been included in the Forest Development Road System Plan.

forest health—The perceived condition of a forest derived from concerns about factors as its age, structure, composition, function, vigor, presence of unusual levels of insects or disease, and resilience to disturbance.

forest land—Land at least 10 percent occupied by forest trees of any size, or formerly having had such tree cover, and not currently developed for non-forest use. Lands developed for non-forest use including areas for crops, improved pasture, residential, or administrative areas, improved roads of any width, adjoining road clearing, and power line clearing of any width.

Forest and Rangeland Renewable Resources Planning Act of 1974—An act of Congress requiring the preparation of a program for the management of the national forests' renewable resources, and of land and resource management plans for units of the National Forest System. It also requires a continuing inventory of all National Forest System lands and renewable resources.

Forest Service Handbook (FSH)—A handbook that provides detailed instructions for proceeding with specialized phases of programs or activities for Forest Service use.

Forest Service Manual (FSM)—Agency manuals that provide direction for Forest Service activities.

forest trail system—Trails that are part of the forest transportation system. A designated path commonly used and maintained for hikers, horse riders, bicycles, or two-wheeled motorized vehicles.

forest type—A descriptive term used to group stands of similar composition and development because of given ecological factors, by which they may be differentiated from other groups of stands.

forest supervisor—The official responsible for administering the National Forest System lands in a Forest Service administrative unit. It may consist of two or more national forests or all the

forests within a state. The supervisor reports to the regional forester.

forest-wide standard—A performance criterion indicating acceptable norms, specification, or quality that actions must meet to maintain the minimum considerations for a particular resource. This type of standard applies to all areas of the forest regardless of the other management prescriptions applied.

free-to-grow—A seedling or small tree free from direct competition from other trees, shrubs, grasses, or herbaceous plants.

fuel break —Any natural or constructed barrier used to segregate, stop, and control the spread of fire, or to provide a control line from which to work.

fuel treatment —The rearrangement or disposal of fuels to reduce fire hazard. Fuels are defined as living and dead vegetative materials consumable by fire.

fuels management—The planned treatment of fuels to achieve or maintain desired fuels conditions.

fuelwood—Wood used for conversion to some form of energy.

G

game species—Any species of wildlife or fish for which seasons and bag limits have been prescribed, and which are normally harvested by hunters, trappers, and fishermen under state or federal laws, codes, and regulations.

General Forest Area—National forest lands not categorized as developed recreation sites, trails or wilderness. It can be a logical working area, (i.e., a drainage, geographic area, forest district, etc.) Typically containing a wide spectrum of settings and opportunities, facilities and sites located inside the boundary of a GFA are sometimes considered *concentrated use areas* (CUA), that may include dispersed front- and/or backcountry campsites, parking areas, pullouts and landings, river and road corridors, lake surfaces, and day use areas including OHV areas, climbing areas, target shooting areas, etc. Amenities or constructed features inside GFAs are primarily for resource protection.

geologic features—Landforms or other features of significant geologic interest that may require special management to protect the special qualities, or provide interpretation to the public.

geologic formation—A mappable body of rock identified by distinctive characteristics, some degree of internal homogeneity, and stratigraphic position. The name normally consists of two parts. The first is the name of the geographic locality where the formation was first identified and described. This is followed by a descriptive geologic term, usually the dominant rock type.

Geographic Information System—An information processing technology to input, store, manipulate, analyze, and display spatial resource data to support the decision-making processes of an organization. Generally, an electronic medium for processing map information, typically used with manual processes to affect specific decisions about land base and its resources.

geological area—A unit of land that has been designated by the Forest Service as containing outstanding formations or unique geological features of the earth's development, including caves and fossils. Areas of this type and all other special interest areas are identified and formally classified primarily because of their recreational and educational values. Areas with similar types of values of scientific importance are formally classified as research natural areas.

global ranks—Ranks assigned by the Nature Conservancy and state heritage programs based on number of occurrences.

grassland—Areas on which vegetation is dominated by grasses, grass-like plants, forbs, and/or cryptogams (mosses, lichens, and ferns), provided these areas do not qualify as built-up land or cultivated cropland. Examples include tall grass and short grass prairies, meadows, cordgrass marshes, sphagnum moss areas, pasturelands, and areas cut for hay.

grazing—Consumption of range or pasture forage by animals.

grazing capacity—The maximum stocking rate possible without inducing damage to vegetation or related resources.

grazing permit—Official, written permission to graze a specified number, kind, and class of livestock for a specific period on a defined range allotment.

gross receipts—A total of all funds received by the U.S. Treasury as a result of Forest Service activities.

groundwater—Water in a saturated zone in a geologic stratum. Water stored below the water table where the soil (or other geologic material) is saturated.

group selection—An uneven-aged regeneration method in which trees are removed periodically in small groups. Uneven age classes for trees are established in small groups. The width of groups is about twice the height of the mature trees, with small opening providing microenvironments suitable for tolerant regeneration, and the larger openings providing conditions suitable for more intolerant regeneration.

growing stock trees—Live trees, meeting specified standards of quality or vigor, included in growth and yield projections to arrive at the allowable sale quantity.

growing stock volume—Volume (cubic feet) of solid wood in growing stock trees 5 inches DBH and larger, from a 1-foot stump to a minimum 4-inch top diameter, outside bark, on the central stem. Volume of solid wood in primary forks from the point of occurrence to a minimum 4-inch top diameter outside bark is included.

H

habitat—The native environment of an animal or plant.

harvest cutting—An intermediate for final cutting that extracts salable trees.

harvesting method—A procedure by which a stand is logged. Emphasis is on meeting logging requirements rather than silvicultural objectives.

herbicide—A pesticide used for killing or controlling the growth of undesirable plants.

high-grading—The removal from the most commercially valuable trees, often leaving a residual stand composed of trees of poor condition or species composition.

historic landscapes—Industrial, agricultural, pastoral or domestic landscapes that have evolved over many years from human alteration. Commonly functional and often vernacular, the landscapes may not always be visually pleasing, often responding to specific functions or topography, not formally planned or designed. They may be informal to the degree that they appear to be natural occurrences, or the spatial organization of built and natural elements may be quite traditional or formal. They are identifiable and can be

mapped, either as point-specific features or enclaves within a larger landscape, as entire landscapes themselves, or as a combination of both.

human resource programs—Any of the federal labor programs providing work experience for local people.

hydric soils—Soils developed in conditions where soil oxygen is limited by the presence of saturated soil for long periods during the growing season.

I

immediate foreground- The area in the landscape from the viewer out to 300 feet distance.

improved pasture —Fenced, fertilized pastures intensively managed for livestock grazing.

improvement cutting—The removal of less desirable trees in a stand of poles or larger trees, primarily to improve composition and quality.

industrial fuelwood—Wood to be used specifically by industry for production of energy.

i**ndustrial wood**—All commercial round wood products, except fuelwood.

infestation—The attack by macroscopic organisms in considerable concentration. Examples are infestations of tree crowns by budworm, timber by termites, soil or other substrates by nematodes or weeds.

INFRA infrastructure—An integrated database for collection/storage/use of information about features, land units, facilities and utilities, accessibility and real property. For recreation management, INFRA holds information on O&M costs, recreation funding shortfalls, recreation use data, information on accessibility, and inventories of facilities. INFRA brings together Oracle, Arc Info and Arc View GIS technology, and supplements recreation management systems including SMS, ROS and Benefits Based Management.

initial attack—The aggressive response to a wildland fire based on values to be protected, benefits of response, and reasonable cost of response.

in-stream flow—The presence of adequate stream flow in channels necessary to maintain the integrity of the stream channel, and protection of downstream beneficial uses including fish and wildlife needs, outdoor recreation uses of water, and livestock watering needs.

integrated pest management (IPM)—The maintenance of destructive agents, including insects at tolerable levels, by the planned use of a variety of preventive, suppressive, or regulatory tactics and strategies that are ecologically and economically efficient and socially acceptable.

Interdisciplinary Team—A group of resource specialists (e.g., forester, wildlife biologist, hydrologist, etc.) responsible for developing the Forest Plan/Environmental Statement, and for making recommendations to the forest supervisor.

intermediate treatments—A collective term for any treatment designed to enhance growth, quality, vigor, and composition of the stand after establishment of regeneration and prior to final harvest.

intermittent streams—Streams that flow in response to a seasonally-fluctuating water table in a well-defined channel. The channel will exhibit signs of annual scour, sediment transport, and other stream channel characteristics, absent perennial flows.

Intermittent streams typically flow during times of elevated water table levels, and may be dry during significant periods of the year, depending on precipitation cycles.

interpretive association—A nonprofit, tax-exempt corporation or organization whose purpose is extending and enhancing the ability of the Forest Service to provide customer service to National Forest visitors. They work cooperatively with the Forest Service in educating the public about natural and cultural issues on public lands.

interpretive services—Visitor information services designed to present inspirational, educational, and recreational values to forest visitors in an effort to promote understanding, appreciation, and enjoyment of their forest experience.

intolerant—A plant requiring sunlight and exposure for establishment and growth.

L

land exchange—The conveyance of non-federal land or interests in the land in exchange for National Forest System land or interests in land.

landing—A cleared area in the forest to which logs are yarded or skidded for loading onto trucks for transport.

landline location—Legal identification and accurate location of national forest property boundaries.

land management planning—A formal process of management planning involving four interactive steps: monitoring, assessment, decision making, and implementations as described in the Federal Code of Regulations.

landscape—An area composed of interacting ecosystems that are repeated because of geology, land form, soils, climate, biota, and human influences throughout the area. Landscapes are generally of a size, shape, and pattern that are determined by interacting ecosystems
.

landscape character—Particular attributes, qualities, and traits of landscape that give it an image and make it identifiable or unique.

land type—An intermediate level in the ecological classification system based on landform, natural vegetative communities, and soils.

land type association—A group of landtypes. The landtypes in the association are sufficiently homogeneous to be considered as a whole for modeling the future outputs and effects of planned management activities. Landtype associations may not follow watershed boundaries, and are defined on the basis of general similarities in climate, geology, landform, and vegetation.

large woody debris (LWD) (coarse woody debris) (CWD)—Any piece(s) of dead woody material, e.g., dead boles, limbs, and large root masses, on the ground in forest stands, or in streams.

late-seral (successional) stage—The stage of forest development at which overstory trees have attained most of expected height growth and have reached ecological maturity. As used in the Final Environmental Impact Statement and Forest Plan, a stand age of greater than 80 years is generally used to defin this condition. Old-growth forests occur during the late periods of this seral stage at ages that vary by forest type and in response to a variety of environmental conditions. See successional stage.

lease—A contract between the landowner and another granting the latter the right to search for and produce oil, gas, or other mineral substances (as specified in the document) on payment of an agreed rental, bonus, or royalty. This right is subject to the terms, conditions, and limitations specified in the document.

leave tree—A tree (marked to be) left standing for wildlife, seed production, etc, in an area where it might otherwise be felled.

limits of acceptable change (LAC)—A planning process used to establish acceptable wilderness resource and social conditions and prescribe appropriate management actions.

local road—Roads that connect terminal facilities with forest collector or forest arterial roads, or public highways. Forest local roads may be developed and operated for either long- or short-term service. These roads are generally single lane.

low PSI skidder—A term used to identify any one of several types of vehicles used to move logs from stump to log loading area. Low PSI (pounds per square inch) identifies those vehicles that, because of design of tracks, wheels, or suspension system, exert much lower pressure on ground surface than other types of ground-based skidding vehicles.

logging—The felling, skidding, on-site processing, and loading of trees or logs onto trucks.

long-term sustained-yield capacity—The highest uniform wood yield from lands being managed for timber production that may be sustained under a specified management intensity, consistent with multiple-use objectives.

M

machine planting—A method by which tree seedlings are planted by mechanical means rather than by hand.

management action—A set of management activities applied to a land area to produced a desired output.

management action controls—Specifies the acreage or the proportion of an analysis unit assigned to a set of management actions. The controls can be specified in terms of greater than or equal to, equal to, or less than equal to some amount, or proportion of the analysis unit acreage.

management area —A selected grouping of capability or analysis areas selected through evaluation procedures used to locate decisions, and resolve issues and concerns. An area with similar management objectives, and a common management prescription.

Management Attainment Report (MAR)—A process used in determining whether work is progressing as planned. It provides the manager with information for measuring progress against objectives, information for measuring self and subordinates' performance, and an indication of a reporting unit's performance.

management concern—An issue, problem, or condition which constrains the range of management practices identified by the Forest Service in the planning process.

management direction—A statement of multiple-use and other goals and objectives. The associated management prescriptions, and standards and guidelines for attaining them.

management emphasis—The multiple-use values to be featured or enhanced.

management indicator species—An animal or plant selected for use as a planning tool in accordance with 1982 NFMA regulations (36 CFR 219.19). These species are used to help set objectives, analyze effects of alternatives, and monitor plan implementation. They are chosen because their population changes are believed to indicate the effects of management on selected biological components.

management intensity—A management practice or combination of management practices and associated costs designed to obtain different levels of goods and services.
management opportunity—A statement of general actions, measures, or treatments that address a public issue or management concern in a favorable way.

Management Plan (Forest Plan)—A plan developed to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended, that guides all natural resource management activities and establishes management standards and guidelines for the National Forest System lands of a given national forest.

management practice—A specific action, measure, course of action, or treatment undertaken on a forest.

management prescription—Management practices and intensity selected and scheduled for application on a specific area to attain multiple-use and other goals and objectives.

management situation—A comprehensive statement of the planning area resources, its history as it may influence planning, past and present uses, and a review of the public issus directly concerned with the area.

management team—A decision-making group consisting of the forest supervisor, staff officers, and district rangers.

management type—The tree species or species group that should be grown on a specific site, whether or not it presently occupies the site that best suits the particular site soil, aspect, elevation, and moisture provided by the area and the forest plan's objectives.

mast tree—Generally hardwood trees of the heavy seeded variety including oaks, hickories, walnut, beech—25 years and older capable of producing frequent seed crops to feed a variety of wildlife species.

mature timber—The stage at which a crop or stand of trees best fulfills the main purpose for which it was grown.

maximum modification—A visual quality objective in which man's activity may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background.

mean annual increment of growth—The total increase in girth, diameter, basal area, height, or volume of individual trees or a stand up to a given age divided by that age.

mechanical site preparation—Soil disturbance by mechanical chopping, furrowing, dozing, or disking to prepare areas for reforestation. Objective is to reduce plant competition for trees to be planted.

mesic—Sites or habitats characterized by intermediate moisture conditions, i.e., neither decidedly wet or dry.

mesophytic— Plants which grow or are adapted to conditions where there is a balanced supply of water; in conditions which are neither wet nor dry.

middle ground—The space between the foreground and the background in a picture or landscape, generally ½ mile to 4 miles distance from the viewer.

mid-serel (successional) stage—The stage of forest development during which distinct overstory, midstory, and understory canopies are developed. As used in the Final Environmental Impact Statement and Forest Plan, a stand of 11 to 40 years is generally used to define this condition. See successional stage.

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mineral exploration—The search for valuable minerals on lands open to mineral entry.

mineral soil—Weathered rock materials without any vegetative cover.

mineral resource—A known or undiscovered concentration of naturally occurring solid, liquid, or gaseous material in or on the earth's crust in such form and amount that economic extraction of a commodity from the concentration is currently or potentially feasible.

minerals (leasable)—Coal, oil, gas, phosphate, sodium, potassium, oil shale, sulphur, and geothermal steam. All hard-rock minerals that occur on acquired lands, as opposed to public domain lands, are leasable.

minerals (salable)—Common variety deposits that—although they may have value or use in trade, manufacture, the sciences, or in the mechanical or ornamental arts—do not possess a distinct, special economic value for such use over and above the normal uses of the general sum of such deposits. These may include sand, stone, gravel, pumicite, cinders, pumice (except that occurring in pieces more than two inches on a side), clay, and petrified wood.

minimum management requirement—Any constraint imposed to comply with 36 CFR 219.27 and other legal restrictions that must be met by benchmark solutions as noted in 36 CFR 219.11(e)(1). These include requirements including conserving soil productivity, maintaining minimum viable populations of wildlife, preserving the habitat of endangered species' habitat, dispersing openings, and limiting cut size. It also includes any other standards and guidelines, including best management practices that serve to define management prescriptions and resource response.

mitigation—Actions to avoid, minimize, reduce, eliminate, or rectify the impact of a management practice.

monitoring —The periodic evaluation on a sample basis of Forest Plan management practices to determine how fully objectives have been met, and how closely management standards have been applied.

montane—Relating to the zone of relatively moist, cool upland ;slopes characterized by the presence of large evergreen trees as a dominant life form.

mortality—Dead or dying trees resulting from forest fire, insect, diseases, or climatic factors.

motorized equipment—Machines that use a motor, engine, or other non-living power source. This includes, but is not limited to such machines as chain saws, aircraft, snowmobiles, generators, motor boats, and motor vehicles. It does not include small battery or gas powered hand carried devices that include+ shavers, wristwatches, flashlights, cameras, stoves, or other similar small equipment.

multiple use—The management of all the various renewable surface resources of the National Forest System so that they are used in a manner that will best meet the needs of the American people. Making the most judicious use of the land for these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in the use to conform to changing needs and conditions.

multipliers—The ratio of a total impact to a component of the impact in input/output analysis. An example would be the ratio of the sum of direct, indirect, and induced impacts to direct impacts.

N

National Environmental Policy Act (NEPA) of 1969—An act to declare a national policy that will encourage productive and enjoyable harmony between humankind and the environment. It was created to promote efforts that will prevent or eliminate damage to the environment, biosphere, and stimulate the health and welfare of humanity. In addition, the act was crafted to enrich the understanding of the ecological systems and natural resources important to the nation, and establish a Council of Environmental Quality.

National Forest Land and Resource Management Plan (Forest Plan)—A plan developed to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended, that guides all natural resource management activities and establishes management standards and guidelines for the Natioan Forest System lands of a given national forest.

National Forest Management Act (NFMA) of 1976—Act passed as an amendment to the Forest and Rangeland Renewable Resources Planning Act, requiring the preparation of regional guides and forest plans, and the preparation of regulations to guide them.

National Forest System (NFS)—All national forest lands reserved or withdrawn from public domain of the United States and acquired through purchase, exchange, donation, or other means. National Grasslands and land utilization projects administered under Title III of the Bankhead–Jones Farm Tenant Act (50 Stat. 525, 7 U.S.C. 1010–1012), and other lands, waters, or interests that are administered by the Forest Service, or are designated for administration through the Forest Service as a part of the system.

National Forest System Land—Federal land that has been legally designated as national forests or purchase units, and other land under the administration of the Forest Service, including experimental areas and Bankhead-Jones Title III land.

National Recreation Trails—Trails designated by the Secretary of the Interior or the Secretary of Agriculture as part of the national system of trails authorized by the National Trails System Act. National recreation trails provide a variety of outdoor recreation uses, in or reasonably accessible, to urban areas.

National Visitor Use Monitoring (NUVM)—A systematic process to estimate annual recreation and other uses of National Forest lands through user surveys.

National Register of Historic Places—The National Register of Historic Places is the Nation's official list of cultural resources worthy of preservation. Authorized under the National Historic Preservation Act of 1966,the National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. The National Register is administered by the National Park Service, which is part of the U.S. Department of the Interior.

National Wild and Scenic Rivers System—Rivers with scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values designated by Congress under the Wild and Scenic Rivers Act of Oct. 2, 1968, for preservation of their free-flowing condition.

National Wilderness Preservation System—All lands covered by the Wilderness Act and subsequent wilderness designations, irrespective of the department or agency having jurisdiction.

natural regeneration—An age class created from natural seeding, sprouting, suckering, or layering.

net annual growth—The net change in merchantable volume expressed as an annual average between surveys in the absence of cutting (gross growth minus mortality).

net public benefits—An expression used to signify the overall long-term value to the nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs) whether they can be quantitatively valued. Net public benefits are measured by quantitative and qualitative criteria rather than a single measure or index. The maximization of net public benefits to be derived from management of units of the National Forest System is consistent with the principles of multiple use and sustained yield.

no-action alternative—The most likely condition expected to exist in the future if current management direction would continue unchanged.

non-chargable volume—All volume not included in the growth and yield projections for the selected management prescriptions used to arrive at the allowable sale quantity.

non-commodity output—A resource output that cannot be bought and sold.

non-declining yield—A level of timber production planned so that the planned sale and harvest for any future decade is equal to, or greater than the planned sale and harvest for the preceding decade.

non-forest land—Land that has never supported forests and lands formerly forested where use for timber utilization is precluded by development for other use. Lands that never have had, or that are incapable of having 10 percent or more of the area occupied by forest trees; or lands previously having such cover and currently developed for non-forest use.

non-game species—Any species of wildlife or fish which is ordinarily not managed or otherwise controlled by hunting, fishing, or trapping regulations. The designation may vary by state.

non-point source pollution—A diffuse source of pollution not regulated as a point source. May include atmospheric, deposition, agricultural runoff, and sediment from land-distributing activities.

non-stocked stands—Stands less than 16.7 percent stocked with growing stock trees.

non-timber forest products— All forest products except timber, including resins, oils, leaves, bark, plants other than trees, fungi, and animals or animal products.

O

objective—A concise, time-specific statement of measurable planned results that respond to pre-established goals. It forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals.

off-highway vehicle (OHV)—Any vehicle capable of being operated off established roads; e.g., ATVs, motorbikes, four-wheel drives, and snowmobiles. (Also referred to as OHV or off-highway vehicle).

off-road vehicle (ORV)—Any motorized vehicle designed for or capable of cross county

travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain; except that term excludes (A) any registered motorboat; (B) any fire, military, emergency or law enforcement vehicle when used for emergency purposes, and any combat or combat support vehicle\when used for national defense purposes; and (C) any vehicle whose use is expressly authorized by the respective agency head under a permit, lease, license, or contract.

offstream use—Water withdrawn or diverted from a ground or surface-water source for public water supply, industry, irrigation, livestock, thermoelectric power generation, and other uses.

old growth forests—An ecosystem distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics including tree size, accumulation of large dead woody material, number of canopy layers, species composition, and ecosystem function. Old growth is not necessarily virgin or primeval. It can develop over time following human disturbances, just as it does following natural disturbances. Old growth encompasses older forests dominated by early seral species, and forests in later successional stages dominated by shade tolerant species.

on-site—A term referring to species normally found on a site under natural conditions. The same or contiguous property that may be divided by a public or private right-of-way, provided that the entrance and exit between the properties is at a crossroads intersection, and that access is by crossing, as opposed to going along the right-of-way.

operating plan—A written plan, prepared by those engaged in mining activity on the forests, and approved by a forest officer for prospecting, exploration, or extraction activities that are slated to take place on National Forest System land.

ordinary high water mark—The line on the shore established by the fluctuation of water, and is indicated by physical characteristics including a clear, natural line impressed on the bank; shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter, debris, or other appropriate means that consider the characteristics of the surrounding area.

output—The goods, end products, or services that are purchased, consumed, or used directly by people. Goods, services, products, and concerns produced by activities that are measurable and capable of being used to determine the effectiveness of programs and activities in meeting objectives. A broad term for describing any result, product, or service that a process or activity actually produces.

output, minimum level—The amount of an output that will occur regardless of management activity.

outstanding mineral rights—Instances in which the minerals in federally- owned lands were severed prior to the transaction in which government acquired the land. Such rights are not subject to the Secretary of Agriculture's rules and regulations. Removal or extraction of these minerals must be allowed in accordance with the instrument severing the minerals from the surface and under applicable state and local laws and regulations.

overstory—That portion of trees in a two- or multi-layered forest stand that provides the upper crown cover.

overstory removal—The cutting of trees comprising an upper canopy layer in order

to release trees or other vegetation in an understory.

P

PAOT—Persons-at-one-time; a measure of recreation carrying capacity, especially for developed sites. National conventions include 5 persons per family picnic/camp unit, 3.5 persons per parking lot stall at a trailhead or visitor center, 1.5 persons per motorcycle parking stall and 40 persons per tour bus parking stall.

partial retention— A visual quality objective which in human activities may be evident, but must remain subordinate to the characteristic landscape.

partnership—Voluntary, mutually beneficial and desired arrangement between the Forest Service and another or others to accomplish mutually agreed-on objectives consistent with the agency's mission and serving the public's interest.

payments in lieu of taxes—Payments to local or state governments based on ownership of federal land, and not directly dependent on production of outputs or receipt sharing.

per capita use—The average amount of water used person during a standard time period, generally per day.

perennial stream—Any watercourse that generally flows most of the year in a well-defined channel and is below the water table. Droughts and other precipitation patterns may influence the actual duration of flow. It contains fish or aquatic insects that have larvae with multi-year life cycles. Water-dependent vegetation is typically associated with perennial streams.

person-year—About 2,000 working hours that may be filled by one person working during the course of one year or several people working a total of 2,000 hours

.

petrographic—The description and systematic classification of rocks.

physiographic region—A region of similar geologic structure and climate that has had a unified geomorphic history.

piedmont—The "foothills"; a physiographic province, or large area of similar geologic structure, geomorphic history, and climate, characterized by rolling hills, clay soils, metaphorpic rocks, and moderate elevations. In South Carolina, the piedmont ranges from the sandhills region, which crosses the state at Augusta, Columbia, and Lancaster, to an area running roughly from Westminster to Landrum

planning area—The area of the National Forest System covered by a regional guide or forest plan.

planning criteria—Standards, tests, rules, and guidelines by which the planning process is conducted, and upon which judgments and decisions are based.

planning horizon—The overall time period considered in the planning process that spans all activities covered in the analysis or plan. All future conditions and effects of proposed actions which would influence the planning decisions.

planning period—One decade. The time interval within the planning horizon that is used to show incremental changes in yields, costs, effects, and benefits.

plastic soil— soils with excessive clay and high moisture retention near the surface, which moves aside or displaces under heavy loads, forming deep ruts.

pre-commercial thinning—The selective felling, deadening, or removal of tree in a young stand not for immediate financial return, but primarily to accelerate diameter increment on the remaining stems. To maintain a specific stocking or stand density range, or to improve the vigor and quality of the remaining trees.

prescribed fire—Any fire ignited by management actions to meet specific objectives including disposal of fuels, and controlling unwanted vegetation. The fires are conducted in accordance with prescribed fire plans, and are also designed to stimulate grasses, forbs, shrubs, or trees for range, wildlife, recreation, or timber management purposes.

present net value—The difference between the discounted value (benefits) of all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area.

preservation—A visual quality objective that provides for ecological change only.

presuppression—Activities required in advance of fire occurrence to ensure effective suppression action, including: (1) recruiting and training fire forces, (2) planning and organizing attack methods, (3) procuring and maintaining fire equipment, and (4) maintaining structural improvements necessary for the fire program.

primary trout stream—Streams that contain naturally-reproducing populations of brook, rainbow, and/or brown trout.

primitive road—Roads constructed with no regard for grade control or designed drainage, sometimes by merely repeated driving over an area. These roads are single lane, usually with native surfacing and sometimes passable with four-wheel drive vehicles only, especially in wet weather.

process records—A system that records decisions and activities that result from the process of developing a forest plan, revision, or significant amendment.

proclamation boundary—The boundary contained within the presidential proclamation that established the national forest.

productive deferred—Productive (capable) forest land which has been legislatively designated or administratively designated by the Secretary of Agriculture or Chief of the Forest Service for wilderness study or possible additions to the Wilderness System. This classification includes RARE II area designated as wilderness, but does not include RARE II areas designated as "further planning."

productivity class—A classification of the capacity of a given piece of land for timber growth is expressed in cubic feet per acre a year.

Class I—Lands capable of producing 120 cubic feet or more per acre a year.
Class II—Lands capable of producing 85 to 119 cubic feet per acre a year.
Class III—Lands capable of producing 50 to 84 cubic feet per acre a year.
Class IV—Lands capable of producing 20 to 49 cubic feet per acre a year.

program—Sets of activities or projects with specific objectives, defined in terms of specific results and responsibilities for accomplishments .

program budget—The schedule of projects and activities to be carried out on the forest for a year for which funds have been appropriated.

program development and budgeting—The process by which activities for the forest are proposed and funded.

project—A work schedule prescribed for a project area to accomplish management prescriptions. An organized effort to achieve an objective identified by location, activities, outputs, effects, time period, and responsibilities for execution.

proposed action—In terms of the National Environmental Policy Act, the project, activity, or decision that a federal agency intends to implement or undertake. The proposed action described in the Environmental Impact Statement is the Forest Plan.

proposed wilderness—Areas recommended for wilderness by the Forest Service as a result of the RARE II study, but which have yet to be acted on by Congress.

prospecting permit—A written instrument or contract between the landowner and another conveying to the latter the right to enter the former's property and search for mineral materials. Two types of permits are used: (1) a BLM Prospecting Permit is issued by the Bureau of Land Management upon recommendation of the Forest Service. In most cases, these are preference right permits in which the prospector has the first opportunity, to the exclusion of all others, to lease any minerals discovered, and (2) a Forest Service Prospecting Permit issued by the Forest Service. No preference rights are conveyed under Forest Service permits, except in some cases of common varieties on acquired lands.

public domain land—Original holdings of the United States that were never granted or conveyed to other jurisdictions or reacquired by exchange for other public domain lands.

public issue—A subject or question of widespread public interest relating to management of the National Forest System.

public participation activities—Meetings, conferences, seminars, workshops, tours, written comments, survey questionnaires, and similar activities designed or held to obtain comments from the general public and specific publics.

public roads—Roads across national forest land which were in place as public ways when these lands were acquired. These roads may be a part of the forest, state, or county system, and may be maintained by any of these agencies.

public supply—Water withdrawn by public and private water suppliers and delivered to users.

puddled soils—intense soil disturbance under very wet conditions that causes the normal soil structure to break down into soupy mixture.

pulpwood—Wood cut and prepared primarily for manufacture into wood pulp.

pure stand—A stand composed of essentially a single tree species, conventionally at least 85 percent based on numbers, basal areas, or volumes.

Q

qualifiers—Measurable characteristics of outputs and activities. They characterize properties or attributes of activities or outputs.

R

raking—A term used in land clearing whereby crawler tractors, or other types of similar heavy equipment, with a large rake device attached to the front end, are used to push clearing debris into piles or windrows.

ranger district—Administrative subdivisions of the forest supervised by a District Ranger who reports to the Forest Supervisor.

rare species—Any native or once-native species of wild animal which exists in small numbers, and has been determined to need monitoring. May include peripheral species.
real dollar value—A monetary value, which compensates for the effects of inflation.

receipt shares—The portion of receipts derived from Forest Service resource management that is distributed to state and county governments, including the Forest Service, 25 percent fund payments.

reconstruction—Work that includes, but is not limited to, widening of roads, improving alignment, providing additional turnouts, and improving sight distance that improve the standard to which the road was originally constructed. Also undertaken to increase the capacity of the road or to provide greater traffic safety.

Record of Decision—A document separate from, but associated with an environmental impact statement that publicly and officially discloses the responsible official's decision on the alternative assessed in the environmental impact statement chosen to implement.

recreation—Leisure time activity including swimming, picnicking, camping, boating, hiking, hunting, and fishing.

recreation capacity—A measure of the number of people a site can reasonably accommodate at one time; sometimes measured as PAOTs.

recreation alignment—To align or allocate the recreation resources (activities and opportunities) of an area with the niche and markets of the that area.

Recreation Opportunity Spectrum—A method for classifying types of recreation experiences available, or for specifying recreation experience objectives desired in certain areas. Classes are: Primitive, Semi-Primitive Non-Motorized, Semi-Primitive Motorized, Roaded Natural, Rural, and Urban.

- **Primitive ROS**—An area characterized by having essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted.
  The recreation experience opportunity level provided would be characterized by the extremely high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsmen and outdoor skills in an environment that offers a high degree of challenge and risk.
- **Semi-Primitive Non-Motorized (ROS)**—An area characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Interaction between users (or concentration of users) is low, but there is often 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.

  The recreation experience opportunity level provided would be characterized by the high, but not extremely high (or moderate) 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. (The opportunity to have a high degree of interaction with

the natural environment.) Motorized use is not permitted.

- **Semi-Primitive Motorized (ROS)**—An area characterized by a predominantly natural or natural-appearing environment of moderate-to-large size. Interaction between users (or concentration of users) is low, but there is often 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.
  The recreation experience opportunity level provided would be characterized by the high, but not extremely high (or moderate) 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. (The opportunity to have a high degree of interaction with the natural environment.) Motorized use is permitted.

- **Roaded Natural (ROS)**—An area characterized by predominantly natural-appearing environments with moderate evidences of the sights and sounds of man. Such evidences usually harmonize with the natural environment.
  Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities.
  The recreation opportunity experience level provided would be characterized by the probability for equal experiencing of affiliation with individuals and groups and for isolation from sights and sounds of humans. Opportunities for both motorized and non-motorized forms of recreation may be provided.

- **Rural (ROS)—**A classification for areas characterized by a substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil, but harmonize with the natural environment. A considerable number of facilities are designed for use by a large number of people. Moderate densities are provided away from developed sites. Facilities for intensified motorized use and parking are provided.
  The recreation opportunity experience level provided would be characterized by the 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. Opportunities for wildland challenge, risk taking, and testing of outdoor skills are generally unimportant.
- **Urban (ROS)—**An area characterized by a substantially urbanized environment, although the background may have natural-appearing elements. Renewable resources modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sound of humans, on-site, are predominant. Large numbers of users can be expected, both on-site and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry

people throughout the site. The recreation opportunity experience level provided would be characterized by the probability for experiencing affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. Experiencing natural environments, having challenges and risk afforded by the natural environment, and the use of outdoor skills are relatively unimportant. Opportunities for competitive and spectator sports and for passive uses of highly human-influenced parks and open spaces are common.

recreation visit—The entry of one person upon a National Forest to participate in recreation activities for an unspecified period of time. A NF visit can be composed of multiple site visits.

reforestation —The re-establishment of forest cover by seeding, planting, and natural means.

regeneration— The act of renewing of a tree crop by establishing young trees by naturally or artificially. The young crop itself.

regeneration cutting—Any removal of trees intended to assist regeneration already present or to make regeneration possible.

regeneration (reproduction) method—A cutting procedure by which a new age class is created. The major methods are clearcutting, seed-tree, shelterwood, selection, and coppice.

regeneration (reproduction) period—The time between the initial regeneration cutting and the successful re-establishment of a new age class by natural means, planting, or direct seeding.

Region 8—The states that make up the Southern Region of the USDA Forest Service.

Regional Forester—The official responsible for management of National Forest land within a USDA Forest Service region.

regulated harvest—Includes any volume scheduled in calculations of the allowable sale quantity which is harvested from suitable forest land.

release and weeding—A silvercultural treatment designed to free desirable trees from competition with overstory trees, less desirable trees, or grasses and other forms of vegetative growth. It includes release of natural and artificial regeneration.

relic (species)— An isolated species from an ancient family as established through a long fossil record and exhibiting a restricted distribution.

removal cut—The cut which removes the last seed bearers of a seed tree or shelterwood regeneration method after the new seedling stand is considered to be established.

research natural area—An area set aside by the Forest Service specifically to preserve a representative sample of an ecological community, primarily for scientific and educational purposes. Commercial exploitation is not allowed and general public use is discouraged.

reserve trees—Trees, pole-sized or larger, retained after the regeneration period under the clearcutting, seed-tree, shelterwood, or coppice methods.

reserved mineral rights—Refers to those cases wherein the minerals were severed from the surface during the transaction whereby the government acquired the land. These rights are subject to the Secretary of Agriculture's rules and regulations that were applicable at the time

of the transaction.

resource—An aspect of human environment which renders possible, or facilitates the satisfaction of, human wants, and the attainment of social objectives.

resource allocation model—A mathematical model using linear programming that will allocate land to prescriptions and schedule implementation of those prescriptions simultaneously. The end purpose of the model is to find a schedule and allocation that meets the goals of the forest and optimizes some objective function including minimizing costs. The model used for this planning is called spectrum.

resource use and development opportunities—A possible action, measure, or treatment and corresponding goods and services identified and introduced during the scoping process. It may subsequently be incorporated into and addressed by the land and resource management plan in terms of a management prescription.

responsible line officer—The Forest Service employee who has the authority to select and/or carry out a specific planning action.

retention—A visual quality objective in which man's activities are not evident to the casual forest visitor.

revegetation—The re-establishment and development of a plant cover. This may take place naturally through the reproductive processes of the existing flora or artificially through the direct action of humans (e.g., afforestation and range reseeding).

revision—To make the plan new or up-to-date. Plan revision must be considered and approved in accordance with the requirements for the development and approval of a forest plan. Revisions take place every 10-15 years, but may occur more frequently if conditions or public demands change significantly.

right-of-way—A right of use across the lands of others. It generally does not apply to absolute purchase of ownership. Land authorized to be used or occupied for the construction, operation, maintenance, and termination of a project or facility passing over, upon, under, or through such land.

riparian—Land areas directly influenced by water. They usually have visible vegetative or physical characteristics showing this water influence. Streamside, lake borders, and marshes are typical riparian areas.

riparian areas—Areas with three-dimensional ecotones of interaction that include terrestrial and aquatic ecosystems that extend down into the groundwater, up above the canopy, outward across the floodplain, up the near-slopes that drain to the water, laterally into the terrestrial ecosystem, and along the watercourse at a variable width.

riparian corridor—An administrative zone applied to both sides of a stream or along side a pond, lake, wetland, seep or spring. It is a fixed width by stream type that may fall within or beyond the true riparian area.

riparian functions—Activities that occur in a riparian area without the influence of management activities. Functions include erosion and deposition by the streams, nutrient cycling, movement and storage of water, vegetative succession, etc.

ripping—A process where the soil is mechanically sliced or broken to improve tilth, aeration, and permeability.

river classifications (wild and scenic rivers)

(1) **wild —** Rivers or sections of rivers that are free of impoundments and generally inaccessible except by

trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

(2) **scenic —** Rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

(3) **recreational —** Rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

road—A motor vehicle path more than 50 inches wide, unless classified and managed as a trail. It may be classed as a system or non-system road.

road-constant service—A facility on the transportation system developed and operated for long-term land management and resource utilization needs. It is also operated for continuous or annual recurrent service. System-open roads generally remain open for public use except for seasonal closures to prevent road damage due to bad weather conditions.

road—intermittent service—A facility on the transportation system that is developed and operated for long-term land management and resource utilization needs. It is operated for periodic service and closed for more than one year between periods of use. System-closed roads are generally built to access logging sites and are closed once logging activities are completed. They can be re-opened several years later, however, when access is once again needed to the site.

road closure—A technique used by management to regulate and control the use of facilities to achieve transportation economy, user safety, protection of the public investment, and accomplishment of forest resource objectives. It may be intermittent or long term.

road density—A measure of the total length of road in any given unit of area (e.g., 4 miles/square mile.)

road maintenance levels—A formally established set of objectives that describes the conditions necessary to achieve the planned operation of a road. The levels vary from Level I, basic custodial care, to Level V, which is assigned high use roads in which user safety and comfort are important considerations.

roadless area—Undeveloped federal land within which there are no improved roads or roads maintained for travel by means of motorized vehicles intended for highway use.

roadless area review and evaluation (RARE) II—The assessment of "primitive" areas within the national forests as potential wilderness areas as required by the Wilderness Act documented in the final environmental impact statement of the Roadless Area Review and Evaluation, January 1979.

rollover—A maximum PNV solution with an individual good or service production constrained at its maximum potential level. It provides an economically efficient basis for comparing all benchmark levels.

rotation—The number of years required to establish, including the regeneration period and grow timber crops, to a specified condition or maturity for harvest. Even- and two-aged management prescriptions in the Forest Plan use a rotation.

roundwood—Timber and fuelwood prepared in the round state - from felled trees to material trimmed, barked, and crosscut (e.g.: logs and transmission poles).

RPA Program—The recommended direction for long-range management of renewable resources of National Forest System lands. This direction serves as the basis for the regional targets assigned to the forest. The development of this direction is required by the Forest and Rangeland Renewable Resources Planning Act.

runoff—The total stream discharge of water from a watershed including surface and subsurface flow, but not groundwater. Usually expressed in acre-feet.

rural—A recreation opportunity spectrum classification for areas characterized by a substantially modified natural environment. Sights and sounds of man are evident. Renewable resource modification and utilization practices enhance specific recreation activities or provide soil and vegetative cover protection.

rural water use—Term used in previous water-use circulars to describe water used in suburban or farm areas for domestic and livestock needs. The water is generally self-supplied.

S

sale schedule—The quantity of timber planned for sale by time period from an area of suitable land covered by a forest plan. The first period (usually a decade) of the selected sale schedule provides the allowable sale quantity. Future periods are shown to establish that long-term sustained yield will be achieved and maintained.

sanitation cutting—The removal of trees to improve stand health and to reduce actual or anticipated spread of insects and disease.

sapling—A usually young tree that is larger than a seedling, but smaller than a pole. Size varies by region.

savanna—A plant community with a structure characterized by trees comprising 10-25 percent of the canopy cover.

sawtimber—Trees suitable in size and quality for producing logs that can be processed into dimension lumber.

scalloping—The undulating vegetative treatment given to a roadside for aesthetic purposes.

Scenery Management System—A system for the inventory and analysis of the aesthetic values of the National Forest Lands. It replaces the Visual Management System (VMS) as defined in Agricultural Handbook #462 The primary components of the SMS include: Landscape Character, Scenic Attractiveness, Existing Scenic Integrity, Concern Levels, Seen Areas, Scenic Classes, which are developed in the inventory. The Forest Plan components are Landscape Character Goals, Scenic Integrity Levels, Scenic Integrity Objectives, and Standards and Guidelines. These give management direction for the management areas.

National Forest land area is mapped as ecological sections or subsections but may be other land units. Landscape Character descriptions are developed for mapping Scenic Attractiveness, Class A-Distinctive, B-Typical, and C-Indistinctive areas. These help determine the high priority scenic areas. Existing Scenic Integrity Levels indicate the degree of intactness and wholeness of the existing landscape character. Very High Scenic Integrity Level is an unaltered landscape, High Scenic Integrity Level is a landscape that appears unaltered, Moderate Scenic Integrity Level is a landscape that is slightly altered, Low Scenic Integrity Level is a landscape that is moderately altered, Very Low Scenic Integrity Level is a landscape that is heavily altered, and Unacceptably Low Scenic Integrity Level is a landscape that is extremely altered.

Concern Levels are a measure of the degree of public importance placed on the landscape viewed from travel ways and use areas. Concern Levels reflect both the number of visitors and the interest of visitors in scenery. Concern Level 1 areas include primary recreation areas, very high use roadways, major roadways and trails through the forest, and places with moderate use where nearly all visitors are very concerned about scenery. Concern Level 2 areas include mostly secondary recreation areas, secondary roadways, trails, and places with moderate use and visitors with moderate interest in scenery. Concern level 3 travel ways and areas are those which receive very little use and/or use is primarily by visitors not concerned with scenery.

After Concern Levels are determined, the visibility of each area is mapped. Foreground is defined as up to ½ mile from the viewer, Middleground is ½ mile to 4 miles, and Background is over 4 miles from the viewer. The Seldom Seen areas are also mapped.

Scenic Classes are determined by overlaying Scenic Attractiveness, Landscape Visibility, and Concern Level. The matrix in Table 4-2 page 4-16 from the SMS handbook is used. Scenic Class 1 scenery has extremely high public value, Scenic Class 2 scenery has very high public value, Scenic Class 3 scenery has high public value, Scenic Class 4 scenery has moderately high public value, Scenic Class 5 scenery has moderate public value, Scenic Class 6 scenery has moderately low public value, and Scenic Class 7 scenery has low public value. The Scenic Classes are used during the Forest planning process to compare the value of scenery to other resources.

Scenic Integrity Objectives (SIOs) and Landscape Character Goals are developed for Forest Plan Management Areas. Scenic Integrity Objectives are Very High-unaltered, High-appears unaltered, Moderate-slightly altered, and Low-moderately altered. The SIO that is assigned to a management area in the Forest Plan may be different than that of its existing Scenic Integrity Level indicating that any new

scenic attractiveness—The scenic importance of a landscape based on human perceptions of the intrinsic beauty of landform, rockform, waterform, and vegetation pattern. Classified as A (Distinctive), B (Typical or Common), or C (Undistinguished).

scenic class—A system of classification describing the importance or value of a particular landscape or portions of that landscape. Values range from 1 (highest value) to 7 (lowest value).

scenic integrity objective—A desired level of excellence based on physical and sociological characteristics of an area. Refers to the degree of acceptable alterations of the characteristic landscape. Objectives include very high, high, moderate, and low.

- **very high (VH)**—Generally provides for only ecological changes in natural landscapes and complete intactness of landscape character in cultural landscapes.
- **high (H)**—Human activities are not visually evident to the casual observer. Activities may only repeat attributes of form, line, color, and texture found in the existing landscape character.
- **moderate (M)**—Landscapes appear slightly altered. Noticeable human created deviations must remain visually subordinate to the landscape character being viewed.
- **low (L)**—Landscapes appear moderately altered. Human created deviations begin to dominate the valued landscape character being viewed but borrow from valued attributes such as size, shape, edge effect, and pattern of natural openings, vegetative type changes, or architectural styles outside the landscape being viewed.

scoured channel—A definable channel of flow where surface water converges with enough energy to remove soil, organic matter, and leaf litter.

secondary processor—A mill that processes partially manufactured wood (a wood product such as chips or lumber), into a finished product. Examples include paper and furniture.

secondary trout streams—Streams that do not contain naturally-reproducing trout populations, but will sustain trout throughout the year. Populations must be maintained by stocking.

sediment—Solid mineral and organic material that is in suspension, is being transported, or has been moved from its site of origin by air, water, gravity, or ice.

seedling/sapling stands—Stands at least 16.7 percent stocked with growing stock trees, of which more than one-half of total stocking is seedlings and saplings.

seed tree —An even-aged regeneration method where in a single cut, the removal of all merchantable trees in a stand, except for a small number of widely dispersed trees retained for seed production, and to produce a new age class in a fully-exposed microenvironment.

seed-tree with reserves method—A two-aged regeneration method in which some or all of the seed trees are retained after regeneration has become established to attain goals other than regeneration.

seep—A wet area where a seasonal high water table intersects with the ground surface. Seeps that meet the definition of a wetland are included in the Riparian Corridor.

selected species—Species selected as indicators of the effects of management. Term is the same as management indicator species.

selection cutting—The removal of selected trees, particularly mature trees at planned intervals (cutting cycle), individually or in small groups, from an uneven-aged forest to realize the yield, and establish a new crop of desired tree species. Additionally, the tending of immature stand components are accomplished at each cutting cycle.

sensitive species—Those species that (1) have appeared in the *Federal Register* as proposals for classification, and are under consideration for official listing as endangered or threatened species; (2) are on an official state list, or (3) are recognized by the Regional Forester to need special management to prevent the need for their placement on federal or state lists.

sensitivity analysis—A determination of the consequences of varying the level of one or several factors while holding other factors constant.

sensitivity level—A particular degree or measure of viewer interest in the scenic qualities of the landscape.

sequential lower bounds—The maximum percent decrease in harvest volume in any decade as compared to the preceding decade. This prevents the forest from significantly decreasing its share of the market, which would violate the assumptions of the horizontal demand curve.

sequential upper bounds—The maximum percent increase in harvest volume in any decade as compared to the preceding decade. This prevents the forest from significantly increasing its share of the market, which would violate the assumptions of the horizontal demand curve.

shearing—A method used in land clearing whereby tree stems are severed at ground line by large bladed mechanisms mounted on

crawler tractors (e.g.: serrated tooth V-blade or KG blade).

shelterwood—A regeneration method of regenerating an even-aged stand in which a new age class develops beneath the partially shaped microenvironment provided by the residual trees. The sequence of treatments can include three distinct types of cuttings: (1) an optional preparatory harvest to enhance conditions for seed production; (2) an establishment harvest to prepare the seed bed, and to create a new age class; and 3) a removal harvest to release established regeneration from competition with the overwood.

shelterwood with reserves—A two-aged regeneration method in which some or all of the shelter trees are retained, well beyond the normal period of retention, to attain goals other than regeneration.

short-term facilities—Facilities developed and operated for limited resource activity or other project needs. It will cease to exist as a transportation facility after the purpose for which it was constructed is completed, and the occupied land is reclaimed and managed for natural resource purposes.

silvicultural system—A management process whereby forests are tended, harvested, and replaced, resulting in a forest of distinctive form. Systems are classified according to the method of carrying out the fellings that remove the mature crop, and provide for regeneration and according to the type of forest thereby produced.

silviculture—The art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands. Silviculture entails the manipulation of forest and woodland vegetation in stands and on landscapes to meet the diverse needs and values of landowners and society on a sustainable basis.

silvics—The study of the life history and general characteristics of forest trees and stands, with particular reference to environmental factors, as a basis for the practice of silviculture.

single-tree selection—A regeneration method of creating new age classes in uneven-aged stands in which individual trees of all size classes are removed uniformly throughout the stand to achieve desired stand structural characteristics.

site—An area in which a plant or stand grows, considered in terms of its environment, particularly as this determines the type and quality of the vegetation the area can carry

site class—A classification of site quality, usually expressed in terms of ranges of dominant tree height at a given age or potential mean annual increment at culmination.

site preparation—The preparation of the ground surface prior to reforestation. Various treatments are applied as needed to control vegetation that will interfere with the establishment of the new crop of trees or to expose the mineral soil sufficiently for the establishment of the species to be reproduced.

site index—A series-specific measure of actual or potential forest productivity (site quality, usually for even-aged stands), expressed in terms of the average height of trees included in a specified stand component (defined as a certain number of dominants, codominants, or the largest and tallest trees per unit area) at a specified index or base age.

site productivity class—A species-specific classification of forest land in terms of inherent capacity to grow crops of industrial, commercial wood. Usually derived from the site index.

site quality (productivity)—The productive capacity of a site, usually expressed as volume production of a given species.

skid trails—A travel way through the woods formed by loggers dragging (skidding) logs from the stump to a log landing without dropping a blade and without purposefully changing the geometric configuration of the ground over which they travel.

skidding—A term for moving logs by dragging from stump to roadside, deck, or other landing.

slash—The residue left on the ground after felling, silvicultural operations, or as a result of storm, fire, girdling, or poisoning. All vegetative debris resulting from the purchaser's operations. Slash associated with construction of roads is subject to treatment according to construction specifications, all other is subject to the terms of contract provision B/BT6.7.

snag—A dead or partially dead (more than 50 percent) hardwood or pine tree which is used by many bird species for perching, feeding, or nesting.

social analysis—An analysis of the social (as distinct from the economic and environmental) effects of a given plan or proposal for action. It includes identification and evaluation of all pertinent desirable and undesirable consequences to all segments of society, stated in some comparable quantitative terms, including persons or percent of population in each affected social segment. In addition, social analysis also includes a subjective analysis of social factors not expressible in quantitative terms.

soil enhancement—Application of methods or materials to the soil to increase its productivity and stimulate growth of vegetation.

soil productivity—The inherent capacity of a soil to support the growth of specified plants, plant communities, or a sequence of plant communities. Soil productivity may be expressed in terms of volume or weight/unit area/year, percent plant cover, or other measures of biomass accumulation.

soil survey—A term for the systematic examination of soils in the field and in laboratories; their description and classification; the mapping of kinds of soil; the interpretation of soils according to their adaptability for various crops, grasses, and trees; their behavior under use of treatment for plant production or for other purposes; and their productivity under different management systems.

soil and water resource improvement—The application of preplanned treatment measures designed to favorably change conditions of water flow, water quality, rates of soil erosion, and enhancement of soil productivity.

southern pine beetle—One of the many species of pine bark beetles that are present in the forest at all times. When environmental and forest conditions become favorable, the beetle populations can increase and cause substantial timber losses over extensive areas in a relatively short period of time.

spatial feasibility testing— A process for verifying on a sample basis that land allocation and scheduling is actually implementable on the ground.

special concern species—Species that is federally listed as Category 2 or ranked as globally rare by state heritage programs and The Nature Conservancy. Also used by some states for any species of wild animal native or once-native to the state which is determined by the state to require monitoring.

special-use authorization—A permit, term permit, or easement that allows occupancy, use, rights, or privileges of National Forest System land.

special use permit—A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of National Forest land for some special purpose.

splash dams—Dams, usually temporary, built of wood across mountain streams to pond up large amounts of water.

spring—A water source located where water begins to flow from the ground due to the intersection of the water table with the ground surface. Generally flows throughout the year. Springs that are the source of perennial or intermittent streams are included in the Riparian Corridor.

stand—A contiguous group of trees sufficiently uniform in age-class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit.

stand density—A quantitative measure of stocking expressed either absolutely per unit of land in terms of number of trees, basal area, volume per unit area, or relative to some standard condition.

stand improvement—A term comprising all intermediate cuttings made to improve the composition, structure, condition, health, and growth of even-aged, two-aged, or uneven-aged stands.

standard—Requirement that precludes or imposes limitations on resource management practices and uses. Usually for resource protection, public safety, or addressing an issue.

state, county, and municipal land—Land owned by states, counties, and local public agencies or municipalities, or land leased to these governmental units for 50 years or more.

stocking—The degree of occupancy of land by growing stock trees, measured by basal area or number of trees per unit area and spacing compared with a minimum standard—which varies by tree size and species or species group—to the occupancy that is required to fully utilize the growth potential of the land.

stratified mixture—A stand in which different tree species occupy different strata of the total crown canopy.

stratigraphic—Pertaining to strata or layers, as in a description of layers of rock types.

stratum (canopy layer)—A distinct layer of vegetation within a forest community.

Streamside Management Zones—Land areas adjacent to natural streams, lakes, ponds, and seeps. These zones are typically designed to reduce, minimize or prevent non-point source pollution from entering a stream system (e.g., sediment from a road or timber harvesting activity). Specific SMZ buffer widths are often defined in State Best Management Practice handbooks.

stressors—Pressure or change brought upon an ecosystem by pollution sources including sediment, contaminants, and toxins.

successional stage—A period marked by distinctiveness of structure, in the development of a forest community from establishment of tree regeneration to advanced age. In general, successional stages used in the Forest Plan and Final Environmental Impact Statement are defined in terms of forest age as a surrogate measure of the distince structure at each stage as follows.

- **early**—0 to 10 years old
- **seedling/sapling**—11 to approximately 40 years old
- **mid**—approximately 41 to 80 years old
- **late**—over approximately 80 years old; includes old growth.

suitability—The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices.

suitable forest land—National Forest System land allocated by a Forest Plan decision to be managed for timber production on a regulated basis. *Regulated basis* means a systematic relationship between tree growth and timber harvest such that a specific timber volume objective level can be sustained indefinitely.

supply—The amount of a good or service that producers are willing to provide at a specified price, time period, and conditions of sale.

surficial water—Water on or at the ground surface. Does not include ditches, canals, spillways, or other human-created flow channels.

sustained yield of the products and services—The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the National Forest System without impairment of the productivity of the land.

sympatric—Condition where two or more closely related species live together in the same section of stream. The species have overlapping distributions. Opposite of allopatric.

T

targets—Objectives assigned to the forest by the Regional Plan.

taxomic—Classification of organisms into categories according to their natural relationships.

tentatively suitable forest land—National Forest System land that meets specific criteria in the implementing regulations of the National Forest Management Act (36 CFR 219.14 for further consideration during the planning process for timber production on a regulated basis. Note that "tentatively suitable land" is not the same as the allocation of the existing Forest Plan, as amended since 1985, but is identified by a reanalysis. (Also called "Phase 1 suitability" or "Stage 1 suitability" because its designation as Part "A" of a three-part process described by the text of the National Forest Management Act.) (Timber Supply/Demand).

term permit—A special-use authorization to occupy and use National Forest System land, other than rights-of-way, for a specified period. It is revocable and compensable according to its terms.

theming—A land and/or management scheme created with the list of land and/or management.

thermoelectric power water use—Water used in the process of the generation of thermoelectric power.

thinning— A cutting made to reduce stand density of trees primarily to improve growth, enhance forest health, or to recover potential mortality.

thinning interval—The period of time between successive thinning entries, usually used in connection with even-aged stands.

threatened species—Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Designated as a threatened species in the *Federal Register* by the Secretary of Interior.

tiering —A National Environmental Policy Act term used to reference the coverage of general matters in broader environmental impact statements (including national program

or policy statements), with subsequent narrower statements or environmental analyses (including regional or basinwide program statements or ultimately site-specific statements), incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.

timber—Wood retaining many of the recognizable characteristics of a tree: round, bark covered, and tapering, but without the limbs and leaves. In wood-industry usage, it may be "standing timber"- that portion of living trees with characteristics of value to the wood-using industry, or cut trees not yet processed beyond removing limbs and tops.

timber demand—A relationship between stumpage or delivered log price and the quantity of timber produced.

timber product market area—The geographic area enclosed within a polygon drawn by connecting those mills buying forest timber that are the farthest away from the forest.

timber production—The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use. For purposes of forest planning, timber production does not include the production of fuelwood or harvests from unsuitable lands.

timber removals (drain)—The merchantable volume of trees removed from the inventory by harvesting, cultural operations including stand improvement, land clearing, or changes in land use expressed as an annual average between surveys. Within national forests, removals are almost all timber harvest except that the inventory on lands withdrawn by legislative action is also normally accounted for as "removals."

timber sale program quantity—The volume of timber planned for sale during the first decade of the planning horizon. It includes the allowable sale quantity (chargeable volume), and any additional material (non-chargeable volume), planned for sale. The timber sale program quantity is usually expressed as an annual average for the first decade.

timber stand improvement—A term comprising all intermediate cuttings made to improve the composition, constitution, condition, and increment of a timber stand.

timber supply—The amount of wood raw material available to be harvested within specified parameters of time and geographic area.

timberland—Forest land that is producing or capable of producing in excess of 20 cubic feet per acre per year of industrial wood crops under natural conditions. Not withdrawn from timber utilization, and not associated with urban or rural development. Currently, inaccessible and inoperable areas are included.

tolerance—The ability of a tree to grow satisfactorily in the shade of, and in competition with, other trees.

topography—The configuration of a land surface including its relief, elevation, and the position of its natural and human-made features.

toxicity index profile—Estimate of cumulative potential for toxic impacts in water.

trailheads—The parking, signing, and other facilities available at the terminus of a trail.

traffic service levels—Describe a road's significant traffic characteristics and operating conditions.

transfer age—The age a stand will transfer from one Model 2 management class to another.

transfer class—A Model 2 management class that receives transferred acres. A regeneration transfer class has a transfer age of zero. All other transfer classes have an age greater than zero.

transfer columns—A column constructed the matrix generator to create special LP structures. They accumulate information from several decision variables into one column.
.
two-aged silvicultural system—A planned sequence of treatments designed to maintain and regenerate a stand with two age classes.

two-aged stand—A stand composed of two distinct age classes that are separated in age by more than 20 percent of rotation.

type conversion—A change from tree species or species group to another. An example is a change from hardwoods to pine.

U

undercutting (root pruning)—The root pruning of seedlings in a nursery bed.

understory—The trees and other vegetation growing under a more or less continuous cover of branches and foliage formed collectively by the upper portion (overstory) of adjacent trees and other woody growth.

uneven-aged regeneration methods—Methods of regenerating a forest stand, and maintaining an uneven-aged structure by removing some trees in all size classes either singly, in small groups, or strips. The methods are single-tree or group selection.
uneven-aged silvicultural system—A planned sequence of treatments designed to maintain and regenerate a stand with three or more age classes.

universal soil loss equation—An equation used to estimate soil erosion rates and for the design of water erosion control systems. A = RKLSPC wherein A = average annual soil loss in tons per acre per year; R = rainfall factor; K = soil erodibility factor, L = length of slope; S = percent of slope; P = conservation practice factor; and C = cropping and management factor.

unregulated forest—Commercial forest land that will not be organized for timber production under sustained-yield principles.

unsuitable forest land (not suited)—Forest land not managed for timber production because: (a) Congress, the Secretary [of Agriculture], or the Chief [of the Forest Service] has withdrawn it; (b) it is not producing or capable of producing crops of industrial wood; (c) technology is not available to prevent irreversible damage to soils productivity, or watershed conditions; (d) there is no reasonable assurance based on existing technology and knowledge, that it is possible to restock lands within five years after final harvest, as reflected in current research and experience; (e) there is, at present, a lack of adequate information about responses to timber management activities; or (f) timber management is inconsistent with, or not cost efficient in meeting the management requirements and multiple-use objectives specified in the Forest Plan.

urban—An area characterized by a substantially urbanized environment. The background may have natural-appearing elements.

utilization standards—Measurements for standing trees that describe the minimum size tree that will be designated for sale for various products including sawtimber or small roundwood.

V

values, market—Prices of market goods and services measured in real dollars in terms of what people are willing to pay as evidenced by market transactions.

values, non-market—Prices of non-market goods and services imputed from other economic values.

vector – A matrix composed of only one row or column.

viable population—Population of plants or animals that has the estimated numbers and distribution of reproductive individuals to ensure its continued existence is well distributed in the planning area.

viewshed—The total landscape seen, or potentially seen from all or a logical part of a travel route, use area, or water body.

visual quality objective—A desired level of excellence based on physical and sociological characteristics of an area under the Visual Management System. Refers to the degree of acceptable alterations of the characteristic landscape. Objectives include Preservation, Retention, Partial Retention, Modification, and Maximum Modification. The Visual Management System (VMS) as defined in Agricultural Handbook #462 and was replaced by the Scenery Management System.

visual resource—The composite of basic terrain, geological features, water features, vegetative patterns, and land-use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

W

warm water fishery—Aquatic habitats that support fish species which have their best reproductive success and summer water temperature tolerance between 75 and 85 degrees Fahrenheit (23-29 C), or about 80 degrees Fahrenheit. Examples include sunfish species, and largemouth bass.

water supply area—Areas that serve present and future municipal water supply and trout hatching or rearing operations.

water yield—The measured output of the forest's streams expressed in acre-feet. The amount or volume of water that flows in a given period of time from a watershed.

waterbars—A change in the grade of a roadbed, trail surface, or fire line used to divert water off the surface to prevent it from eroding ruts and possibly carrying sediment to a stream.

watershed—The total area above a given point on a stream that contributes water to the flow at that point.

Weeks Act —Implemented in 1911, it authorized the acquisition of lands on the watershed of navigable streams for the purposes of conserving their navigability, or for the purpose of timber.

wetlands—(pursuant to the Federal Clean Water Act)—Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances, support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas, and are found primarily within palustrine systems; but may also be within riverine, lacustrine, estruarine, and marine systems.

wild and scenic river—A river selected for nomination and/or designation through the Wild

and Scenic Rivers Act of 1968 for possessing outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values.

wilderness—wilderness—A Congressionally-designated area that is part of the National Wilderness Preservation System established through Wilderness Act of 1964; Also defined in the Act as a wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this chapter an area of underdeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

Wilderness Act of 1964—Act which gave Congress authority to designate certain areas of public land as wilderness. It established the National Wilderness Preservation System to secure an enduring resource of wilderness.

wilderness study area—One of the areas selected by the Chief of the Forest Service from an inventory of undeveloped National Forest System lands as having apparent high qualities for wilderness. Lands possessing the basic characteristics of wilderness and designated by Congress for further wilderness study. A study can determine whether they should be recommended for addition to the National Wilderness Preservation System.

wildland fire—Any non-structural fire on wildlands other than one intentionally set for management purposes. Confined to a predetermined area. Not to be confused with "fire use,"which includes prescribed fire.

wildland urban interface—The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

wildlife—All non-domesticated mammals, birds, reptiles, and amphibians living in a natural environment, including game species and non-game species. Animals, or their progeny (i.e., feral animals—including horses, burros, and hogs), that once were domesticated, but escaped captivity, are not considered wildlife.

wildlife and fish user-day—A 12-hour participation in the use of wildlife and fish primarily for consumptive or non-consumptive use including hunting, fishing, or wildlife viewing. Such use is the result of habitat management, and the populations supported by that habitat. A WFUD is counted as one day or any part of a day that the user participated in these activities. Does not include sport or commercial uses of anadromous fish.

wildlife habitat diversity—The distribution and abundance of different plant and animal communities and species within a specific area.

wildlife habitat improvement—The manipulation or maintenance of vegetation to yield desired results in terms of habitat suitable for designated wildlife species or groups of species.

wildlife tree—A den tree, snag, or mast or food tree.

with-without comparison—An evaluation that compares outputs, benefits, costs, and other effects with a base alternative.

withdrawal—Water removed from the ground or diverted from a surface water source for use.

withdrawal of land—An order removing specific land areas from availability for certain uses.

withdrawn national forest lands—National Forest System lands segregated or otherwise withheld from settlement, sale, location, or entry under some or all of the general land laws.

woodland—A plant community with a structure characterized by trees comprising 25-60% of the canopy cover.

X

xeric—Pertaining to sites or habitats characterized by decidedly dry conditions.

Y

yarding—A term used to describe operations used to move logs from stump to point where logs are loaded for transport to mill. Most commonly used in cable logging operations.

yield composite—Activity and output relationships which estimate yields. They allow the development of a yield stream from a related yield stream without entering each yield coefficient independently. Yield composite relationships can be time, age, or sequence based.

yield stream—A subset of a yield table containing specific information for an activity or output. A timber output may have a yield stream for amount, diameter, basal area, or trees.

yield table—A tabular statement of outputs expected to be produced under a specific set of conditions.

Z

zone—Large, contiguous areas of land that include watersheds or management areas. It can be comprised of several complete analysis units. The land within a zone is generally a heterogenous mixture of environmental types.

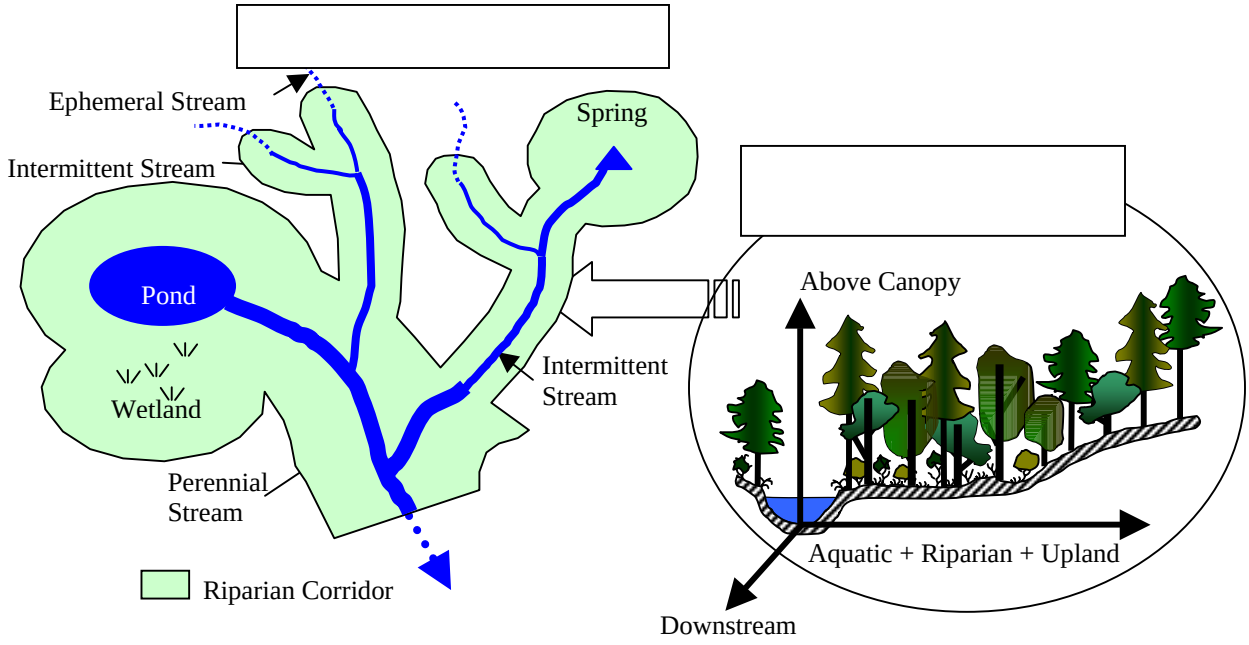
zone management actions—Management actions available to zones. They contain the ability to coordinate the management activities that occur within a zone.

Appendix C
Riparian Corridors

A. Overview of Riparian Corridors

The figure below is a simplified representation of the Riparian Corridor that demonstrates its extension on both sides of a watercourse, down into the water table, and laterally around wetlands and other surface water sources. The Riparian Corridor may fall within or beyond the riparian area.

Figure 1. Simplified Representation of the Riparian Corridor



Operational Definition for a Riparian Area

Riparian areas are areas associated with the aquatic ecosystem and that portion of the terrestrial ecosystem that is substantially affected by the presence of surface and groundwater. Riparian areas are relatively flat lands with elevated water tables or seasonal flooding that border streams, lakes, ponds, etc. Distinct types of plant species that occur in riparian areas and are common to wetlands. The plant composition is often associated with the magnitude and duration of flooding or soil saturation from rainfall and groundwater interactions, and the types of soils that develop under these circumstances. Riparian areas have variable widths that are determined by

ecologically significant boundaries rather than arbitrary distances. The extent of the riparian area can often be estimated by changes in dominant plant species and topography when interpreting aerial photos. However, their boundaries are best determined on the ground by using features of soil, landform and vegetation, and hydrologic indicators when they are present. No feature is used alone to delineate these ecosystems. Characteristics indicative of these areas include but are not necessarily limited to:

Soils**-** The physical characteristics of soils that are reflected in their taxonomic names often describe soil properties that are suggestive of riparian status. Soils with rainfall exceeding evapotranspiration, flooding, high moisture holding capacity, moisture restriction and/or elevated water tables within the normal rooting zone reveal these characteristics upon field classification. Taxonomic soil names with descriptors such as Fluva (floodprone), Aqua (water) or Ombroaqua (rain and water) are a just few examples.

Landforms- The 100-year floodplain, stream terraces (especially the first terrace), and depressional features are typically indicative of riparian conditions.

Vegetation- The presence, types and abundance of wetland plants are used to help determine wetland and riparian status. References include Corps of Engineers Wetland Delineation Manual (Technical Report Y-87-1, 1987), which includes a National and Southeast Plant list or other available plant lists on this subject such as the US Fish and Wildlife Service National Plant List of Plants that Occur in Wetlands (Reed, 1988).

Hydrology – Hydrology indicators are not always present, but can be helpful in determining frequency or likelihood of flooding from adjacent streams, or include observations associated with streamflow, rainfall or groundwater levels for specific determinations.

Although some of the indicators are technically demanding for classification purposes. Many of the soil, landform, plant and hydrology indicators can applied by trained field crews to assist in the determination if specialists in each field are not on the delineation team.

C. Relationship of Riparian Corridors with Streamside Management Zones

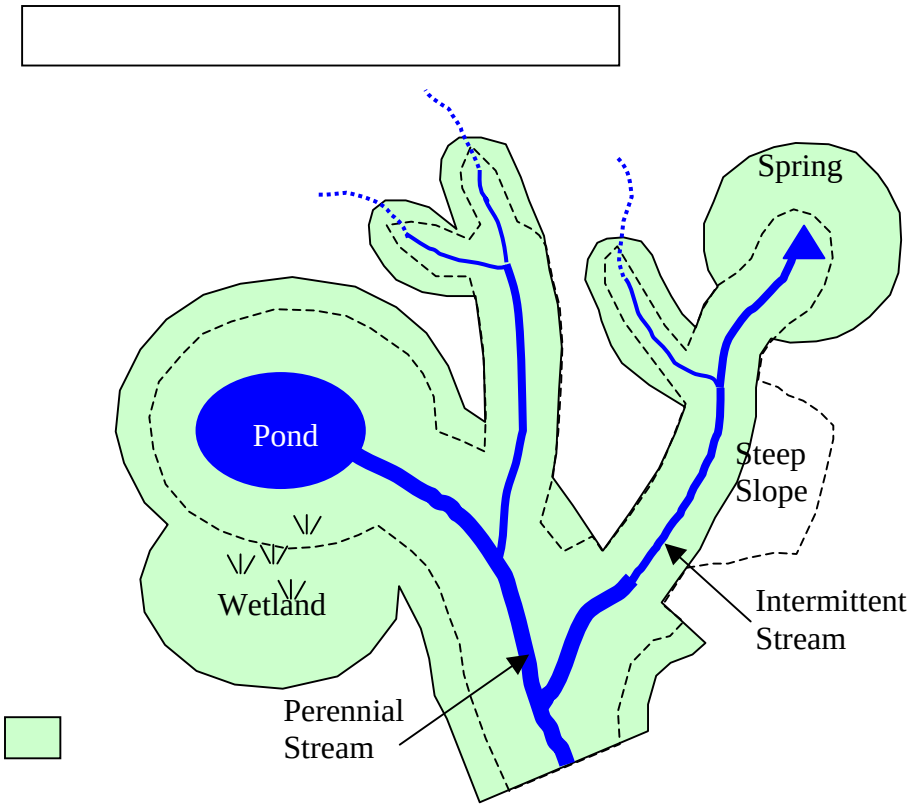
TIn the implementation of the Sumter National Forest Plans, we will meet or exceed State BMPs to protect water quality. Current State BMP handbooks or manuals are incorporated as direction in the Forest Plan and are implemented for those resource management activities that are covered by the handbooks/manuals. Management direction for activities not included in BMP handbooks/manuals are included in the Forest Plan or this appendix. Where specific direction is lacking for a specific activity, other guidance documents such as the Region 8 Soil and Water Conservation Practices Guide (2002) will be consulted as needed.

The streamside management zones (SMZ) recommended in South Carolina's Best Management Practices for Forestry are designated areas directly adjacent to streams and water bodies where land management activities are controlled or regulated to primarily protect water quality and aquatic organisms from upslope land uses. Provisions within the SMZ typically contain

sediment filter strips, a base shade level, restriction on ground disturbance and protection of stream banks and streambeds. As described, Riparian Corridors are management prescription areas that maintain ecological processes and functions. SMZs may be the same width or smaller than the riparian corridor, however, in some cases they may extend beyond the corridor. (See Figure 2.)

The Sumter Forest Plan may also apply additional standards that are applicable to acres within the SMZ. This is due to the difference in BMP guidelines (which pertain to forestry practices)local geological or physical conditions which require specific SMZ direction (e.g. steep slopes).

Figure 2. The Relationship of the Riparian Corridor to the SMZ



Riparian Corridor

Streamside Management Zone ----------

Appendix D
Suitability for Timber Production and Timber Sale Program

Timber Suitability Analysis

During forest land and resource management planning, the Forest Service is required to identify lands unsuited for timber production (36 CFR 219.14). This identification process involves three stages of analysis. Stage 1 analysis identifies lands tentatively suitable for timber production. Stage 2 analysis is designed to explore the financial aspect of varying intensities of timber management on lands identified as tentatively suitable for timber production from Stage 1. Stage 3 analysis identifies lands as unsuited for timber production under the alternative selected in the revised Forest Land and Resource Management Plan.

Table D-1. Stage 1 Suitability

Stage 1 Suitability	Acres
Total Sumter NF	**362,850**
Wilderness	-2,855
Wild/Scenic River	-3,514
Water	-1,761
Non-forest	-5,441
Tentatively Suitable	**349,279**

The "Stage 2 Suitability Analysis" is an economic analysis of each Analysis Unit (AU) in SPECTRUM. It is meant to answer two questions 1) Which lands are "above cost", and 2) Which management intensity is the most economical for each Analysis Unit. The results of this analysis can be found in Appendix B of the FEIS.

Table D-2 displays the results of the Stage 3 Analysis:

Table D-2. Results of Stage 3 Analysis

Selected Alternative		Acres
Tentatively Suitable		349,279
1B	Recommended Wilderness	-1971
2A3	Recreational River	-977
4D	Botanical Areas	-4,379
4F	Scenic Areas	-9,979
4G1	Calhoun Experimental Forest (Natural Area)	-908
6C	Old Growth	-1620
7A	Scenic Byway	-2,754
7D	Concentrated Recreation Area	-235
7E1	Dispersed Recreation	-6,545
9F	Rare Communities	-622
11	Riparian Corridors	-55,563
12A	Remote Backcountry	-4413
Total Suitable		259,313

All of the acres above are approximate. Management prescription 11 is estimated based on stream order, slope, and soil type. Actual area will be based on ground conditions. Management prescriptions 5A, 5B, and 5C are included in the non-forest acres used to calculate tentatively suitable lands.

Timber Sale Program.

NFMA regulations (36 CFR 219.16) require that "In a forest plan, the selected forest management alternative includes a sale schedule which provides the allowable sale quantity." The following table shows the allowable sale quantity (ASQ) calculated by the Spectrum linear programming model. For Forest Plan purposes, the following table fulfills the requirement of 36 CFR 219.16. ASQ is an estimated output. It describes the maximum volume of timber that may be harvested from lands suitable for timber production during a specified period, usually ten years. This volume may not be exceeded during a given decade, and is not presented as a guaranteed harvest volume. The actual volume sold depends on budgets, workforce, and site-specific analysis that are beyond the scope of this plan.

Table D-3. Allowable Sale Quantity by Decade

Decade	Allowable Sale quantity (MMCF)
1	139
2	139
3	139
4	139
5	139
6	139
7	139
8	139
9	139
10	139

Appendix E - MONITORING SUMMARY TABLE

_____ National Forest

MQ #	Monitoring Question	Element	Method of Collection	Duration/ Frequency	Reporting Interval	Needed Precision	Needed Reliability	Responsibility	Goal #	Objective #	Standard #
1	Are rare communities being protected, maintained, and restored?	Baseline acreage, condition, and distribution of rare communities on the Forest	GIS Query for acreage; Condition determined based on field visits to rare commmunity sites. Assessments will primarily be qualitative, through quantitative elements may be included where warranted.	Not less than once/ every 5 years	Report Annually as Needed	High	High	Forest Botanist	12	12.01. 12.02	FW-30; FW-31, FW-32
1		Rare communities restored, acres. Specifically table mountain pine-dominated communities and canebrakes	Query MAR Targets related to habitat restoration.	Not less than once/ every 5 years	Report Annually as Needed	High	High	Forest Botanist	12	12.01,12.02	FW-30; FW-31, FW-32
2	Are landscape-level and stand-level composition and structure of major forest communities within desirable ranges of variability?	Restore native communities on sites occupied by loblolly pine on the Andrew Pickens District	Monitor acres of loblolly pine on the Andrew Pickens Ranger District.	Not less than once every 5 years.	Report annually as needed	Med	Med	Forest Silviculurist and Forest Biologist	8	8.01	
2		Provide for dry-xeric sites in the piedmont and mountains with rare communities preferred.	Monitor acres of woodland, savanna, and grassland on the forest. Representative species, diversit and abundance in fire adapted plant communities.	Not less than once every 5 years.	Report annually as needed	Med	Med	Forest Silviculurist and Forest Biologist	8	8.02	
2		Create conditions to restore dry-mesic oak, oak-pine, and pine-oak communities on the peidmont	Monitor acres restored to oak, oak-pine, or pine-oak in the piedmont. Representative species, diversity, and abundance in fire adapted plant communities.	Not less than once every 5 years.	Report annually as needed	Med	Med	Forest Silviculurist and Forest Biologist	8	8.03	
2		Increase shortleaf pine and shortleaf pine/oak communities on the piedmont	Monitor acres of shortleaf pine, shortleaf pine-oak on the piedmont.	Not less than once every 5 years.	Report annually as needed	Med	Med	Forest Silviculurist and Forest Biologist	8	8.04	
2		Increase structural diversity by creating gaps in 1 to 5 percento of closed canopy mid- and late-successional mesic deciduous forest	Monitor acres treated within mesic deciduous forest.	Not less than once every 5 years.	Report annually as needed	Med	Med	Forest Silviculurist and Forest Biologist	8	8.05	
2		Restore sites currently occupied by white pine stands to diverse native communities	Monitor acres in white pine.	Not less than once every 5 years.	Report annually as needed	Med	Med	Forest Silviculurist and Forest Biologist	8	8.06	
2		Trends in MIS population indicies in relationship to major forest community/conditions. Frequency of occurrence trends in hooded warbler, scarlet tanager, pine warbler, acadian flycatcher and brown-headed nuthatch .	Collect bird point data.	Not less than once every 5 years.	Report annually as needed	High	High	Forest Biologist	8		
3	Are key successional stage habitats being provided?	Trends in Early, Mid and Late Successional Habitat by prescriptiion group	Monitor acres regenerated in 10B, 7E2, 8A1, 8B2, 9A3, 9G2 Management Prescriptions. Calculate percentage of each management prescription and intermingled riparian corridors that is age 0-10. Query on GIS database in 10B, 7E2, 8A1, 8B2, 9A3, 9G2 Management Prescriptions. based on age classes defined for mid and late successional habitat. Calculate percentage of each management prescription and intermingled riparian corridor that is in mid to late successional conditioin	Not less than once every 5 years.	Report annually as needed	High	High	Forest Biologist and Forest Silviculturist	8, DFC's for Management prescriptions 10B, 7E2, 8A1, 8B2, 9A3, 9G2		
3		Acres, conditions, and distribution of existing old growth	Conduct field visits to existing old growth sites to assess community condition, and identify impending threats and management needs.	Not less than once every 5 years.	Every 5 Years	High	HIgh	Forest Botantist	13		FW-33
3		Trends in MIS population indicies in relationship to major forest community/conditions. Frequency of occurrence trends in prairie warbler, swainson's warbler, and field sparrow .	Collect bird point data.	Not less than once every 5 years.	Report annually as needed	High	High	Forest Biologist	8		
4	How well are key terrestrial habitat attributes being provided?	Acres, conditions, and distribution of wetland habitats and ephemeral wetlands. (See other elements related to MIS species, woody debris, and riparian condition under questions 2, 4, and 16)	Monitor acres surveyed for wetlands habitats. Monitor acres and # of sites inventoried as wetland or ephemeral pools. Sample frequency of occurrence of frog species using stratified random points in all habitat types.	Not less than once every 5 years.	Report annually as needed	Med	Med	Forest Biologist	3,4,8,9	9.01	

4		Trends in MIS population indicies in relationship to major forest community/conditions. Frequency of occurrence trends in pileated woodpecker.	Collect bird point data.	Not less than once every 5 years.	Report annually as needed	High	High	Forest Biologist	8		
4		Trends in hard mast production capability	Map and update changes in forest composition and condition through routine inventories. Infer mast production capability from the status of older age classes of oak forest community types.	5 years	5 years	Moderate	Moderate	Forest Silviculurist	8		
5	What is the status and trend in aquatic habitat conditions in relationship to aquatic communities?	Trends in the composition and abundance of macroinvertebrate communities	Kick nets, surber samplers, electroshocking, nets, snorkeling and other appropriate methods using defined protocols	Each selected stream will be monitored 3 times every 10 years	Annually	High	High	S.O. Fisheries Biologist	3, 4		
5		Trends in the composition and abundance of stream fish communities	Electrofishing, seining, snorkeling and other defined protocol	Each selected stream will be monitored 3 times every 10 years	Annually	High	High	S.O. Fisheries Biologist	3, 4		
5		Trend in aquatic habitat conditions. Perennial and intermittent streams are managed in a manner that emphasizes and recruits large woody debris. Improve, rehabilitte or restore aquatic habitat.	Basinwide habitat surveys and other appropriate methods using defined protocol.	Annually	Annually	High	High	S.O. Fisheries Biologist	3, 4	4.01 11-OBJ-2	
5		Trend in the composition and abundance of impoundment fish communities	Electrofishing and nets; water quality kits	Annually	Annually	HIgh	High	S.O. Fisheries Biologist	3, 4		
6	What are status and trends of forest health threats on the forest?	Conditions and trends of forest fuels and acres of hazardous fuels treated through wildland fire use, prescribed fire, and mechanical treatment	Fuel monitoring following Regional protocol. Acres of hazardous fuels treated through wildland fire use, prescribed fire, and mechanical treatment mapped into the GIS data base reports generate through GIS/NRIS FSVeg queries.	Continuous	Annual	Moderate	Moderate	District FMO & Forest FMO	2017		
6		Improve forest health in pine stands by reducing stand density.	Query from STARS database, or review of forms in timber sale folder.	Annual	Annual	Medium	Medium	Forest Silviculurist	16	17.01	
6		Compliance with NAAQS air particulate emissions from NF lands [36 CFR 219.27(a)(12)] (Ask Charlie)	Compare results against NAAQS for fine particulates. Data collected by the Georgia and SC air regulatory agency, analyzed by Forest Service personnel. Standard practices to eximate emissio (use correct emisssion factors from EPA's "AP-42" or more specifiec factors. Gather data for fine particulates near prescribed fires.	Annual	Annual	Medium	Medium	Forest FMO and Zone Air Specialist	7		
6		Treatments to eliminate or control invasive non-native species. Emphasize treatments of PETS or specific areas. Baseline acres infested with non-native plants by species.	Query MAR Targets related Noxious Weed Control. Query NRIS Database of Invasive Species Locations; Collect Forestwide data when available and supplement with project-level data.	Annually as Available	5-years	High	High	Forest Ecologist	15	15.01	9.F.-8; FW-27
6		Maintain condition class 1 by restoring historic fire return intervals and reducing the risk of losing ecosystem components to wildfire.	Monitor acres in condition class 1	Not less than once every 5 years.	Report annually as needed	Med	Med	Forest Silviculurist and Forest Biologist	20	20.01	
7	What are the status and trends of federally listed species and populations or habitats for species with viability concerns on the forest?	Trends in recovery of T&E species, and status and distribution of some viability concern species that are not specifically identified under other elements. Species targeted under this element will be determined through periodic review of each species'status and conservation priority. Priorities will likely vary through the life of the plan as new information is obtained.	Various methods will be used as appropriate to the species or species group. Refer to the PETS Species Inventory and Monitoring Handbook.	Monitor populations and/or habitat annually	Annual	High	High	Forest Ecologist	4, 10, 12	10.01, 10.02	FW-25 through FW-28; 9.F.1.through 9.F.9

8	What are the trends for demand species and their use?	Trends in harvest data for bobwhite quail, deer, turkey, bear; WMA permit sales, turkey tags and bear permits issued.	Monitor annual harvest records and other recreation use indicies in cooperation with SCDNR and USFWS.	Annually	Annually as needed	Med	Med	Forest Biologist	8, 22, 23		
8		Maintain or improve ponds/lake habitat for recreational fisheries	Monitor acres of pond treatment and number of fish structures	Annually	Annually	Med	Med	Forest Biologist and Forest Fisheries Biologist		23.01	
8		Trends in MIS population indicies in relationship to major forest community/conditions. Frequency of occurrence trends in bobwhite quail, eastern wild turkey and black bear.	Trends in population indicies.	Not less than once every 5 years.	Report annually as needed	High	High	Forest Biologist	8		
9	Are high quality, nature-based recreation experiences being provided and what are the trends	Results and trends in user satisfaction ratings [36 CFR 219.21(a)]	Analysis of NVUM cutomer satisfaction data and any local customer satisfaction information available.	Every 5 years	Every 5 years	Low/ moderate	Low/ moderate	SO-Recreation Staff	22, 23		
10	What are the status and trends of recreation use impacts on the environment?	Recreation activities contribution to the degradation of riparian areas or adversely affecting water quality	Evaluation of recreation's possible contribution to particular problems identified by other monitoring elements in this plan. Amount of recreation use and type of activity will be considered. M&E Report. See monitoring questions#1, 5,6,7, 8, 9,15.	Annually	Annual	Moderate	High	Recreation StaffSO and natural resource scientists	1, 3, 4, 5, 22	Riparian RX - 11 DFC	FW-2, FW-10, FW-11, FW-14, FW-70, FW-76, FW-77
10		Impacts associated with OHV activities.	Compilation of field monitoring and field observation of OHV trail condition and documentation of improvement needs.	Annually	Annually	Moderate	Moderate to High	Recreation Staff and Forest Soil Scientist and Forest Hydrologist	1, 3, 4, 5, 22, 23	Riparian RX - 11 DFC	FW-2, FW-10, FW-11, FW-14, FW-70, FW-76, FW-77 EO 11644, 36 CFR 295
10		Are motorized and nonmorized trails being mantained?	Analysis of deferred maintenance and report percent change in trail backlog.	Annually	Annually	Moderate	Moderate to High	Recreation Staff	25		
11	What is the status and trend of wilderness character?	Is visitor use within limits that do not impair the wilderness characteristics? [36 CFR 219.18(a)]	Compilation of field monitoring and field observation of trails and any use areas condition and documentation of improvement needs.	Annually	Annually	Moderate	Moderate	District	26, 27		
12	What are the status and trend of Wild and Scenic River conditions?	Are free-flowing conditions and outstandingly remarkable values being protected for eligible and designated rivers?	Review a variety of projects within the river corridors (these may include prescribed fire, maintenance of trails and recreation facilities, restoration of native communities, control of non-native invasive vegetation and insects and disease outbreaks).	Each stream/river will be monitored every 3 years or more often if needed.	Annually	Moderate	Moderate	SO - Recreation Staff and Resource Specialists	1, 28, 29		Wild and Scenic River Act and Congressional Designation CFR
12		Are water quality standards being met for eligible and designated rivers?	Review USGS and other water quality records for fecal coliform and other components at measurement sites. Collect information at critical sites if questions remain about water quality impairments and the conditions that produce them.	Annually	Annually	Moderate	Moderate	Forest hydrologist	1, 28 29		Meet Clean Water Act including SC Water Quality Standards for protection of beneficial uses
13	Are the scenery and recreation settings changing and why?	Acres of National Forest land that meet or exceed established scenic quality objectives [36 CFR 219.27(c)(6), 36 CFR 219.27(d)(1)]	Review a sample of projects (use the treatment and location data in activity tracking system). Projects should include a variety of SIO's, if available.	Every 5 years	Every 5 Years	Moderate	Moderate	SO-Recreation Staff (Forest Landscape Architect)	13, 30		
13		Acres of National Forest land that meet or exceed established ROS objectives.	Review a sample of projects (use the treatment and location data in activity tracking system). Projects should include a variety of ROS class, if available.	Every 5 years	Every 5 Years	Moderate	Moderate	SO-Recreation Staff (Forest Landscape Architect)	28	23.02	
14	Are heritage sites being protected?	Effectiveness of heritage protection measures [36 CFR 219.24(a)(4)]	Sample field condition assessmetn of sites elibible or listed Natinal Register.	Annuallly	Annually	High	High	Forest and District Archeologist	31		

15	Are watersheds maintained (and where necessary restored) to provide resilient and stable conditions to support the quality and quantity of water necessary to protect ecological functions and support intended beneficial uses?	Are State BMPs and Forest Standards being implemented to protect and maintain soil and water resources? [36 CFR 219.27(a)(4), 36 CFR 219.12(k)(2)]	Field inspection of project sites following established monitoring protocol. Results reported annually in M&E Report. Regular coordination with State Forestry Commission occurs for BMP compliance checks to randomly selected sites with perennial, intermittent and channeled ephemeral streams. Annual FAT to Ranger Districts to review some projects within critical areas and conduct any updates on monitoring or reporting proceedures, and updates of improvement plans.	Annual	Annual	Moderate	Moderate to High	Forest hydrologist or Forest soil scientist	1, 3	1.01, 4.01	FW-1, FW-2, and numerous others
15		Improve soil and water conditions through stabilization or rehabilitation of actively eroding areas such as gullies, barren areas, abandoned roads or trails, and unstable stream banks.	Field checks that work was planned, implemented and monitored within normal range of acceptance, and the treatments were effective, mitigation measures installed and where appropriate targets reported in MAR or other reports. Review and comparison of stream conditions and morphology help identify poor and declining conditions where more detailed analysis may be needed.	Annual	Annual	Moderate	Moderate to High	Forest hydrologist or Forest soil scientist	1	1.01	FW-1, FW-2
15		Improve soil productivity on disturbed, low productivity, eroded soils with loblolly and shortleaf pine on the piedmont.	Field checks that work was planned, implemented and monitored within normal range of acceptance, and the treatments were effective and where appropriate reported as part of the Forest MAR targets.	Annual	Annual	Moderate	Moderate to High	Forest hydrologist or Forest soil scientist	1, 5	5.01	FW-1, FW-2
		The instream flows needed to protect stream processes, aquatic and riparian habitats and communities, and recreation and aesthetic values will be determined.	Field inspection of project sites following established monitoring protocol.	Annual	Annual	Moderate	Moderate to High	Forest hydrologis	2	2.01	
16	What are the conditions and trends of riparian area, wetland and floodplain functions and values?	Are management strategies in riparian areas adhering to Forest Plan riparian guidelines? Are conditions in riparian areas or corridors providing for soil conservation, associated habitats and necessary shade and cover for aquatic habitats?	Field checks to insure that work was planned, implemented and monitored within normal range of acceptance, treatments were effective and where appropriate reported as part of the Forest MAR targets. BMP's are applied.	Annual	Annual	Moderate	Moderate to High	Forest hydrologist, Forest fisheries biologist and/or Forest soil scientist	3, 4	RX-11 DFC	11-1 to 11-25
16		Create and maintain a dense understory within riparian corridors that lack such conditions. Improve structural diversity and composition within the riparian corridor on the piedmont.	Monitor acres of gap development, regeneration, or canebreak restoration or development withn riparian corridor.	Not less than once every 5 years.	Annual	Med	Med	Forest Biologist	4, 8, 9	4.01. 11-OBJ-1	
16		Acres of Riparian area inventoried for condition (i.e. terrestrial habitat, vegetative composition, woody debris recruitment, invasives)	Terrestrial habitat, hydrologic function, stream PFC, aquatic habitat parameters are recorded.	Not less than once every 5 years.	Annual	High	High	Forest Silviculturist or Forest Biologist	3, 4, 8, 9		
17	How do actual outputs and services compare with projected?	Are roads being maintained, constructed or reconstructed to reduce sediment delivery to water bodies and to provide a transportation system that supplies safe and efficient access for forest users while protecting forest resources. [36 CFR 219.27 (a)(10)]	Review and track the miles of national forest system roads existing, compared to the miles maintained to the objective maintenance level: the miles of road improvements, and the miles of classified and unclassified roads decommissioned.	Annually	Annual	High	High	Engineering Staff, Forest Hydrologist, Forest Soil Scientist	34 and 35		FW-96
17		Emphasize high quality forest products on the Piedmont.	PTSAR report from STARS database. Timber volume offerred through the end of the 4th quarter within the 10B management prescription.	Annual	Annual	High	High	Forest Silviculturist	18	18.01	
18	Are silvicultural requirements of the Forest Plan being met?	Are lands being adequately restocked within 5 years of regeneration treatments? [36 CFR 219.27(c)(3)]	Evaluation of PEP reports for plantations, stocking checks for planned natural regeneration	Annual	Not less than once every 5 years	Med	Med	Forest Silviculturist	14, 18		
19	Are Forest Plan objectives and standards being applied and accomplishing their intended purpose?	Are projects being managed according to requirements and making progress toward achievement of DFC for vegetation? [36 CFR 219.15, 36 CFR 219.27]	Interdsiciplinary review. Sample vegetation management projects to compare vegetation conditions with the Plan DFC, goals and objectives. Review project documents and related EAs/EISs for consistency with the Forest Plan's standards. Results reported annually in M&E Report.	Annually	Annual	Moderate	High	Forest Planning Staff		DFC.s, goals and objectives	Standards

Appendix F
Possible Outputs and Activities for the First 10 Years (Average Annual)

Resource		Unit of Measure	Estimate
Prescribed Burning (includes woodland sav.)		Acres	23,527
Harvesting Trees			
	Even-aged regeneration[1]	Acres	2,667
	Uneven-aged harvest	Acres	241
	Thinning	Acres	3,320
	Thinning woodland sav.	Acres	1,470
	Riparian harvest[2]	Acres	300
Site preparation			
	Handfell/Herbicide	Acres	1,144
	Drum Chopping	Acres	1,523
Stand improvement (precom. thin, release, etc.)		Acres	1,904
Roads			
	Constructed	Miles	.9
	Reconstructed	Miles	34.2
	Total	Miles	35.1
	Maintenance	Miles	845
	Road Closure	Miles	6
Maintenance (Construction) Trails			
	Hike only	Miles	72(+0)
	Hike and Mountain Bike only	Miles	109(+8.5)
	Hike and Equestrian only	Miles	21(+0)
	Hike, Mtountain Bike and Equestrian only	Miles	97(+4.0)
	OHV/Motorcycle, Mnt. Bike and Hike	Miles	86(+4.0)
	Paddle sports	Miles	125(+0)
	Portage (for paddle sports)	Miles	2(+0)
	Interpretive (will be on existing trails)	Miles	(+1.0)
	Total	Miles	512(+16.5)
[1]400 Acres of loblolly pine conversion are included in the acres of even-aged regeneration.			
[2]Riparian area harvest, such as canopy gaps, is not included in other harvest acres shown above. These acres are for riparian dependent species.			

Activity	Unit of Measure	Estimate
Maintaining (Constructing) Developed Recreation Facilities	PAOTS	3107(+0)
Wildlife or Linear Openings		
Constructing/ Fertilization	Acres	164
Maintaining (burning or mowing)	Acres	2200
Maintaining/ Fertilization (cultivating)	Acres	500
Soil and Water Improvements		
Stabilization or Restoration	Acres	150
Improve Soil Productivity		
Fertilization	Acres	700
Water Bird Habitat Development Construction	Acres	60
Invasive plant Control (hand/herb)	Acres	750
Mid-story control	Acres	250
Canebrake Restoration	Acres	200

Appendix G
Mining Proposal Evaluation Process

Under authority of the Mineral Resources on Weeks Law Lands Act of March 4, 1917, (the function of which was transferred from the Secretary of the Agriculture to the Department of the Interior by the President's Reorganization Plan 3 of 1946), prospecting permits and leases may be issued for hard-rock minerals acquired by the United States (FSM 2822.13).

The first step in this process is for the applicant to submit a Prospecting Permit Application to the Bureau of Land Management (BLM). The application must contain the applicant's or the applicant's agent's original signature. The application must also include: (a) applicant's name and address, (b) a statement of the applicant's qualifications and holdings, (c) a complete and accurate land description, (d) three copies of any maps needed to accompany the description; and (e) the name of all of the commodities for which the applicant is applying. Once the application is reviewed by BLM, it is sent to the Forest Service, the surface management agency, for review and consideration. The Forest Service will analyze the applicant's proposal to determine compliance with the Forest Land Use Plan, environmental requirements, and unsuitability criteria. The Forest Service will send out a scooping letter to the public requesting comments on the. The Forest Service will incorporate any comments with the response to BLM giving Forest Service approval to prospecting permit with appropriate mitigation measures to adequately protect surface resources. The Forest Service will publish a Decision Memo that Categorically Excludes the proposal from further analysis. BLM will then approve the prospecting permit for a period of two years and can be extended up to an additional four years.

Once the prospecting comes to a successful conclusion the permittee can apply for a Preference Right Lease Application (PRLA). In this process the applicant submits the PRLA, data and mining plan to BLM's Eastern State's Office (ESO) in Springfield, Virginia. The PRLA is forwarded to the appropriate Forest Service office. BLM then conducts an analysis on the data from the applicant's exploration and the PRLA. The appropriate Forest Service office reviews the Forest Plan for direction regarding mineral-related uses. Considering this direction, the appropriate Forest Service office conducts an environmental analysis, using procedures in FSM 1950, to evaluate what impact the proposed action would have on the surface resources and other users. The study includes and considers the following factors where applicable:

1. Statutory authorities
2. Existing and planned uses
3. Dedications
4. Impact on surface resources
5. Damage to watershed
6. Degree of surface disturbance and difficulty in restoration.
7. Special values, such as wilderness character, archeological sites, cultural resources (FSM 2361), and endangered species habitat
8. Access needs, including system roads to be used, reconstructed or constructed
9. Term of the lease and probable nature of operations
10. Economic considerations, such as relative values of minerals and surface resources and scarcity of and demand for minerals
11. Range of alternatives for operations and land used and for environmental protection.

During this process BLM cooperates with the Forest Service on the environmental analysis and makes a valuable deposit determination based on the information provided by the potential lessee.

The next step is for the Forest Service to make their consent decision and send the lease stipulations and plan of operations mitigation measures to BLM.

BLM then finishes the preparation of their environmental analysis with lease stipulations and calculates the bond.

Both BLM and Forest Service conduct a final review and BLM requests the bond and requires the Lessee to agree to the lease stipulations and plan of operation mitigation measures.

BLM then issues the lease.

The lessee cannot commence operations until they have complied with all State and local requirements.

Appendix H
Vegetation Management Practices

This appendix describes the most common vegetation management practices that are likely to be chosen as individual projects are designed and implemented on the Sumter, as well as the forest types where one could expect them to be used. This information complies with CFR 219.15. Standards and guidelines that apply to these practices are found in chapters 2 and 3 of the Forest Plan.

S*ite-specific treatment choices are made at the project level, and are not constrained by this Forest Plan appendix.*The combinations of forest types, stand structures, component species, site characteristics, and other conditions that could exist throughout the forest are extremely variable.

Silvicultural Systems and Associated Harvest Methods

There are three silvicultural systems used to provide regulated and sustainable yield of wood products for local wood processing facilities on the Sumter National Forest.

1. The *even-aged silvicultural system* is a planned sequence of treatments for tending, harvesting and re-establishing a stand designed to maintain trees composed of a single age class in which the range of tree ages is usually 20 percent of rotation. This system creates a mosaic of single age class stands across the lands suitable for timber production. Collectively, all age classes are present and maintained on lands that are suitable for timber production. When a stand reaches the appropriate age, often expressed as the rotation, a final harvest is scheduled to remove most or all of the merchantable trees in a stand. Whether all or some of the merchantable trees are harvested depends on the regeneration method chosen to accomplish the management prescription objectives. Regeneration, designed to replace desired tree species, takes place within 5 years after the final harvest.

   Even-aged regeneration harvest methods:

   a. Seed tree method—All trees are harvested except for a small number of trees retained for seed production. This method is designed to produce a new stand in fully exposed microenvironment. Seed trees are usually removed after regeneration is established. In most cases, snags and any existing den trees are left for wildlife habitat.

   b. Shelterwood method—Enough trees are left to produce sufficient shade to produce a new age class in a moderated microenvironment. The sequence of treatments can include three types of cuttings:

      (1) an optional preparatory cut to enhance conditions for seed production,

      (2) an establishment cut to prepare the seed bed and to create a new age class, and

      (3) a removal cut to release established regeneration from competition with the overwood. Cutting may be done uniformly throughout the stand (uniform

shelterwood), in groups or patches (group shelterwood), or in strips (strip shelterwood). In most cases, snags and any existing den trees are left for wildlife habitat.

c. Clearcutting method—Essentially all merchantable trees are harvested, leaving a fully exposed microclimate for the development of a new stand. In most cases, snags and any existing den trees are left for wildlife habitat.

Intermediate harvests are made in even-aged and two-aged stands between regeneration and maturity. These may include:

a. Thinning—A harvest made to reduce stand density of trees primarily to improve growth, enhance forest health, or recover potential mortality.

b. Improvement cuttings—The removal of less desirable trees of any species in a stand of poles or larger trees, primarily to improve composition and quality.

c. Sanitation cuttings—The removal of trees to improve stand health by stopping or reducing the actual or anticipated spread of insects and disease. (See stand improvement.)

d. Salvage cuttings—The removal of dead trees or trees damaged or dying because of injurious agents other than competition, to recover economic value that would otherwise be lost.

2. The ***two-aged*** *silvicultural system* regenerates and maintains stands with two age classes.

Two-aged regeneration harvest methods:

a. Clearcutting with reserves—A clearcutting in which varying numbers of reserve trees are not harvested to attain goals other than regeneration.

b. Seed tree with reserves—Some or all of the seed trees are retained after regeneration has become established to attain goals other than regeneration.

c. Shelterwood with reserves—Some or all of the shelter trees are retained after regeneration has become established to attain goals other than regeneration.

3. The ***uneven-aged*** *silvicultural system* is a planned sequence of treatments for tending, harvesting and re-establishing a stand and maintaining trees in three or more age classes.

Uneven-aged regeneration harvest methods:

a. Single tree selection—Individual trees of several size classes are removed more or less uniformly throughout the stand to promote growth of remaining trees and to provide space for regeneration.

b. Group selection—Trees are removed and new age classes are established in small groups. The width of groups is commonly no more than twice the height of the mature trees with smaller openings providing microenvironments suitable for shade tolerant regeneration and larger openings providing conditions suitable for shade

intolerant regeneration. Thinning may also be done between groups as part of the harvest.

Coppice methods, which achieve the majority of regeneration from stump sprouts or root suckers, are not addressed here since strict coppice methods have not historically been in substantial use on the Sumter. However, stump sprouts are an important component of regeneration for most hardwood types and can be important for shortleaf pine and pitch pine under certain conditions. Advance regeneration of seedlings is also very important in many hardwood types, and can play a role in the regeneration of conifer types as well.

Application of Silvicultural Systems and Harvest Methods

Because most of the desired forest types are composed of tree species that range from shade intolerant to intermediate in shade tolerance, even-aged and two-aged silvicultural systems will probably be applied in most places. As stated above, group selection can be adapted for shade intolerant species also. While single tree selection has been used with success in loblolly pine—shortleaf pine forests, it does present some challenges discussed later in this appendix.

Seed tree and shelterwood harvests are the regeneration harvest methods that will probably be most commonly applied across the forest. These systems can meet most visual quality needs.

Clearcutting or clearcutting with reserves will most likely be applied where a forest type conversion is desired, and the seed source for an existing species, such as loblolly pine or Virginia pine, needs to be removed.

Two aged systems will probably be applied in areas of high visual sensitivity such as near trails. How many reserve trees must be left before a stand is considered two-aged can be a fine distinction. Oak, hickory and den trees will typically be kept as reserve trees in most regeneration harvests.

Uneven-aged systems are most likely to be used in areas of high visual sensitivity. Their use presents some challenges to consider.

1. Harvest equipment. Most harvesters are designed for either large or small material, but not both. Saw head harvesters can also present problems with the saw head mowing down sapling size trees that comprise the youngest age classes.

2. Economics.

    a. Relatively low volumes per acre increase purchasers' costs. This decreases revenue from such sales and makes them less attractive to purchasers. Because of this one cost factor, stands in which uneven-aged regeneration harvest is planned should generally have the following characteristics:

    (1) Slopes operable by ground skidding equipment (reason—permit more cost effective ground based tree felling and skidding operation).

    (2) Close proximity to existing system roads (reason—minimize purchaser's need to build roads for log removal).

    (3) Substantial stand size. Larger than 60 acres is best (reason—so the sale of the wood products will have sufficient total volume to permit the purchaser to make a profit).

    b. Mixed product sizes. Harvest through all diameter classes (in single tree selection) results in

separate products for purchasers to market. Markets for smaller trees are weak in parts of the Sumter. Individual purchasers usually supply either large tree markets or small tree markets.

c. Time and cost of intensive inventories. Detailed stand inventories are needed to apply the single tree selection method. Additional time and cost are substantial. With limited personnel and budget, these are important factors.

d. Hardwood control in pine stands. With an uneven-aged structure, shortleaf pine and loblolly pine stands can only carry a limited hardwood component and still have enough sunlight to produce successful regeneration. This can require hardwood control most cutting cycles, perhaps every cutting cycle.

e. More frequent entries increase the cost for marking and sale administration.

3. Shade tolerance of desired forest types. As already stated, most of the desired forest types on the Sumter National Forest are composed of tree species that are shade intolerant to intermediate in shade tolerance. These species are better adapted to even-aged or two-aged silvicultural systems.
4. Stand tending in group selection. Tracking groups runs counter to the philosophy behind group selection, and turns it into even-aged management on a micro scale. It also presents difficulties with service contracts for site preparation, release, or other activities. Therefore, one hopes that stand tending treatments will not be necessary, and accepts the species composition and yields of untended groups.

Thinning is likely to be applied in most forest types. It is usually visually benign, and can often improve visual quality. One specific application of thinning will be applied that has not been in previous use on the Sumter. This is in the development of woodland conditions. The purpose of such a thinning is to create very open forests with low tree densities. These will be associated with the use of prescribed fire to create and maintain herbaceous understories. Woodland conditions will be sought most often in management prescription 8B2, but also in management prescriptions 7E2, 8A1, and 9G2 and perhaps others.

Salvage harvest will probably be most associated with southern pine beetle outbreaks. This may occur in any place where there is host type, and the management prescription does not prohibit salvage harvest. Salvage is also common after wind events. It may also be applied after severe ice storms or other events that cause enough mortality or damage to warrant salvage harvest.

Silviculture by Forest Type

Silviculture is discussed by forest type instead of community types because species composition varies more widely by community type than by forest type. This species composition defines the regeneration requirements that are needed.

Silviculture in loblolly pine forest types—Loblolly pine is the most extensive forest type on the Sumter National Forest. In the piedmont, the most likely regeneration method is the seed tree method, especially in management prescription 10B. Anticipated site preparation for these sites is mechanical drum chopping. In areas of very high visual concern, either shelterwood or shelterwood with reserves may be used. Herbicide foliar sprays may commonly

be used to release loblolly pine, oak, and hickory seedlings. Precommercial thinning will be needed in some stands that become very densely stocked with seedlings.

Oak and hickory canopy trees will commonly be retained, as will wildlife den trees.

In most piedmont management prescriptions, thinning will be used to maintain moderate stand densities (less than 100 square feet per acre basal area) to reduce susceptibility to southern pine beetle attack and to encourage development of larger diameter trees.

In the piedmont 8B2 management prescription, heavy thinning will be applied to many stands to achieve very open woodland conditions. Such thinning and associated practices were discussed above.

In the 9G2 management prescription, hardwood and mixed pine and hardwood stands are desired. If advance oak and hickory regeneration is present, clearcutting or clearcutting with reserves may be used to release this advanced regeneration and limit the seed source for future/additional loblolly pine seedlings. Most stands, however, are not expected to have adequate advance oak and hickory regeneration. If it is not present, thinning may be used to achieve stand densities that provide enough sunlight to encourage these species in the understory.

In the mountains, loblolly pine is outside its native range. These stands will be replaced with shortleaf pine, pitch pine, oak, hickory, permanent openings, or some combination of these. Clearcutting or clearcutting with reserves may be the most common method used to remove all of the loblolly pine. If desired species are already present as a component of the current stands, they will remain.

Silviculture in shortleaf pine and pitch pine forest types—In the mountains, even-aged and two-aged silvicultural systems are most suitable to regenerate shortleaf pine and pitch pine forest types. This is because both of these species are intolerant of shade. Anticipated site preparation methods are felling of unwanted residual trees and/or herbicide application to seedling through pole size tree species other than shortleaf pine, pitch pine, oak or hickory. Since seed crops are irregular, and not dependable for any given year, planting may be needed, or site preparation may need to be repeated. Otherwise, regeneration harvest could convert such sites to hardwood types. These species may often be managed together with oak and hickory species as mixed forest types. After establishment, release with herbicide may be a common practice. Thinning may be used to maintain moderate stand densities of less than 100 square feet per acre basal area. This will reduce susceptibility to southern pine beetle attack and encourage development of larger diameter trees.

In the mountains, shortleaf pine/pitch pine types are appropriate forest types to establish woodland conditions, as described previously.

In the piedmont, shortleaf pine is desired on sites where it is not likely to be affected by littleleaf disease. On some sites, loblolly pine stands may be converted to shortleaf pine, or possibly a mixture of shortleaf pine with oak and/or hickory. Such sites must be carefully selected. Soils on these sites must be well drained. Otherwise littleleaf disease is likely to take a severe toll on the species. Clay soils, including typical red clay eroded soils, are not appropriate sites for establishing shortleaf pine in the piedmont. On piedmont sites being converted from loblolly pine forest types, clearcutting or clearcutting with reserves will probably be used to remove all of the loblolly pine in a stand and limit that seed source.

Silviculture in Virginia pine forest types—Virginia pine is a common species in the southern Appalachians. It usually occupies sites that are well suited to shortleaf pine and pitch pine, two species that are much less abundant in southern Appalachian forests than in years past. Therefore, Virginia pine stands of merchantable size may commonly be targeted for conversion to shortleaf pine and/or pitch pine, retaining oak or hickory that may be present. In these stands a sequence of treatments will be needed to ensure

Virginia pine seedlings have been eliminated, because it tends to regenerate prolifically. This sequence would typically be to: (1) harvest the Virginia pine, (2) fell unwanted residual trees, and then (3) spray all Virginia pine seedlings with herbicide, as well as seedlings/sprouts of any other undesired tree species. Uneven-aged methods would discriminate well against Virginia pine, but they are not the best suited methods for the species that are desired to replace Virginia pine: typically shortleaf pine, pitch pine, oak or hickory.

Where Virginia pine is desired in the regenerated stand, clearcutting or clearcutting with reserves are the best methods because Virginia pine is a shallow rooted species subject to wind throw. It is produces seed almost every year and is intolerant of shade. Other even-aged or two-aged methods would work, but the remaining Virginia pine canopy trees would have a substantial probability of being blown over.

For the same reasons, any thinning done in Virginia pine should not open such stands too much, or wind throw could likely result.

Silviculture in oak-hickory forest type*s*— Advance regeneration is the key to regenerating oak and hickory forest types. This makes categorizing regeneration methods for these types difficult. Even-aged and two-aged methods are the most appropriate however, because oaks and hickories are generally intermediate in shade tolerance and do not reproduce well in their own shade. Herbicide release may be needed to favor oak and hickory seedlings over less desired competing tree species.

Thinning can be important in these stands for two reasons. First, oak and hickory trees need large, well-developed crowns to produce substantial quantities of hard mast. Individual trees must have adequate space to develop such crowns. Second, dense stands do not allow enough sunlight to the forest floor to encourage the establishment of advance regeneration.

Silviculture in eastern white pine forest types—Silviculture in these forest types depends on whether eastern white pine is desired in regenerated stands or not. Where it is not, best results will be obtained by harvest of all eastern white pine in a given stand to limit the available source of seed.

Where white pine is desired in a regenerated stand, almost any regeneration method can be made to work. This is because white pine is shade tolerant and thus suited to uneven-aged methods, but also fast growing enough that even-aged systems tend to work well.

Silviculture in yellow-poplar forest types—On the Sumter National Forest, yellow-poplar is most often found growing together with other species. Its seed can remain viable in the forest floor for 4-7 years. This stored seed and yellow-poplar's very fast growth habit make even-aged and two-aged regeneration methods most appropriate for use where this species is desired. Because of the seed stored in the forest floor, no overstory trees are needed for regeneration. They may be retained for aesthetic reasons, however, for habitat needs, or to continue growing if they are still relatively young. Where other species are desired in the regenerated stand, yellow-poplar must be treated (most effectively with herbicide) if other species are to have much chance of competing. Yellow-poplar is so aggressive and fast growing that even though it is classified as shade intolerant, it can sometimes become established in relatively small canopy gaps.

Silviculture in bottomland hardwood forest types—Most of these areas fall into the management prescription 11, riparian corridors. Anticipated harvest in this forest type is mainly to produce canopy gaps or to restore canebrakes.

Harvests to provide canopy gaps will most likely be either group selection or thinning. These are expected to be adjacent to and concurrent with other harvests in upland stands so that they can be commercially feasible.

These harvests should favor retention of mast producing species.

With canebrakes, the preferred harvest is generally a sequence of thinnings until approximately 20 square feet per acre or less basal area remains. Prescribed fire is needed approximately once every 10 years.

Silviculture in eastern hemlock forest types—Harvest operations are not anticipated because of the threat to this species from hemlock woolly adelgid, and because much of this forest type is in riparian areas.

Site Preparation, Reforestation, and Stand Improvement Methods

All site preparation methods are available for use on the Forest. These include, but may not be limited to mechanical methods, prescribed fire, manual methods and herbicide use. Many of these have been discussed under the previous section of this appendix. Limitations on these methods are found in standards in chapters 2 and 3 in this Forest Plan.

Planting is anticipated mainly in:

1. Areas being converted from loblolly pine to shortleaf pine and/or pitch pine
2. Regeneration of shortleaf pine, pitch pine, or table mountain pine stands in the mountains.
3. Areas being converted from Virginia pine to shortleaf pine or pitch pine.
4. Salvage areas of sufficient size (larger than 5 or 10 acres) that natural regeneration may not be sufficient.
5. Gullied areas that are being restored to reduce erosion and sedimentation.

The primary methods of stand improvement are expected to be release, precommercial thinning, and fertilization. Release is a treatment designed to free young trees from undesirable, usually overtopping, competing vegetation. Precommercial thinning is the removal of trees not for immediate financial return, but to reduce stocking to concentrate growth on the more desirable trees.

Release and precommercial thinning have been addressed in the previous section, and may be applied in circumstances not already mentioned. Selective application of herbicides will probably be the method used to accomplish most release work.This activity is most useful in shaping the species composition of individual stands. Fertilization for stand improvement is principally done in loblolly pine stands after a first thinning. Soil fertility is a key ecosystem component that was much reduced on many eroded piedmont farm lands before they became National Forest lands.

Other Vegetation Management Practices

Prescribed fire is used to reduce hazardous fuel accumulations and to manipulate vegetative communities. Many plant species on the forest are fire adapted to some degree. Some are perhaps fire dependent.

Herbicides will be the primary means of controlling non-native invasive plants. There are a wide variety of these plants in a wide variety of places across the forest. In some circumstances pulling can be effective, but in most cases it is important to kill all of the root tissue of these species.

The vegetation in wildlife openings will be maintained by a number of methods. These may include prescribed fire, mowing, disking, herbicide application, chain saw use or tree grinding.

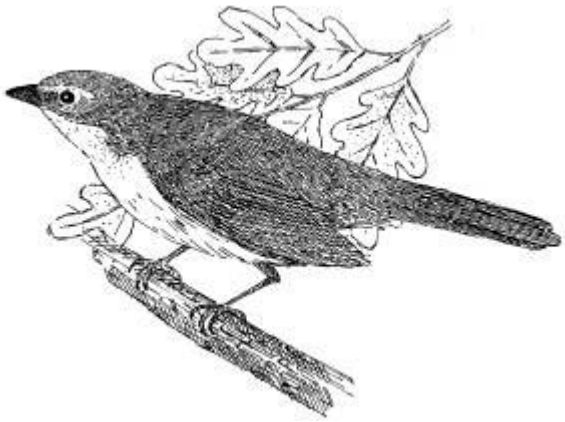
In regeneration areas, snags (dead trees) are sometimes lacking.These are sometimes created by either cut surface application of herbicide, or by girdling.

Fertilization will be used in conjunction with seeding done for erosion control and wildlife habitat enhancement. It may also be used for soil/water improvement to increase the growth of understory plants, reducing runoff and erosion.

Utility companies must maintain their rights-of-way across National Forest lands so that trees do not interfere with their management.This is generally accomplished either by herbicide application, or by mowing.

Dams and dikes need to be kept relatively free of trees and other woody vegetation.That is because their roots weaken the structures, and create pore spaces through which water can begin to move through the dam or dike. This vegetation control is accomplished most effectively with herbicide application.

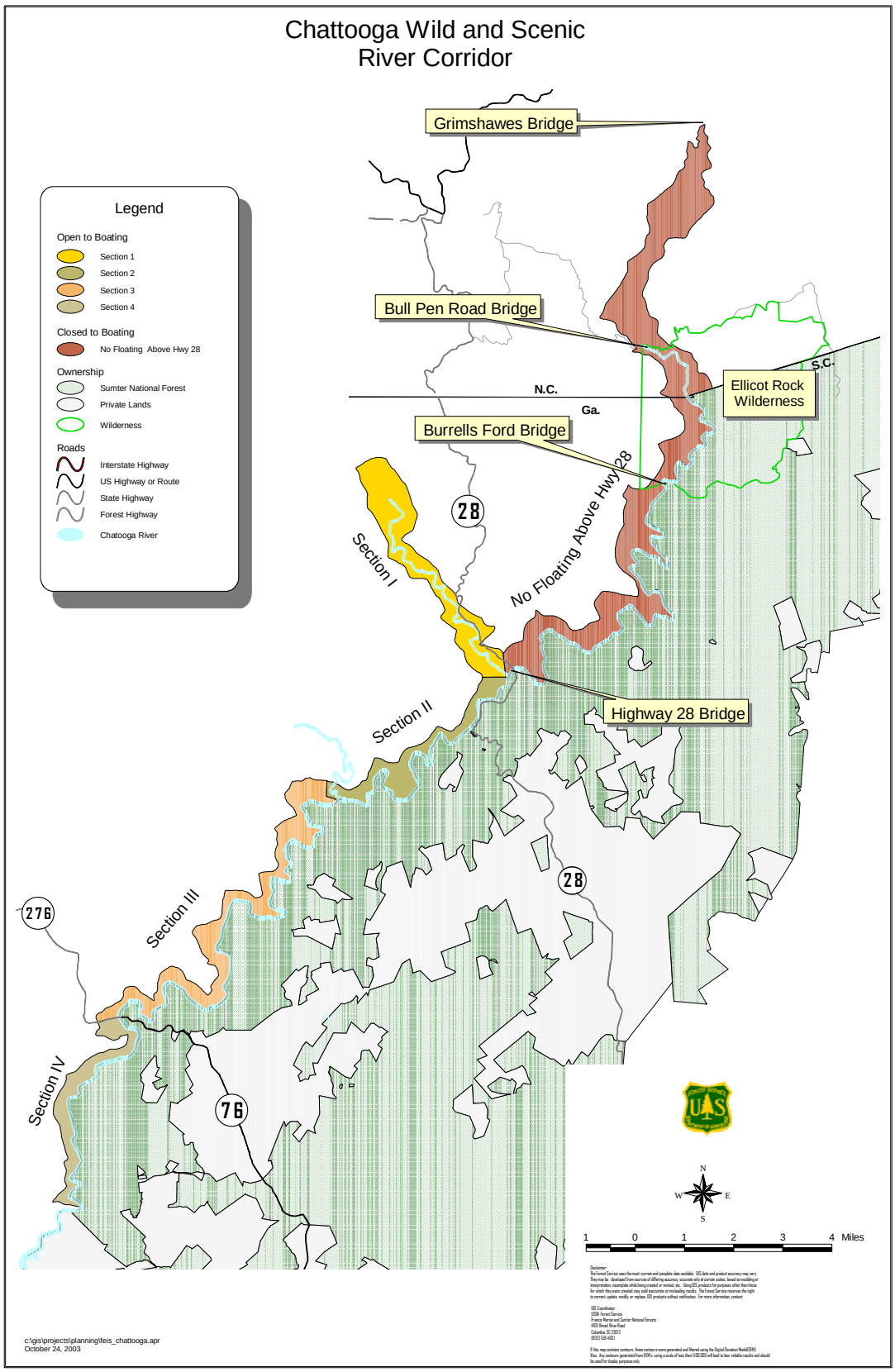
Ponds and lakes sometimes develop populations of aquatic weeds that need control. Such control is accomplished by herbicide application.



Mesic deciduous forest on the piedmont.

Appendix I
Resource Maps

The portions of the Chattooga River open to boating are divided into four sections. (Please refer to the following map.) Section I is the West Fork of the Chattooga River in Georgia ending at the main river channel. Section II begins at the Highway 28 Bridge and ends at Earl's Ford. Section III begins at Earl's Ford and ends at the Highway 76 Bridge. Section IV begins at the Highway 76 Bridge and ends at Lake Tugaloo. The uses of the river are regulated by section, season, water level and type of use (commercial and private). These are further discussed as standards within management prescription 2A in Chapter 3.


Chattooga Wild and Scenic
River Corridor
Legend
Open to Boating
Section 1
Section 2
Section 3
Section 4
Closed to Boating
No Floating Above Hwy 28
Ownership
Sumter National Forest
Private Lands
Wilderness
Roads
Interstate Highway
US Highway or Route
State Highway
Forest Highway
Chatooga River
Grimshawes Bridge
Bull Pen Road Bridge
Burrells Ford Bridge
Highway 28 Bridge
Ellicot Rock
Wilderness
N.C.
S.C.
Ga.
28
276
76
Section I
Section II
Section III
Section IV
No Floating Above Hwy 28
N
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1 0 1 2 3 4 Miles
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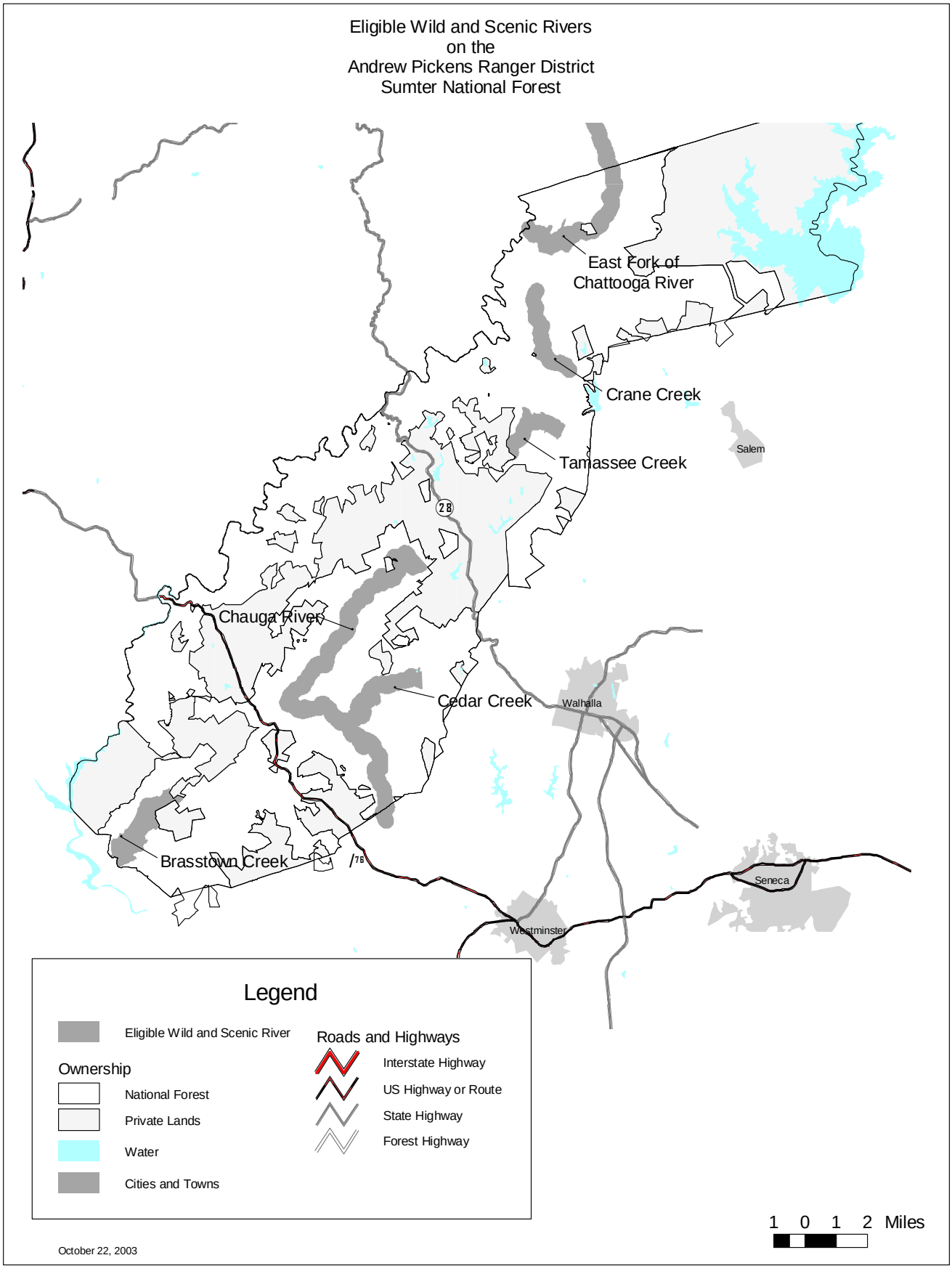
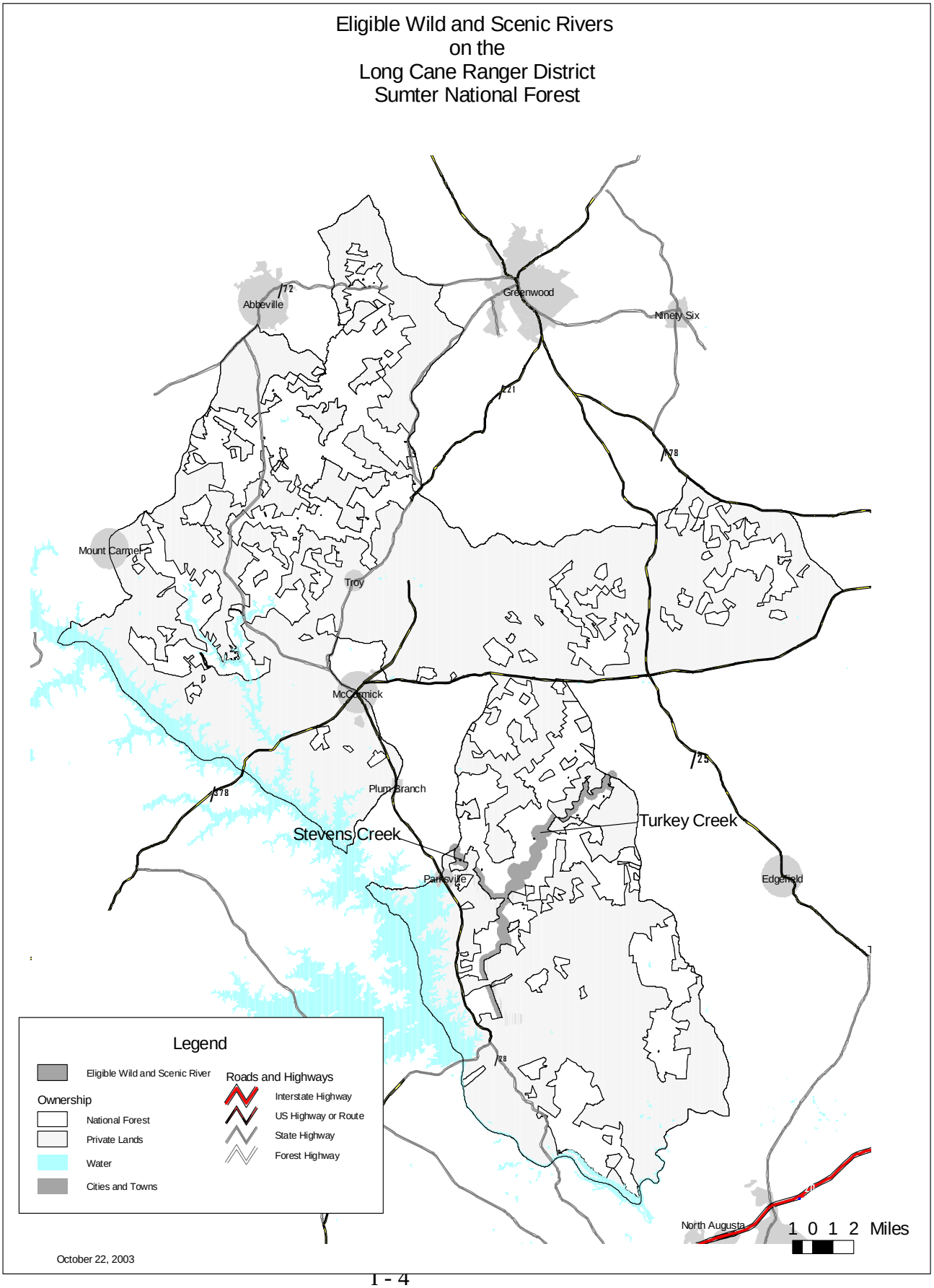
October 24, 2003


Eligible Wild and Scenic Rivers
on the
Andrew Pickens Ranger District
Sumter National Forest
East Fork of
Chattooga River
Crane Creek
Tamassee Creek
Salem
28
Chauga River
Cedar Creek
Walhalla
Brasstown Creek
76
Seneca
Westminster
Legend
Eligible Wild and Scenic River
Ownership
National Forest
Private Lands
Water
Cities and Towns
Roads and Highways
Interstate Highway
US Highway or Route
State Highway
Forest Highway
1 0 1 2 Miles
October 22, 2003


Eligible Wild and Scenic Rivers
on the
Long Cane Ranger District
Sumter National Forest
Abbeville
Greenwood
Ninety Six
Mount Carmel
Troy
McCormick
Plum Branch
Stevens Creek
Turkey Creek
Parksville
Edgefield
North Augusta
Legend
Eligible Wild and Scenic River
Ownership
National Forest
Private Lands
Water
Cities and Towns
Roads and Highways
Interstate Highway
US Highway or Route
State Highway
Forest Highway
1 0 1 2 Miles
October 22, 2003